7.5

IBM WebSphere MQ Administration Reference

Note

Before using this information and the product it supports, read the information in “Notices” on page 1203.

This edition applies to version 7 release 5 of IBM® WebSphere® MQ and to all subsequent releases and modifications until otherwise indicated in new editions.

Contents

Administration reference

Use the links to reference information in this section to help you operate and administer WebSphere MQ.

- Queue names
- Other object names
- “IBM WebSphere MQ Administration Interface” on page 1119

Syntax diagrams

The syntax for a command and its options is presented in the form of a syntax diagram called a railroad diagram.

Railroad diagrams are a visual format suitable for sighted users; see, “How to read railroad diagrams” on page 5. It tells you what options you can supply with the command, how to enter them, indicates relationships between different options, and sometimes different values of an option.

How to read railroad diagrams

Each railroad diagram begins with a double right arrow and ends with a right and left arrow pair. Lines beginning with a single right arrow are continuation lines. You read a railroad diagram from left to right and from top to bottom, following the direction of the arrows.

Other conventions used in railroad diagrams are:

Table 1. How to read railroad diagrams

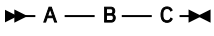
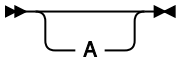
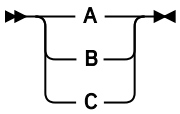
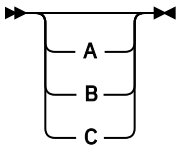
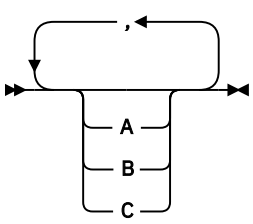
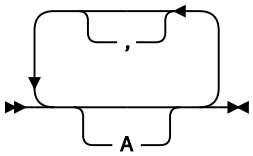
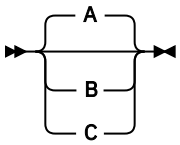
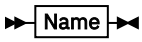
Convention	Meaning
	You must specify values A, B, and C. Required values are shown on the main line of a railroad diagram.
	You may specify value A. Optional values are shown below the main line of a railroad diagram.
	Values A, B, and C are alternatives, one of which you must specify.
	Values A, B, and C are alternatives, one of which you might specify.
	You might specify one or more of the values A, B, and C. Any required separator for multiple or repeated values (in this example, the comma (,)) is shown on the arrow.

Table 1. How to read railroad diagrams (continued)	
Convention	**Meaning**
	You might specify value A multiple times. The separator in this example is optional.
	Values A, B, and C are alternatives, one of which you might specify. If you specify none of the values shown, the default A (the value shown above the main line) is used.
 **Name** 	The railroad fragment Name is shown separately from the main railroad diagram.
Punctuation and uppercase values	Specify exactly as shown.

IBM WebSphere MQ Control commands

Find out how to use the WebSphere MQ control commands.

If you want to issue control commands, your user ID must be a member of the mqm group. For more information, see Authority to administer IBM WebSphere MQ on UNIX, Linux®, and Windows systems .

When using control commands that operate on a queue manager, you must use the command from the installation associated with the queue manager you are working with.

In addition, note the following environment-specific information:

- On Windows, all control commands can be issued from a command line. Command names and their flags are not case-sensitive: you can enter them in uppercase, lowercase, or a combination of uppercase and lowercase. However, arguments to control commands (such as queue names) are case-sensitive.

  In the syntax descriptions, the hyphen (-) is used as a flag indicator. You can use the forward slash (/) instead of the hyphen.
- On UNIX and Linux systems, all WebSphere MQ control commands can be issued from a shell. All commands are case-sensitive.
- A subset of the control commands can be issued using the IBM WebSphere MQ Explorer.

For a list of the control commands see, “The control commands” on page 8.

For a comparison of the different administration command sets, see “Comparing command sets” on page 143.

For information about commands for managing keys and certificates, see “Managing keys and certificates” on page 150.

Related concepts

“MQSC reference” on page 169

Use MQSC commands to manage queue manager objects, including the queue manager itself, queues, process definitions, channels, client connection channels, listeners, services, namelists, clusters, and authentication information objects.

"Programmable command formats reference" on page 685
Programmable Command Formats (PCFs) define command and reply messages that can be exchanged between a program and any queue manager (that supports PCFs) in a network. PCFs simplify queue manager administration and other network administration.

Using control commands

The table in this topic shows the three categories of control commands: queue manager commands, channel commands, and utility commands.

Control commands can be divided into three categories, as shown in Table 2 on page 7.

Table 2. Categories of control commands

Category	Description
Queue manager commands	Queue manager control commands include commands for creating, starting, stopping, and deleting queue managers and command servers
Channel commands	Channel commands include commands for starting and ending channels and channel initiators
Utility commands	Utility commands include commands associated with: • Running MQSC commands • Conversion exits • Authority management • Recording and recovering media images of queue manager resources • Displaying and resolving transactions • Trigger monitors • Displaying the file names of WebSphere MQ objects

For more information, see "IBM WebSphere MQ Control commands" on page 6

Using control commands on Windows systems

In WebSphere MQ for Windows, you enter control commands at a command prompt.

In Windows environments, control commands and their flags are not case-sensitive, but arguments to those commands (such as queue names and queue-manager names) are case-sensitive.

For example, in the command:

```
crtmqm /u SYSTEM.DEAD.LETTER.QUEUE jupiter.queue.manager
```

- The command name can be entered in uppercase or lowercase, or a mixture of the two. These are all valid: `crtmqm`, `CRTMQM`, and `CRTmqm`.
- The flag can be entered as `-u`, `-U`, `/u`, or `/U`.
- `SYSTEM.DEAD.LETTER.QUEUE` and `jupiter.queue.manager` must be entered exactly as shown.

For more information, see WebSphere MQ control commands.

Using control commands on UNIX and Linux systems

In WebSphere MQ for UNIX and Linux systems, you enter control commands in a shell window.

In UNIX environments, control commands, including the command name itself, the flags, and any arguments, are case-sensitive. For example, in the command:

```
crtmqm -u SYSTEM.DEAD.LETTER.QUEUE jupiter.queue.manager
```

- The command name must be `crtmqm`, not `CRTMQM`.
- The flag must be `-u`, not `-U`.
- The dead-letter queue is called `SYSTEM.DEAD.LETTER.QUEUE`.
- The argument is specified as `jupiter.queue.manager`, which is different from `JUPITER.queue.manager`.

Take care to type the commands exactly as you see them in the examples.

For more information about the `crtmqm` command, see "crtmqm" on page 23.

For more information on control commands, see "IBM WebSphere MQ Control commands" on page 6

The control commands

This collection of topics provides reference information for each of the WebSphere MQ control commands. These control commands require that the ID is in the mqm group.

addmqinf

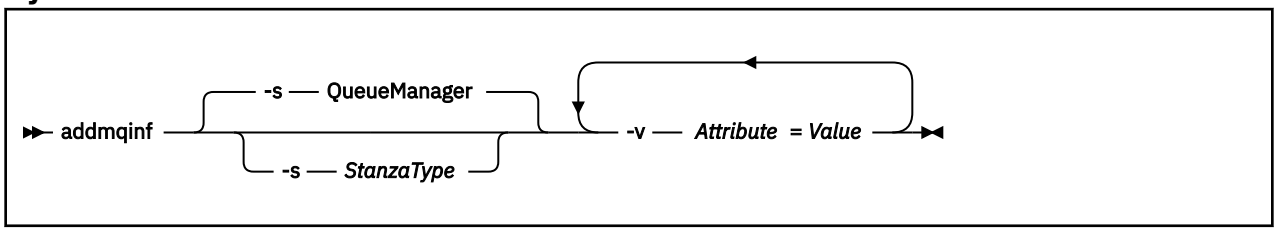
Add WebSphere MQ configuration information (Windows and UNIX platforms only).

Purpose

Use the **addmqinf** command to add information to the IBM WebSphere MQ configuration data.

For example, use **dspmqinf** and **addmqinf** to copy configuration data from the system where a queue manager was created, to other systems where the same multi-instance queue manager is also to be started.

Syntax



Required parameters

-v *Attribute=Value*

The name and value of the stanza attributes to be placed in the stanza specified in the command.

Table 3 on page 9 lists the QueueManager stanza attribute values. The queue manager stanza is the only stanza that is currently supported.

Table 3. QueueManager stanza attributes		
Attribute	***Value***	**Required or optional**
Name	The name of the queue manager. You must provide a different name from any other queue manager stanza on the system.	Required
Prefix	The directory path *under* which this queue manager data directory is stored by default. You can use **Prefix** to modify the location of the queue manager data directories. The value of **Directory** *is* automatically appended to this path.	Required
Directory	The name of the queue manager data directory. Sometimes the name must be provided (as in "Example" on page 10), because it is different from the queue manager name. Copy the directory name from the value returned by **dspmqinf**. The rules for transforming queue manager names into directory names are described in Understanding WebSphere MQ file names.	Required
DataPath	The directory path where the queue manager data files are placed. The value of **Directory** is *not* automatically appended to this path - you must provide the transformed queue manager name as part of **DataPath**. If the **DataPath** attribute is omitted on UNIX, the queue manager data directory path is defined as ***Prefix*/*Directory***.	UNIX: Optional Windows: Required

Optional parameters

-s *StanzaType*

A stanza of the type *StanzaType* is added to the IBM WebSphere MQ configuration.

The default value of *StanzaType* is `QueueManager`.

The only supported value of *StanzaType* is `QueueManager`.

Return codes

Return code	Description
0	Successful operation
1	Queue manager location is invalid (either **Prefix** or **DataPath**)
39	Bad command-line parameters
45	Stanza already exists
46	Required configuration attribute is missing
58	Inconsistent use of installations detected
69	Storage is not available
71	Unexpected error
72	Queue manager name error
100	Log location is invalid

Example

```
addmqinf -v DataPath=/MQHA/qmgrs/QM!NAME  +
  -v Prefix=/var/mqm  +
  -v Directory=QM!NAME  +
  -v Name=QM.NAME
```

Creates the following stanza in mqs.ini:

```
QueueManager:
   Name=QM.NAME
   Prefix=/var/mqm
   Directory=QM!NAME
   DataPath=/MQHA/qmgrs/QM!NAME
```

Usage notes

Use `dspmqinf` with `addmqinf` to create an instance of a multi-instance queue manager on a different server.

To use this command you must be a WebSphere MQ administrator and a member of the `mqm` group.

Related commands

Command	Description
“dspmqinf” on page 53	Display WebSphere MQ configuration information
“rmvmqinf” on page 89	Remove WebSphere MQ configuration information

amqmdain

amqmdain is used to configure or control some Windows specific administrative tasks.

Purpose

The **amqmdain** command applies to IBM WebSphere MQ for Windows only.

Use **amqmdain** to perform some Windows specific administrative tasks.

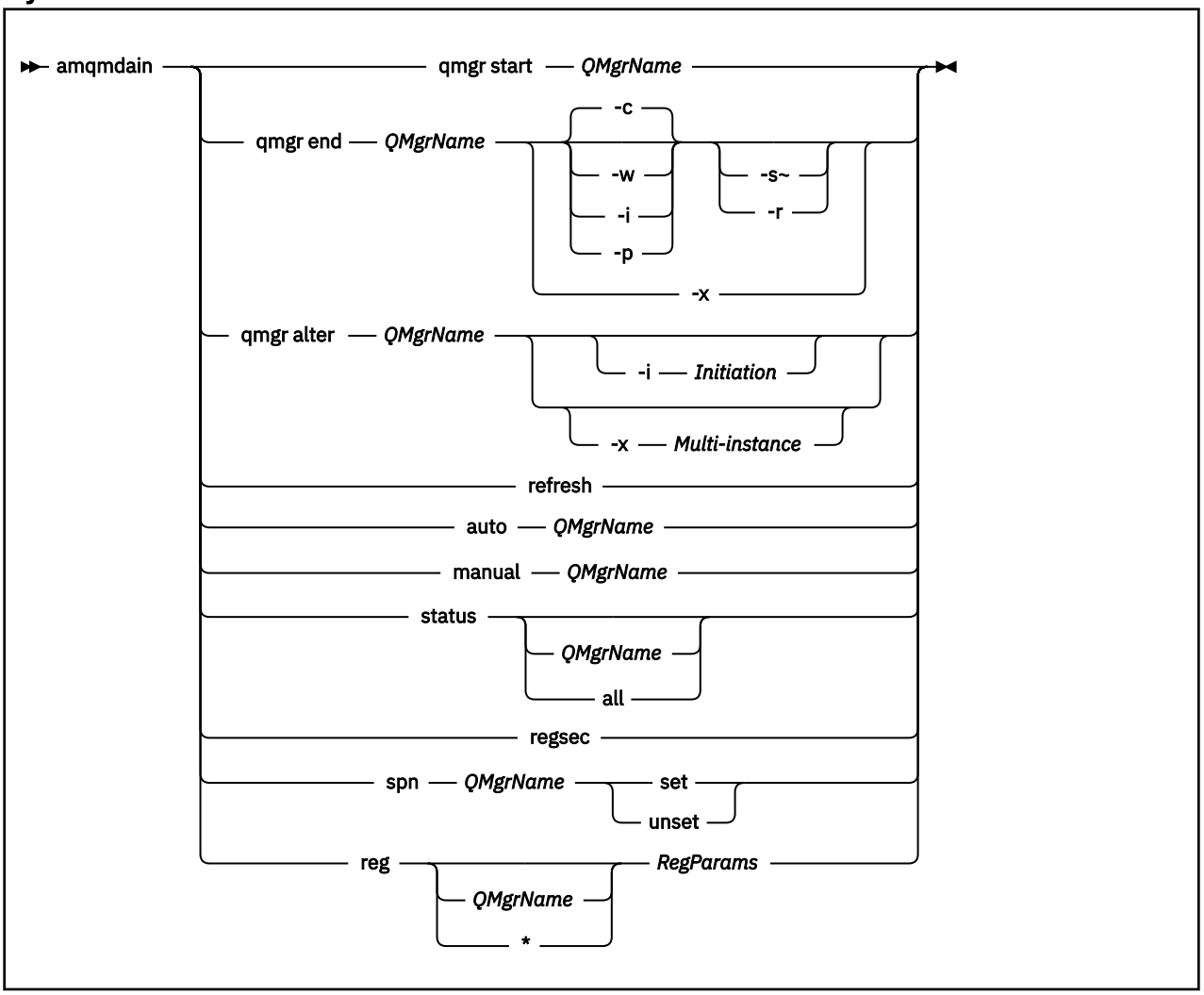
Starting a queue manager with **amqmdain** is equivalent to using the **strmqm** command with the option `-ss`. **amqmdain** makes the queue manager run in a non-interactive session under a different user account. However, to ensure that all queue manager startup feedback is returned to the command line, use the `strmqm -ss` command rather than **amqmdain**.

You must use the **amqmdain** command from the installation associated with the queue manager that you are working with. You can find out which installation a queue manager is associated with using the `dspmq -o installation` command.

To administer and define IBM WebSphere MQ service and listener objects, use MQSC commands, PCF commands, or the IBM WebSphere MQ Explorer.

The **amqmdain** command has been updated to modify either the `.ini` files or the registry as appropriate.

Syntax



Keywords and parameters

All parameters are required unless the description states they are optional.

In every case, *QMgrName* is the name of the queue manager to which the command applies.

qmgr start *QMgrName*
Starts a queue manager.

This parameter can also be written in the form *start QMgrName*.

If you start your queue manager as a service and need the queue manager to continue to run after logoff, use `strmqm -ss qmgr` instead of `amqmdain start qmgr`.

qmgr end *QMgrName*
Ends a queue manager.

This parameter can also be written in the form *end QMgrName*.

For consistency across platforms, use `endmqm qmgr` instead of `amqmdain end qmgr`.

For fuller descriptions of the options, see "endmqm" on page 72.

-c
Controlled (or quiesced) shutdown.

-w
Wait shutdown.

-i
Immediate shut down.

-p
Pre-emptive shut down.

-r
Reconnect clients.

-s
Switch over to a standby queue manager instance.

-x
End the standby instance of the queue manager without ending the active instance.

qmgr alter *QMgrName*
Alters a queue manager.

-i *Initiation*
Specifies the initiation type. Possible values are:

Table 4. Initiation parameters.

Parameter	Parameter Description
auto	Sets the queue manager to automatic startup (when the machine starts, or more precisely when the IBM WebSphere MQ service starts). The syntax is: `amqmdain qmgr alter QmgrName -i auto`
interactive	Sets the queue manager to manual startup that then runs under the logged on (interactive) user. The syntax is: `amqmdain qmgr alter QmgrName -i interactive`
service	Sets the queue manager to manual startup that then runs as a service. The syntax is: `amqmdain qmgr alter QmgrName -i service`

-x *Multi-instance*
Specifies if **auto** queue manager start by the IBM WebSphere MQ service permits multiple instances. Equivalent to the `-sax` option on the **crtmqm** command. Also specifies if the **amqmdain start qmgr** command permits standby instances. Possible values are:

Table 5. Multi-instance parameters.

Parameter	Parameter Description
set	Sets automatic queue manager startup to permit multiple instances. Issues `strmqm -x`. The `set` option is ignored for queue managers that are initiated interactively or as a manual service startup. The syntax of the command is: `amqmdain qmgr alter QmgrName -x set`

Table 5. Multi-instance parameters. (continued)	
Parameter	**Parameter Description**
unset	Sets automatic queue manager startup to single instance. Issues `strmqm`. The `unset` option is ignored for queue managers that are initiated interactively or as a manual service startup. The syntax of the command is: `amqmdain qmgr alter QmgrName -x unset`

refresh
Refreshes or checks the status of a queue manager. You will not see anything returned on the screen after executing this command.

auto *QMgrName*
Sets a queue manager to automatic startup.

manual *QMgrName*
Sets a queue manager to manual startup.

status *QMgrName* | all
These parameters are optional.

Table 6. Status parameters.	
Parameter	**Parameter Description**
If no parameter is supplied:	Displays the status of the IBM WebSphere MQ services.
If a *QMgrName* is supplied:	Displays the status of the named queue manager.
If the parameter *all* is supplied:	Displays the status of the IBM WebSphere MQ services and all queue managers.

regsec
Ensures that the security permissions assigned to the Registry keys containing installation information are correct.

spn *QMgrName* set | unset
You can set or unset the service principal name for a queue manager.

reg *QMgrName* | * *RegParams*
Parameters *QMgrName*, and * are optional.

Table 7. Reg parameters.	
Parameter	**Parameter Description**
If *RegParams* is specified alone:	Modifies **queue manager** configuration information related to the default queue manager.
If *QMgrName* and *RegParams* are specified:	Modifies **queue manager** configuration information related to the queue manager specified by *QMgrName*.
If * and *RegParams* are specified:	Modifies **IBM WebSphere MQ** configuration information.

The parameter, *RegParams*, specifies the stanzas to change, and the changes that are to be made. *RegParams* takes one of the following forms:

- -c add -s *stanza* -v attribute=*value*
- -c remove -s *stanza* -v [attribute|*]
- -c display -s *stanza* -v [attribute|*]

If you are specifying queue manager configuration information, the valid values for *stanza* are:

```
XAResourceManager\name
ApiExitLocal\name
Channels
ExitPath
InstanceData
Log
QueueManagerStartup
TCP
LU62
SPX
NetBios
Connection
QMErrorLog
Broker

ExitPropertiesLocal
SSL
```

If you are modifying IBM WebSphere MQ configuration information, the valid values for *stanza* are:

```
ApiExitCommon\name
ApiExitTemplate\name
ACPI
AllQueueManagers
Channels
DefaultQueueManager
LogDefaults
ExitProperties
```

The following are usage considerations:

- **amqmdain** does not validate the values you specify for *name*, *attribute*, or *value*.
- When you specify add, and an attribute exists, it is modified.
- If a stanza does not exist, **amqmdain** creates it.
- When you specify remove, you can use the value * to remove all attributes.
- When you specify display, you can use the value * to display all attributes which have been defined. This value only displays the attributes which have been defined and not the complete list of valid attributes.
- If you use remove to delete the only attribute in a stanza, the stanza itself is deleted.
- Any modification you make to the Registry re-secures all IBM WebSphere MQ Registry entries.

Examples

The following example adds an XAResourceManager to queue manager TEST. The commands issued are:

```
amqmdain reg TEST -c add -s XAResourceManager\Sample -v SwitchFile=sf1
amqmdain reg TEST -c add -s XAResourceManager\Sample -v ThreadOfControl=THREAD
amqmdain reg TEST -c add -s XAResourceManager\Sample -v XAOpenString=openit
amqmdain reg TEST -c add -s XAResourceManager\Sample -v XACloseString=closeit
```

To display the values set by the commands above, use:

```
amqmdain reg TEST -c display -s XAResourceManager\Sample -v *
```

The display would look something like the following:

```
0784726, 5639-B43 (C) Copyright IBM Corp. 1994, 2025. ALL RIGHTS RESERVED.
Displaying registry value for Queue Manager 'TEST'
        Attribute = Name, Value = Sample
        Attribute = SwitchFile, Value = sf1
        Attribute = ThreadOfControl, Value = THREAD
        Attribute = XAOpenString, Value = openit
        Attribute = XACloseString, Value = closeit
```

To remove the XAResourceManager from queue manager TEST, use:

```
amqmdain reg TEST -c remove -s XAResourceManager\Sample -v *
```

Return codes

Return code	Description
0	Command completed normally
-2	Syntax error
-3	Failed to initialize MFC
-6	Feature no longer supported
-7	Configuration failed
-9	Unexpected Registry error
-16	Failed to configure service principal name
-29	Inconsistent use of installations detected
62	The queue manager is associated with a different installation
71	Unexpected error
119	Permission denied (Windows only)

Note:

1. If the *qmgr start QMgrName* command is issued, all return codes that can be returned with **strmqm**, can be returned here also. For a list of these return codes, see “strmqm” on page 133.
2. If the *qmgr end QMgrName* command is issued, all return codes that can be returned with **endmqm**, can be returned here also. For a list of these return codes, see “endmqm” on page 72.

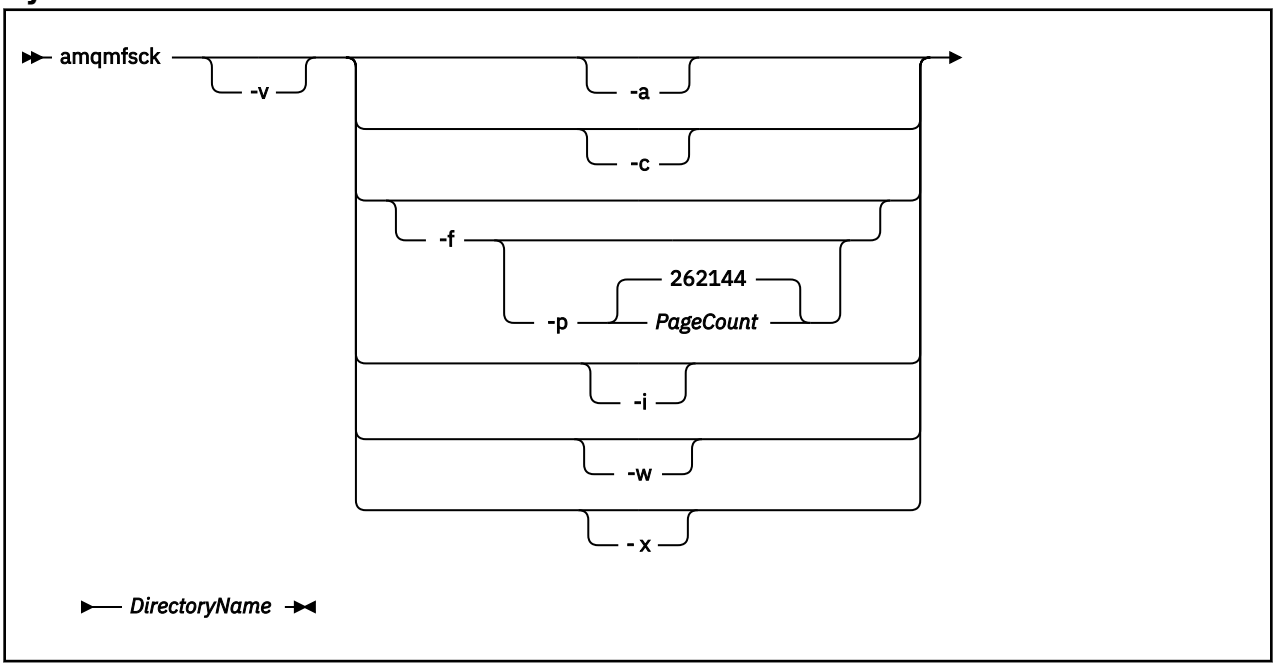
amqmfsck (file system check)

amqmfsck checks whether a shared file system on UNIX and IBM i systems meets the requirements for storing the queue manager data of a multi-instance queue manager.

Purpose

The **amqmfsck** command applies only to UNIX and IBM i systems. You do not need to check the network drive on Windows. **amqmfsck** tests that a file system correctly handles concurrent writes to a file and the waiting for and releasing of locks.

Syntax



Required parameters

DirectoryName
The name of the directory to check.

Optional parameters

-a
Perform the second phase of the data integrity test.

Run this on two machines at the same time. You must have formatted the test file using the `-f` option previously

-c
Test writing to a file in the directory concurrently.

-f
Perform the first phase of the data integrity test.

Formats a file in the directory in preparation for data integrity testing.

-i
Perform the third phase of the data integrity test.

Checks the integrity of the file after the failure to discover whether the test worked.

-p
Specifies the size of the test file used in the data integrity test in pages. .

The size is rounded up to the nearest multiple of 16 pages. The file is formatted with *PageCount* pages of 4 KB.
The optimum size of the file depends on the speed of the filesystem and the nature of the test you perform. If this parameter is omitted, the test file is 262144 pages, or 1 GB.
The size is automatically reduced so that the formatting completes in about 60 seconds even on a very slow filesystem.

-v
Verbose output.

-w
Test waiting for and releasing locks.

-x
Deletes any files created by **amqmfsck** during the testing of the directory.

Do not use this option until you have completed the testing, or if you need to change the number of pages used in the integrity test.

Usage

You must be a WebSphere MQ Administrator to run the command. You must have read/write access to the directory being checked.

The command returns an exit code of zero if the tests complete successfully.

The task, Verifying shared file system behavior , describes how to use **amqmfsck** to check the whether of a file system is suitable for multi-instance queue managers.

Interpreting your results

If the check fails, the file system is not capable of being used by WebSphere MQ queue managers. If the tests fail, choose verbose mode to help you to interpret the errors. The output from the `verbose` option helps you understand why the command failed, and if the problem can be solved by reconfiguring the file system.

Sometimes the failure might be an access control problem that can be fixed by changing directory ownership or permissions. Sometimes the failure can be fixed by reconfiguring the file system to behave in a different way. For example, some file systems have performance options that might need to be changed. It is also possible that the file system protocol does not support concurrency sufficiently robustly, and you must use a different file system. For example, you must use NFSv4 rather than NFSv3.

If the check succeeds, the command reports `The tests on the directory completed successfully`. If your environment is not listed as supported in the testing and support statement, this result does not necessarily mean that you can run IBM WebSphere MQ multi-instance queue managers successfully. You must plan and run a variety of tests to satisfy yourself that you have covered all foreseeable circumstances. Some failures are intermittent, and there is a better chance of discovering them if you run the tests more than once.

Related tasks
Verifying shared file system behavior

crtmqcvx

Create data conversion code from data type structures.

Purpose

Use the `crtmqcvx` command to create a fragment of code that performs data conversion on data type structures. The command generates a C function that can be used in an exit to convert C structures.

The command reads an input file containing structures to be converted, and writes an output file containing code fragments to convert those structures.

For information about using this command, see Utility for creating conversion-exit code.

Syntax

Required parameters

SourceFile
The input file containing the C structures to convert.

TargetFile
The output file containing the code fragments generated to convert the structures.

Return codes

Return code	Description
0	Command completed normally
10	Command completed with unexpected results
20	An error occurred during processing

Examples

The following example shows the results of using the data conversion command against a source C structure. The command issued is:

```
crtmqcvx source.tmp target.c
```

The input file, `source.tmp`, looks like this:

```
/* This is a test C structure which can be converted by the */
/* crtmqcvx utility                                         */

struct my_structure
{
    int    code;
    MQLONG value;
};
```

The output file, `target.c`, produced by the command, looks like this:

```
MQLONG Convertmy_structure(
             PMQDXP  pExitParms,
             PMQBYTE *in_cursor,
             PMQBYTE *out_cursor,
             PMQBYTE in_lastbyte,
             PMQBYTE out_lastbyte,
             MQHCONN hConn,
             MQLONG  opts,
             MQLONG  MsgEncoding,
             MQLONG  ReqEncoding,
             MQLONG  MsgCCSID,
             MQLONG  ReqCCSID,
             MQLONG  CompCode,
             MQLONG  Reason)
{
    MQLONG ReturnCode = MQRC_NONE;

    ConvertLong(1); /* code */

    AlignLong();
    ConvertLong(1); /* value */

Fail:
    return(ReturnCode);
}
```

You can use these code fragments in your applications to convert data structures. However, if you do so, the fragment uses macros supplied in the header file `amqsvmha.h`.

crtmqenv

Create a list of environment variables for an installation of IBM WebSphere MQ, on UNIX, Linux, and Windows.

Purpose

You can use the **crtmqenv** command to create a list of environment variables with the appropriate values for an installation of IBM WebSphere MQ. The list of environment variables is displayed on the command line, and any variables that exist on the system have the IBM WebSphere MQ values added to them. This command does not set the environment variables for you, but gives you the appropriate strings to set the variables yourself, for example, within your own scripts.

If you want the environment variables set for you in a shell environment, you can use the **setmqenv** command instead of using the **crtmqenv** command.

You can specify which installation the environment is created for by specifying a queue manager name, an installation name, or an installation path. You can also create the environment for the installation that issues the **crtmqenv** command by issuing the command with the **-s** parameter.

This command lists the following environment variables, and their values, appropriate to your system:

- CLASSPATH
- INCLUDE
- LIB
- MANPATH
- MQ_DATA_PATH
- MQ_ENV_MODE
- MQ_FILE_PATH
- MQ_JAVA_INSTALL_PATH
- MQ_JAVA_DATA_PATH
- MQ_JAVA_LIB_PATH

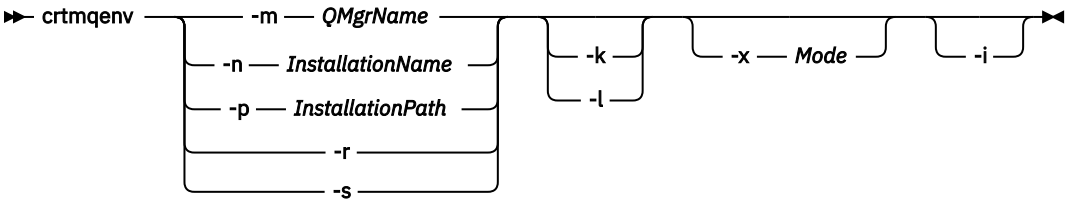
- MQ_JAVA_JVM_FLAG
- MQ_JRE_PATH
- PATH

On UNIX and Linux systems, if the **-l** or **-k** flag is specified, the *LIBPATH* environment variable is set on AIX®, and the *LD_LIBRARY_PATH* environment variable is set on HP-UX, Linux, and Solaris.

Usage notes

The **crtmqenv** command removes all directories for all IBM WebSphere MQ installations from the environment variables before adding new references to the installation for which you are setting up the environment. Therefore, if you want to set any additional environment variables that reference IBM WebSphere MQ, set the variables after issuing the **crtmqenv** command. For example, if you want to add *MQ_INSTALLATION_PATH*/java/lib to *LD_LIBRARY_PATH*, you must do so after running **crtmqenv**.

Syntax



Required Parameters

-m *QMgrName*
Create the environment for the installation associated with the queue manager *QMgrName*.

-n *InstallationName*
Create the environment for the installation named *InstallationName*.

-p *InstallationPath*
Create the environment for the installation in the path *InstallationPath*.

-r
Remove all installations from the environment.

-s
Create the environment for the installation that issued the command.

Optional Parameters

-k
UNIX and Linux only.

Include the *LD_LIBRARY_PATH* , or *LIBPATH*, environment variable in the environment, adding the path to the IBM WebSphere MQ libraries at the start of the current *LD_LIBRARY_PATH*, or *LIBPATH*, variable.

-l
UNIX and Linux only.

Include the *LD_LIBRARY_PATH*, or *LIBPATH*, environment variable in the environment, adding the path to the IBM WebSphere MQ libraries at the end of the current *LD_LIBRARY_PATH*, or *LIBPATH*, variable.

-x *Mode*
Mode can take the value 32, or 64.

Create a 32-bit or 64-bit environment. If this parameter is not specified, the environment matches that of the queue manager or installation specified in the command.

Any attempt to display a 64-bit environment with a 32-bit installation fails.

-i

List only the additions to the environment.

When this parameter is specified, the environment variables set for previous installations remain in the environment variable path and must be manually removed.

Return codes

Return code	Description
0	Command completed normally.
10	Command completed with unexpected results.
20	An error occurred during processing.

Examples

The following examples assume that a copy of IBM WebSphere MQ is installed in `/opt/mqm` on a UNIX or Linux system.

1. This command creates a list of environment variables for an installation installed in `/opt/mqm`:

```
/opt/mqm/bin/crtmqenv -s
```

2. This command creates a list of environment variables for an installation installed in `/opt/mqm2`, and includes the path to the installation at the end of the current value of the *LD_LIBRARY_PATH* variable:

```
/opt/mqm/bin/crtmqenv -p /opt/mqm2 -l
```

3. This command creates a list of environment variables for the queue manager `QM1`, in a `32`-bit environment:

```
/opt/mqm/bin/crtmqenv -m QM1 -x 32
```

The following example assumes that a copy of IBM WebSphere MQ is installed in `c:\Program Files\IBM\WebSphere MQ` on a Windows system.

1. This command creates a list of environment variables for an installation called `installation1`:

```
"c:\Program Files\IBM\WebSphere MQ\crtmqenv" -n installation1
```

Related reference

"setmqenv" on page 120
Use the **setmqenv** to set up the IBM WebSphere MQ environment, on UNIX, Linux, and Windows.

Related information

Choosing a primary installation

Multiple installations

crtmqinst

Create installation entries in `mqinst.ini` on UNIX and Linux systems.

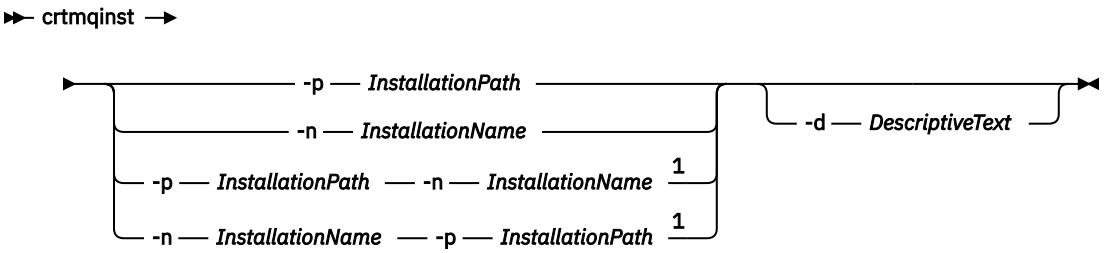
Purpose

File `mqinst.ini` contains information about all IBM WebSphere MQ installations on a system. For more information about mqinst.ini, see Installation configuration file, mqinst.ini .

The first IBM WebSphere MQ installation is automatically given an installation name of `Installation1` because the **crtmqinst** command is not available until an installation of IBM WebSphere MQ is on the system. Subsequent installations can have an installation name set before installation occurs, by

using the **crtmqinst** command. The installation name cannot be changed after installation. For more information about installation names, see Choosing an installation name.

Syntax



Notes:

1 When specified together, the installation name and installation path must refer to the same installation.

Parameters

-d
Text that describes the installation.

The text can be up to 64 single-byte characters, or 32 double-byte characters. The default value is all blanks. You must use quotation marks around the text if it contains spaces.

-n *InstallationName*
The name of the installation.

The name can contain up to 16 single-byte characters and must be a combination of alphabetic and numeric characters in the ranges a-z, A-Z, and 0-9. The installation name must be unique, regardless of whether uppercase or lowercase characters are used. For example, the names `INSTALLATIONNAME` and `InstallationName` are not unique.

If you do not supply the installation name, the next available name in the series Installation1, Installation2... is used.

-p *InstallationPath*
The installation path. If you do not supply the installation path, `/opt/mqm` is used on UNIX and Linux systems, and `/usr/mqm` is used on AIX.

Return codes

Return code	Description
0	Entry created without error
10	Invalid installation level
36	Invalid arguments supplied
37	Descriptive text was in error
45	Entry already exists
59	Invalid installation specified
71	Unexpected error
89	.ini file error
96	Could not lock .ini file
98	Insufficient authority to access .ini file

Return code	Description
131	Resource problem

Example

1. This command creates an entry with an installation name of `myInstallation`, an installation path of `/opt/myInstallation`, and a description "My WebSphere MQ installation":

```
crtmqinst -n MyInstallation -p /opt/myInstallation -d "My WebSphere MQ installation"
```

Quotation marks are needed because the descriptive text contains spaces.

Note: On UNIX systems, the **crtmqinst** command must be run by the root user because full access permissions are required to write to the mqinst.ini configuration file.

crtmqm

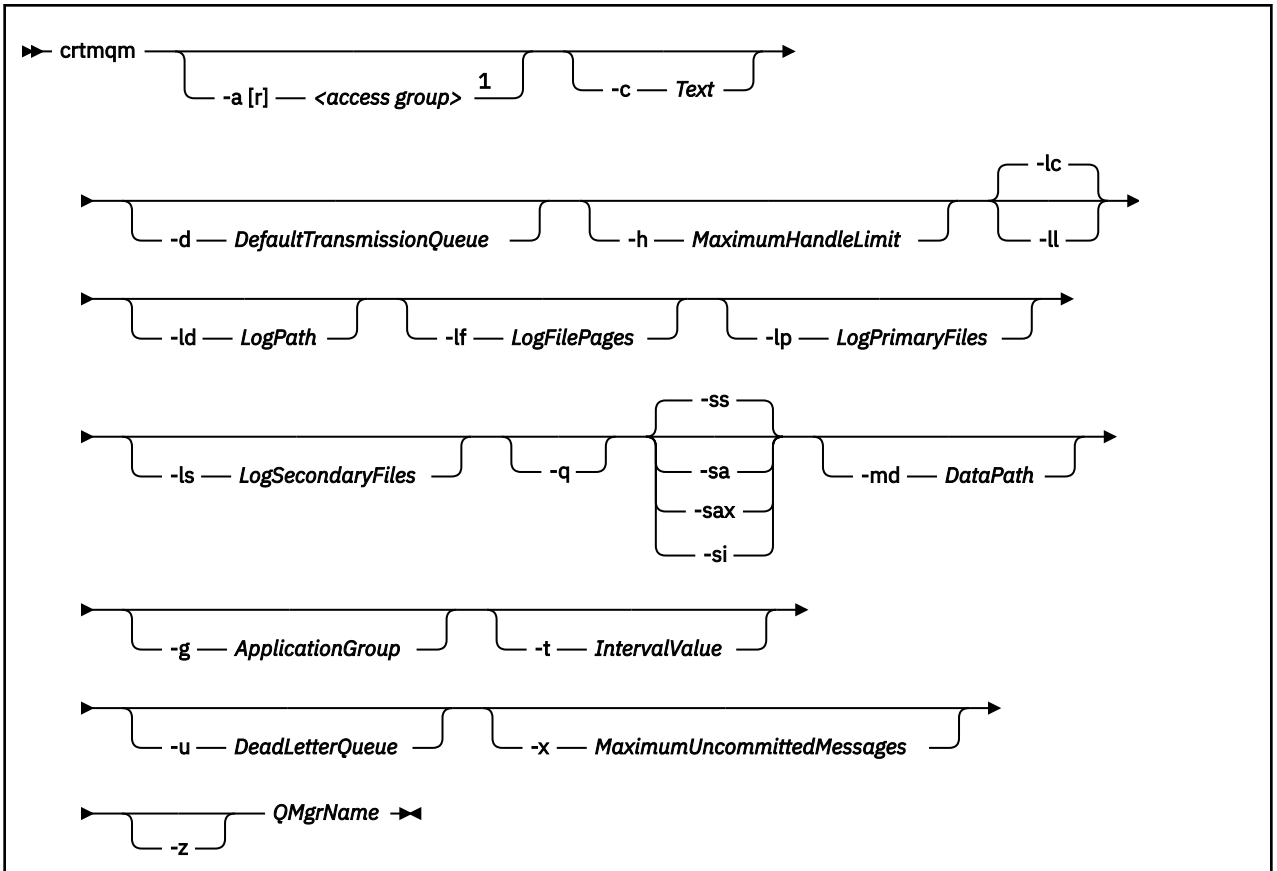
Create a queue manager.

Purpose

Use the **crtmqm** command to create a queue manager and define the default and system objects. The objects created by the **crtmqm** command are listed in System and default objects. When you have created a queue manager, use the **strmqm** command to start it.

The queue manager is automatically associated with the installation from which the **crtmqm** command was issued. To change the associated installation, use the **setmqm** command. Note that the Windows installer does not automatically add the user that performs the installation to the `mqm` group. For more details, see Authority to administer IBM WebSphere MQ on UNIX, Linux and Windows systems .

Syntax



Notes:

[1] Windows only

Required parameters

QMgrName

The name of the queue manager that you want to create. The name can contain up to 48 characters. This parameter must be the last item in the command.

Note: WebSphere MQ checks if the queue manager name exists. If the name already exists in the directory, then a suffix of `.000`,`.001`,`.002`, and so on, is added to the queue manager name. For example, if a queue manager QM1 is added to the directory and if QM1 already exists, then a queue manager with the name QM1.000 (suffix .000) is created.

Optional parameters

`-a[r]`*access group*

Use the access group parameter to specify a Windows security group, members of which will be granted full access to all queue manager data files. The group can either be a local or global group, depending on the syntax used.

Valid syntax for the group name is as follows:

LocalGroup
Domain name \ *GlobalGroup name*
GlobalGroup name@*Domain name*

You must define the additional access group before running the **`crtmqm`** command with the `-a [r]` option.

If you specify the group using `-ar` instead of `--a` , the local `mqm` group is not granted access to the queue manager data files. Use this option if the file system hosting the queue manager data files does not support access control entries for locally defined groups.

The group is typically a global security group, which is used to provide multi-instance queue managers with access to a shared queue manager data and logs folder. Use the additional security access group to set read and write permissions on the folder or to share containing queue manager data and log files.

The additional security access group is an alternative to using the local group named `mqm` to set permissions on the folder containing queue manager data and logs. Unlike the local group `mqm`, you can make the additional security access group a local or a global group. It must be a global group to set permissions on the shared folders that contain the data and log files used by multi-instance queue managers.

The Windows operating system checks the access permissions to read and write queue manager data and log files. It checks the permissions of the user ID that is running queue manager processes. The user ID that is checked depends on whether you started the queue manager as a service or you started it interactively. If you started the queue manager as a service, the user ID checked by the Windows system is the user ID you configured with the **Prepare** IBM WebSphere MQ wizard. If you started the queue manager interactively, the user ID checked by the Windows system is the user ID that ran the **strmqm** command.

The user ID must be a member of the local `mqm` group to start the queue manager. If the user ID is a member of the additional security access group, the queue manager can read and write files that are given permissions by using the group.

Restriction: You can specify an additional security access group only on Windows operating system. If you specify an additional security access group on other operating systems, the **crtmqm** command returns an error.

-c ***Text***
Descriptive text for this queue manager. You can use up to 64 characters; the default is all blanks.

If you include special characters, enclose the description in single quotation marks. The maximum number of characters is reduced if the system is using a double-byte character set (DBCS).

-d ***DefaultTransmissionQueue***
The name of the local transmission queue where remote messages are put if a transmission queue is not explicitly defined for their destination. There is no default.

-g ***ApplicationGroup***
The name of the group that contains members that are allowed to perform the following actions:

- Run MQI applications
- Update all IPCC resources
- Change the contents of some queue manager directories

This option applies to IBM WebSphere MQ for AIX, Solaris, HP-UX, and Linux.

The default value is `-g all` , which allows unrestricted access.

The `-g` *`ApplicationGroup`* value is recorded in the queue manager configuration file named, `qm.ini`.

The `mqm` user ID and the user running the command must belong to the specified Application Group. For further details of the operation of restricted mode, see Restricted mode.

-h ***MaximumHandleLimit***
The maximum number of handles that an application can open at the same time.

Specify a value in the range 1 - 999999999. The default value is 256.

The next set of parameter descriptions relate to logging, which is described in Using the log for recovery.

Note: Choose the logging arrangements with care, because some cannot be changed after they are committed.

-lc
Use circular logging. This method is the default logging method.

-ld ***LogPath***
The directory used to store log files. The default directory to store log paths is defined when you install IBM WebSphere MQ.

If the volume containing the log file directory supports file security, the log file directory must have access permissions. The permissions allow the user IDs, under whose authority the queue manager runs, read and write access to the directory and its subdirectories. When you install IBM WebSphere MQ, you grant permissions to the user IDs and to the `mqm` group on the default log directory. If you set the *LogPath* parameter to write the log file to a different directory, you must grant the user IDs permission to read and write to the directory. The user ID and permissions for UNIX and Linux are different from those for the Windows system:

UNIX and Linux
The directory and its subdirectories must be owned by the user `mqm` in the group `mqm`.

If the log file is shared between different instances of the queue manager, the security identifiers (sid) that are used must be the same for the different instances. You must have set the user `mqm` to the same `sid` on the different servers running instances of the queue manager. Likewise for the group `mqm` .

Windows
If the directory is accessed by only one instance of the queue manager, you must give read and write access permission to the directory for the following groups and users:

- The local group `mqm`
- The local group `Administrators`
- The SYSTEM user ID

To give different instances of a queue manager access to the shared log directory, the queue manager must access the log directory using a global user. Give the global group, which contains the global user, read and write access permission to the log directory. The global group is the additional security access group specified in the `-a` parameter.

In IBM WebSphere MQ for Windows systems, the default directory is `C:\Program Files\IBM\WebSphere MQ\log` (assuming that `C` is your data drive). If the volume supports file security, the SYSTEM ID, Administrators, and `mqm` group must be granted read/write access to the directory.

In IBM WebSphere MQ for UNIX and Linux systems, the default directory is `/var/mqm/log`. User ID `mqm` and group `mqm` must have full authorities to the log files.

If you change the locations of these files, you must give these authorities yourself. If these authorities are set automatically, then the log files are in their default locations.

-lf ***LogFilePages***
The log data is held in a series of files called log files. The log file size is specified in units of 4 KB pages.

In IBM WebSphere MQ for UNIX and Linux systems, the default number of log file pages is 4096, giving a log file size of 16 MB. The minimum number of log file pages is 64 and the maximum is 65535.

In IBM WebSphere MQ for Windows systems, the default number of log file pages is 4096, giving a log file size of 16 MB. The minimum number of log file pages is 32 and the maximum is 65535.

Note: The size of the log files for a queue manager specified during creation of that queue manager cannot be changed.

-ll*LinearLogging*
Use linear logging.

-lp *LogPrimaryFiles*
The log files allocated when the queue manager is created.

On a Windows system, the minimum number of primary log files you can have is 2 and the maximum is 254. On UNIX and Linux systems, the minimum number of primary log files you can have is 2 and the maximum is 510. The default is 3.

On a Windows system, the total number of primary and secondary log files must not exceed 255 and must not be less than 3. On UNIX and Linux systems the total number of primary and secondary log files must not exceed 511 and must not be less than 3.

Operating system limits can reduce the maximum log size.

The value is examined when the queue manager is created or started. You can change it after the queue manager has been created. However, a change in the value is not effective until the queue manager is restarted, and the effect might not be immediate.

For more information about primary log files, see What logs look like .

To calculate the size of the primary log files, see Calculating the size of the log .

-ls *LogSecondaryFiles*
The log files allocated when the primary files are exhausted.

On a Windows system, the minimum number of secondary log files you can have is 1 and the maximum is 253. On UNIX and Linux systems, the minimum number of secondary log files you can have is 2 and the maximum is 509. The default is 2.

On a Windows system, the total number of secondary and secondary log files must not exceed 255 and must not be less than 3. On UNIX and Linux systems the total number of primary and secondary log files must not exceed 511 and must not be less than 3.

Operating system limits can reduce the maximum log size.

The value is examined when the queue manager is started. You can change this value, but changes do not become effective until the queue manager is restarted, and even then the effect might not be immediate.

For more information about the use of secondary log files, see What logs look like.

To calculate the size of the secondary log files, see Calculating the size of the log .

-md *DataPath*
The directory used to hold the data files for a queue manager.

In IBM WebSphere MQ for Windows systems, the default is `C:\Program Files\IBM\WebSphere MQ\qmgrs` (assuming that `C:` is your data drive). If the volume supports file security, the SYSTEM ID, Administrators, and `mqm` group must be granted read/write access to the directory.

In IBM WebSphere MQ for UNIX and Linux systems, the default is `/var/mqm/qmgrs`. User ID `mqm` and group `mqm` must have full authorities to the log files.

The `DataPath` parameter is provided to assist in the configuration of multi-instance queue managers. For example, on UNIX and Linux systems: if the `/var/mqm` directory is located on a local file system, use the `DataPath` parameter and the `LogPath` parameter to point to the shared file systems accessible to multiple queue managers.

Note: A queue manager created using `DataPath` parameter runs on versions of WebSphere MQ earlier than version 7.0.1, but the queue manager must be reconfigured to remove the `DataPath` parameter. You have two options to restore the queue manager to a pre-version 7.0.1 configuration and run without the `DataPath` parameter: If you are confident about editing queue manager configurations, you can manually configure the queue manager using the `Prefix` queue manager configuration parameter. Alternatively, complete the following steps to edit the queue manager:

1. Stop the queue manager.

2. Save the queue manager data and log directories.
3. Delete the queue manager.
4. Backout WebSphere MQ to the pre-v7.0.1 fix level.
5. Create the queue manager with the same name.
6. Replace the new queue manager data and log directories with the ones you saved.

-q
Makes this queue manager the default queue manager. The new queue manager replaces any existing default queue manager.

If you accidentally use this flag and you want to revert to an existing queue manager as the default queue manager, change the default queue manager as described in Making an existing queue manager the default.

-sa
Automatic queue manager startup. For Windows systems only.

The queue manager is configured to start automatically when the IBM WebSphere MQ Service starts.

This is the default option if you create a queue manager from IBM WebSphere MQ Explorer.

Queue managers created in IBM WebSphere MQ releases earlier than Version 7 retain their existing startup type.

-sax
Automatic queue manager startup, permitting multiple instances. For Windows systems only.

The queue manager is configured to start automatically when the IBM WebSphere MQ Service starts.

If an instance of the queue manager is not already running the queue manager starts, the instance becomes active, and standby instances are permitted elsewhere. If a queue manager instance that permits standbys is already active on a different server, the new instance becomes a standby instance.

Only one instance of a queue manager can run on a server.

Queue managers created in IBM WebSphere MQ versions earlier than Version 7.0.1 retain their existing startup type.

-si
Interactive (manual) queue manager startup.

The queue manager is configured to start only when you manually request startup by using the **strmqm** command. The queue manager runs under the (interactive) user when that user is logged-on. Queue managers configured with interactive startup end when the user who started them logs off.

-ss
Service (manual) queue manager startup.

A queue manager configured to start only when manually requested by using the **strmqm** command. The queue manager then runs as a child process of the service when the IBM WebSphere MQ Service starts. Queue managers configured with service startup continue to run even after the interactive user has logged off.

This is the default option if you create a queue manager from the command line.

-t ***IntervalValue***
The trigger time interval in milliseconds for all queues controlled by this queue manager. This value specifies the length of time triggering is suspended, after the queue manager receives a trigger-generating message. That is, if the arrival of a message on a queue causes a trigger message to be put on the initiation queue, any message arriving on the same queue within the specified interval does not generate another trigger message.

You can use the trigger time interval to ensure that your application is allowed sufficient time to deal with a trigger condition before it is alerted to deal with another trigger condition on the same queue. You might choose to see all trigger events that happen; if so, set a low or zero value in this field.

Specify a value in the range 0 - 999999999. The default is 999999999 milliseconds; a time of more than 11 days. Allowing the default to be used effectively means that triggering is disabled after the first trigger message. However, an application can enable triggering again by servicing the queue using a command to alter the queue to reset the trigger attribute.

-u ***DeadLetterQueue***
The name of the local queue that is to be used as the dead-letter (undelivered-message) queue. Messages are put on this queue if they cannot be routed to their correct destination.

The default is no dead-letter queue.

-x ***MaximumUncommittedMessages***
The maximum number of uncommitted messages under any one sync point. The uncommitted messages are the sum of:

- The number of messages that can be retrieved from queues
- The number of messages that can be put on queues
- Any trigger messages generated within this unit of work

This limit does not apply to messages that are retrieved or put outside a sync point.

Specify a value in the range 1 - 999999999. The default value is 10000 uncommitted messages.

-z
Suppresses error messages.

This flag is used within IBM WebSphere MQ to suppress unwanted error messages. Do not use this flag when using a command line. Using this flag can result in a loss of information.

Return codes

Return code	Description
0	Queue manager created
8	Queue manager exists
39	Invalid parameter specified
49	Queue manager stopping
58	Inconsistent use of installations detected
69	Storage unavailable
70	Queue space unavailable
71	Unexpected error
72	Queue manager name error
74	The IBM WebSphere MQ service is not started.
100	Log location invalid
111	Queue manager created. However, there was a problem processing the default queue manager definition in the product configuration file. The default queue manager specification might be incorrect.
115	Invalid log size
119	Permission denied (Windows only)

Examples

- The following command creates a default queue manager called `Paint.queue.manager`, with a description of `Paint shop`, and creates the system and default objects. It also specifies that linear logging is to be used:

```
crtmqm -c "Paint shop" -ll -q Paint.queue.manager
```

- The following command creates a default queue manager called `Paint.queue.manager`, creates the system and default objects, and requests two primary and three secondary log files:

```
crtmqm -c "Paint shop" -ll -lp 2 -ls 3 -q Paint.queue.manager
```

- The following command creates a queue manager called `travel`, creates the system and default objects, sets the trigger interval to 5000 milliseconds (5 seconds), and specifies SYSTEM.DEAD.LETTER.QUEUE as its dead-letter queue.

```
crtmqm -t 5000 -u SYSTEM.DEAD.LETTER.QUEUE travel
```

- The following command creates a queue manager called QM1 on UNIX and Linux systems, which has log and queue manager data folders in a common parent directory. The parent directory is to be shared on highly available networked storage to create a multi-instance queue manager. Before issuing the command, create other parameters `/MQHA`, `/MQHA/logs` and `/MQHA/qmgrs` owned by the user and group `mqm`, and with permissions `rwxrwxr-x`.

```
crtmqm -ld /MQHA/logs -md /MQHA/qmgrs QM1
```

Related commands

Command	Description
strmqm	Start queue manager
endmqm	End queue manager
dltmqm	Delete queue manager
setmqm	Set associated installation

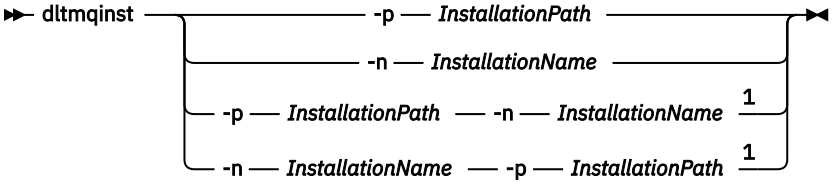
dltmqinst

Delete installation entries from `mqinst.ini` on UNIX and Linux systems.

Purpose

File `mqinst.ini` contains information about all IBM WebSphere MQ installations on a system. For more information about mqinst.ini, see Installation configuration file, mqinst.ini .

Syntax



Notes:

[1] When specified together, the installation name and installation path must refer to the same installation.

Parameters

-n *InstallationName*
The name of the installation.

-p *InstallationPath*
The installation path is the location where IBM WebSphere MQ is installed.

Return codes

Return code	Description
0	Entry deleted without error
5	Entry still active
36	Invalid arguments supplied
44	Entry does not exist
59	Invalid installation specified
71	Unexpected error
89	ini file error
96	Could not lock ini file
98	Insufficient authority to access ini file
131	Resource problem

Example

1. This command deletes an entry with an installation name of `myInstallation`, and an installation path of `/opt/myInstallation`:

```
dltmqinst -n MyInstallation -p /opt/myInstallation
```

Note: You can only use the **dltmqinst** command on another installation from the one it runs from. If you only have one IBM WebSphere MQ installation, the command will not work.

Note: On a Solaris 10 MQ Client installation, only the root user has permissions to edit the mqinst.ini file.

dltmqm

Delete a queue manager.

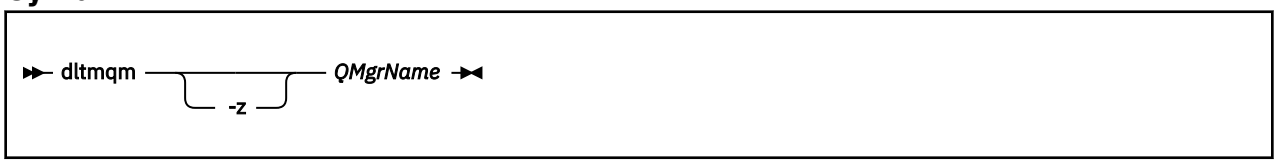
Purpose

Use the **dltmqm** command to delete a specified queue manager and all objects associated with it. Before you can delete a queue manager, you must end it using the **endmqm** command.

You must use the **dltmqm** command from the installation associated with the queue manager that you are working with. You can find out which installation a queue manager is associated with using the `dspmq -o installation` command.

In WebSphere MQ for Windows, it is an error to delete a queue manager when queue manager files are open. If you get this error, close the files and reissue the command.

Syntax



Required parameters

QMgrName
The name of the queue manager to delete.

Optional parameters

-z
Suppresses error messages.

Return codes

Return code	Description
0	Queue manager deleted
3	Queue manager being created
5	Queue manager running
16	Queue manager does not exist
24	A process that was using the previous instance of the queue manager has not yet disconnected.
25	An error occurred while creating or checking the directory structure for the queue manager.
26	Queue manager running as a standby instance.
27	Queue manager could not obtain data lock.
29	Queue manager deleted, however there was a problem removing it from Active Directory.
33	An error occurred while deleting the directory structure for the queue manager.
49	Queue manager stopping
58	Inconsistent use of installations detected
62	The queue manager is associated with a different installation
69	Storage not available
71	Unexpected error
72	Queue manager name error
74	The WebSphere MQ service is not started.
100	Log location invalid.
112	Queue manager deleted. However, there was a problem processing the default queue manager definition in the product configuration file. The default queue manager specification might be incorrect.
119	Permission denied (Windows only).

Examples

1. The following command deletes the queue manager `saturn.queue.manager`.

```
dltmqm saturn.queue.manager
```

2. The following command deletes the queue manager `travel` and also suppresses any messages caused by the command.

```
dltmqm -z travel
```

Usage notes

In WebSphere MQ for Windows, it is an error to delete a queue manager when queue manager files are open. If you get this error, close the files and reissue the command.

Deleting a cluster queue manager does not remove it from the cluster. To check whether the queue manager you want to delete is part of a cluster, issue the command **DIS CLUSQMGR(*)**. Then check whether this queue manager is listed in the output. If it is listed as a cluster queue manager you must remove the queue manager from the cluster before deleting it. See the related link for instructions.

If you do delete a cluster queue manager without first removing it from the cluster, the cluster continues to regard the deleted queue manager as a member of the cluster for at least 30 days. You can remove it from the cluster using the command **RESET CLUSTER** on a full repository queue manager. Re-creating a queue manager with an identical name and then trying to remove that queue manager from the cluster does not result in the cluster queue manager being removed from the cluster. This is because the newly created queue manager, although having the same name, does not have the same queue manager ID (QMID). Therefore it is treated as a different queue manager by the cluster.

Related commands

Command	Description
crtmqm	Create queue manager
strmqm	Start queue manager
endmqm	End queue manager

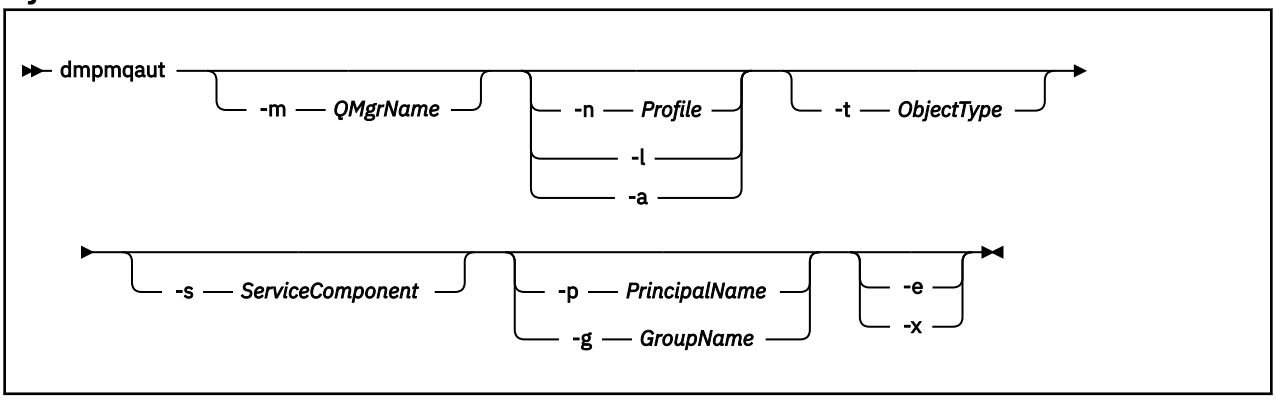
dmpmqaut

Dump a list of current authorizations for a range of WebSphere MQ object types and profiles.

Purpose

Use the dmpmqaut command to dump the current authorizations to a specified object.

Syntax



Optional parameters

-m *QMgrName*
Dump authority records only for the queue manager specified. If you omit this parameter, only authority records for the default queue manager are dumped.

-n *Profile*
The name of the profile for which to dump authorizations. The profile name can be generic, using wildcard characters to specify a range of names as explained in Using OAM generic profiles on UNIX or Linux systems and Windows.

-l
Dump only the profile name and type. Use this option to generate a *terse* list of all defined profile names and types.

-a
Generate set authority commands.

-t *ObjectType*
The type of object for which to dump authorizations. Possible values are:
A table showing possible values, and descriptions, for the -t flag.

Value	Description
authinfo	An authentication information object, for use with Secure Sockets Layer (SSL) channel security
channel or **chl**	A channel
clntconn or **clcn**	A client connection channel
listener or **lstr**	A listener
namelist or **nl**	A namelist
process or **prcs**	A process
queue or **q**	A queue or queues matching the object name parameter
qmgr	A queue manager
rqmname or **rqmn**	A remote queue manager name
service or **srvc**	A service
topic or **top**	A topic

-s *ServiceComponent*
If installable authorization services are supported, specifies the name of the authorization service for which to dump authorizations. This parameter is optional; if you omit it, the authorization inquiry is made to the first installable component for the service.

-p *PrincipalName*
This parameter applies to WebSphere MQ for Windows only; UNIX systems keep only group authority records.

The name of a user for whom to dump authorizations to the specified object. The name of the principal can optionally include a domain name, specified in the following format:

```
userid@domain
```

For more information about including domain names on the name of a principal, see Principals and groups.

-g *GroupName*
The name of the user group for which to dump authorizations. You can specify only one name, which must be the name of an existing user group.

For IBM WebSphere MQ for Windows only, the group name can optionally include a domain name, specified in the following formats:

```
GroupName@domain
domain\GroupName
```

-e
Display all profiles used to calculate the cumulative authority that the entity has to the object specified in `-n Profile`. The variable *Profile* must not contain any wildcard characters.

The following parameters must also be specified:

- `-m QMgrName`
- `-n Profile`
- `-t ObjectType`

and either `-p PrincipalName`, or `-g GroupName`.

-x
Display all profiles with the same name as specified in `-n Profile`. This option does not apply to the QMGR object, so a dump request of the form `dmpmqaut -m QM -t QMGR ... -x` is not valid.

Examples

The following examples show the use of dmpmqaut to dump authority records for generic profiles:

1. This example dumps all authority records with a profile that matches queue a.b.c for principal user1.

```
dmpmqaut -m qm1 -n a.b.c -t q -p user1
```

The resulting dump would look something like this:

```
profile:     a.b.*
object type: queue
entity:      user1
type:        principal
authority:   get, browse, put, inq
```

Note: UNIX users cannot use the `-p` option; they must use `-g groupname` instead.

2. This example dumps all authority records with a profile that matches queue a.b.c.

```
dmpmqaut -m qmgr1 -n a.b.c -t q
```

The resulting dump would look something like this:

```
profile:     a.b.c
object type: queue
entity:      Administrator
type:        principal
authority:   all
- - - - - - - - - - - - - - - -
profile:     a.b.*
object type: queue
entity:      user1
type:        principal
authority:   get, browse, put, inq
- - - - - - - - - - - - - - - -
profile:     a.**
object type: queue
entity:      group1
type:        group
authority:   get
```

3. This example dumps all authority records for profile a.b.*, of type queue.

```
dmpmqaut -m qmgr1 -n a.b.* -t q
```

The resulting dump would look something like this:

```
profile:     a.b.*
object type: queue
entity:      user1
type:        principal
authority:   get, browse, put, inq
```

4. This example dumps all authority records for queue manager qmX.

```
dmpmqaut -m qmX
```

The resulting dump would look something like this:

```
profile:     q1
object type: queue
entity:      Administrator
type:        principal
authority:   all
- - - - - - - - - - - - - - - -
profile:     q*
object type: queue
entity:      user1
type:        principal
authority:   get, browse
- - - - - - - - - - - - - - - -
profile:     name.*
object type: namelist
entity:      user2
type:        principal
authority:   get
- - - - - - - - - - - - - - - -
profile:     pr1
object type: process
entity:      group1
type:        group
authority:   get
```

5. This example dumps all profile names and object types for queue manager qmX.

```
dmpmqaut -m qmX -l
```

The resulting dump would look something like this:

```
profile: q1, type: queue
profile: q*, type: queue
```

```
profile: name.*, type: namelist
profile: pr1, type: process
```

Note:

1. For WebSphere MQ for Windows only, all principals displayed include domain information, for example:

```
profile:     a.b.*
object type: queue
entity:      user1@domain1
type:        principal
authority:   get, browse, put, inq
```

2. Each class of object has authority records for each group or principal. These records have the profile name `@CLASS` and track the `crt` (create) authority common to all objects of that class. If the `crt` authority for any object of that class is changed then this record is updated. For example:

```
profile:     @class
object type: queue
entity:      test
entity type: principal
authority:   crt
```

   This shows that members of the group `test` have `crt` authority to the class `queue`.

3. For WebSphere MQ for Windows only, members of the "Administrators" group are by default given full authority. This authority, however, is given automatically by the OAM, and is not defined by the authority records. The `dmpmqaut` command displays authority defined only by the authority records. Unless an authority record has been explicitly defined, therefore, running the `dmpmqaut` command against the "Administrators" group displays no authority record for that group.

dmpmqcfg

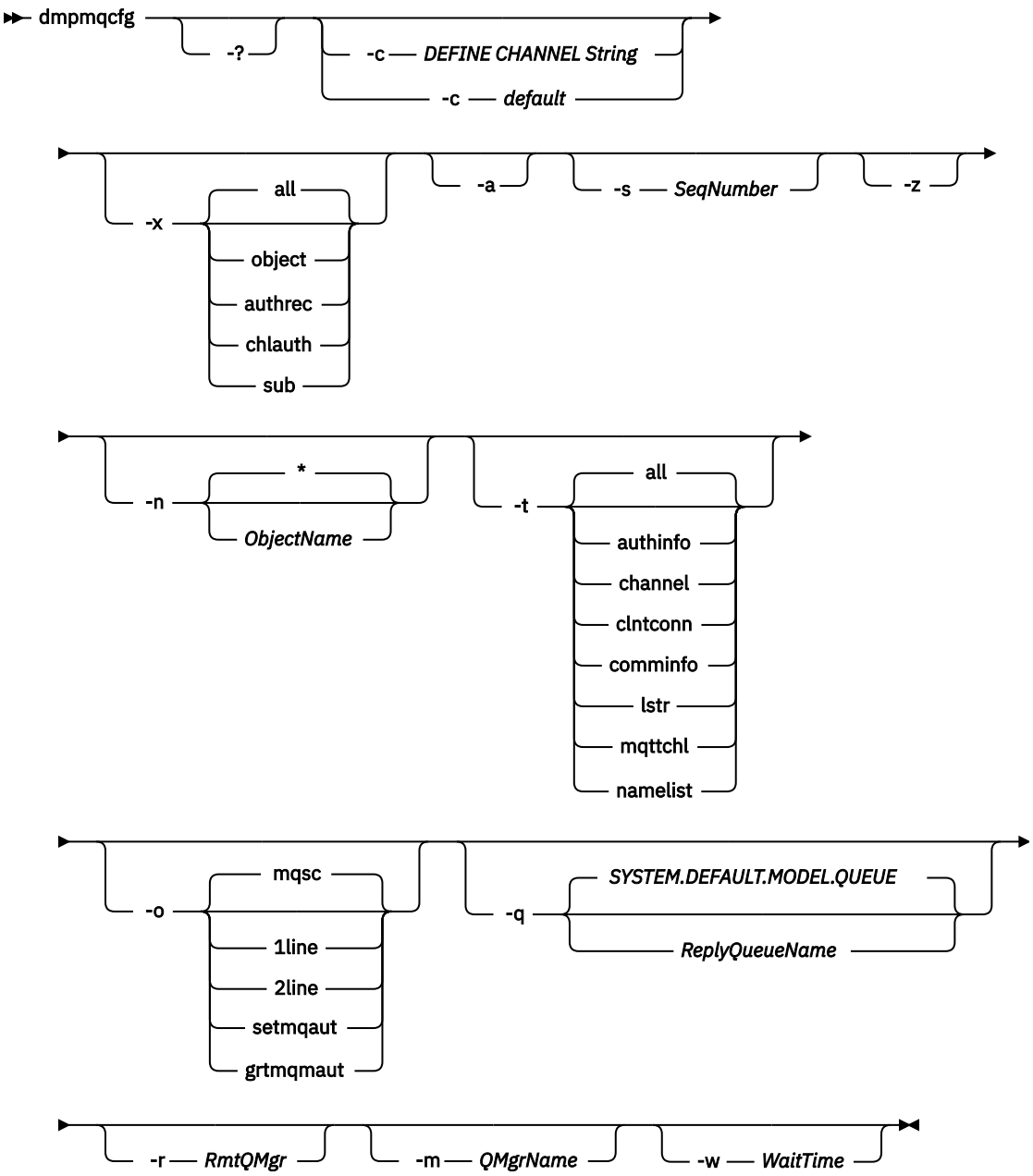
Use the **dmpmqcfg** command to dump the configuration of a WebSphere MQ queue manager.

Purpose

Use the `dmpmqcfg` command to dump the configuration of WebSphere MQ queue managers. If any default object has been edited, the -a option must be used if the dumped configuration will be used to restore the configuration.

The **dmpmqcfg** utility dumps only subscriptions of type MQSUBTYPE_ADMIN, that is, only subscriptions that are created using the MQSC command **DEFINE SUB** or its PCF equivalent. The output from **dmpmqcfg** is a **runmqsc** command to enable the administration subscription to be re-created. Subscriptions that are created by applications using the MQSUB MQI call of type MQSUBTYPE_API are not part of the queue manager configuration, even if durable, and so are not dumped by **dmpmqcfg**. MQTT channels will only be returned for types -t all and -t mqttchl if the telemetry (MQXR) service is running. For instructions on how to start the telemetry service, see Administering IBM WebSphere MQ Telemetry.

Note: The **dmpmqcfg** command does not make a backup of the IBM WebSphere MQ Advanced Message Security policies. If you want to export the IBM WebSphere MQ Advanced Message Security policies, ensure that you run **dspmqspl** with the `-export` flag. This command exports the policies for IBM WebSphere MQ Advanced Message Security into a text file, which can be used for restoration purposes. For more information see “dspmqspl” on page 63.



Optional Parameters

-?
Inquire the usage message for `dmpmqcfg`.

-c
Force a client mode connection. If the **-c** parameter is qualified with the option `default`, the default client connection process is used. If **-c** is omitted, the default is to attempt to connect to the queue manager first by using server bindings and then if this fails by using client bindings.

If the option is qualified with an MQSC DEFINE CHANNEL CHLTYPE(CLNTCONN) string then this is parsed and if successful, used to create a temporary connection to the queue manager.

-x ***[all | object | authrec | chlauth | sub]***
Filter the definition procedure to show `object` definitions, `authority records`, `channel authentication` records, or durable `subscriptions` . The default value `all` is that all types are returned.

-a
Return object definitions to show all attributes. The default is to return only attributes which differ from the defaults for the object type.

-s*SeqNumber*
Reset channel sequence number for sender, server and cluster sender channel types to the numeric value specified. The value SeqNumber must be in the range 1 - 999999999.

-z
Activate silent mode in which warnings, such as those which appear when inquiring attributes from a queue manager of a higher command level are suppressed.

-n*[* | ObjectName]*
Filter the definitions produced by object or profile name, the object/profile name may contain a single asterisk. The * option can be placed only at the end of the entered filter string.

@class authority records are included in **dmpmqcfg** output regardless of the object or profile filter specified.

-t
Choose a single type of object for which to export. Possible values are:

Value	Description
all	All object types
authinfo	An authentication information object
channel or chl	A channel
comminfo	A communications information object
lstr or listener	A listener
mqttchl	An MQTT channel
namelist or nl	A namelist
process or prcs	A process
queue or q	A queue
qmgr	A queue manager
srvc or service	A service
topic or top	A topic

-o*[mqsc | 1line | 2line | setmqaut | grtmqmaut]*
Possible values are:

Value	Description
mqsc	Multi-line MQSC that can be used as direct input to **runmqsc**
1line	MQSC with all attributes on a single line for line diffing
2line	MQSC with output on two lines. The first line is an MQSC command string and the second is a commented version with immutable values.
setmqaut	setmqaut statements for UNIX and Windows queue managers; valid only when -x authrec is specified
grtmqmaut	Linux only; generates iSeries syntax for granting access to the objects.

Note: If you wish to use the option 2line, you must ensure that you have applied APAR IT00612 to your IBM WebSphere MQ Version 7.5 installation.

-q
The name of the reply-to queue used when getting configuration information.

-r
The name of the remote queue manager/transmit queue when using queued mode. If this parameter is omitted the configuration for the directly connected queue manager (specified with the **-m** parameter) is dumped.

-m
The name of the queue manager to connect to. If omitted the default queue manager name is used.

V 7.5.0.9 **-w *WaitTime***
The time, in seconds, that **dmpmqcfg** waits for replies to its commands.

Any replies received after a timeout are discarded, but the MQSC commands still run.

The check for timeout is performed once for each command reply.

Specify a time in the range 1 through 999999; the default value is 60 seconds.

Timed-out failure is indicated by:

- Nonzero return code to the calling shell or environment.
- Error message to `stdout` or `stderr`.

Authorizations

The user must have MQZAO_OUTPUT (+put) authority to access the command input queue (SYSTEM.ADMIN.COMMAND.QUEUE) and MQZAO_DISPLAY (+dsp) authority to access the default model queue (SYSTEM.DEFAULT.MODEL.QUEUE), to be able to create a temporary dynamic queue if using the default reply queue.

The user must also have MQZAO_CONNECT (+connect) and MQZAO_INQUIRE (+inq) authority for the queue manager, and MQZAO_DISPLAY (+dsp) authority for every object that is requested.

Return code

If a failure occurs **dmpmqcfg** returns an error code. Otherwise, the command outputs a footer, an example of which follows:

```
********************************************************************************
* Script ended on 2016-01-05   at 05.10.09
* Number of Inquiry commands issued: 14
* Number of Inquiry commands completed: 14
* Number of Inquiry responses processed: 273
* QueueManager count: 1
* Queue count: 55
* NameList count: 3
* Process count: 1
* Channel count: 10
* AuthInfo count: 4
* Listener count: 1
* Service count: 1
* CommInfo count: 1
* Topic count: 5
* Subscription count: 1
* ChlAuthRec count: 3
* Policy count: 1
* AuthRec count: 186
* Number of objects/records: 273
********************************************************************************
```

Examples

To make these examples work you need to ensure that your system is set up for remote MQSC operation. See Preparing queue managers for remote administration and Preparing channels and transmission queues for remote administration.

```
dmpmqcfg -m MYQMGR -c "DEFINE CHANNEL(SYSTEM.ADMIN.SVRCONN) CHLTYPE(CLNTCONN)
         CONNAME('myhost.mycorp.com(1414)')"
```

dumps all the configuration information from remote queue manager *MYQMGR* in MQSC format and creates an ad-hoc client connection to the queue manager using a client channel called *SYSTEM.ADMIN.SVRCONN*.

Note: You need to ensure that a server-connection channel with the same name exists.

```
dmpmqcfg -m LOCALQM -r MYQMGR
```

dumps all configuration information from remote queue manager *MYQMGR*, in MQSC format, connects initially to local queue manager *LOCALQM*, and sends inquiry messages through this local queue manager.

Note: You need to ensure that the local queue manager has a transmission queue named *MYQMGR*, with channel pairings defined in both directions, to send and receive replies between queue managers.

Related tasks

Restoring queue manager configuration

dmpmqlog

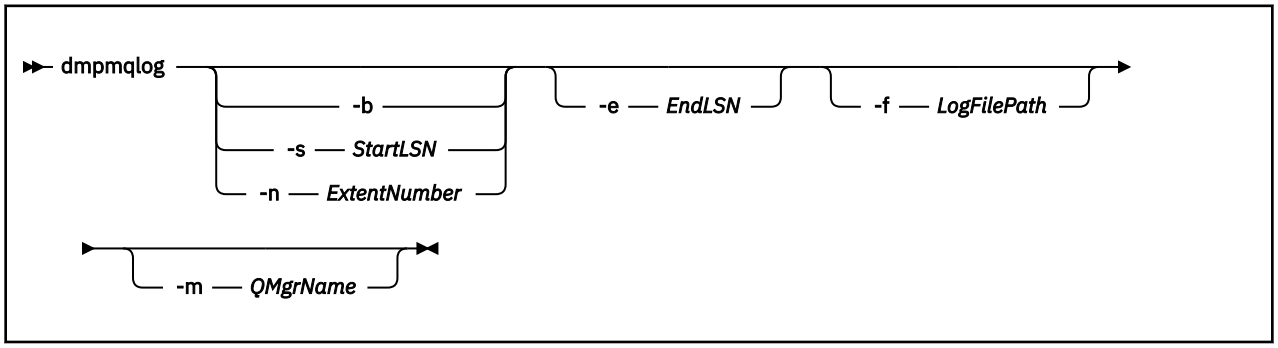
Display and format a portion of the WebSphere MQ system log.

Purpose

Use the dmpmqlog command to dump a formatted version of the WebSphere MQ system log to standard out.

The log to be dumped must have been created on the same type of operating system as that being used to issue the command.

Syntax



Optional parameters

Dump start point

Use one of the following parameters to specify the log sequence number (LSN) at which the dump should start. If you omit this, dumping starts by default from the LSN of the first record in the active portion of the log.

-b

Start dumping from the base LSN. The base LSN identifies the start of the log extent that contains the start of the active portion of the log.

-s *StartLSN*
Start dumping from the specified LSN. The LSN is specified in the format nnnn:nnnn:nnnn:nnnn.

If you are using a circular log, the LSN value must be equal to or greater than the base LSN value of the log.

-n *ExtentNumber*
Start dumping from the specified extent number. The extent number must be in the range 0 - 9999999.

This parameter is valid only for queue managers using linear logging.

-e *EndLSN*
End dumping at the specified LSN. The LSN is specified in the format nnnn:nnnn:nnnn:nnnn.

-f *LogFilePath*
The absolute (rather than relative) directory path name to the log files. The specified directory must contain the log header file (amqhlctl.lfh) and a subdirectory called active. The active subdirectory must contain the log files. By default, log files are assumed to be in the directories specified in the WebSphere MQ configuration information. If you use this option, queue names associated with queue identifiers are shown in the dump only if you use the -m option to name a queue manager name that has the object catalog file in its directory path.

On a system that supports long file names this file is called qmqmobjcat and, to map the queue identifiers to queue names, it must be the file used when the log files were created. For example, for a queue manager named qm1, the object catalog file is located in the directory ..\qmgrs\qm1\qmanager\. To achieve this mapping, you might need to create a temporary queue manager, for example named tmpq, replace its object catalog with the one associated with the specific log files, and then start dmpmqlog, specifying -m tmpq and -f with the absolute directory path name to the log files.

-m *QMgrName*
The name of the queue manager. If you omit this parameter, the name of the default queue manager is used.

Note: Do not dump the log while the queue manager is running, and do not start the queue manager while dmpmqlog is running.

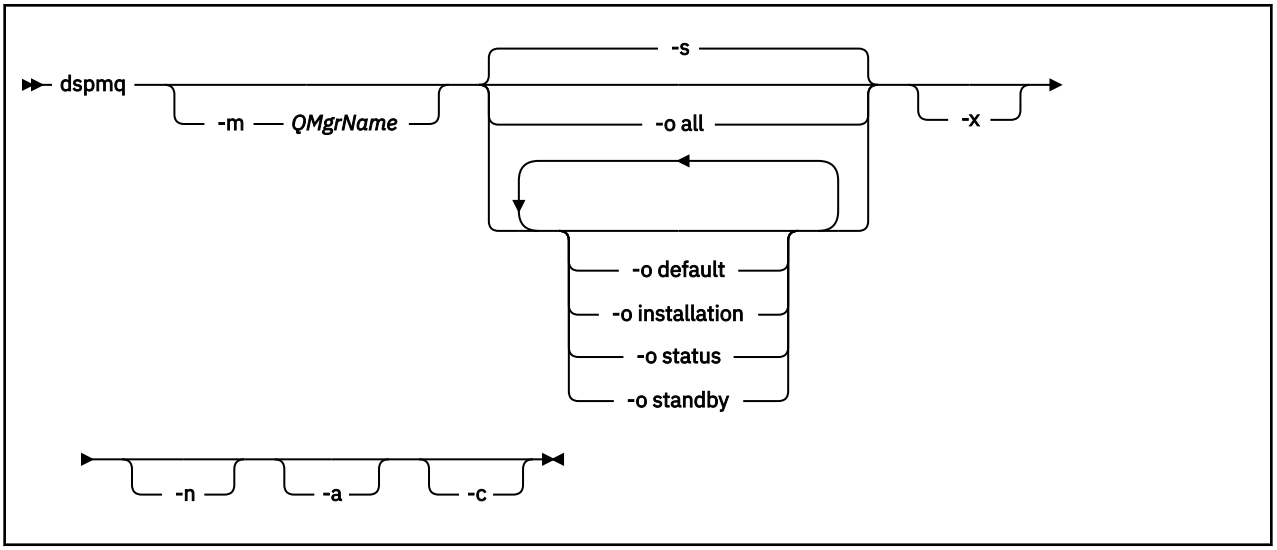
dspmq

Display information about queue managers.

Purpose

Use the dspmq command to display names and details of the queue managers on a system.

Syntax



Required parameters

None

Optional parameters

-a
Displays information about the active queue managers only.

A queue manager is active if it is associated with the installation from which the **dspmq** command was issued and one or more of the following statements are true:

- The queue manager is running
- A listener for the queue manager is running
- A process is connected to the queue manager

-m *QMgrName*
The queue manager for which to display details. If you give no name, all queue manager names are displayed.

-n
Suppresses translation of output strings.

-s
The operational status of the queue managers is displayed. This parameter is the default status setting.

The parameter *-o status* is equivalent to *-s*.

-o all
The operational status of the queue managers is displayed, and whether any are the default queue manager.

On Windows, UNIX and Linux, the installation name (INSTNAME), installation path (INSTPATH), and installation version (INSTVER) of the installation that the queue manager is associated with is also displayed.

-o default
Displays whether any of the queue managers are the default queue manager.

-o installation
Windows, UNIX and Linux only.

Displays the installation name (INSTNAME), installation path (INSTPATH), and installation version (INSTVER) of the installation that the queue manager is associated with.

-o status
The operational status of the queue managers is displayed.

-o standby
Displays whether a queue manager currently permits starting a standby instance. The possible values are shown in Table 8 on page 44.

Table 8. Standby values

Value	Description
Permitted	The queue manager is running and is permitting standby instances.
Not permitted	The queue manager is running and is not permitting standby instances.
Not applicable	The queue manager is not running. You can start the queue manager and this instance becomes active if it starts successfully.

-x
Information about queue manager instances are displayed. The possible values are shown in Table 9 on page 44.

Table 9. Instance values

Value	Description
Active	The instance is the active instance.
Standby	The instance is a standby instance.

-c
Shows the list of processes currently connected to the IPCC, QMGR, and PERSISTENT sub pools for a queue manager.

For example, this list typically includes:

- Queue manager processes
- Applications, including those that are inhibiting shutdown
- Listeners

Queue Manager States

The following is a list of the different states a queue manager can be in:

Starting

Running

Running as standby

Running elsewhere

Quiescing

Ending immediately

Ending pre-emptively

Ended normally

Ended immediately

Ended unexpectedly

Ended pre-emptively

Status not available

Return codes

Return code	Description
0	Command completed normally
36	Invalid arguments supplied
58	Inconsistent use of installations detected
71	Unexpected error
72	Queue manager name error

Examples

1. The following command displays queue managers on this server:

```
dspmq -o all
```

2. The following command displays standby information for queue managers on this server that have ended immediately:

```
dspmq -o standby
```

3. The following command displays standby information and instance information for queue managers on this server:

```
dspmq -o standby -x
```

dspmqaut

dspmqaut displays the authorizations of a specific WebSphere MQ object.

Purpose

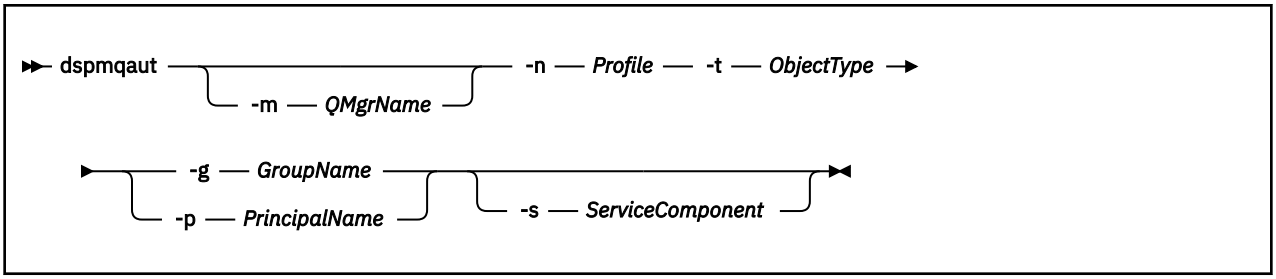
Use the `dspmqaut` command to display the current authorizations to a specified object.

If a user ID is a member of more than one group, this command displays the combined authorizations of all the groups.

Only one group or principal can be specified.

For more information about authorization service components, see Installable services, Service components , and Authorization service interface.

Syntax



Required parameters

-n *Profile*
The name of the profile for which to display authorizations. The authorizations apply to all IBM WebSphere MQ objects with names that match the profile name specified.

This parameter is required, unless you are displaying the authorizations of a queue manager. In this case you must not include it and instead specify the queue manager name using the `-m` parameter.

-t *ObjectType*
The type of object on which to make the inquiry. Possible values are:

Table 10. Object Types

Object Type Command	Object Description
authinfo	An authentication information object, for use with Secure Sockets Layer (SSL) channel security
channel or **chl**	A channel
clntconn or **clcn**	A client connection channel
listener or **lstr**	A Listener
namelist or **nl**	A namelist
process or **prcs**	A process
queue or **q**	A queue or queues matching the object name parameter
rqmname or **rqmn**	A remote queue manager name
service or **srvc**	A service
topic or **top**	A topic

Optional parameters

-m *QMgrName*
The name of the queue manager on which to make the inquiry. This parameter is optional if you are displaying the authorizations of your default queue manager.

-g *GroupName*
The name of the user group on which to make the inquiry. You can specify only one name, which must be the name of an existing user group.

For IBM WebSphere MQ for Windows only, the group name can optionally include a domain name, specified in the following formats:

```
GroupName@domain
domain\GroupName
```

-p *PrincipalName*
The name of a user for whom to display authorizations to the specified object.

For IBM WebSphere MQ for Windows only, the name of the principal can optionally include a domain name, specified in the following format:

```
userid@domain
```

For more information about including domain names on the name of a principal, see Principals and groups.

-s *ServiceComponent*
If installable authorization services are supported, specifies the name of the authorization service to which the authorizations apply. This parameter is optional; if you omit it, the authorization inquiry is made to the first installable component for the service.

Returned parameters

Returns an authorization list, which can contain none, one, or more authorization values. Each authorization value returned means that any user ID in the specified group or principal has the authority to perform the operation defined by that value.

Table 11 on page 47 shows the authorities that can be given to the different object types.

Table 11. Specifying authorities for different object types

Authority	Queue	Process	Queue manager	Remote queue manager name	Namelist	Topic	Auth info	Clntconn	Channel	Listener	Service
all	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
alladm	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
allmqi	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
none	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
altusr	No	No	Yes	No	No	No	No	No	No	No	No
browse	Yes	No	No	No	No	No	No	No	No	No	No
chg	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
clr	Yes	No	No	No	No	Yes	No	No	No	No	No
connect	No	No	Yes	No	No	No	No	No	No	No	No
crt	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ctrl	No	No	No	No	No	Yes	No	No	Yes	Yes	Yes
ctrlx	No	No	No	No	No	No	No	No	Yes	No	No
dlt	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
dsp	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
get	Yes	No	No	No	No	No	No	No	No	No	No
pub	No	No	No	No	No	Yes	No	No	No	No	No
put	Yes	No	No	Yes	No	Yes	No	No	No	No	No
inq	Yes	Yes	Yes	No	Yes	No	Yes	No	No	No	No
passall	Yes	No	No	No	No	Yes	No	No	No	No	No
passid	Yes	No	No	No	No	Yes	No	No	No	No	No

Table 11. Specifying authorities for different object types (continued)

Authority	Queue	Process	Queue manager	Remote queue manager name	Namelist	Topic	Auth info	Clntconn	Channel	Listener	Service
resume	No	No	No	No	No	Yes	No	No	No	No	No
set	Yes	Yes	Yes	No	No	No	No	No	No	No	No
setall	Yes	No	Yes	No	No	Yes	No	No	No	No	No
setid	Yes	No	Yes	No	No	Yes	No	No	No	No	No
sub	No	No	No	No	No	Yes	No	No	No	No	No
system	No	No	Yes	No	No	No	No	No	No	No	No

The following list defines the authorizations associated with each value:

Table 12. Authorizations associated with values.

Authorization Commands	Description
all	Use all operations relevant to the object. `all` authority is equivalent to the union of the authorities `alladm`, `allmqi`, and `system` appropriate to the object type.
alladm	Perform all administration operations relevant to the object
allmqi	Use all MQI calls relevant to the object
altusr	Specify an alternative user ID on an MQI call
browse	Retrieve a message from a queue by issuing an `MQGET` call with the BROWSE option
chg	Change the attributes of the specified object, using the appropriate command set
clr	Clear a queue (PCF command Clear queue only) or a topic
ctrl	Start, and stop the specified channel, listener, or service, and ping the specified channel.
ctrlx	Reset or resolve the specified channel
connect	Connect the application to the specified queue manager by issuing an `MQCONN` call
crt	Create objects of the specified type using the appropriate command set
dlt	Delete the specified object using the appropriate command set
dsp	Display the attributes of the specified object using the appropriate command set
get	Retrieve a message from a queue by issuing an `MQGET` call
inq	Make an inquiry on a specific queue by issuing an `MQINQ` call

Table 12. Authorizations associated with values. (continued)	
Authorization Commands	**Description**
passall	Pass all context
passid	Pass the identity context
pub	Publish a message on a topic using the MQPUT call.
put	Put a message on a specific queue by issuing an MQPUT call
resume	Resume a subscription using the MQSUB call.
set	Set attributes on a queue from the MQI by issuing an MQSET call
setall	Set all context
setid	Set the identity context
sub	Create, alter, or resume a subscription to a topic using the MQSUB call.
system	Use queue manager for internal system operations

The authorizations for administration operations, where supported, apply to these command sets:

- Control commands
- MQSC commands
- PCF commands

Return codes

Return code	Description
0	Successful operation
26	Queue manager running as a standby instance.
36	Invalid arguments supplied
40	Queue manager not available
49	Queue manager stopping
58	Inconsistent use of installations detected
69	Storage not available
71	Unexpected error
72	Queue manager name error
133	Unknown object name
145	Unexpected object name
146	Object name missing
147	Object type missing
148	Invalid object type
149	Entity name missing

Examples

- The following example shows a command to display the authorizations on queue manager `saturn.queue.manager` associated with user group `staff`:

```
dspmqaut -m saturn.queue.manager -t qmgr -g staff
```

  The results from this command are:

```
Entity staff has the following authorizations for object:
        get
        browse
        put
        inq
        set
        connect
        altusr
        passid
        passall
        setid
```

- The following example displays the authorities user1 has for queue a.b.c:

```
dspmqaut -m qmgr1 -n a.b.c -t q -p user1
```

  The results from this command are:

```
Entity user1 has the following authorizations for object:
        get
        put
```

dspmqcsv

The status of a command server is displayed

Purpose

Use the **dspmqcsv** command to display the status of the command server for the specified queue manager.

The status can be one of the following:

- Starting
- Running
- Running with SYSTEM.ADMIN.COMMAND.QUEUE not enabled for gets
- Ending
- Stopped

You must use the **dspmqcsv** command from the installation associated with the queue manager that you are working with. You can find out which installation a queue manager is associated with using the `dspmq -o installation` command.

Syntax

Required parameters

None

Optional parameters

QMgrName
The name of the local queue manager for which the command server status is being requested.

Return codes

Return code	Description
0	Command completed normally
10	Command completed with unexpected results
20	An error occurred during processing

Examples

The following command displays the status of the command server associated with `venus.q.mgr`:

```
dspmqcsv venus.q.mgr
```

Related commands

Command	Description
strmqcsv	Start a command server
endmqcsv	End a command server

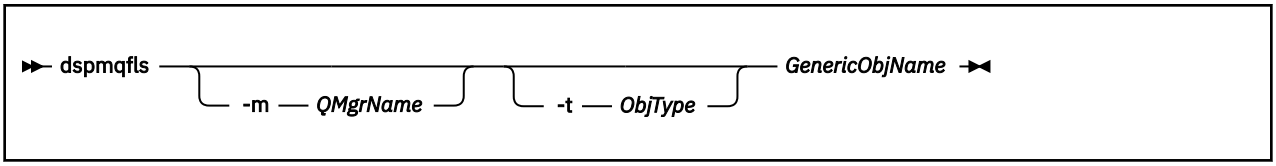
dspmqfls

Display the file names corresponding to WebSphere MQ objects.

Purpose

Use the `dspmqfls` command to display the real file system name for all IBM WebSphere MQ objects that match a specified criterion. You can use this command to identify the files associated with a particular object. This command is useful for backing up specific objects. See Understanding WebSphere MQ file names for information about name transformation.

Syntax



Required parameters

GenericObjName
The name of the object. The name is a string with no flag and is a required parameter. Omitting the name returns an error.

This parameter supports an asterisk (*) as a wildcard at the end of the string.

Optional parameters

-m *QMgrName*
The name of the queue manager for which to examine files. If you omit this name, the command operates on the default queue manager.

-t *ObjType*
The object type. The following list shows the valid object types. The abbreviated name is shown first followed by the full name.

Table 13. Valid object types

Object Type	Description
***** or **all**	All object types; this parameter is the default
authinfo	Authentication information object, for use with Secure Sockets Layer (SSL) channel security
channel or **chl**	A channel
clntconn or **clcn**	A client connection channel
catalog or **ctlg**	An object catalog
namelist or **nl**	A namelist
listener or **lstr**	A listener
process or **prcs**	A process
queue or **q**	A queue or queues matching the object name parameter
qalias or **qa**	An alias queue
qlocal or **ql**	A local queue
qmodel or **qm**	A model queue
qremote or **qr**	A remote queue
qmgr	A queue manager object
service or **srvc**	A service

Note:

1. The `dspmqfls` command displays the name of the directory containing the queue, ***not*** the name of the queue itself.

2. In IBM WebSphere MQ for UNIX systems, you must prevent the shell from interpreting the meaning of special characters, for example, an asterisk (*). The way you do this depends on the shell you are using. It may involve the use of single quotation marks, double quotation marks, or a backslash.

Return codes

Return code	Description
0	Command completed normally
10	Command completed but not entirely as expected
20	An error occurred during processing

Examples

1. The following command displays the details of all objects with names beginning SYSTEM.ADMIN defined on the default queue manager.

```
dspmqfls SYSTEM.ADMIN*
```

2. The following command displays file details for all processes with names beginning PROC defined on queue manager RADIUS.

```
dspmqfls -m RADIUS -t prcs PROC*
```

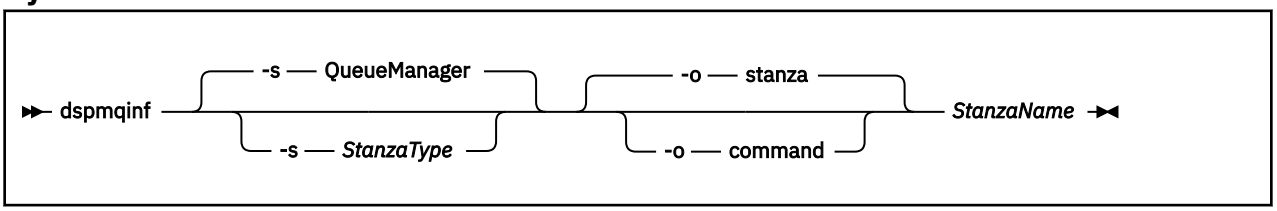
dspmqinf

Display WebSphere MQ configuration information (Windows and UNIX platforms only).

Purpose

Use the dspmqinf command to display WebSphere MQ configuration information.

Syntax



Required parameters

StanzaName

The name of the stanza. That is, the value of the key attribute that distinguishes between multiple stanzas of the same type.

Optional parameters

-s *StanzaType*

The type of stanza to display. If omitted, the QueueManager stanza is displayed.

The only supported value of *StanzaType* is QueueManager.

-o stanza
Displays the configuration information in stanza format as it is shown in the `.ini` files. This format is the default output format.

Use this format to display stanza information in a format that is easy to read.

-o command
Displays the configuration information as an **addmqinf** command.

Information about the installation associated with the queue manager is not displayed using this parameter. The **addmqinf** command does not require information about the installation.

Use this format to paste into a command shell.

Return codes

Return code	Description
0	Successful operation
39	Bad command-line parameters
44	Stanza does not exist
58	Inconsistent use of installations detected
69	Storage not available
71	Unexpected error
72	Queue manager name error

Examples

```
dspmqinf QM.NAME
```

The command defaults to searching for a QueueManager stanza named `QM.NAME` and displays it in stanza format.

```
QueueManager:
   Name=QM.NAME
   Prefix=/var/mqm
   Directory=QM!NAME
   DataPath=/MQHA/qmgrs/QM!NAME
   InstallationName=Installation1
```

The following command gives the same result:

```
dspmqinf -s QueueManager -o stanza QM.NAME
```

The next example displays the output in **addmqinf** format.

```
dspmqinf -o command QM.NAME
```

The output is on one line:

```
addmqinf -s QueueManager -v Name=QM.NAME -v Prefix=/var/mqm -v Directory=QM!NAME
         -v DataPath=/MQHA/qmgrs/QM!NAME
```

Usage notes

Use `dspmqinf` with `addmqinf` to create an instance of a multi-instance queue manager on a different server.

To use this command you must be a WebSphere MQ administrator and a member of the `mqm` group.

Related commands

Command	Description
“addmqinf” on page 8	Add queue manager configuration information
“rmvmqinf” on page 89	Remove queue manager configuration information

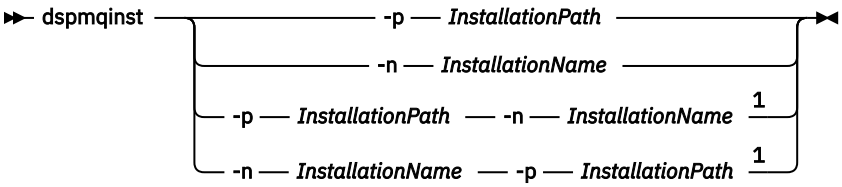
dspmqinst

Display installation entries from `mqinst.ini` on UNIX, Linux, and Windows.

Purpose

File `mqinst.ini` contains information about all IBM WebSphere MQ installations on a system. For more information about mqinst.ini, see Installation configuration file, mqinst.ini .

Syntax



Notes:

1 When specified together, the installation name and installation path must refer to the same installation.

Parameters

-n *InstallationName*
The name of the installation.

-p *InstallationPath*
The installation path.

?
Display usage information.

Return codes

Return code	Description
0	Entry displayed without error
36	Invalid arguments supplied
44	Entry does not exist
59	Invalid installation specified
71	Unexpected error
89	.ini file error
96	Could not lock .ini file
131	Resource problem

Examples

1. Display details of all WebSphere MQ installations on the system:

```
dspmqinst
```

2. Query the entry for the installation named *Installation3*:

```
dspmqinst -n Installation3
```

3. Query the entry with an installation path of `/opt/mqm`:

```
dspmqinst  -p /opt/mqm
```

4. Query the entry for the installation named *Installation3*. Its expected installation path is `/opt/mqm`:

```
dspmqinst -n Installation3 -p /opt/mqm
```

dspmqrte

Determine the route that a message has taken through a queue manager network.

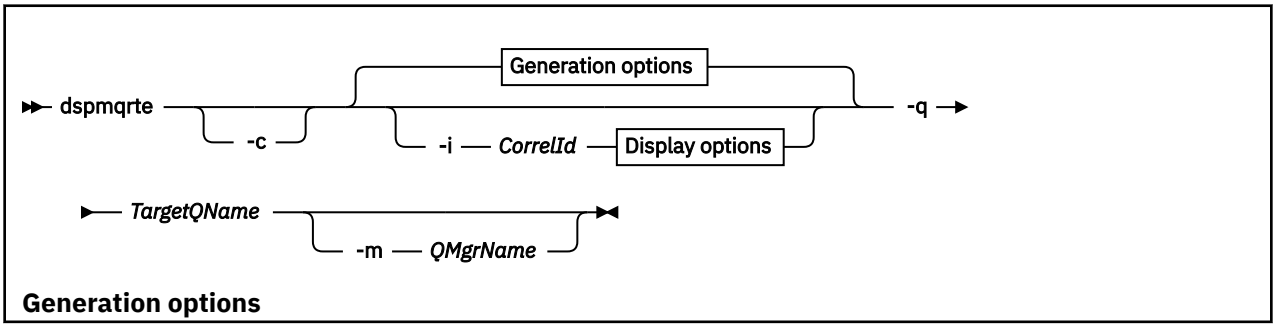
Purpose

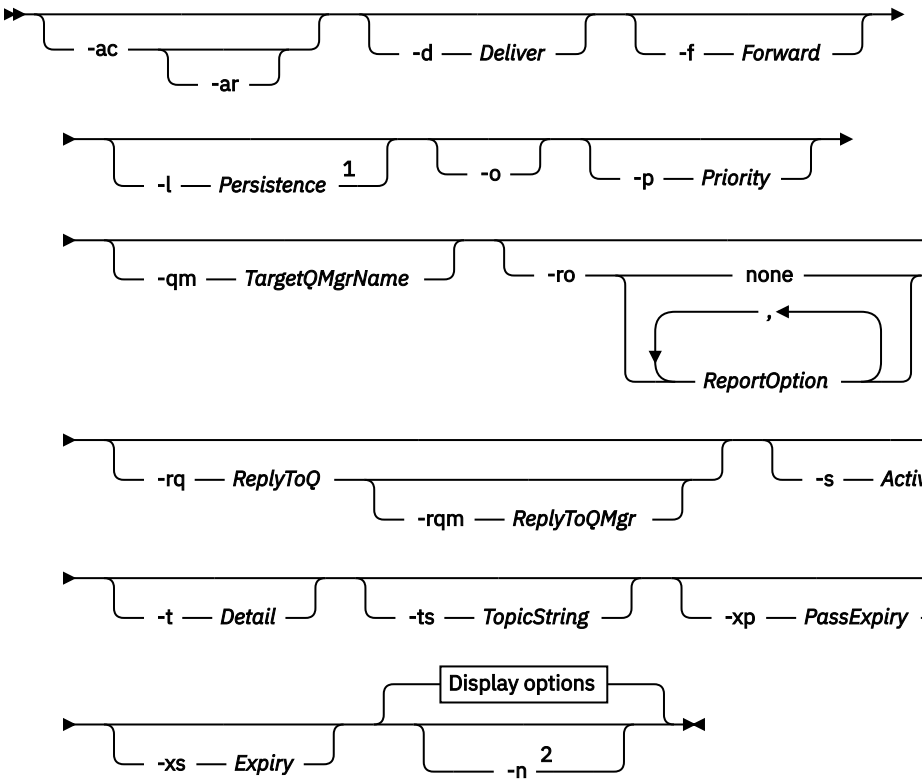
The WebSphere MQ display route application (dspmqrte) can be executed on all platforms except z/OS®. You can execute the WebSphere MQ display route application as a client to a WebSphere MQ for z/OS queue manager by specifying the -c parameter when issuing the dspmqrte command.

Note: To run a client application against a queue manager, the Client Attachment feature must be installed.

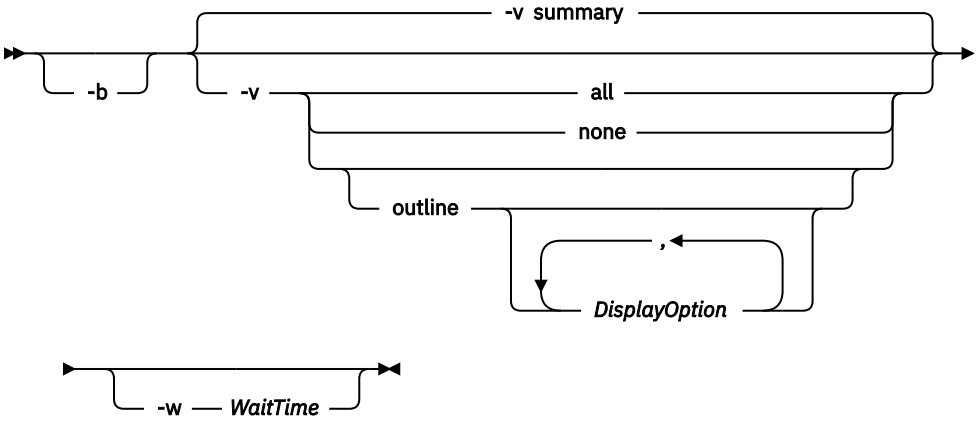
The WebSphere MQ display route application generates and puts a trace-route message into a queue manager network. As the trace-route message travels through the queue manager network, activity information is recorded. When the trace-route message reaches its target queue, the activity information is collected by the WebSphere MQ display route application and displayed. For more information, and examples of using the WebSphere MQ display route application, see WebSphere MQ display route application.

Syntax





Display options



Notes:

[1] If *Persistence* is specified as `yes`, and is accompanied by a request for a trace-route reply message (*-ar*), or any report generating options (*-ro ReportOption*), then you must specify the parameter *-rq ReplyToQ*. The reply-to queue must not resolve to a temporary dynamic queue.

[2] If this parameter is accompanied by a request for a trace-route reply message (*-ar*), or any of the report generating options (*-ro ReportOption*), then a specific (non-model) reply-to queue must be specified using *-rq ReplyToQ*. By default, activity report messages are requested.

Required parameters

-q *TargetQName*

If the IBM WebSphere MQ display route application is being used to send a trace-route message into a queue manager network, *TargetQName* specifies the name of the target queue.

If the WebSphere MQ display route application is being used to view previously gathered activity information, *TargetQName* specifies the name of the queue where the activity information is stored.

Optional parameters

-c

Specifies that the WebSphere MQ display route application connects as a client application. For more information about how to set up client machines, see Installing an IBM WebSphere MQ client .

This parameter can be used only if the client component is installed.

-i *CorrelId*

This parameter is used when the WebSphere MQ display route application is used to display previously accumulated activity information only. There can be many activity reports and trace-route reply messages on the queue specified by *-q TargetQName*. *CorrelId* is used to identify the activity reports, or a trace-route reply message, related to a trace-route message. Specify the message identifier of the original trace-route message in *CorrelId*.

The format of *CorrelId* is a 48 character hexadecimal string.

-m *QMgrName*

The name of the queue manager to which the WebSphere MQ display route application connects. The name can contain up to 48 characters.

If you do not specify this parameter, the default queue manager is used.

Generation options

The following parameters are used when the WebSphere MQ display route application is used to put a trace-route message into a queue manager network.

-ac

Specifies that activity information is to be accumulated within the trace-route message.

If you do not specify this parameter, activity information is not accumulated within the trace-route message.

-ar

Requests that a trace-route reply message containing all accumulated activity information is generated in the following circumstances:

- The trace-route message is discarded by a WebSphere MQ Version 7.0 queue manager.
- The trace-route message is put to a local queue (target queue or dead-letter queue) by a WebSphere MQ Version 7.0 queue manager.
- The number of activities performed on the trace-route message exceeds the value of specified in *-s Activities*.

For more information about trace-route reply messages, see Trace-route reply message reference .

If you do not specify this parameter, a trace-route reply message is not requested.

-d *Deliver*

Specifies whether the trace-route message is to be delivered to the target queue on arrival. Possible values for *Deliver* are:

yes	On arrival, the trace-route message is put to the target queue, even if the queue manager does not support trace-route messaging.
no	On arrival, the trace-route message is **not** put to the target queue.

If you do not specify this parameter, the trace-route message is **not** put to the target queue.

-f *Forward*

Specifies the type of queue manager that the trace-route message can be forwarded to. Queue managers use an algorithm when determining whether to forward a message to a remote queue manager. For details of this algorithm, see The cluster workload management algorithm. The possible values for *Forward* are:

all The trace-route message is forwarded to any queue manager.

Warning: If forwarded to a WebSphere MQ queue manager before Version 6.0, the trace-route message is not recognized and can be delivered to a local queue despite the value of the *-d Deliver* parameter.

supported The trace-route message is only forwarded to a queue manager that honors the *Deliver* parameter from the *TraceRoute* PCF group.

If you do not specify this parameter, the trace-route message is only forwarded to a queue manager that honors the *Deliver* parameter.

-l *Persistence*

Specifies the persistence of the generated trace-route message. Possible values for *Persistence* are:

yes The generated trace-route message is persistent. (MQPER_PERSISTENT).

no The generated trace-route message is not persistent. (MQPER_NOT_PERSISTENT).

q The generated trace-route message inherits its persistence value from the queue specified by *-q TargetQName*. (MQPER_PERSISTENCE_AS_Q_DEF).

A trace-route reply message, or any report messages, returned shares the same persistence value as the original trace-route message.

If *Persistence* is specified as **yes**, you must specify the parameter *-rq ReplyToQ*. The reply-to queue must not resolve to a temporary dynamic queue.

If you do not specify this parameter, the generated trace-route message is not persistent.

-o

Specifies that the target queue is not bound to a specific destination. Typically this parameter is used when the trace-route message is to be put across a cluster. The target queue is opened with option MQOO_BIND_NOT_FIXED.

If you do not specify this parameter, the target queue is bound to a specific destination.

-p *Priority*

Specifies the priority of the trace-route message. The value of *Priority* is either greater than or equal to 0, or MQPRI_PRIORITY_AS_Q_DEF. MQPRI_PRIORITY_AS_Q_DEF specifies that the priority value is taken from the queue specified by *-q TargetQName*.

If you do not specify this parameter, the priority value is taken from the queue specified by *-q TargetQName*.

-qm *TargetQMgrName*

Qualifies the target queue name; normal queue manager name resolution applies. The target queue is specified with *-q TargetQName*.

If you do not specify this parameter, the queue manager to which the WebSphere MQ display route application is connected is used as the reply-to queue manager.

-ro none | *ReportOption*

none Specifies no report options are set.

ReportOption Specifies report options for the trace-route message. Multiple report options can be specified using a comma as a separator. Possible values for *ReportOption* are:

activity
The report option MQRO_ACTIVITY is set.

coa
The report option MQRO_COA_WITH_FULL_DATA is set.

cod
The report option MQRO_COD_WITH_FULL_DATA is set.

exception
The report option MQRO_EXCEPTION_WITH_FULL_DATA is set.

expiration
The report option MQRO_EXPIRATION_WITH_FULL_DATA is set.

discard
The report option MQRO_DISCARD_MSG is set.

If *-ro ReportOption* or *-ro none* are not specified, then the MQRO_ACTIVITY and MQRO_DISCARD_MSG report options are specified.

-rq *ReplyToQ*
Specifies the name of the reply-to queue that all responses to the trace-route message are sent to. If the trace-route message is persistent, or if the *-n* parameter is specified, a reply-to queue must be specified that is not a temporary dynamic queue.

If you do not specify this parameter, the system default model queue, SYSTEM.DEFAULT.MODEL.QUEUE is used as the reply-to queue. Using this model queue causes a temporary dynamic queue, for the WebSphere MQ display route application, to be created.

-rqm *ReplyToQMgr*
Specifies the name of the queue manager where the reply-to queue is located. The name can contain up to 48 characters.

If you do not specify this parameter, the queue manager to which the WebSphere MQ display route application is connected is used as the reply-to queue manager.

-s *Activities*
Specifies the maximum number of recorded activities that can be performed on behalf of the trace-route message before it is discarded. This parameter prevents the trace-route message from being forwarded indefinitely if caught in an infinite loop. The value of *Activities* is either greater than or equal to 1, or MQROUTE_UNLIMITED_ACTIVITIES. MQROUTE_UNLIMITED_ACTIVITIES specifies that an unlimited number of activities can be performed on behalf of the trace-route message.

If you do not specify this parameter, an unlimited number of activities can be performed on behalf of the trace-route message.

-t *Detail*
Specifies the activities that are recorded. The possible values for *Detail* are:

low Activities performed by user-defined application are recorded only.

medium Activities specified in **low** are recorded. Additionally, activities performed by MCAs are recorded.

high Activities specified in **low**, and **medium** are recorded. MCAs do not expose any further activity information at this level of detail. This option is available to user-defined applications that are to expose further activity information only. For example, if a user-defined application determines the route a message takes by considering certain message characteristics, the routing logic can be included with this level of detail.

If you do not specify this parameter, medium level activities are recorded.

-ts *TopicString*
Specifies a topic string to which the WebSphere MQ display route application is to publish a trace-route message, and puts this application into topic mode. In this mode, the application traces all of the messages that result from the publish request.

-xp *PassExpiry*
Specifies whether the report option MQRO_DISCARD_MSG and the remaining expiry time from the trace-route message is passed on to the trace-route reply message. Possible values for *PassExpiry* are:

yes The report option MQRO_PASS_DISCARD_AND_EXPIRY is specified in the message descriptor of the trace-route message.

If a trace-route reply message, or activity reports, are generated for the trace-route message, the MQRO_DISCARD_MSG report option (if specified), and the remaining expiry time are passed on.

This parameter is the default value.

no The report option MQRO_PASS_DISCARD_AND_EXPIRY is **not** specified.

If a trace-route reply message is generated for the trace-route message, the discard option and remaining expiry time from the trace-route message are **not** passed on.

If you do not specify this parameter, the MQRO_PASS_DISCARD_AND_EXPIRY report option is not specified in the trace-route message.

-xs *Expiry*
Specifies the expiry time for the trace-route message, in seconds.

If you do not specify this parameter, the expiry time is specified as 60 seconds.

-n
Specifies that activity information returned for the trace-route message is not to be displayed.

If this parameter is accompanied by a request for a trace-route reply message (*-ar*), or any of the report generating options from (*-ro ReportOption*), then a specific (non-model) reply-to queue must be specified using *-rq ReplyToQ*. By default, activity report messages are requested.

After the trace-route message is put to the specified target queue, a 48 character hexadecimal string is returned containing the message identifier of the trace-route message. The message identifier can be used by the WebSphere MQ display route application to display the activity information for the trace-route message at a later time. This can be done using the *-i CorrelId* parameter.

If you do not specify this parameter, activity information returned for the trace-route message is displayed in the form specified by the *-v* parameter.

Display options

The following parameters are used when the WebSphere MQ display route application is used to display collected activity information.

-b

Specifies that the WebSphere MQ display route application only browses activity reports or a trace-route reply message related to a message. This parameter allows activity information to be displayed again at a later time.

If you do not specify this parameter, the IBM WebSphere MQ display route application gets activity reports and deletes them, or a trace-route reply message related to a message.

-v summary | all | none | outline *DisplayOption*

summary
The queues that the trace-route message was routed through are displayed.

all
All available information is displayed.

none
No information is displayed.

outline *DisplayOption*
Specifies display options for the trace-route message. Multiple display options can be specified using a comma as a separator.

If no values are supplied the subsequent information is displayed:

- The application name
- The type of each operation
- Any operation-specific parameters

Possible values for *DisplayOption* are:

activity
All non-PCF group parameters in *Activity* PCF groups are displayed.

identifiers
Values with parameter identifiers MQBACF_MSG_ID or MQBACF_CORREL_ID are displayed. This overrides *msgdelta*.

message
All non-PCF group parameters in *Message* PCF groups are displayed. When this value is specified, you cannot specify *msgdelta*.

msgdelta
All non-PCF group parameters in *Message* PCF groups, that have changed since the last operation, are displayed. When this value is specified, you cannot specify *message*.

operation
All non-PCF group parameters in *Operation* PCF groups are displayed.

traceroute
All non-PCF group parameters in *TraceRoute* PCF groups are displayed.

If you do not specify this parameter, a summary of the message route is displayed.

-w *WaitTime*

Specifies the time, in seconds, that the WebSphere MQ display route application waits for activity reports, or a trace-route reply message, to return to the specified reply-to queue.

If you do not specify this parameter, the wait time is specified as the expiry time of the trace-route message, plus 60 seconds.

Return codes

Return code	Description
0	Command completed normally
10	Invalid arguments supplied
20	An error occurred during processing

Examples

1. The following command puts a trace-route message into a queue manager network with the target queue specified as TARGET.Q. Providing queue managers on route are enabled for activity recording, activity reports are generated. Depending on the queue manager attribute, ACTIVREC, activity reports are either delivered to the reply-to queue ACT.REPORT.REPLY.Q, or are delivered to a system queue. The trace-route message is discarded on arrival at the target queue.

   ```
   dspmqrte -q TARGET.Q -rq ACT.REPORT.REPLY.Q
   ```

   Providing one or more activity reports are delivered to the reply-to queue, ACT.REPORT.REPLY.Q, the WebSphere MQ display route application orders and displays the activity information.
2. The following command puts a trace-route message into a queue manager network with the target queue specified as TARGET.Q. Activity information is accumulated within the trace-route message, but activity reports are not generated. On arrival at the target queue, the trace-route message is discarded. Depending on the value of the target queue manager attribute, ROUTEREC, a trace-route reply message can be generated and delivered to either the reply-to queue, TRR.REPLY.TO.Q, or to a system queue.

   ```
   dspmqrte -ac -ar -ro discard -rq TRR.REPLY.TO.Q -q TARGET.Q
   ```

   Providing a trace-route reply message is generated, and delivered to the reply-to queue TRR.REPLY.TO.Q, the WebSphere MQ display route application orders and displays the activity information that was accumulated in the trace-route message.

For more examples of using the WebSphere MQ display route application and its output, see WebSphere MQ display route application examples.

dspmqspl

Use the **dspmqspl** command to display a list of all policies and details of a named policy.

Syntax

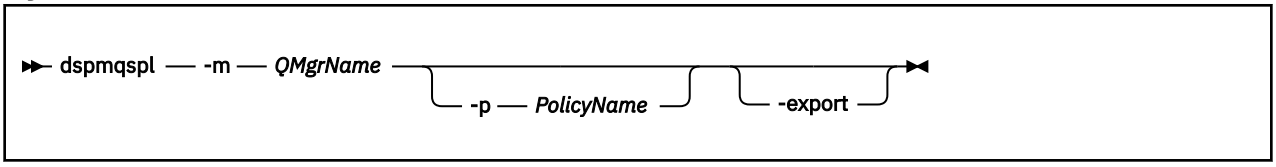


Table 14. dspmqspl command flags.

Command flag	Explanation
-m	Queue manager name (**mandatory**).
-p	Policy name.
-export	Adding this flag generates output which can easily applied to a different queue manager.

dspmqtrc

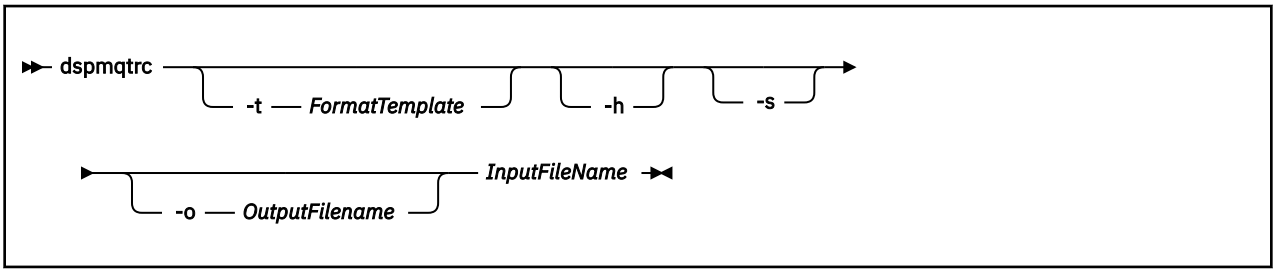
Format and display IBM WebSphere MQ trace.

Purpose

The dspmqtrc command is supported on UNIX and HP Integrity NonStop Server systems only. Use the dspmqtrc command to display WebSphere MQ formatted trace output.

The runtime SSL trace files have the names AMQ.SSL.TRC and AMQ.SSL.TRC.1. You cannot format any of the SSL trace files. The SSL trace files are binary files and, if they are transferred to IBM support by FTP, they must be transferred in binary transfer mode.

Syntax



Required parameters

InputFileName
The name of the file containing the unformatted trace, for example:

```
/var/mqm/trace/AMQ12345.01.TRC
```

If you provide one input file, dspmqtrc formats it to the output file you name. If you provide more than one input file, any output file you name is ignored, and formatted files are named AMQ*yyyyy*.*zz*.FMT, based on the PID of the trace file.

Optional parameters

-t *FormatTemplate*
The name of the template file containing details of how to display the trace. If this parameter is not supplied, the default template file location is used:

For AIX systems, the default value is as follows:

```
MQ_INSTALLATION_PATH/lib/amqtrc2.fmt
```

For all HP Integrity NonStop Server, and UNIX systems other than AIX systems, the default value is as follows:

```
MQ_INSTALLATION_PATH/lib/amqtrc.fmt
```

MQ_INSTALLATION_PATH represents the high-level directory in which IBM WebSphere MQ is installed.

-h
Omit header information from the report.

-s
Extract trace header and put to stdout.

-o *output_filename*
The name of the file into which to write formatted data.

Related commands

Command	Description
endmqtrc	End trace
“strmqtrc” on page 137	Start trace

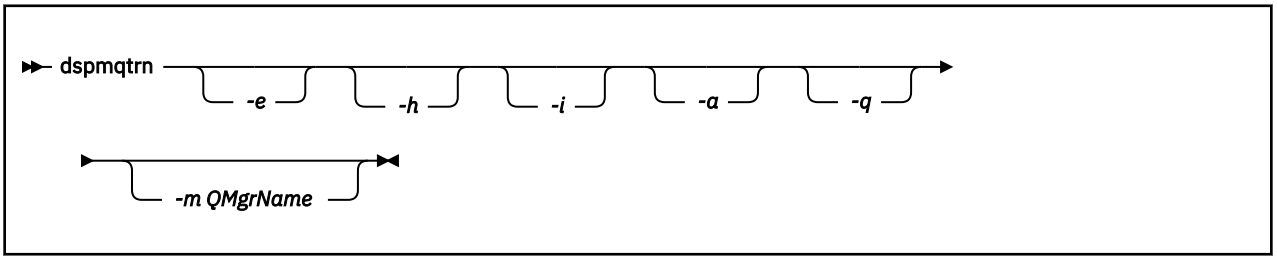
dspmqtrn

Display in-doubt and heuristically completed transactions.

Purpose

Use the `dspmqtrn` command to display details of transactions. This command includes transactions coordinated by IBM WebSphere MQ and by an external transaction manager.

Syntax



Optional parameters

-e
Requests details of externally coordinated, in-doubt transactions. Such transactions are those for which IBM WebSphere MQ has been asked to prepare to commit, but has not yet been informed of the transaction outcome.

-h
Requests details of externally coordinated transactions that were resolved by the `rsvmqtrn` command, and the external transaction coordinator has yet to acknowledge with an `xa-forget` command. This transaction state is termed *heuristically completed* by X/Open.

Note: If you do not specify -e, -h, or -i, details of both internally and externally coordinated in-doubt transactions are displayed, but details of externally coordinated, heuristically completed transactions are not displayed.

-i
Requests details of internally coordinated, in-doubt transactions. Such transactions are those for which each resource manager has been asked to prepare to commit, but IBM WebSphere MQ has yet to inform the resource managers of the transaction outcome.

Information about the state of the transaction in each of its participating resource managers is displayed. This information can help you assess the affects of failure in a particular resource manager.

Note: If you do not specify -e or -i, details of both internally and externally coordinated in-doubt transactions are displayed.

-a

Requests a list of all transactions known to the queue manager . The returned data includes transaction details for all transactions known to the queue manager. If a transaction is currently associated with an IBM WebSphere MQ application connection, information related to that IBM WebSphere MQ application connection is also returned. The data returned by this command might typically be correlated with the output of a `runmqsc` "DISPLAY CONN" on page 527 command, and the output fields have the same meaning as in that command.

Not all of the fields are appropriate for all transactions. When the fields are not meaningful, they are displayed as blank. For example: The `UOWLOG` value when the command is issued against a circular logging queue manager.

-q

Specifying this parameter on its own is the same as specifying `-a -q`.

Displays all the data from the `-a` parameter and a list of up to 100 unique objects updated within the transaction. If more than 100 objects are updated in the same transaction, only the first 100 distinct objects are listed for each transaction.

-m*QMgrName*

The name of the queue manager for which to display transactions. If you omit the name, the transaction of the default queue manager are displayed.

Return codes

Return code	Description
0	Successful operation
26	Queue manager running as a standby instance.
36	Invalid arguments supplied
40	Queue manager not available
49	Queue manager stopping
58	Inconsistent use of installations detected
69	Storage not available
71	Unexpected error
72	Queue manager name error
102	No transactions found

Related commands

Command	Description
rsvmqtrn	Resolve transaction

dspmqver

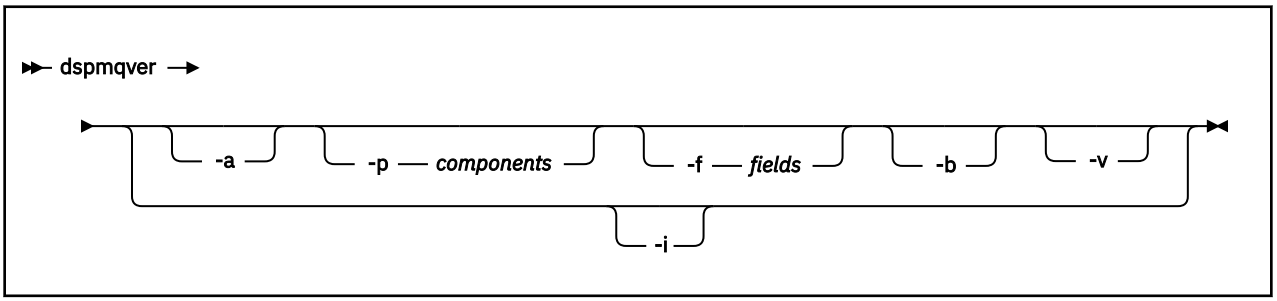
Display WebSphere MQ version and build information.

Purpose

Use the `dspmqver` command to display WebSphere MQ version and build information.

By default, the **dspmqver** command displays details of the installation from which it was invoked. A note is displayed if other installations exist; use the -i parameter to display their details.

Syntax



Optional parameters

-a
Display information about all fields and components.

-p *Components*
Display information for the components specified by *component*. Either a single component or multiple components can be specified. Enter either the value of a single component or the sum of the values of all the required components. Available components and related values follow:

1	WebSphere MQ server, or client.
2	WebSphere MQ classes for Java.
4	WebSphere MQ classes for Java Message Service.
8	WebScale Distribution Hub
16[“1” on page 67]	IBM WebSphere MQ custom channel for Windows Communication Foundation
32	IBM Message Service Client for .NET (XMS .NET) - this component is only available on Windows
64	GSKit, or for HP Integrity NonStop Server, SSL
128	Advanced Message Security

Notes:

1. Supported by WebSphere MQ for Windows only. If you have not installed Microsoft .NET 3 or later, the following error message is displayed:

   ```
   Title: WMQWCFCustomChannelLevel.exe - Application Error

   The application failed to initialize properly (0x0000135).
   ```

The default value is 1.

-f *Fields*
Display information for the fields specified by *field*. Specify either a single field or multiple fields. Enter either the value of a single field or the sum of the values of all the required fields. Available fields and related values follow:

1	Name

2	Version, in the form V.R.M.F: Where V=Version, R=Release, M=Modification, and F=Fix pack
4	Level
8	Build type
16	Platform
32	Addressing mode
64	Operating system
128	Installation path
256[1]	Installation description
512[1]	Installation name
1024[1]	Maximum command level
2048[1]	Primary installation
4096	Data Path

Note:

1. Not applicable to HP Integrity NonStop Server.

Information for each selected field is displayed on a separate line when the dspmqver command is run.

The default value is 8191. This displays information for all fields.

-b

Omit header information from the report.

-v

Display verbose output.

-i

Display information about all installations. You cannot use this option with other options. The installation from which the dspmqver command was issued is displayed first. For any other installations, only the following fields are displayed: Name, Version, Installation name, Installation description, Installation path, and Primary installation. Not applicable to HP Integrity NonStop Server.

Return codes

Return code	Description
0	Command completed normally.
10	Command completed with unexpected results.
20	An error occurred during processing.

Examples

The following command displays WebSphere MQ version and build information, using the default settings for **-p** and **-f** :

```
dspmqver
```

The following command displays information about all fields and components and is the equivalent of specifying `dspmqver -p 63 -f 4095`:

```
dspmqver -a
```

The following command displays version and build information for the WebSphere MQ classes for Java:

```
dspmqver -p 2
```

The following command displays the Common Services for Java Platform Standard Edition, IBM WebSphere MQ, Java Message Service Client, and WebSphere MQ classes for Java Message Service:

```
dspmqver -p 4
```

The following command displays the build level of the WebScale Distribution Hub:

```
dspmqver -p 8 -f 4
```

The following command displays the name and build type for IBM WebSphere MQ custom channel for Windows Communication Foundation:

```
dspmqver -p 16 -f 9
```

The following command displays information about installations of IBM WebSphere MQ.

```
dspmqver -i
```

Command Failure

The **dspmqver** command can fail if you try to view version or build information for the WebSphere MQ classes for Java, and you have not correctly configured your environment. For example, you might see the following message:

```
[root@blade883 ~]# dspmqver -p2
AMQ8351: WebSphere MQ Java environment has not been configured correctly.
```

To resolve this problem, ensure that the path is configured to include the JRE, and that the correct environment variables are set; for example, by using `setjmsenv` or `setjmsenv64`. For example:

```
export PATH=$PATH:/opt/mqm/java/jre/bin
cd /opt/mqm/java/bin/
. ./setjmsenv64

[root@blade883 bin]# dspmqver -p2
Name:       WebSphere MQ classes for Java
Version:    7.1.0.0
Level:      k000-L110908
Build Type: Production
```

endmqcsv

Stop the command server for a queue manager.

Purpose

Use the **endmqscv** command to stop the command server on the specified queue manager.

You must use the **endmqscv** command from the installation associated with the queue manager that you are working with. You can find out which installation a queue manager is associated with using the `dspmq -o installation` command.

If the queue manager attribute, SCMDSERV, is specified as QMGR then changing the state of the command server using **endmqscv** does not effect how the queue manager acts upon the SCMDSERV attribute at the next restart.

Syntax

Required parameters

QMgrName
The name of the queue manager for which to end the command server.

Optional parameters

-c
Stops the command server in a controlled manner. The command server can complete the processing of any command message that it has already started. No new message is read from the command queue.

This parameter is the default.

-i
Stops the command server immediately. Actions associated with a command message currently being processed might not complete.

Return codes

Return code	Description
0	Command completed normally
10	Command completed with unexpected results
20	An error occurred during processing

Examples

1. The following command stops the command server on queue manager `saturn.queue.manager`:

```
endmqcsv  -c saturn.queue.manager
```

The command server can complete processing any command it has already started before it stops. Any new commands received remain unprocessed in the command queue until the command server is restarted.

2. The following command stops the command server on queue manager `pluto` immediately:

```
endmqcsv -i pluto
```

Related commands

Command	Description
strmqcsv	Start a command server
dspmqcsv	Display the status of a command server

endmqlsr

End all listener process for a queue manager.

Purpose

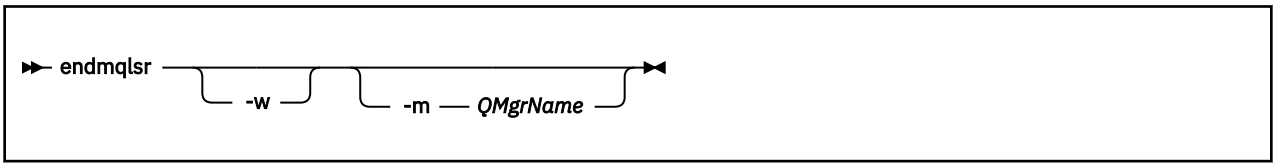
The **endmqlsr** command ends all listener processes for the specified queue manager.

You must use the **endmqlsr** command from the installation associated with the queue manager that you are working with. You can find out which installation a queue manager is associated with using the `dspmq -o installation` command.

You do not have to stop the queue manager before issuing the **endmqlsr** command. If any of the listeners are configured to have inbound channels running within the **runmqlsr** listener process, rather than within a pool process, the request to end that listener might fail if channels are still active. In this case a message is written indicating how many listeners were successfully ended and how many listeners are still running.

If the listener attribute, CONTROL, is specified as QMGR then changing the state of the listener using **endmqlsr** does not effect how the queue manager acts upon the CONTROL attribute at the next restart.

Syntax



Optional parameters

-m ***QMgrName***
The name of the queue manager. If you omit this parameter, the command operates on the default queue manager.

-w
Wait before returning control.

Control is returned to you only after all listeners for the specified queue manager have stopped.

Return codes

Return code	Description
0	Command completed normally
10	Command completed with unexpected results
20	An error occurred during processing

endmqdnm

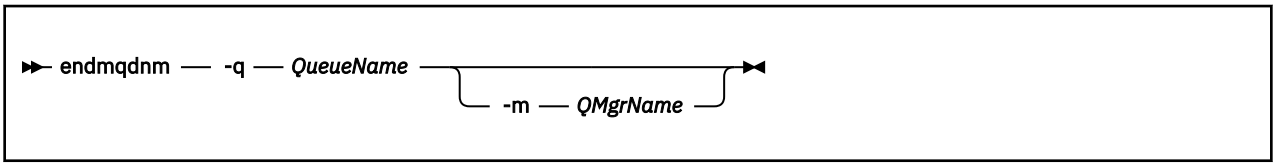
Stop the .NET monitor for a queue (Windows only).

Purpose

Note: The endmqdnm command applies to WebSphere MQ for Windows only.

Use the **endmqdnm** control command to stop a .NET monitor.

Syntax



Required parameters

-q *QueueName*
The name of the application queue that the .NET monitor is monitoring.

Optional parameters

-m *QMgrName*
The name of the queue manager that hosts the application queue.

If omitted, the default queue manager is used.

Return codes

Return code	Description
0	Successful operation
36	Invalid arguments supplied
40	Queue manager not available
58	Inconsistent use of installations detected
71	Unexpected error
72	Queue manager name error
133	Unknown object name error

endmqm

Stop a queue manager or switch to a standby queue manager.

Purpose

Use the endmqm command to end (stop) a specified queue manager. This command stops a queue manager in one of three modes:

- Controlled or quiesced shutdown
- Immediate shutdown
- Pre-emptive shut down

The **endmqm** command stops all instances of a multi-instance queue manager in the same way as it stops a single instance queue manager. You can issue the **endmqm** on either the active instance, or one of the standby instances of a multi-instance queue manager. You must issue **endmqm** on the active instance to end the queue manager.

If you issue the **endmqm** command on the active instance of a multi-instance queue manager, you can permit a standby instance to switch over to being the new active instance when the current active instance completes its shutdown.

If you issue the **endmqm** command on a standby instance of a multi-instance queue manager, you can end the standby instance by adding the `-x` option, and leave the active instance running. The queue manager reports an error if you issue **endmqm** on the standby instance without the `-x` option.

Issuing the **endmqm** command will affect any client application connected through a server-connection channel. The effect varies depending on the parameter used, but it is as though a STOP CHANNEL command was issued in one of the three possible modes. See Stopping channels , for information about the effects of STOP CHANNEL modes on server-connection channels. The **endmqm** optional parameter descriptions state which STOP CHANNEL mode they will be equivalent to.

If you issue **endmqm** to stop a queue manager, reconnectable clients do not try to reconnect. To override this behavior, specify either the `-r` or `-s` option to enable clients to start trying to reconnect.

Note: If a queue manager or a channel ends unexpectedly, reconnectable clients start trying to reconnect.

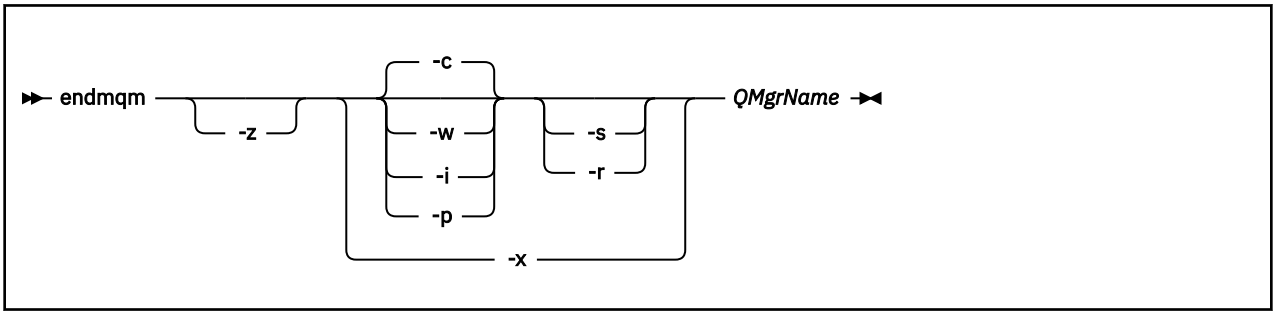
Note: The client might not reconnect to this queue manager. Depending on the MQCONNX reconnect option the client has used, and the definition of the queue manager group in the client connection table, the client might reconnect to a different queue manager. You can configure the client to force it to reconnect to the same queue manager.

You must use the **endmqm** command from the installation associated with the queue manager that you are working with. You can find out which installation a queue manager is associated with using the `dspmq -o installation` command.

The attributes of the queue manager and the objects associated with it are not affected by the **endmqm** command. You can restart the queue manager using the **strmqm** (Start queue manager) command.

To delete a queue manager, stop it and then use the **dltmqm** (Delete queue manager) command.

Syntax



Required parameters

QMgrName
The name of the message queue manager to be stopped.

Optional parameters

-c
Controlled (or quiesced) shutdown. This parameter is the default.

The queue manager stops, but only after all applications have disconnected. Any MQI calls currently being processed are completed. In the unlikely event that a "dspmq" on page 42 command is issued in the small timeframe between the applications disconnecting and the queue manager actually stopping, the "dspmq" on page 42 command might transiently report the status as `Ending immediately`, even though a controlled shutdown was requested.

Control is returned to you immediately and you are not notified of when the queue manager has stopped.

The effect on any client applications connected through a server-connection channel is equivalent to a STOP CHANNEL command issued in QUIESCE mode.

-i
Immediate shutdown. The queue manager stops after it has completed all the MQI calls currently being processed. Any MQI requests issued after the command has been issued fail. Any incomplete units of work are rolled back when the queue manager is next started.

Control is returned after the queue manager has ended.

The effect on any client applications connected through a server-connection channel is equivalent to a STOP CHANNEL command issued in FORCE mode.

-p
Pre-emptive shutdown.

Use this type of shutdown only in exceptional circumstances. For example, when a queue manager does not stop as a result of a normal `endmqm` command.

The queue manager might stop without waiting for applications to disconnect or for MQI calls to complete. This can give unpredictable results for WebSphere MQ applications. The shutdown mode is set to *immediate shutdown*. If the queue manager has not stopped after a few seconds, the shutdown mode is escalated, and all remaining queue manager processes are stopped.

The effect on any client applications connected through a server-connection channel is equivalent to a STOP CHANNEL command issued in TERMINATE mode.

-r
Start trying to reconnect reconnectable clients. This parameter has the effect of reestablishing the connectivity of clients to other queue managers in their queue manager group.

-s
Switch over to a standby queue manager instance after shutting down. The command checks that there is a standby instance running before ending the active instance. It does not wait for the standby instance to start before ending.

Connections to the queue manager are broken by the active instance shutting down. Reconnectable clients start trying to reconnect.

You can configure the reconnection options of a client to reconnect only to another instance of the same queue manager, or to reconnect to other queue managers in the queue manager group.

-w
Wait shutdown.

This type of shutdown is equivalent to a controlled shutdown except that control is returned to you only after the queue manager has stopped. You receive the message `Waiting for queue manager qmName to end` while shutdown progresses. In the unlikely event that a "dspmq" on page 42 command is issued in the small timeframe between the applications disconnecting and the queue manager actually stopping, the "dspmq" on page 42 command might transiently report the status as `Ending immediately`, even though a controlled shutdown was requested.

The effect on any client applications connected through a server-connection channel is equivalent to a STOP CHANNEL command issued in QUIESCE mode.

-x
End a standby instance of the queue manager, without ending the active instance of the queue manager.

-z
Suppresses error messages on the command.

Return codes

Return code	Description
0	Queue manager ended
3	Queue manager being created
16	Queue manager does not exist
40	Queue manager not available
49	Queue manager stopping
58	Inconsistent use of installations detected
62	The queue manager is associated with a different installation
69	Storage not available
71	Unexpected error
72	Queue manager name error
77	WebSphere MQ queue manager cannot switch over
79	Active instance of WebSphere MQ queue manager *QmgrName* not ended
90	Standby instance of WebSphere MQ queue manager *QmgrName* not ended
119	Permission denied

Examples

The following examples show commands that stop the specified queue managers.

1. This command ends the queue manager named `mercury.queue.manager` in a controlled way. All applications currently connected are allowed to disconnect.

```
endmqm mercury.queue.manager
```

2. This command ends the queue manager named `saturn.queue.manager` immediately. All current MQI calls complete, but no new ones are allowed.

```
endmqm -i saturn.queue.manager
```

The results of issuing **endmqm** to the local instance of a multi-instance queue manager are shown in Table 15 on page 76. The results of the command depend on whether the -s or -x switch is used, and the running status of local and remote instances of the queue manager.

Table 15. endmqm actions

endmqm option	Local machine	Remote machine	RC	Message	Result
	Active	None	0	-	Queue manager ended.
		Standby			Queue manager ended, including the standby instance.
	Standby	Active	90	AMQ8368	Standby instance of WebSphere MQ queue manager *QmgrName* not ended.
-s	Active	None	77	AMQ7276	WebSphere MQ queue manager cannot switch over.
		Standby	0	-	Queue manager QMNAME ended, permitting switchover to a standby instance.
	Standby	Active	90	AMQ8368	Standby instance of WebSphere MQ queue manager *QmgrName* not ended.
-x	Active	None	79	AMQ8367	Active instance of WebSphere MQ queue manager *QmgrName* not ended.
		Standby			
	Standby	Active	0	-	Standby instance of queue manager QMNAME ended.

Related commands

Command	Description
"crtmqm" on page 23	Create queue manager
"strmqm" on page 133	Start queue manager
"dltmqm" on page 31	Delete queue manager

endmqsvc (end IBM WebSphere MQ service)

The **endmqsvc** command ends the IBM IBM WebSphere MQ service on Windows. Run the command on Windows only.

Purpose

The command ends the IBM IBM WebSphere MQ service on Windows.

Run the command to end the service, if the service is running.

Restart the service for IBM WebSphere MQ processes to pick up a new environment, including new security definitions.

Syntax

```
endmqsvc
```

Parameters

The **endmqsvc** command has no parameters.

You must set the path to the installation that contains the service. Either make the installation primary, run the **setmqenv** command, or run the command from the directory containing the **endmqsvc** binary file.

Related reference

“strmqsvc (Start IBM IBM WebSphere MQ service)” on page 132

The **strmqsvc** command starts the IBM IBM WebSphere MQ service on Windows. Run the command on Windows only.

endmqtrc

End trace for some or all of the entities that are being traced.

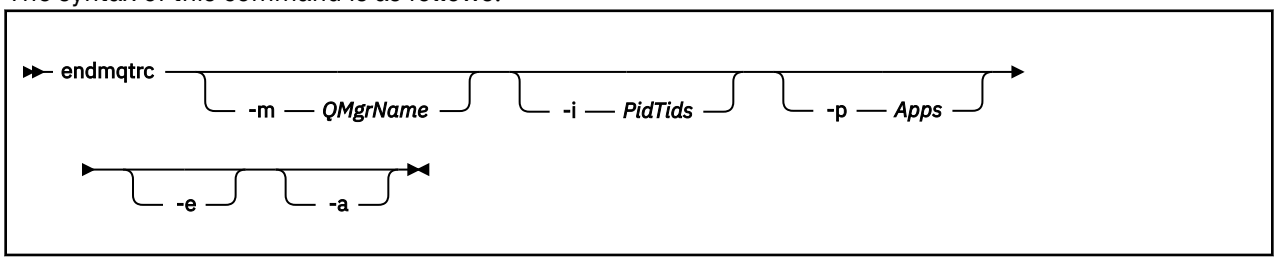
Purpose

Use the endmqtrc command to end tracing for the specified entity or all entities. The endmqtrc command ends only the trace that is described by its parameters. Using endmqtrc with no parameters ends early tracing of all processes.

Attention: There can be a slight delay between the endmqtrc command ending, and all trace operations actually completing. This is because WebSphere MQ processes are accessing their own trace files. As each process becomes active at different times, their trace files close independently of one another.

Syntax

The syntax of this command is as follows:



Optional parameters

-m *QMgrName*

The name of the queue manager for which to end tracing. This parameter applies to server products only.

The QMgrName supplied must match exactly the QMgrName supplied on the strmqtrc command. If the strmqtrc command used wildcards, the endmqtrc command must use the same wildcard specification including the escaping of any wildcard characters to prevent them being processed by the command environment.

A maximum of one -m flag and associated queue manager name can be supplied on the command.

-i *PidTids*
Process identifier (PID) and thread identifier (TID) for which to end tracing. You cannot use the -i flag with the -e flag. If you try to use the -i flag with the -e flag, then an error message is issued. This parameter must only be used under the guidance of IBM Service personnel.

-p *Apps*
The named processes for which to end tracing. *Apps* is a comma-separated list. You must specify each name in the list exactly as the program name would be displayed in the "Program Name" FDC header. Asterisk (*) or question mark (?) wildcards are allowed. You cannot use the -p flag with the -e flag. If you try to use the -p flag with the -e flag, then an error message is issued.

-e
Ends early tracing of all processes.

Using endmqtrc with no parameters has the same effect as endmqtrc -e. You cannot specify the -e flag with the -m flag, the -i flag, or the -p flag.

-a
Ends all tracing.

This flag ***must*** be specified alone.

Return codes

Return code	Description
AMQ5611	This message is issued if you supply invalid arguments to the command.
58	Inconsistent use of installations detected

Examples

This command ends tracing of data for a queue manager called QM1.

```
endmqtrc -m QM1
```

The following examples are a sequence that shows how the endmqtrc command ends only the trace that is described by its parameters.

1. The following command enables tracing for queue manager QM1 and process amqxxx.exe:

   ```
   strmqtrc -m QM1 -p amqxxx.exe
   ```

2. The following command enables tracing for queue manager QM2:

   ```
   strmqtrc -m QM2
   ```

3. The following command ends tracing for queue manager QM2 only. Tracing of queue manager QM1 and process amqxxx.exe continues:

   ```
   endmqtrc -m QM2
   ```

Related commands

Command	Description
dspmqtrc	Display formatted trace output
“strmqtrc” on page 137	Start trace

migmbbrk

The migmbbrk command migrates publish/subscribe configuration data from WebSphere Event Broker Version 6.0 or WebSphere Message Broker Version 6.0 or 6.1 to WebSphere MQ Version 7.0.1 or later versions.

Purpose

The migmbbrk command is not supported on all of the platforms that WebSphere MQ supports. See *Supported operating systems* for details.

To use the **migmbbrk** command you must be using at least WebSphere Message Broker Version 6.0, Fix Pack 9, or WebSphere Message Broker Version 6.1, Fix Pack 4.

Use the **migmbbrk** command to migrate the publish/subscribe configuration data from a WebSphere Event Broker Version 6.0 or a WebSphere Message Broker Version 6.0 or Version 6.1 broker to a WebSphere MQ Version 7.0.1 or later queue manager. The command runs a migration process that migrates the following publish/subscribe configuration data to the queue manager that is associated with the named broker:

- Subscriptions
- Subscription points. (Subscription points are supported only when RFH2 messages are used.)
- Streams
- Retained publications

The **migmbbrk** command does not migrate the Access Control List (ACL). Instead, running the migration with the -t or -r parameters produces a file containing suggested setmqaut commands to set up a security environment in the queue manager that is equivalent to the security environment that existed in the broker. You must review and modify the security command file as needed and run the commands to set up a security environment in the queue manager, equivalent to the one that existed in the broker, before you run the migration with the -c parameter to complete the migration.

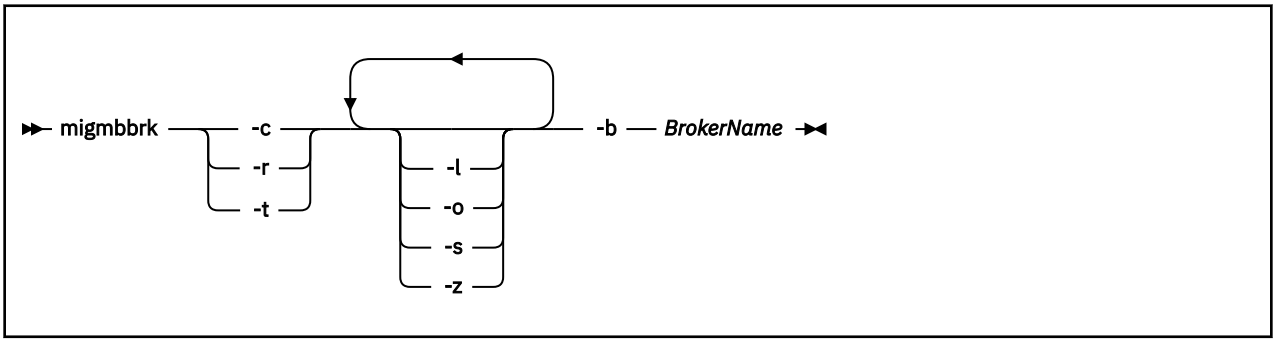
Note: On UNIX systems, all authorities are held by user groups internally, not by principals. This has the following implications:

- If you use the **setmqaut** command to grant an authority to a principal, the authority is granted to the primary user group of the principal. This means that the authority is effectively granted to all members of that user group.
- If you use the **setmqaut** command to revoke an authority from a principal, the authority is revoked from the primary user group of the principal. This means that the authority is effectively revoked from all members of that user group.

You must issue the **migmbbrk** command from a command window that can execute both WebSphere MQ and WebSphere Message Broker commands successfully. Typically this is true if the command is issued from a WebSphere Message Broker command console.

The WebSphere Event Broker Version 6.0 or WebSphere Message Broker Version 6.0 or 6.1 publish/subscribe configuration data, which is stored in the subscription database tables, is not deleted by the migration process. This configuration data is therefore available to use until you explicitly delete it.

Syntax



Required parameters

-b *BrokerName*

The name of the broker that is the source of the publish/subscribe configuration data that is to be migrated. The queue manager to which the publish/subscribe configuration data is migrated is the queue manager that is associated with the named broker.

-c

Complete the migration of the publish/subscribe configuration data. The completion phase of the migration uses the topic objects that are created in the initial -t phase. It is possible that the broker state has changed since the initial phase was run and that new additional topic objects are now required. If so, the completion phase creates new topic objects as necessary. The completion phase does not delete any topic objects that have become unnecessary; you might need to delete any topic objects that you do not require.

Before you complete the migration you must review and modify the security command file produced in the -r or -t phase as required and execute the commands to set up a security environment in the queue manager, equivalent to the one that existed in the broker.

Before you run this completion phase, you must run the initial -t phase. You cannot use the -c parameter with the -r parameter or the -t parameter. This phase also creates a migration log.

-r

Rehearse the migration process but do not change anything. You can use this parameter before running the migration with the -t parameter, to create a migration log, including any errors, so that you can observe what the result of the migration process would be, but without changing the current configurations.

Rehearsing the migration also produces a file containing suggested setmqaut commands to set up a security environment in the queue manager that is equivalent to the security environment that existed in the broker. Before you complete the migration with the -c parameter you must review and modify the security command file as required and execute the commands to set up a security environment in the queue manager, equivalent to the one that existed in the broker.

You cannot use the -r parameter with the -c parameter or the -t parameter.

-t

Create topic objects that might be needed in the queue manager, based on the ACL entries that are defined in the broker.

Use of the -t parameter also produces a file containing suggested setmqaut commands to set up a security environment in the queue manager that is equivalent to the security environment that existed in the broker. The topic objects are created in anticipation of you executing the security commands to create ACLs for the topic objects. Before you complete the migration with the -c parameter you must review and modify the security command file as required and execute the commands to set up a security environment in the queue manager, equivalent to the one that existed in the broker.

You must run this phase before you run the completion phase with the -c parameter. You cannot use the -t parameter with the -c parameter or the -r parameter. This phase also creates a migration log.

Optional parameters

-l
Leave the broker running. If you do not specify this parameter, the broker is shut down by default at the end of the migration process.

-o
Overwrite any subscription or retained publication that exists in the queue manager and that has the same name as a subscription or retained publication that is being migrated from the broker, with the publish/subscribe configuration data that was retrieved from the broker. The -o parameter has no effect if you use it with the -r parameter.

-s
Discard any intermediate configuration data that was retained from a previous instance of the migration process that failed or was interrupted. The migration process populates private queues with temporary data. If the migration process completes successfully, the temporary data is deleted. If you do not specify this parameter and the migration process fails or is interrupted, the temporary data is retained and is used by the migration process if you restart it, so that the process resumes at the point where it previously failed or was interrupted.

-z
Run the migration process, regardless of whether it has previously run to a successful completion. If you do not specify this parameter and the migration process has previously run to a successful completion, the process recognizes this fact and exits. You can use the -o parameter with the -z parameter, but this is not mandatory. A previous rehearsal of the migration using the -r parameter does not count as a successful completion.

Return codes

Return Code	Explanation
0	Migration completed successfully
20	An error occurred during processing

Output files

The migration process writes two output files to the current directory:

amqmigrateacl.txt
A file containing a list of setmqaut commands, created in the current directory for you to review, change, and run if appropriate, to help you to reproduce your ACLs.

amqmigmbbrk.log
A log file containing a record of the details of the migration.

Examples

This command migrates the publish/subscribe configuration data of broker BRK1 into its associated queue manager and specifies that the migration process runs regardless of whether it has previously run to a successful completion. It also specifies that any subscription or retained publication that exists in the queue manager, that has the same name as a subscription or retained publication that is being migrated from the broker, must be overwritten.

```
migmbbrk -z -o -b BRK1
```

Supported operating systems

The **migmbbrk** command is supported only on the following platforms that support WebSphere Event Broker Version 6.0 or WebSphere Message Broker Version 6.0:

Microsoft Windows XP Professional with SP2, 32-bit versions only
Solaris x86-64 platform: Solaris 10
Solaris SPARC platform: Sun Solaris 9 (64-bit)
AIX Version 5.2 or later, 64-bit only
HP-UX Itanium platform: HP-UX 11i
Linux zSeries (64-bit)
Linux PowerPC® (64-bit)
Linux Intel x86
Linux Intel x86-64

On z/OS, the equivalent function to the migmbbrk command is provided by the CSQUMGMB utility.

MQExplorer (launch WebSphere MQ Explorer)

Start IBM WebSphere MQ Explorer (Windows, Linux x86, and Linux x86-64 platforms only).

Purpose

To launch IBM WebSphere MQ Explorer by using the system menu on Linux, or the start menu on Windows, you must left-click on the installation that you want to launch.

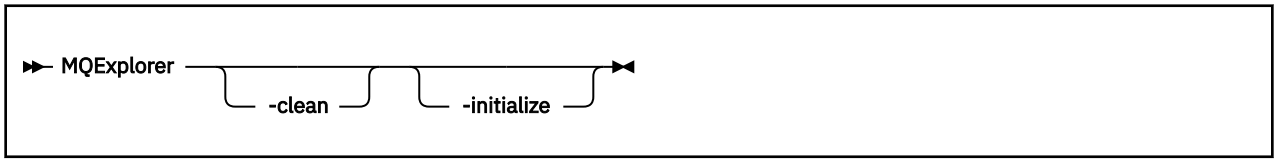
On Windows, open the start menu, and select the IBM WebSphere MQ Explorer installation entry under the **IBM WebSphere MQ** folder that corresponds to the installation that you want to launch. Each instance of IBM WebSphere MQ Explorer listed is identified by the name that you chose for its installation.

On Linux, the system menu entry for IBM WebSphere MQ Explorer is added to the **Development** category. Where it appears within the system menu is dependent on your Linux distribution (SUSE or Red Hat), and your desktop environment (GNOME or KDE).

- On SUSE
  - Left-click **Computer > More Applications...,** and find the installation of IBM WebSphere MQ Explorer that you want to launch under the **Development** category.
- On Red Hat
  - The installation of IBM WebSphere MQ Explorer that you want to launch can be found under **Applications > Programming**.

Syntax

The **MQExplorer** command is stored in `MQ_INSTALLATION_PATH/bin`. **MQExplorer.exe** (the MQExplorer command) supports standard Eclipse runtime options. The syntax of this command is as follows:



Optional parameters

-clean
Is passed to Eclipse. This parameter causes Eclipse to delete any cached data used by the Eclipse runtime.

-initialize
Is passed to Eclipse. This parameter causes Eclipse to discard configuration information used by the Eclipse runtime.

The graphical user interface (GUI) does not start.

mqrc (MQ return code)

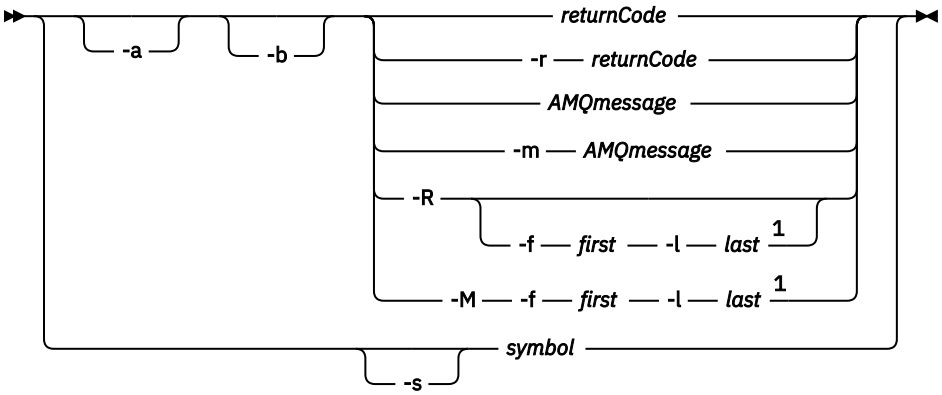
Display information about return codes.

Purpose

You can use the **mqrc** command to display information about symbols, return codes, and AMQ messages. You can specify a range of return codes or AMQ messages, as well as specifying specific return codes or AMQ messages.

Numeric arguments are interpreted as decimal if they start with a digit 1 - 9, or hex if prefixed with 0x.

Syntax



Notes:

[1] If there is a problem with a message within a range, an indication is displayed before the message text. ? is displayed if there are no matching return codes for the message. ! is displayed if the message severity is different to the return code severity.

Parameters

returnCode
The return code to display

AMQmessage
The AMQ message to display

symbol
The symbol to display

-a
Try all severities to find message text

-b
Display messages without extended information

-f *first*
First number in a range

-l *last*
Last number in a range

-m *AMQmessage*
The AMQ message to list

-M
Display AMQ messages in a range

-r *returnCode*
The return code to display

-R
Display all return codes. If used with the **-f** and **-l** parameters, **-R** displays the return codes within a range.

-s *symbol*
The symbol to display

Examples

1. This command displays AMQ message 5005:

```
mqrc AMQ5005
```

2. This command displays return codes in the range 2505 - 2530:

```
mqrc -R -f 2505 -l 2530
```

rcdmqimg

Write the image of an object or group of objects to the log for media recovery.

Purpose

Use the **rcdmqimg** command to write an image of an object, or group of objects, to the log for use in media recovery. This command can be used only when using linear logging. See Types of logging for more information about linear logging. Use the associated command **rcrmqobj** to recreate the object from the image.

rcdmqimg must be run manually or from an automated task you have created. The command does not run automatically as it must be run in accordance with, and as determined by, the usage of each individual customer of WebSphere MQ .

Running **rcdmqimg** moves the log sequence number (LSN) forwards and frees up old log files for archival or deletion.

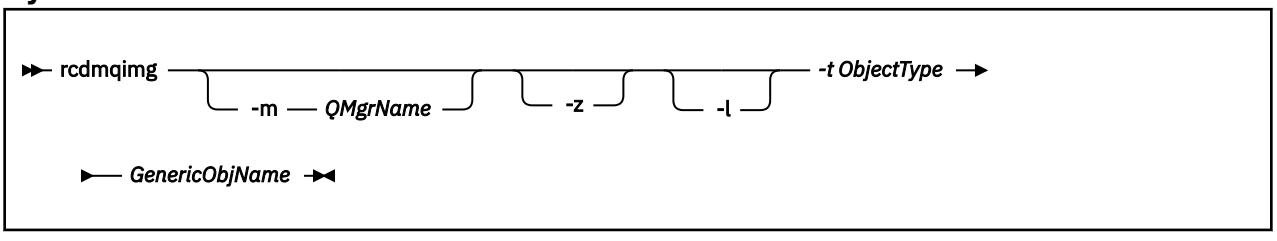
When determining when and how often to run **rcdmqimg**, consider these factors:

Disk space
If disk space is limited, regular running of **rcdmqimg** releases log files for archive or deletion.

Impact on normal system performance
rcdmqimg activity can take a long time if the queues on the system are deep. At this time, other system usage is slower and disk utilization increases because data is being copied from the queue files to the logs. Therefore, the ideal time to run **rcdmqimg** is when the queues are empty and the system is not being heavily used.

You use this command with an active queue manager. Further activity on the queue manager is logged so that, although the image becomes out of date, the log records reflect any changes to the object.

Syntax



Required parameters

GenericObjName
The name of the object to record. This parameter can have a trailing asterisk to record that any objects with names matching the portion of the name before the asterisk.

This parameter is required unless you are recording a queue manager object or the channel synchronization file. Any object name you specify for the channel synchronization file is ignored.

-t *ObjectType*
The types of object for which to record images. Valid object types are:

all and *****	All the object types; **ALL** for objtype and ***** for GenericObjName
authinfo	Authentication information object, for use with Secure Sockets Layer (SSL) channel security
channel or **chl**	Channels
clntconn or **clcn**	Client connection channels
catalog or **ctlg**	An object catalog
listener or **lstr**	Listeners
namelist or **nl**	Namelists
process or **prcs**	Processes
queue or **q**	All types of queue
qalias or **qa**	Alias queues
qlocal or **ql**	Local queues
qmodel or **qm**	Model queues
qremote or **qr**	Remote queues
qmgr	Queue manager object
service or **srvc**	Service
syncfile	Channel synchronization file.
topic or **top**	Topics

Note: When using IBM WebSphere MQ for UNIX systems, you must prevent the shell from interpreting the meaning of special characters, for example, an asterisk (*). How you do this depends on the shell you are using, but might involve the use of single quotation marks ('), double quotation marks ("), or a backslash (\).

Optional parameters

-m *QMgrName*
The name of the queue manager for which to record images. If you omit this parameter, the command operates on the default queue manager.

-z
Suppresses error messages.

-l
Writes messages containing the names of the oldest log files required to restart the queue manager and to perform media recovery. The messages are written to the error log and the standard error destination. (If you specify both the -z and -l parameters, the messages are sent to the error log, but not to the standard error destination.)

When issuing a sequence of **rcdmqimg** commands, include the -l parameter only on the last command in the sequence, so that the log file information is gathered only once.

Return codes

Return code	Description
0	Successful operation
26	Queue manager running as a standby instance.
36	Invalid arguments supplied
40	Queue manager not available
49	Queue manager stopping
58	Inconsistent use of installations detected
68	Media recovery not supported
69	Storage not available
71	Unexpected error
72	Queue manager name error
119	User not authorized
128	No objects processed
131	Resource problem
132	Object damaged
135	Temporary object cannot be recorded

Examples

The following command records an image of the queue manager object `saturn.queue.manager` in the log.

```
rcdmqimg -t qmgr -m saturn.queue.manager
```

Related commands

Command	Description
rcrmqobj	Recreate a queue manager object

rcrmqobj

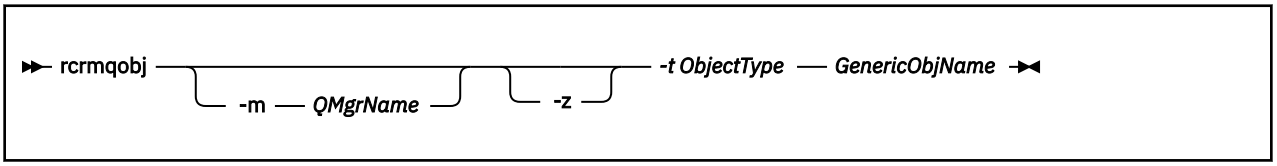
Re-create an object, or group of objects, from their images contained in the log.

Purpose

Use this command to re-create an object, or group of objects, from their images contained in the log. This command can only be used when using linear logging. Use the associated command, `rcdmqimg`, to record the object images to the log.

Use this command on a running queue manager. All activity on the queue manager after the image was recorded is logged. To re-create an object, replay the log to re-create events that occurred after the object image was captured.

Syntax



Required parameters

GenericObjName
The name of the object to re-create. This parameter can have a trailing asterisk to re-create any objects with names matching the portion of the name before the asterisk.

This parameter is required ***unless*** the object type is the channel synchronization file; any object name supplied for this object type is ignored.

-t ObjectType
The types of object to re-create. Valid object types are:

***** or **all**	All object types
authinfo	Authentication information object, for use with Secure Sockets Layer (SSL) channel security
channel or **chl**	Channels
clntconn or **clcn**	Client connection channels
clchltab	Client channel table
listener or **lstr**	Listener
namelist or **nl**	Namelists
process or **prcs**	Processes
queue or **q**	All types of queue
qalias or **qa**	Alias queues
qlocal or **ql**	Local queues
qmodel or **qm**	Model queues
qremote or **qr**	Remote queues
service or **srvc**	Service
syncfile	Channel synchronization file. You can use this option when circular logs are configured but the `syncfile` fails if the channel scratchpad files, which are used to rebuild `syncfile`, are damaged or missing. You might want to do this if your system has reported the error message AMQ7353 (krcE_SYNCFILE_UPDATE_FAILED).
topic or **top**	Topics

Note: When using WebSphere MQ for UNIX systems, you must prevent the shell from interpreting the meaning of special characters, for example, an asterisk (*). How you do this depends on the shell you are using, but might involve the use of single quotation marks ('), double quotation marks ("), or a backslash (\).

Optional parameters

-m *QMgrName*
The name of the queue manager for which to re-create objects. If omitted, the command operates on the default queue manager.

-z
Suppresses error messages.

Return codes

Return code	Description
0	Successful operation
26	Queue manager running as a standby instance.
36	Invalid arguments supplied
40	Queue manager not available
49	Queue manager stopping
58	Inconsistent use of installations detected
66	Media image not available
68	Media recovery not supported
69	Storage not available
71	Unexpected error
72	Queue manager name error
119	User not authorized
128	No objects processed
135	Temporary object cannot be recovered
136	Object in use

Examples

1. The following command re-creates all local queues for the default queue manager:

```
rcrmqobj -t ql *
```

2. The following command re-creates all remote queues associated with queue manager `store`:

```
rcrmqobj -m store -t qr *
```

Related commands

Command	Description
rcdmqimg	Record an object in the log

rmvmqinf

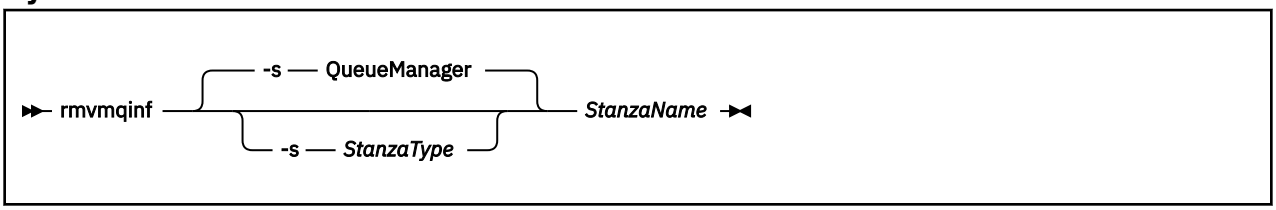
Remove WebSphere MQ configuration information (Windows and UNIX platforms only).

Purpose

Use the **rmvmqinf** command to remove WebSphere MQ configuration information.

You must use the **rmvmqinf** command from the installation associated with the queue manager that you are working with. You can find out which installation a queue manager is associated with using the `dspmq -o installation` command.

Syntax



Required parameters

StanzaName

The name of the stanza. That is, the value of the key attribute that distinguishes between multiple stanzas of the same type.

Optional parameters

-s *StanzaType*

The type of stanza to remove. If omitted, a QueueManager stanza is removed.

The only supported value of *StanzaType* is `QueueManager`.

Return codes

Return code	Description
0	Successful operation
5	Queue manager is running
26	Queue manager is running as a standby instance
39	Bad command line parameters
44	Stanza does not exist
49	Queue manager is stopping
58	Inconsistent use of installations detected
69	Storage is not available
71	Unexpected error
72	Queue manager name error

Example

```
rmvmqinf QM.NAME
```

Usage notes

Use `rmvmqinf` to remove an instance of a multi-instance queue manager.

To use this command you must be a WebSphere MQ administrator and a member of the `mqm` group.

Related commands

Command	Description
"addmqinf" on page 8	Add queue manager configuration information
"dspmqinf" on page 53	Display queue manager configuration information

rsvmqtrn

Resolve in-doubt and heuristically completed transactions

Purpose

The `rsvmqtrn` command is used to resolve two different transaction states.

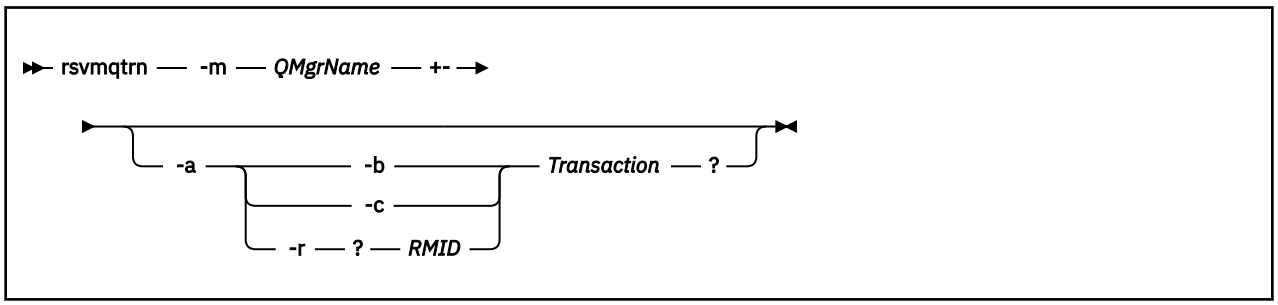
in-doubt transactions
Use the `rsvmqtrn` command to commit or back out internally or externally coordinated in-doubt transactions.

Note: Use this command only when you are certain that transactions cannot be resolved by the normal protocols. Issuing this command might result in the loss of transactional integrity between resource managers for a distributed transaction.

heuristically completed transactions
Use the `rsvmqtrn` command with the -f option for IBM WebSphere MQ to remove all information about externally coordinated transactions that were previously resolved manually using the `rsvmqtrn` command, but the resolution has not been acknowledged by the transaction coordinator using the xa-forget command. Transactions that are manually resolved by a resource manager and unacknowledged by the transaction manager, are known as *heuristically completed* transactions by X/Open.

Note: Only use the -f option if the external transaction coordinator is permanently unavailable. The queue manager, as a resource manager, remembers the transactions that are committed or backed out manually by the `rsvmqtrn` command.

Syntax



Required parameters

-m *QMgrName*
The name of the queue manager.

Optional parameters

-a
The queue manager resolves all internally coordinated, in-doubt transactions (that is, all global units of work).

-b
Backs out the named transaction. This flag is valid for externally coordinated transactions (that is, for external units of work) only.

-c
Commits the named transaction. This flag is valid for externally coordinated transactions (that is, external units of work) only.

-f
Forgets the named heuristically completed transaction. This flag is valid only for externally coordinated transactions (that is, external units of work) that are resolved, but unacknowledged by the transaction coordinator.

Note: Use only if the external transaction coordinator is never going to be able to acknowledge the heuristically completed transaction. For example, if the transaction coordinator has been deleted.

-r *RMID*
The participation of the resource manager in the in-doubt transaction can be ignored. This flag is valid for internally coordinated transactions only, and for resource managers that have had their resource manager configuration entries removed from the queue manager configuration information.

Note: The queue manager does not call the resource manager. Instead, it marks the participation of the resource manager in the transaction as being complete.

Transaction
The transaction number of the transaction being committed or backed out. Use the `dspmqtrn` command to find the relevant transaction number. This parameter is required with the -b, -c, and -r *RMID* parameters, and if used it must be the last parameter.

Return codes

Return code	Description
0	Successful operation
26	Queue manager running as a standby instance.
32	Transactions could not be resolved
34	Resource manager not recognized
35	Resource manager not permanently unavailable
36	Invalid arguments supplied
40	Queue manager not available
49	Queue manager stopping
58	Inconsistent use of installations detected
69	Storage not available
71	Unexpected error
72	Queue manager name error
85	Transactions not known

Related commands

Command	Description
dspmqtrn	Display list of prepared transactions

runmqchi

Run a channel initiator process to automate starting channels.

Purpose

Use the **runmqchi** command to run a channel initiator process.

You must use the **runmqchi** command from the installation associated with the queue manager that you are working with. You can find out which installation a queue manager is associated with using the `dspmq -o installation` command.

The channel initiator is started by default as part of the queue manager.

Syntax

Optional parameters

-q ***InitiationQName***
The name of the initiation queue to be processed by this channel initiator. If you omit it, SYSTEM.CHANNEL.INITQ is used.

-m ***QMgrName***
The name of the queue manager on which the initiation queue exists. If you omit the name, the default queue manager is used.

Return codes

Return code	Description
0	Command completed normally
10	Command completed with unexpected results
20	An error occurred during processing

If errors occur that result in return codes of either 10 or 20, review the queue manager error log that the channel is associated with for the error messages, and the system error log for records of problems that occur before the channel is associated with the queue manager. For more information about error logs, see Error log directories .

runmqchl

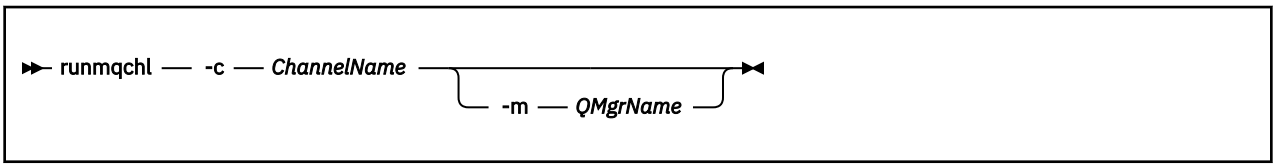
Start a sender or requester channel

Purpose

Use the `runmqchl` command to run either a sender (SDR) or a requester (RQSTR) channel.

The channel runs synchronously. To stop the channel, issue the MQSC command STOP CHANNEL.

Syntax



Required parameters

-c *ChannelName*
The name of the channel to run.

Optional parameters

-m *QMgrName*
The name of the queue manager with which this channel is associated. If you omit the name, the default queue manager is used.

Return codes

Return code	Description
0	Command completed normally
10	Command completed with unexpected results
20	An error occurred during processing

If return codes 10 or 20 are generated, review the error log of the associated queue manager for the error messages, and the system error log for records of problems that occur before the channel is associated with the queue manager.

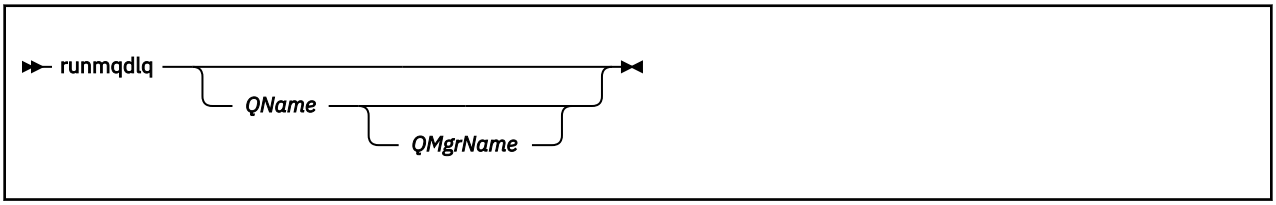
runmqdlq

Start the dead-letter queue handler to monitor and process messages on the dead-letter queue.

Purpose

Use the `runmqdlq` command to start the dead-letter queue (DLQ) handler, which monitors and handles messages on a dead-letter queue.

Syntax



Description

Use the dead-letter queue handler to perform various actions on selected messages by specifying a set of rules that can both select a message and define the action to be performed on that message.

The `runmqdlq` command takes its input from `stdin`. When the command is processed, the results and a summary are put into a report that is sent to `stdout`.

By taking `stdin` from the keyboard, you can enter **runmqdlq** rules interactively.

By redirecting the input from a file, you can apply a rules table to the specified queue. The rules table must contain at least one rule.

If you use the DLQ handler without redirecting stdin from a file (the rules table), the DLQ handler reads its input from the keyboard. In WebSphere MQ for AIX, Solaris, HP-UX, and Linux, the DLQ handler does not start to process the named queue until it receives an end_of_file (Ctrl+D) character. In WebSphere MQ for Windows, it does not start to process the named queue until you press the following sequence of keys: Ctrl+Z, Enter, Ctrl+Z, Enter.

For more information about rules tables and how to construct them, see The DLQ handler rules table.

Optional parameters

The MQSC command rules for comment lines and for joining lines also apply to the DLQ handler input parameters.

QName
The name of the queue to be processed.

If you omit the name, the dead-letter queue defined for the local queue manager is used. If you enter one or more blanks (' '), the dead-letter queue of the local queue manager is explicitly assigned.

QMgrName
The name of the queue manager that owns the queue to be processed.

If you omit the name, the default queue manager for the installation is used. If you enter one or more blanks (' '), the default queue manager for this installation is explicitly assigned.

runmqdnm

Start processing messages on a queue using the .NET monitor (Windows only).

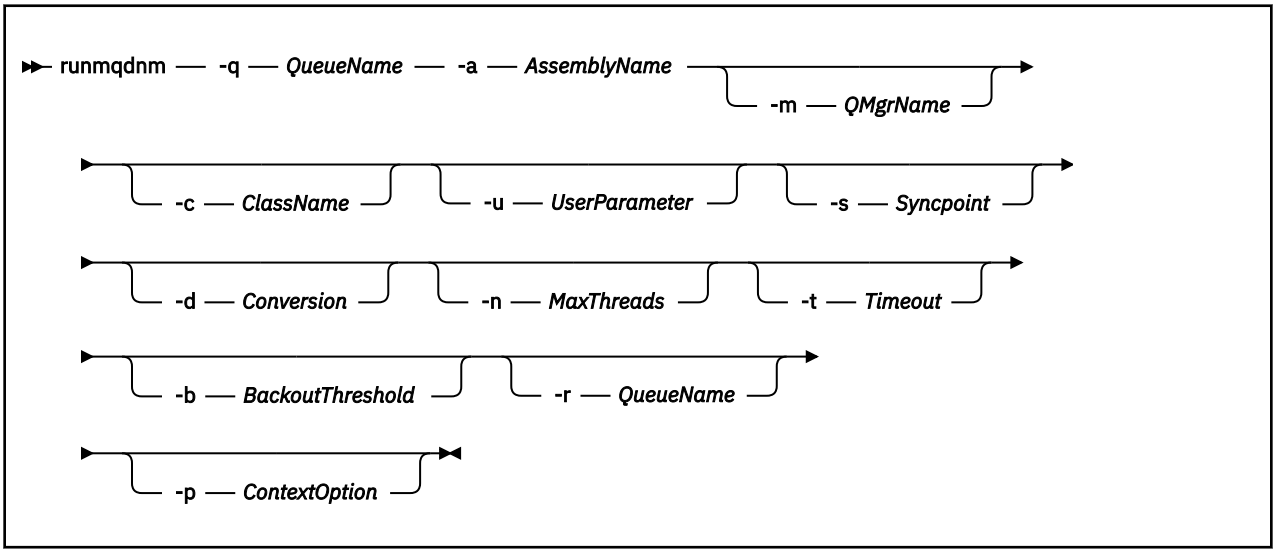
Purpose

Note: The runmqdnm command applies to WebSphere MQ for Windows only.

runmqdnm can be run from the command line, or as a triggered application.

Use the **runmqdnm** control command to start processing messages on an application queue with a .NET monitor.

Syntax



Required parameters

-q *QueueName*
The name of the application queue to monitor.

-a *AssemblyName*
The name of the .NET assembly.

Optional parameters

-m *QMgrName*
The name of the queue manager that hosts the application queue.

If omitted, the default queue manager is used.

-c *ClassName*
The name of the .NET class that implements the IMQObjectTrigger interface. This class must reside in the specified assembly.

If omitted, the specified assembly is searched to identify classes that implement the IMQObjectTrigger interface:

- If one class is found, then *ClassName* takes the name of this class.
- If no classes or multiple classes are found, then the .NET monitor is not started and a message is written to the console.

-u *UserData*
User-defined data. This data is passed to the Execute method when the .NET monitor calls it. User data must contain ASCII characters only, with no double quotation marks, NULLs, or carriage returns.

If omitted, null is passed to the Execute method.

-s *Syncpoint*
Specifies whether sync point control is required when messages are retrieved from the application queue. Possible values are:

YES	Messages are retrieved under sync point control (MQGMO_SYNCPOINT).
NO	Messages are not retrieved under sync point control (MQGMO_NO_SYNCPOINT).

PERSISTENT	Persistent messages are retrieved under sync point control (MQGMO_SYNCPOINT_IF_PERSISTENT).

If omitted, the value of *Syncpoint* is dependent on your transactional model:

- If distributed transaction coordination (DTC) is being used, then *Syncpoint* is specified as YES.
- If distributed transaction coordination (DTC) is not being used, then *Syncpoint* is specified as PERSISTENT.

-d *Conversion*
Specifies whether data conversion is required when messages are retrieved from the application queue. Possible values are:

YES	Data conversion is required (MQGMO_CONVERT).
NO	Data conversion is not required (no get message option specified).

If omitted, *Conversion* is specified as NO.

-n *MaxThreads*
The maximum number of active worker threads.

If omitted, *MaxThreads* is specified as 20.

-t *Timeout*
The time, in seconds, that the .NET monitor waits for further messages to arrive on the application queue. If you specify -1, the .NET monitor waits indefinitely.

If omitted when run from the command line, the .NET monitor waits indefinitely.

If omitted when run as a triggered application, the .NET monitor waits for 10 seconds.

-b *BackoutThreshold*
Specifies the backout threshold for messages retrieved from the application queue. Possible values are:

-1	The backout threshold is taken from the application queue attribute, BOTHRESH.
0	The backout threshold is not set.
1 or more	Explicitly sets the backout threshold.

If omitted, *BackoutThreshold* is specified as -1.

-r *QueueName*
The queue to which messages, with a backout count exceeding the backout threshold, are put.

If omitted, the value of *QueueName* is dependent on the value of the BOQNAME attribute from the application queue:

- If BOQNAME is non-blank, then *QueueName* takes the value of BOQNAME.
- If BOQNAME is blank, then *QueueName* is specified as the queue manager dead letter queue. If a dead letter queue has not been assigned to the queue manager, then backout processing is not available.

-p *ContextOption*
Specifies whether context information from a message that is being backed out is passed to the backed out message. Possible values are:

NONE	No context information is passed.
IDENTITY	Identity context information is passed only.
ALL	All context information is passed.

If omitted, *ContextOption* is specified as ALL.

Return codes

Return code	Description
0	Successful operation
36	Invalid arguments supplied
40	Queue manager not available
49	Queue manager stopping
58	Inconsistent use of installations detected
71	Unexpected error
72	Queue manager name error
133	Unknown object name error

runmqlsr

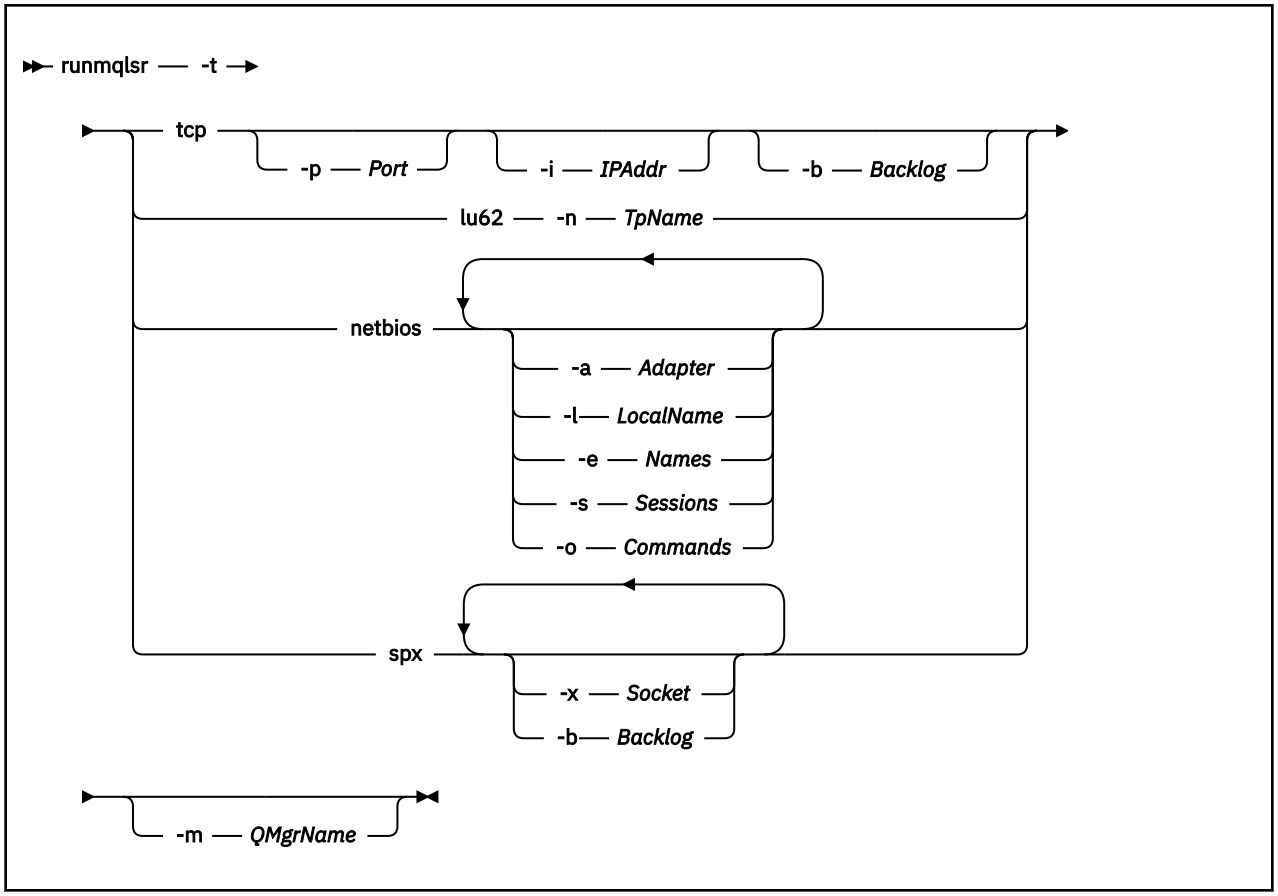
Run a listener process to listen for remote requests on various communication protocols.

Purpose

Use the `runmqlsr` command to start a listener process.

This command is run synchronously and waits until the listener process has finished before returning to the caller.

Syntax



Required parameters

-t
The transmission protocol to be used:

`tcp`	Transmission Control Protocol / Internet Protocol (TCP/IP)
`lu62`	SNA LU 6.2 (Windows only)
`netbios`	NetBIOS (Windows only)
`spx`	SPX (Windows only)

Optional parameters

-p *Port*
The port number for TCP/IP. This flag is valid for TCP only. If you omit the port number, it is taken from the queue manager configuration information, or from defaults in the program. The default value is 1414. It must not exceed 65535.

-i *IPAddr*
The IP address for the listener, specified in one of the following formats:

- IPv4 dotted decimal
- IPv6 hexadecimal notation
- Alphanumeric format

This flag is valid for TCP/IP only.

On systems that are both IPv4 and IPv6 capable you can split the traffic by running two separate listeners. One listening on all IPv4 addresses and one listening on all IPv6 addresses. If you omit this parameter, the listener listens on all configured IPv4 and IPv6 addresses.

-n ***TpName***
The LU 6.2 transaction program name. This flag is valid only for the LU 6.2 transmission protocol. If you omit the name, it is taken from the queue manager configuration information.

-a ***Adapter***
The adapter number on which NetBIOS listens. By default the listener uses adapter 0.

-l ***LocalName***
The NetBIOS local name that the listener uses. The default is specified in the queue manager configuration information.

-e ***Names***
The number of names that the listener can use. The default value is specified in the queue manager configuration information.

-s ***Sessions***
The number of sessions that the listener can use. The default value is specified in the queue manager configuration information.

-o ***Commands***
The number of commands that the listener can use. The default value is specified in the queue manager configuration information.

-x ***Socket***
The SPX socket on which SPX listens. The default value is hexadecimal 5E86.

-m ***QMgrName***
The name of the queue manager. By default the command operates on the default queue manager.

-b ***Backlog***
The number of concurrent connection requests that the listener supports. See TCP, LU62, NETBIOS, and SPX for a list of default values and further information.

Return codes

Return code	Description
0	Command completed normally
4	Command completed after being ended by the **endmqlsr** command
10	Command completed with unexpected results
20	An error occurred during processing: the AMQMSRVN process did not start.

Examples

The following command runs a listener on the default queue manager using the NetBIOS protocol. The listener can use a maximum of five names, five commands, and five sessions. These resources must be within the limits set in the queue manager configuration information.

```
runmqlsr -t netbios -e 5 -s 5 -o 5
```

runmqras

Use the **runmqras** command to gather IBM WebSphere MQ troubleshooting information (MustGather data) together into a single archive, for example to submit to IBM Support.

Purpose

The **runmqras** command is used to gather troubleshooting information from a machine into a single archive. You can use this command to gather information about an application or IBM WebSphere MQ failure, possibly for submitting to IBM when you report a problem.

By default, **runmqras** gathers information such as:

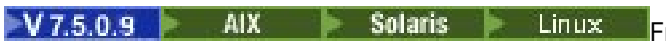
- IBM WebSphere MQ FDC files
- Error logs (from all queue managers as well as the machine-wide IBM WebSphere MQ error logs)
- Product versioning, status information, and output from various other operating system commands.

  Note, for example, the **runmqras** command does not gather user information that is contained in messages on queues.

Running without requesting more sections is intended as a starting point for general problem diagnosis, however, you can request more *sections* through the command line.

These additional *sections* gather more detailed information, depending on the type of problem being diagnosed. If non-default sections are needed by IBM support personnel, they will tell you.

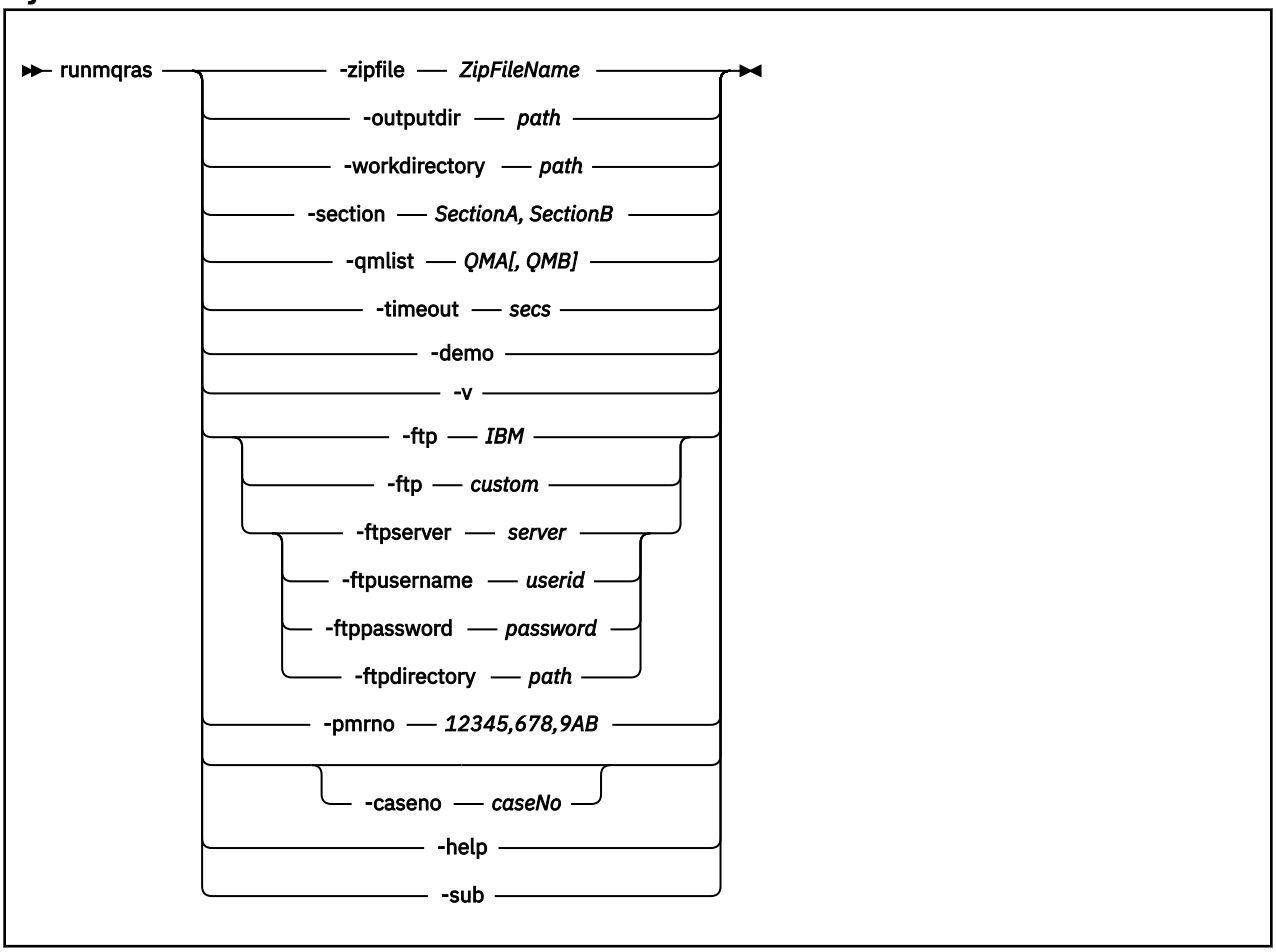
The **runmqras** command can be run under any user ID, but the command only gathers information that the user ID can gather manually. In general, when debugging IBM WebSphere MQ problems, run the command under the `mqm` user ID to allow the command to gather queue manager files and command outputs.



From IBM WebSphere MQ Version 7.5.0, Fix Pack 9, the **runmqras** command, by default, retrieves the environment variable information. This applies to Linux, Solaris, and AIX.

From IBM WebSphere MQ Version 7.5.0, Fix Pack 9, the **runmqras** command retrieves a listing of the queue manager's data directory by default. This applies to distributed platforms.

Syntax



Keywords and parameters

All parameters are required unless the description states they are optional.

In every case, *QMgrName* is the name of the queue manager to which the command applies.

-zipfile *ZipFileName*
Supply the file name of the resulting archive.

By default, the name of the output archive is `runmqras.zip`.

-outputdir *path*
The directory in which the resulting output file is placed.

By default, the output directory is the same as the work directory.

-workdirectory *path*
The directory that is used for storing the output from commands that are run during the processing of the tool. If supplied, this directory must either not exist, in which case it is created, or must be empty.

If you do not supply the path, a directory under `/tmp` is used on UNIX systems, and under `%temp%` is used on Windows, whose name starts with **runmqras** and is suffixed by the date and time.

-section *SectionA, SectionB*
The optional sections about which to gather more specific information.

By default, a generic section of documentation is collected, whereas more specific information can be gathered for a specified problem type; for example, a section name of *trace* gathers all of the contents of the trace directory.

The default collections can be avoided by supplying a section name of *nodefault*.

IBM support generally supplies you with the sections to use. Example available sections are:

all
Gathers all possible information, including all trace files, and diagnostics for many different types of problems. You must use this option only in certain circumstances and this option is not intended for general use.

default
IBM WebSphere MQ logs, FDC files, basic configuration, and status.

Note: Always gathered unless you use the section name **nodefault**.

nodefault
Prevents the default collections from occurring, but other explicitly requested sections are still collected.

trace
Gathers all the trace file information plus the default information.

Note: Does not enable tracing.

defs
Gathers the queue manager definitions and status information.

cluster
Gathers cluster configuration and queue information.

V 7.5.0.1 From IBM WebSphere MQ Version 7.5.0, Fix Pack 1 you can also specify the following sections:

dap
Gathers transaction and persistence information.

kernel
Gathers queue manager kernel information.

logger
Gathers recovery logging information.

topic
Gathers topic tree information.

V 7.5.0.2 From IBM WebSphere MQ Version 7.5.0, Fix Pack 2 you can specify the following section:

QMGR
Gathers all queue manager files: queues, logs, and configuration files.

V 7.5.0.9 From IBM WebSphere MQ Version 7.5.0, Fix Pack 9, you can specify the following sections

leak
Gathers IBM WebSphere MQ process resource usage information.

This section applies to Linux, HP-UX, Solaris, and AIX.

mft
Captures the data obtained by the **fteRas** command.

Note: -section mft only collects information for the default coordination queue manager topology.

For more information, see Section names and descriptions, in the IBM WebSphere MQ technote on using the IBM WebSphere MQ **runmqras** command to collect data.

-qmlist *QMA[,QMB]*
A list of queue manager names on which the **runmqras** command is to be run.

This parameter does not apply to a client product because there are no queue managers from which to request direct output.

By supplying a comma-separated list, you can restrict the iteration across queue managers to a specific list of queue managers. By default, iteration of commands is across all queue managers.

-timeout ***secs***
The default timeout to give an individual command before the command stops waiting for completion.

By default, a timeout of 10 seconds is used. A value of zero means wait indefinitely.

-demo
Run in demonstration mode where no commands are processed, and no files gathered.

By running in demonstration mode, you can see exactly which commands would have been processed, and what files would have been gathered. The output `.zip` file contains a `console.log` file that documents exactly what would have been processed and gathered, should the command be run normally.

-v
Extends the amount of information that is logged in the `console.log` file, contained in the output `.zip` file.

-ftp ***ibm/custom***
Allows the collected archive to be sent through basic FTP to a remote destination.

At the end of processing, the resultant archive can be sent through basic FTP, either directly into IBM, or to a site of your choosing. If you select the *ibm* option, anonymous FTP is used to deliver the archive into the IBM ECuRep server. This process is identical to submitting the file manually using FTP.

Note if you select the *ibm* option, you must also provide the *pmrno* option, and all other FTP* options are ignored.

-ftpserver ***server***
An FTP server name to connect to, when an FTP custom option is used.

-ftpusername ***userid***
The user ID to log in to the FTP server with, when an FTP custom option is used.

-ftppassword ***password***
The password to log in to the FTP server with, when an FTP custom option is used.

-ftpdirectory ***path***
The directory on the FTP server to place the resulting `.zip` file into, used when an FTP custom option is used.

-pmrno ***12345,678,9AB***
A valid IBM PMR number (problem record number) against which to associate the documentation.

Use this option to ensure that the output is prefixed with your PMR Number, so that when the information is sent into IBM, the information is automatically associated with that problem record.

V 7.5.0.9 **-caseno** ***caseNo***
A valid Salesforce case number.

Use this option to ensure that the output is prefixed with your case number, so that when the information is sent into IBM, the information is automatically associated with that case number.

Note: `-caseno` is equivalent to **`-pmrno`** and both are optional parameters, but it is not permitted to supply both together.

-help
Provide simple help.

-sub
Shows the keywords that will be substituted in the xml.

Examples

This command gathers the default documentation from the IBM WebSphere MQ installation, and all queue managers on a machine:

```
runmqras
```

This command gathers the default documentation from the IBM WebSphere MQ installation on a machine, and sends it directly into IBM to be associated with PMR number 11111,222,333 using the basic FTP capability:

```
runmqras -ftp ibm -pmrno 11111,222,333
```

This command gathers the default documentation from a machine, plus all trace files, the queue manager definitions, and status for all queue managers on the machine:

```
runmqras -section trace,defs
```

Return codes

A non zero return code indicates failure.

runmqsc

Run WebSphere MQ commands on a queue manager.

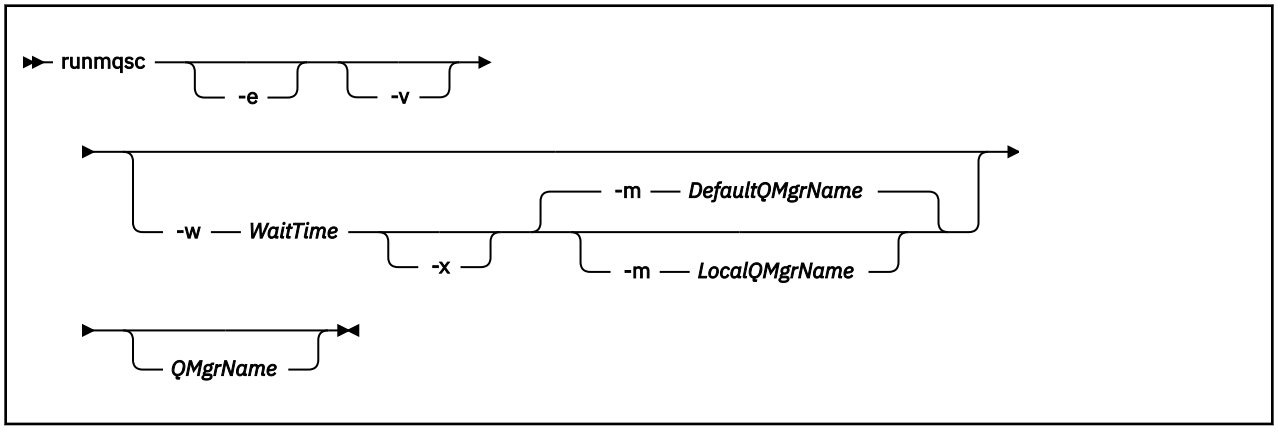
Purpose

Use the **runmqsc** command to issue MQSC commands to a queue manager. MQSC commands enable you to perform administration tasks, for example defining, altering, or deleting a local queue object. MQSC commands and their syntax are described in the MQSC reference.

You must use the **runmqsc** command from the installation associated with the queue manager that you are working with. You can find out which installation a queue manager is associated with using the `dspmq -o installation` command.

To end using the **runmqsc** command, use the **end** command. You can also use the **exit** or the **quit** command to stop**runmqsc**.

Syntax



Description

You can start the `runmqsc` command in three ways:

Verify command
Verify MQSC commands but do not run them. An output report is generated indicating the success or failure of each command. This mode is available on a local queue manager only.

Run command directly
Send MQSC commands directly to a local queue manager.

Run command indirectly
Run MQSC commands on a remote queue manager. These commands are put on the command queue on a remote queue manager and run in the order in which they were queued. Reports from the commands are returned to the local queue manager.

The `runmqsc` command takes its input from `stdin`. When the commands are processed, the results and a summary are put into a report that is sent to `stdout`.

By taking `stdin` from the keyboard, you can enter MQSC commands interactively.

By redirecting the input from a file, you can run a sequence of frequently used commands contained in the file. You can also redirect the output report to a file.

Optional parameters

-e
Prevents source text for the MQSC commands from being copied into a report. This parameter is useful when you enter commands interactively.

-m *LocalQMgrName*
The local queue manager that you want to use to submit commands to the remote queue manager. If you omit this parameter the local default queue manager is used to submit commands to the remote queue manager.

-v
Verifies the specified commands without performing the actions. This mode is only available locally. The -w and -x flags are ignored if they are specified at the same time.

Important: The **-v** flag checks the syntax of the command only. Setting the flag does not check if any objects mentioned in the command actually exist.

For example, if the queue `Q1` does not exist in the queue manager, the following command is syntactically correct and does not generate any syntax errors: `runmqsc -v Qmgr display ql(Q1)`.

However, if you omit the **-v** flag, you receive error message AMQ8147.

-w *WaitTime*
Run the MQSC commands on another queue manager. You must have the required channel and transmission queues set up for this. See Preparing channels and transmission queues for remote administration for more information.

WaitTime
The time, in seconds, that `runmqsc` waits for replies. Any replies received after this are discarded, but the MQSC commands still run. Specify a time in the range 1 through 999 999 seconds.

Each command is sent as an Escape PCF to the command queue (SYSTEM.ADMIN.COMMAND.QUEUE) of the target queue manager.

The replies are received on queue SYSTEM.MQSC.REPLY.QUEUE and the outcome is added to the report. This can be defined as either a local queue or a model queue.

This flag is ignored if the -v flag is specified.

-x
The target queue manager is running under z/OS. This flag applies only in indirect mode. The -w flag must also be specified. In indirect mode, the MQSC commands are written in a form suitable for the WebSphere MQ for z/OS command queue.

QMgrName
The name of the target queue manager on which to run the MQSC commands, by default, the default queue manager.

Return codes

Return code	Description
00	MQSC command file processed successfully
10	MQSC command file processed with errors; report contains reasons for failing commands
20	Error; MQSC command file not run

Examples

1. Enter this command at the command prompt:

```
runmqsc
```

   Now you can enter MQSC commands directly at the command prompt. No queue manager name is specified, so the MQSC commands are processed on the default queue manager.
2. Use one of these commands, as appropriate in your environment, to specify that MQSC commands are to be verified only:

```
runmqsc -v BANK < "/u/users/commfile.in"

runmqsc -v BANK < "c:\users\commfile.in"
```

   This command verifies the MQSC commands in file `commfile.in`. The queue manager name is BANK. The output is displayed in the current window.
3. These commands run the MQSC command file `mqscfile.in` against the default queue manager.

```
runmqsc < "/var/mqm/mqsc/mqscfile.in" > "/var/mqm/mqsc/mqscfile.out"

runmqsc < "c:\Program Files\IBM\WebSphere MQ\mqsc\mqscfile.in" >
    "c:\Program Files\IBM\WebSphere MQ\mqsc\mqscfile.out"
```

   In this example, the output is directed to file `mqscfile.out`.
4. This command submits commands to the QMREMOTE queue manager, using QMLOCAL to submit the commands.

```
runmqsc -w 30 -m QMLOCAL QMREMOTE
```

runmqtmc

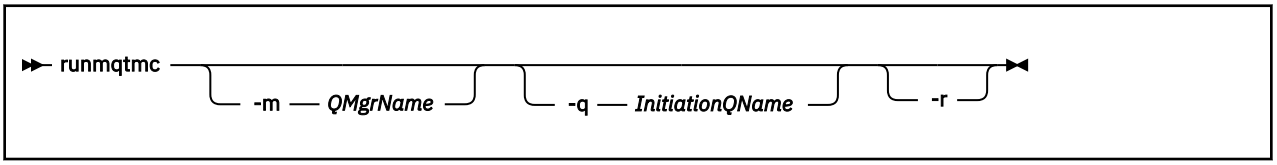
Start the trigger monitor on a client.

Purpose

Use the `runmqtmc` command to start a trigger monitor for a client. For further information about using trigger monitors, see Trigger monitors.

When a trigger monitor starts, it continuously monitors the specified initiation queue. The trigger monitor does not stop until the queue manager ends, see “endmqm” on page 72. While the client trigger monitor is running it keeps the dead letter queue open.

Syntax



Optional parameters

-m *QMgrName*
The name of the queue manager on which the client trigger monitor operates, by default the default queue manager.

-q *InitiationQName*
The name of the initiation queue to be processed, by default SYSTEM.DEFAULT.INITIATION.QUEUE.

-r
Specifies that the client trigger monitor automatically reconnects.

Return codes

Return code	Description
0	Not used. The client trigger monitor is designed to run continuously and therefore not to end. The value is reserved.
10	Client trigger monitor interrupted by an error.
20	Error; client trigger monitor not run.

Examples

For examples of using this command, see The Triggering sample programs.

runmqtrm

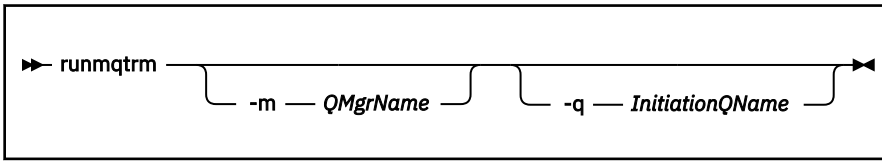
Start the trigger monitor on a server.

Purpose

Use the `runmqtrm` command to start a trigger monitor. For further information about using trigger monitors, see Trigger monitors .

When a trigger monitor starts, it continuously monitors the specified initiation queue. The trigger monitor does not stop until the queue manager ends, see “endmqm” on page 72. While the trigger monitor is running it keeps the dead letter queue open.

Syntax



Optional parameters

-m ***QMgrName***
The name of the queue manager on which the trigger monitor operates, by default the default queue manager.

-q ***InitiationQName***
Specifies the name of the initiation queue to be processed, by default SYSTEM.DEFAULT.INITIATION.QUEUE.

Return codes

Return code	Description
0	Not used. The trigger monitor is designed to run continuously and therefore not to end. Hence a value of 0 would not be seen. The value is reserved.
10	Trigger monitor interrupted by an error.
20	Error; trigger monitor not run.

runswchl

runswchl (switch cluster channel) on UNIX, Linux, and Windows.

Purpose

The command switches or queries the cluster transmission queues associated with cluster-sender channels.

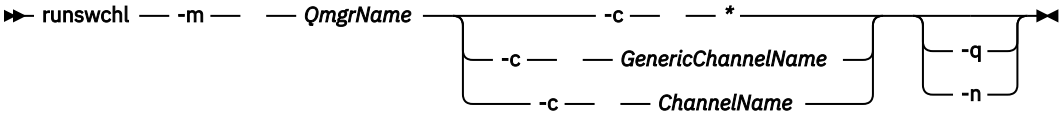
Usage notes

You must log on as an Administrator to run this command.

The command switches all the stopped or inactive cluster-sender channels that match the -c parameter, require switching, and can be switched. The command reports back on the channels that are switched, the channels that do not require switching, and the channels it cannot switch because they are not stopped or inactive.

If you set the -q parameter, the command does not perform the switch, but it provides the list of channels that would be switched.

Syntax



Required parameters

-m ***QmgrName***
The queue manager to run the command against. The queue manager must be started.

-c *******
All the cluster-sender channels

-c ***GenericChannelName***
All matching cluster-sender channels

-c ***ChannelName***
Single cluster-sender channel.

Optional parameters

-q
Display the state of one or more channels. If you omit this parameter, the commands switches any stopped or inactive channels that require switching.

-n
When switching transmission queues, do not transfer messages from the old queue to the new transmission queue.

Note: Take care with the `-n` option: messages on the old transmission queue are not transferred unless you associate the transmission queue with another cluster-sender channel.

Return codes

0
The command completed successfully

10
The command completed with warnings.

20
The command completed with errors.

Examples

To display the configuration state of cluster-sender channel `TO.QM2`:

```
RUNSWCHL -m QM1 -c TO.QM2 -q
```

To switch the transmission queue for cluster-sender channel `TO.QM3` without moving the messages on it:

```
RUNSWCHL -m QM1 -c TO.QM3 -n
```

To switch the transmission queue for cluster-sender channel `TO.QM3` and move the messages on it:

```
RUNSWCHL -m QM1 -c TO.QM3
```

To display the configuration state of all cluster-sender channels on `QM1`:

```
RUNSWCHL -m QM1 -c * -q
```

To display the configuration state of all cluster-sender channels with a generic name of `TO.*`:

```
RUNSWCHL -m QM1 -c TO.* -q
```

Related tasks

Clustering: Switching cluster transmission queues

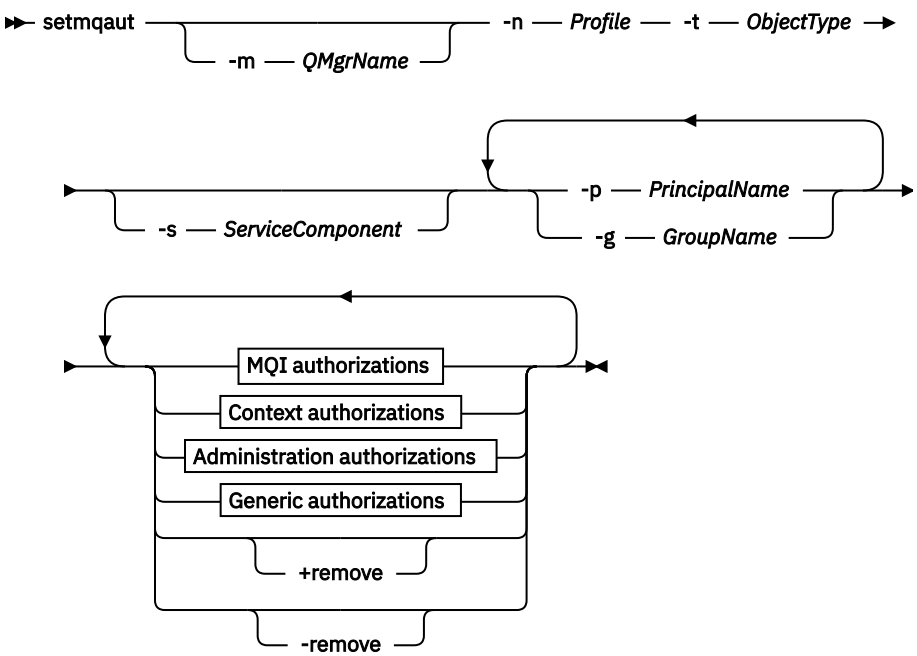
setmqaut

Change the authorizations to a profile, object, or class of objects. Authorizations can be granted to, or revoked from, any number of principals or groups.

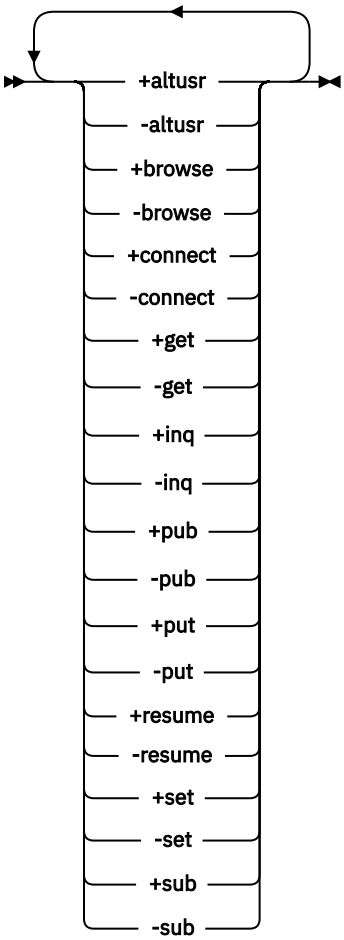
For more information about authorization service components, see Installable services, Service components, and Authorization service interface.

For more information about how authorizations work, see How authorizations work.

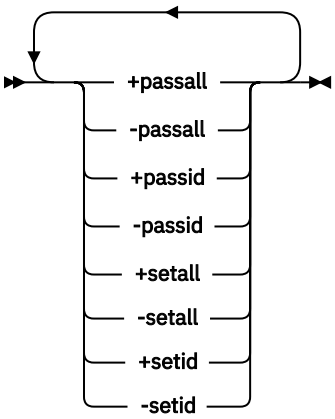
Syntax



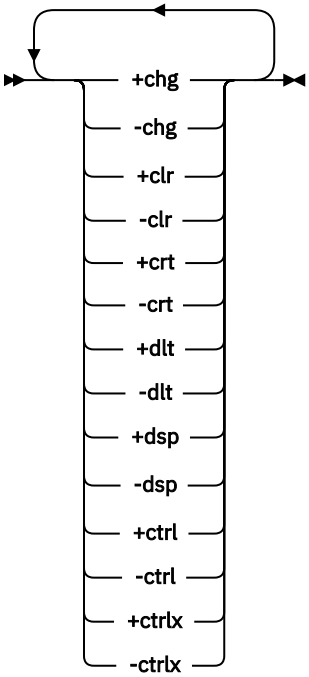
MQI authorizations



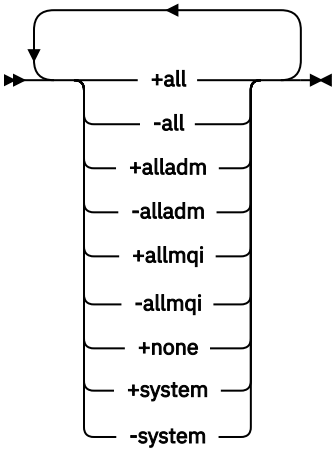
Context authorizations



Administration authorizations



Generic authorizations



Description

Use **setmqaut** both to *grant* an authorization, that is, give a principal or user group permission to perform an operation, and to *revoke* an authorization, that is, remove the permission to perform an operation. You can specify a number of parameters:

- Queue manager name
- Principals and user groups
- Object type
- Profile name
- Service component

The authorizations that can be given are categorized as follows:

- Authorizations for issuing MQI calls
- Authorizations for MQI context
- Authorizations for issuing commands for administration tasks
- Generic authorizations

Each authorization to be changed is specified in an authorization list as part of the command. Each item in the list is a string prefixed by a plus sign (+) or a minus sign (-). For example, if you include +put in the authorization list, you grant authority to issue MQPUT calls against a queue. Alternatively, if you include -put in the authorization list, you revoke the authority to issue MQPUT calls.

You can specify any number of principals, user groups, and authorizations in a single command, but you must specify at least one principal or user group.

If a principal is a member of more than one user group, the principal effectively has the combined authorities of all those user groups. On Windows systems, the principal also has all the authorities that have been granted to it explicitly using the **setmqaut** command.

On UNIX systems, all authorities are held by user groups internally, not by principals. Granting authorities to groups has the following implications:

- If you use the **setmqaut** command to grant an authority to a principal, the authority is granted to the primary user group of the principal. This means that the authority is effectively granted to all members of that user group.
- If you use the **setmqaut** command to revoke an authority from a principal, the authority is revoked from the primary user group of the principal. This means that the authority is effectively revoked from all members of that user group.

To alter authorizations for a cluster sender channel that has been automatically generated by a repository, see Channel definition commands.

Required parameters

-t *ObjectType*
The type of object for which to change authorizations.

Possible values are as follows:

authinfo	An authentication information object
channel or **chl**	A channel
clntconn or **clcn**	A client connection channel
comminfo	A communication information object
listener or **lstr**	A listener
namelist or **nl**	A namelist
process or **prcs**	A process

queue or **q**	A queue
qmgr	A queue manager
rqmname or **rqmn**	A remote queue manager name
service or **srvc**	A service
topic or **top**	A topic

-n *Profile*
The name of the profile for which to change authorizations. The authorizations apply to all IBM WebSphere MQ objects with names that match the profile name specified. The profile name can be generic, using wildcard characters to specify a range of names as explained in Using OAM generic profiles on UNIX or Linux systems and Windows.

This parameter is required, unless you are changing the authorizations of a queue manager, in which case you must *not* include it. To change the authorizations of a queue manager use the queue manager name, for example

```
setmqaut -m QMGR -t qmgr -p user1 +connect
```

where *QMGR* is the name of the queue manager and *user1* is the user requesting the change.

Each class of object has authority records for each group or principal. These records have the profile name `@CLASS` and track the `crt` (create) authority common to all objects of that class. If the `crt` authority for any object of that class is changed then this record is updated. For example:

```
profile:     @class
object type: queue
entity:      test
entity type: principal
authority:   crt
```

This shows that members of the group `test` have `crt` authority to the class `queue`.

Optional parameters

-m *QMgrName*
The name of the queue manager of the object for which to change authorizations. The name can contain up to 48 characters.

This parameter is optional if you are changing the authorizations of your default queue manager.

-p *PrincipalName*
The name of the principal for which to change authorizations.

For IBM WebSphere MQ for Windows only, the name of the principal can optionally include a domain name, specified in the following format:

```
userid@domain
```

For more information about including domain names on the name of a principal, see Principals and groups .

You must have at least one principal or group.

-g *GroupName*
The name of the user group for which to change authorizations. You can specify more than one group name, but each name must be prefixed by the -g flag.

For IBM WebSphere MQ for Windows only, the group name can optionally include a domain name, specified in the following formats:

```
GroupName@domain
domain\GroupName
```

The IBM WebSphere MQ Object Authority Manager validates the users and groups at the domain level, only if you set the **GroupModel** attribute to *GlobalGroups* in the Security stanza of the queue manager.

-s *ServiceComponent*
The name of the authorization service to which the authorizations apply (if your system supports installable authorization services). This parameter is optional; if you omit it, the authorization update is made to the first installable component for the service.

+remove or -remove
Remove all the authorities from WebSphere MQ objects that match the specified profile.

Authorizations
The authorizations to be granted or revoked. Each item in the list is prefixed by a plus sign (+) or a minus sign (-). The plus sign indicates that authority is to be granted. The minus sign indicates that authority is to be revoked.

For example, to grant authority to issue MQPUT calls, specify +put in the list. To revoke the authority to issue MQPUT calls, specify -put.

Table 16 on page 114 shows the authorities that can be given to the different object types.

Table 16. Specifying authorities for different object types.

Cross-tabulation of object types versus authority. Each cell contains whether the authority can be given to the object type.

Authority	Queue	Process	Queuemanager	Remote queuemanager name	Namelist	Topic	Authinfo	Clntconn	Channel	Listener	Service	Comminfo
all[1]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
alladm[2]	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
allmqi[3]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
none	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
altusr	No	No	Yes	No	No	No	No	No	No	No	No	No
browse	Yes	No	No	No	No	No	No	No	No	No	No	No
chg	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
clr	Yes	No	No	No	No	Yes	No	No	No	No	No	No
connect	No	No	Yes	No	No	No	No	No	No	No	No	No
crt	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ctrl	No	No	No	No	No	Yes	No	No	Yes	Yes	Yes	No

Table 16. Specifying authorities for different object types.

Cross-tabulation of object types versus authority. Each cell contains whether the authority can be given to the object type.

(continued)

Authority	Queue	Process	Queuemanager	Remote queuemanager name	Namelist	Topic	Authinfo	Clntconn	Channel	Listener	Service	Comminfo
ctrlx	No	No	No	No	No	No	No	No	Yes	No	No	No
dlt	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
dsp	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
get	Yes	No	No	No	No	No	No	No	No	No	No	No
pub	No	No	No	No	No	Yes	No	No	No	No	No	No
put	Yes	No	No	Yes	No	No	No	No	No	No	No	No
inq	Yes	Yes	Yes	No	Yes	No	Yes	No	No	No	No	No
passall	Yes	No	No	No	No	No	No	No	No	No	No	No
passid	Yes	No	No	No	No	No	No	No	No	No	No	No
resume	No	No	No	No	No	Yes	No	No	No	No	No	No
set	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
setall	Yes	No	Yes	No	No	No	No	No	No	No	No	No
setid	Yes	No	Yes	No	No	Yes	No	No	No	No	No	No
sub	No	No	No	No	No	Yes	No	No	No	No	No	No
system	No	No	Yes	No	No	No	No	No	No	No	No	No

Note:

1. `all` authority is equivalent to the union of the authorities `alladm`, `allmqi`, and `system` appropriate to the object type.
2. `alladm` authority is equivalent to the union of the individual authorities `chg`, `clr`, `dlt`, `dsp`, `ctrl`, and `ctrlx` appropriate to the object type. `crt` authority is not included in the subset `alladm`.
3. `allmqi` authority is equivalent to the union of the individual authorities `altusr`, `browse`, `connect`, `get`, `inq`, `pub`, `put`, `resume`, `set`, and `sub` appropriate to the object type.

Description of specific authorities

You should not grant a user an authority (for example, `set` authority on a queue manager, or `system` authority) that allows the user to access IBM WebSphere MQ privileged options, unless the required authority is specifically documented, and required to run any WebSphere MQ command, or IBM WebSphere MQ API call.

For example, a user requires system authority to run the **setmqaut** command.

chg

A user needs chg authority to make any authorization changes on the queue manager. The authorization changes include:

- Changing the authorizations to a profile, object, or class of objects
- Creating and modifying channel authentication records, and so on

A user also needs chg authority to change or set the attributes of an IBM WebSphere MQ object, using PCF or MQSC commands.

crt

If you grant an entity +crt authority to the queue manager, then that entity also gains +crt authority for each object class.

However, when you remove +crt authority against the queue manager object that only removes the authority on the queue manager object class; crt authority for other objects classes are not removed.

Note that crt authority on the queue manager object has no functional use, and is available for backwards-compatibility purposes only.

dlt

Note that the dlt authority against the queue manager object has no functional use, and is available for backwards-compatibility purposes only.

set

A user needs set authority against the queue to change or set the attributes of a queue using the MQSET API call.

set authority on the queue manager is not required for any administrative purpose, or for any application connecting to the queue manager.

However, a user needs set authority against the queue manager to set privileged connection options.

Note that set authority on the process object has no functional use, and is available for backwards-compatibility purposes only.

Important: Privileged connection options are internal to the queue manager and are not available in IBM WebSphere MQ API calls used by IBM WebSphere MQ applications.

system

The **setmqaut** command makes a privileged IBM WebSphere MQ connection to the queue manager.

Any user who runs IBM WebSphere MQ commands that makes a privileged IBM WebSphere MQ connection needs system authority on the queue manager.

Return codes

Return code	Explanation
0	Successful operation
26	Queue manager running as a standby instance.
36	Invalid arguments supplied
40	Queue manager not available
49	Queue manager stopping
58	Inconsistent use of installations detected

Return code	Explanation
69	Storage not available
71	Unexpected error
72	Queue manager name error
133	Unknown object name
145	Unexpected object name
146	Object name missing
147	Object type missing
148	Invalid object type
149	Entity name missing
150	Authorization specification missing
151	Invalid authorization specification

Examples

1. This example shows a command that specifies that the object on which authorizations are being given is the queue orange.queue on queue manager saturn.queue.manager.

   ```
   setmqaut -m saturn.queue.manager -n orange.queue -t queue
            -g tango +inq +alladm
   ```

   The authorizations are given to a user group called tango, and the associated authorization list specifies that the user group can:

   - Issue MQINQ calls
   - Perform all administration operations on that object
2. In this example, the authorization list specifies that a user group called foxy:

   - Cannot issue any MQI calls to the specified queue
   - Can perform all administration operations on the specified queue

   ```
   setmqaut -m saturn.queue.manager -n orange.queue -t queue
            -g foxy -allmqi +alladm
   ```
3. This example gives user1 full access to all queues with names beginning a.b. on queue manager qmgr1. The profile applies to any object with a name that matches the profile.

   ```
   setmqaut -m qmgr1 -n a.b.* -t q -p user1 +all
   ```
4. This example deletes the specified profile.

   ```
   setmqaut -m qmgr1 -n a.b.* -t q -p user1 -remove
   ```
5. This example creates a profile with no authority.

   ```
   setmqaut -m qmgr1 -n a.b.* -t q -p user1 +none
   ```

Related concepts
Principals and groups
Related reference
“SET AUTHREC” on page 658

Use the MQSC command SET AUTHREC to set authority records associated with a profile name.

Authorizations for MQI calls

altusr	Use another user's authority for the queue manager. Also required for channel operations where the asserting userid is different from the one associated with the connection handle. (For example, an assigned dedicated profile on the receiver MCA end, or when processing a RESET CHL SEQNUM() request from remote systems.) If you are using WebSphere MQ prior to version 7.0.1.4, you must set +altusr for the group containing the user ID specified in MCAUSER on a receiver channel. This action prevents error message AMQ2035 appearing if you reset the sequence number of the corresponding sender channel.
browse	Retrieve a message from a queue using an MQGET call with the BROWSE option.
connect	Connect the application to the specified queue manager using an MQCONN call.
get	Retrieve a message from a queue using an MQGET call.
inq	Make an inquiry on a specific queue using an MQINQ call.
pub	Publish a message on a topic using the MQPUT call.
put	Put a message on a specific queue using an MQPUT call.
resume	Resume a subscription using the MQSUB call.
set	Set attributes on a queue from the MQI using an MQSET call.
sub	Create, alter or resume a subscription to a topic using the MQSUB call.

Note: If you open a queue for multiple options, you must be authorized for each option.

Authorizations for context

passall	Pass all context on the specified queue. All the context fields are copied from the original request.
passid	Pass identity context on the specified queue. The identity context is the same as that of the request.
setall	Set all context on the specified queue. This is used by special system utilities.
setid	Set identity context on the specified queue. This is used by special system utilities. In order to modify any of the message context options, you must have the appropriate authorizations to issue the call. For example, in order to use MQOO_SET_IDENTITY_CONTEXT or MQPMO_SET_IDENTITY_CONTEXT, you must have `+setid` permission.

Note: To use setid or setall authority authorizations must be granted on both the appropriate queue object and also on the queue manager object.

Authorizations for commands

chg	Change the attributes of the specified object.
clr	Clear the specified queue or a topic.
crt	Create objects of the specified type.
dlt	Delete the specified object. Note, that the dlt authority has no effect on a queue manager object.
dsp	Display the attributes of the specified object.

ctrl	For listeners and services, start and stop the specified channel, listener, or service. For channels, start, stop, and ping the specified channel. For topics, define, alter, or delete subscriptions.
ctrlx	Reset or resolve the specified channel.

Authorizations for generic operations

all	Use all operations applicable to the object. `all` authority is equivalent to the union of the authorities `alladm`, `allmqi`, and `system` appropriate to the object type.
alladm	Use all administration operations applicable to the object.
allmqi	Use all MQI calls applicable to the object.
none	No authority. Use this authorization to create profiles without authority. When an authority is given to an object or group that was previously showing "none", then the authorization changes to the authority just applied. However, when the "none" authorization is added to an object or group with an existing alternative authority, the authority does not change.
system	Use queue manager for internal system operations.

setmqcrl

Administer CRL (certificate revocation list) LDAP definitions in an Active Directory (Windows only).

Purpose

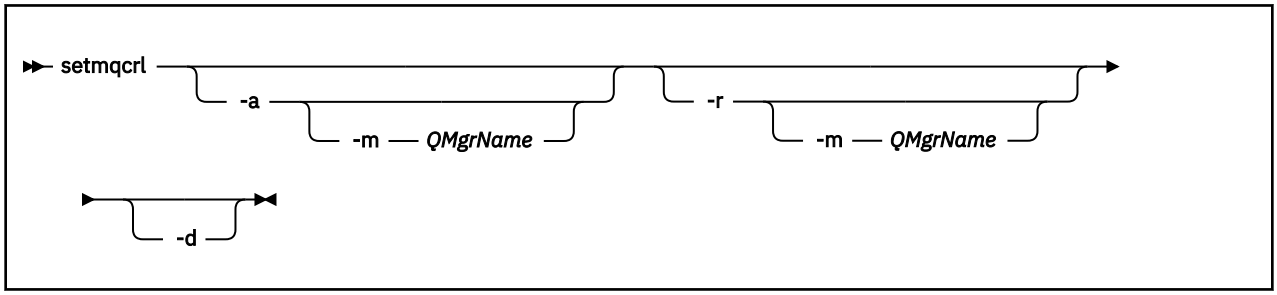
Note: The `setmqcrl` command applies to WebSphere MQ for Windows only.

Use the `setmqcrl` command to configure and administer support for publishing CRL (certificate revocation list) LDAP definitions in an Active Directory.

A domain administrator must use this command, or `setmqscp`, initially to prepare the Active Directory for WebSphere MQ usage and to grant WebSphere MQ users and administrators the relevant authorities to access and update the WebSphere MQ Active Directory objects. You can also use the `setmqcrl` command to display all the currently configured CRL server definitions available on the Active Directory, that is, those definitions referred to by the queue manager's CRL namelist.

The only types of CRL servers supported are LDAP servers.

Syntax



Optional parameters

You must specify one of `-a` (add), `-r` (remove) or `-d` (display).

-a
Adds the WebSphere MQ MQI client connections Active Directory container, if it does not already exist. You must be a user with the appropriate privileges to create subcontainers in the *System* container of your domain. The WebSphere MQ folder is called `CN=IBM-MQClientConnections`. Do not delete this folder in any other way than by using the `setmqscp` command.

-d
Displays the WebSphere MQ CRL server definitions.

-r
Removes the WebSphere MQ CRL server definitions.

-m [* | qmgr]
Modifies the specified parameter (`-a` or `-r`) so that only the specified queue manager is affected. You must include this option with the `-a` parameter.

*** | qmgr**
* specifies that all queue managers are affected. This enables you to migrate a specific WebSphere MQ CRL server definitions file from one queue manager alone.

Examples

The following command creates the IBM-MQClientConnections folder and allocates the required permissions to WebSphere MQ administrators for the folder, and to child objects created subsequently. (In this, it is functionally equivalent to `setmqscp -a`.)

```
setmqcrl -a
```

The following command migrates existing CRL server definitions from a local queue manager, Paint.queue.manager, to the Active Directory, **deleting any other CRL definitions from the Active Directory first**:

```
setmqcrl -a -m Paint.queue.manager
```

setmqenv

Use the **setmqenv** to set up the IBM WebSphere MQ environment, on UNIX, Linux, and Windows.

Purpose

You can use the **setmqenv** script to automatically set up the environment for use with an installation of IBM WebSphere MQ. Alternatively, you can use the **crtmqenv** command to create a list of environment variables and values to manually set each environment variable for your system; see “crtmqenv” on page 19 for more information.

Note: Any changes you make to the environment are not persistent. If you log out, and log in again, your changes are lost.

You can specify which installation the environment is set up for by specifying a queue manager name, an installation name, or an installation path. You can also set up the environment for the installation that issues the **setmqenv** command by issuing the command with the **-s** parameter.

The **setmqenv** command sets the following environment variables, appropriate to your system:

- CLASSPATH
- INCLUDE
- LIB
- MANPATH
- MQ_DATA_PATH

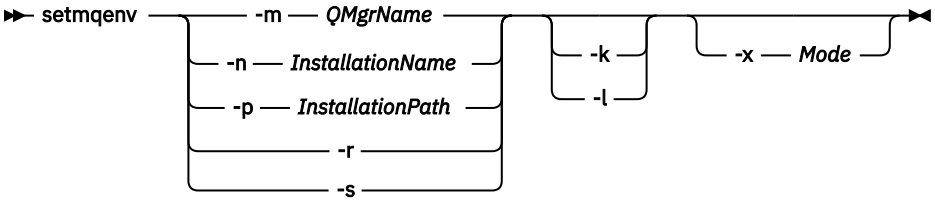
- MQ_ENV_MODE
- MQ_FILE_PATH
- MQ_JAVA_INSTALL_PATH
- MQ_JAVA_DATA_PATH
- MQ_JAVA_LIB_PATH
- MQ_JAVA_JVM_FLAG
- MQ_JRE_PATH
- PATH

On UNIX and Linux systems, if the **-l** or **-k** flag is specified, the *LIBPATH* environment variable is set on AIX, and the *LD_LIBRARY_PATH* environment variable is set on HP-UX, Linux, and Solaris.

Usage notes

- If you have installed IBM WebSphere MQ V 7.0.1, do not use the **setmqenv** command. Some of the components of IBM WebSphere MQ V 7.0.1, such as Explorer, reference the environment variables for their library paths and therefore will not work if the **setmqenv** command has been used to alter the environment variables to point to an IBM WebSphere MQ V 7.0.1 installation path.
- The **setmqenv** command removes all directories for all IBM WebSphere MQ installations from the environment variables before adding new references to the installation for which you are setting up the environment for. Therefore, if you want to set any additional environment variables that reference IBM WebSphere MQ, set the variables after issuing the **setmqenv** command. For example, if you want to add *MQ_INSTALLATION_PATH*`/java/lib` to *LD_LIBRARY_PATH*, you must do so after running the **setmqenv** command.
- In some shells, command-line parameters cannot be used with **setmqenv** and any **setmqenv** command issued is assumed to be a `setmqenv -s` command. The command produces an informational message that the command has been run as if a `setmqenv -s` command had been issued. Therefore, in these shells you must ensure that you issue the command from the installation for which you want to set the environment for. In these shells, you must set the *LD_LIBRARY_PATH* variable manually. Use the **crtmqenv** command with the **-l** or **-k** parameter to list the *LD_LIBRARY_PATH* variable and value. Then use this value to set the *LD_LIBRARY_PATH*.

Syntax



Optional Parameters

-m *QMgrName*
Set the environment for the installation associated with the queue manager *QMgrName*.

-n *InstallationName*
Set the environment for the installation named *InstallationName*.

-p *InstallationPath*
Set the environment for the installation in the path *InstallationPath*.

-r
Remove all installations from the environment.

-s
Set the environment for the installation that issued the **setmqenv** command.

-k
UNIX and Linux only.

Include the *LD_LIBRARY_PATH* or *LIBPATH* environment variable in the environment, adding the path to the IBM WebSphere MQ libraries at the start of the current *LD_LIBRARY_PATH* or *LIBPATH* variable.

-l
UNIX and Linux only.

Include the *LD_LIBRARY_PATH* or *LIBPATH* environment variable in the environment, adding the path to the IBM WebSphere MQ libraries at the end of the current *LD_LIBRARY_PATH* or *LIBPATH* variable.

-x *Mode*
Mode can take the value 32 or 64.

Create a 32-bit or 64-bit environment. If this parameter is not specified, the environment matches that of the queue manager or installation specified in the command.

Any attempt to display a 64-bit environment with a 32-bit installation fails.

Return codes

Return code	Description
0	Command completed normally.
10	Command completed with unexpected results.
20	An error occurred during processing.

Examples

The following examples assume that a copy of IBM WebSphere MQ is installed in the `/opt/mqm` directory on a UNIX or Linux system.

Note: The period character (`.`) character used at the beginning of each command makes the **setmqenv** script run in the current shell. Therefore, the environment changes made by the **setmqenv** script are applied to the current shell. Without the period character (`.`), the environment variables are changed in another shell, and the changes are not applied to the shell from which the command is issued.

- The following command sets up the environment for an installation installed in the `/opt/mqm` directory:

```
. /opt/mqm/bin/setmqenv -s
```

- The following command sets up the environment for an installation installed in the `/opt/mqm2` directory, and includes the path to the installation at the end of the current value of the *LD_LIBRARY_PATH* variable:

```
. /opt/mqm/bin/setmqenv -p /opt/mqm2 -l
```

- The following command sets up the environment for queue manager `QM1` in a 32-bit environment:

```
. /opt/mqm/bin/setmqenv -m QM1 -x 32
```

The following example assumes that a copy of IBM WebSphere MQ is installed in `C:\Program Files\IBM\WebSphere MQ` on a Windows system.

This command sets up the environment for an installation called `Installation1`:

```
"C:\Program Files\IBM\WebSphere MQ\bin\setmqenv.cmd" -n Installation1
```

Related reference

“crtmqenv” on page 19

Create a list of environment variables for an installation of IBM WebSphere MQ, on UNIX, Linux, and Windows.

Related information

Choosing a primary installation

Multiple installations

setmqinst

Set IBM WebSphere MQ installations, on UNIX, Linux, and Windows.

Purpose

You can use the **setmqinst** command to change the installation description of an installation, or to set or unset an installation as the primary installation. To change the primary installation, you must unset the current primary installation before you can set a new primary installation. This command updates information contained in the `mqinst.ini` file.

After unsetting the primary installation, the **setmqinst** command will not be available unless you specify the full path or have an appropriate installation directory on your PATH (or equivalent). The default path in a system standard location will have been deleted.

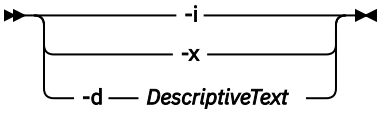
On UNIX platforms you should not assume that the current directory is in the path. If you are in `/opt/mqm/bin` and want to run, for example, `/opt/mqm/bin/dspmqver` you need to enter "**/opt/mqm/bin/dspmqver**" or "**./dspmqver**".

File `mqinst.ini` contains information about all IBM WebSphere MQ installations on a system. For more information about mqinst.ini, see Installation configuration file, mqinst.ini .

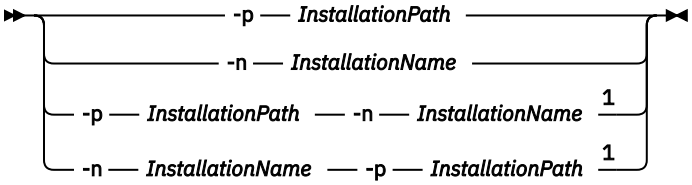
On UNIX or Linux systems, you must run this command as root. On Windows systems, you must run this command as a member of the Administrators group. The command does not have to be run from the installation you are modifying.

Syntax

Action



Installation



Notes:

[1] When specified together, the installation name and installation path must refer to the same installation.

Parameters

-d *DescriptiveText*

Text that describes the installation.

The text can be up to 64 single-byte characters, or 32 double-byte characters. The default value is all blanks. You must use double quotation marks around the text if it contains spaces.

-i
Set this installation as the primary installation.

-x
Unset this installation as the primary installation.

-n *InstallationName*
The name of the installation to modify.

-p *InstallationPath*
The path of the installation to modify. You must use double quotation marks around the path if it contains spaces

Return codes

Return code	Description
0	Entry set without error
36	Invalid arguments supplied
37	Descriptive text was in error
44	Entry does not exist
59	Invalid installation specified
71	Unexpected error
89	ini file error
96	Could not lock ini file
98	Insufficient authority to access ini file
131	Resource problem

Examples

1. This command sets the installation with the name of myInstallation as the primary installation:

```
setmqinst -i -n myInstallation
```

2. This command sets the installation with an installation path of `/opt/myInstallation` as the primary installation:

```
setmqinst -i -p /opt/myInstallation
```

3. This command unsets the installation named myInstallation as the primary installation:

```
setmqinst -x -n myInstallation
```

4. This command unsets the installation with an installation path of `/opt/myInstallation` as the primary installation:

```
setmqinst -x -p /opt/myInstallation
```

5. This command sets the descriptive text for the installation named myInstallation:

```
setmqinst -d "My installation" -n myInstallation
```

The descriptive text is enclosed in quotation marks as it contains spaces.

Related tasks

Choosing a primary installation

Changing the primary installation

setmqm

Set the associated installation of a queue manager.

Purpose

Use the **setmqm** command to set the associated IBM WebSphere MQ installation of a queue manager. The queue manager can then be administered using only the commands of the associated installation. For example, when a queue manager is started with **strmqm**, it must be the **strmqm** command of the installation that was specified by the **setmqm** command.

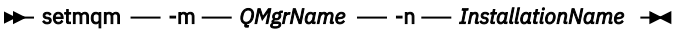
For more information about using this command, including information about when to use it, see Associating a queue manager with an installation.

This command is only applicable to UNIX, Linux and Windows.

Usage notes

- You must use the **setmqm** command from the installation you want to associate the queue manager with.
- The installation name specified by the **setmqm** command must match the installation from which the **setmqm** command is issued.
- You must stop the queue manager before executing the **setmqm** command. The command fails if the queue manager is still running.
- Once you have set the associated installation of a queue manager using the **setmqm** command, migration of the queue manager's data occurs when you start the queue manager using the **strmqm** command.
- Once you have started the queue manager on an installation, you cannot then use **setmqm** to set the associated installation to an earlier version of IBM WebSphere MQ, as it is not possible to migrate back to earlier versions of IBM WebSphere MQ.
- You can find out which installation is associated with a queue manager by using the **dspmq** command. See “dspmq” on page 42 for more information.

Syntax



Required Parameters

-m ***QMgrName***
The name of the queue manager to set the associated installation for.

-n ***InstallationName***
The name of the installation that the queue manager is to be associated with. The installation name is not case-sensitive.

Return codes

Return code	Description
0	Queue manager set to an installation without error
5	Queue manager running

Return code	Description
36	Invalid arguments supplied
59	Invalid installation specified
60	Command not executed from the installation named by the -n parameter
61	Invalid installation name for this queue manager
69	Resource problem
71	Unexpected error
72	Queue manager name error
119	User not authorized

Examples

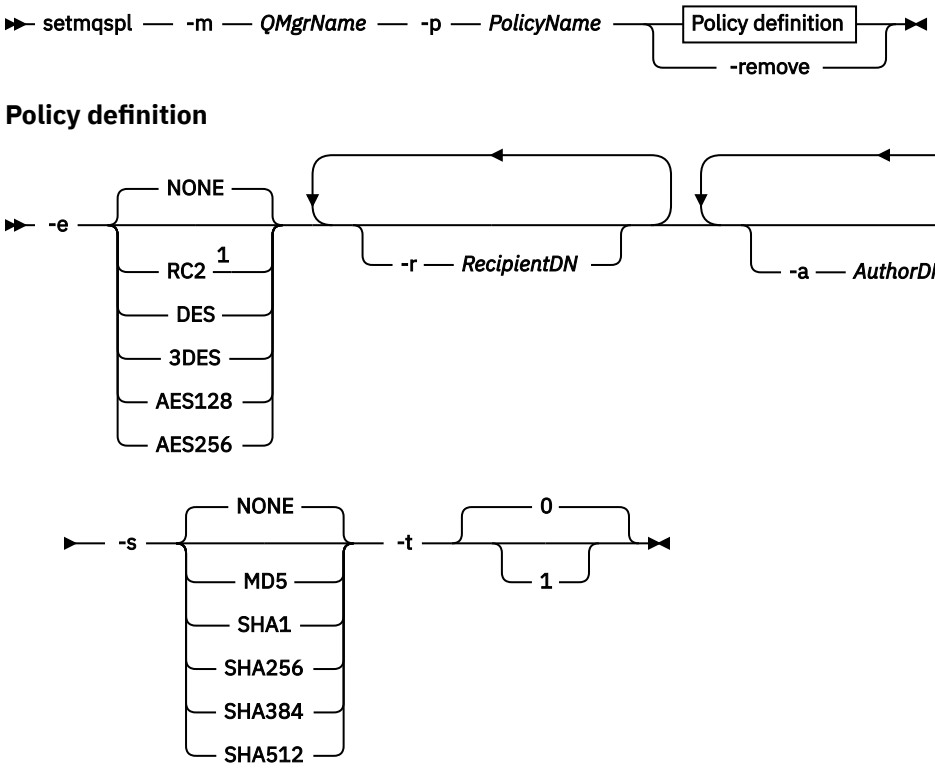
1. This command associates a queue manager QMGR1, with an installation with the installation name of myInstallation.

```
MQ_INSTALLATION_PATH/bin/setmqm -m QMGR1 -n myInstallation
```

setmqspl

Use the **setmqspl** command to define a new security policy, alter an already existing one, or remove an existing policy.

Syntax



Notes:

[1] If an encryption algorithm is selected, a recipient DN must also be provided.

[2] If an author DN is provided, a signing algorithm must also be selected.

Table 17. `setmqspl` command flags.

Command flag	Explanation
`-m`	Queue manager name. This flag is mandatory for all actions on security policies.
`-p`	Policy name. Set the policy name to the name of the queue you wish the policy to apply to.
`-s`	Digital signature algorithm. Advanced Message Security supports the following values: `MD5`, `SHA1`, `SHA256`, `SHA384`, and `SHA512`. All must be in uppercase. The default value is `NONE` **Important:** • For the SHA384 and SHA512 cryptographic hash functions, keys used for signing must be longer than 768 bits. • Encryption algorithms' name must be in uppercase
`-e`	Digital encryption algorithm. Advanced Message Security supports the following encryption algorithms: `RC2`, `DES`, `3DES`, `AES128`, `AES256`. The default value is `NONE`. **Important:** Encryption algorithms' name must be in uppercase
`-r`	The distinguished name (DN) of the message recipient (if provided, the certificate pertaining to the DN is used to encrypt a given message). Recipients can be specified, only if the encryption algorithm is different from `NONE`. Multiple recipients can be included for a message. Each DN must be provided with a separate **`-r`** flag. **Important:** • DN attribute names must be in uppercase. • Commas must be used as a name separators. • To avoid command interpreter errors, place quotation marks around the DNs. For example: `-r "CN=alice, O=ibm, C=US"`

Table 17. `setmqspl` command flags. (continued)	
Command flag	**Explanation**
`-a`	Signature DN that is validated during message retrieval. Only messages signed by a user with a DN provided are accepted during the retrieval. Signature DNs can be specified only if the signature algorithm is different from NONE. Multiple authors can be included. Each author needs to have a separate `-a` flag. **Important:** DN attribute name must be in uppercase.
`-t`	Toleration flag that indicates whether a policy that is associated with a queue can be ignored when an attempt to retrieve a message from the queue involves a message with no security policy set. Valid values include: • **0 (default)** Toleration flag off. • **1** Toleration flag on. Toleration is optional and facilitates staged roll-out, where policies were applied to queues but those queues may already contain messages that have no policy, or still receive messages from remote systems that do not have the security policy set.
`-remove`	Delete policy. If specified, only the `-p` flag remains valid.

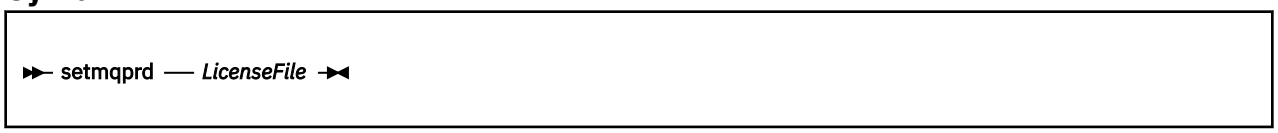
setmqprd

Enroll an IBM WebSphere MQ production license.

A license is normally enrolled as part of the installation process.

Note: You must have the appropriate privileges to run this command on your system. UNIX requires root access, and Windows with UAC (User Account Control) requires Administrator access to run this command.

Syntax



Required parameters

LicenseFile
Specifies the fully-qualified name of the production license certificate file.

The full license file is `amqpcert.lic`. On UNIX and Linux, it is in the */MediaRoot*`/licenses` directory on the installation media. On Windows it is in the *\MediaRoot*`\licenses` directory on the installation media. It is installed into the `bin` directory on the IBM WebSphere MQ installation path.

Trial license conversion

A trial license installation is identical to a production license installation, except for the "count-down" message that is displayed when you start a queue manager on an installation with a trial license. Parts of IBM WebSphere MQ that are not installed on the server, such as the IBM WebSphere MQ MQI client, continue to work after the expiry of the trial license. You do not need to run **setmqprd** to enroll them with a production license.

When a trial license expires, you can still uninstall IBM WebSphere MQ. You can also reinstall IBM WebSphere MQ with a full production license.

Run **setmqprd** to enroll a production license after installing and using a installation with a trial license.

Related tasks

Converting a trial license on UNIX, Linux, and Windows

setmqscp

Publish client connection channel definitions in an Active Directory (Windows only).

Purpose

Note: The `setmqscp` command applies to WebSphere MQ for Windows only.

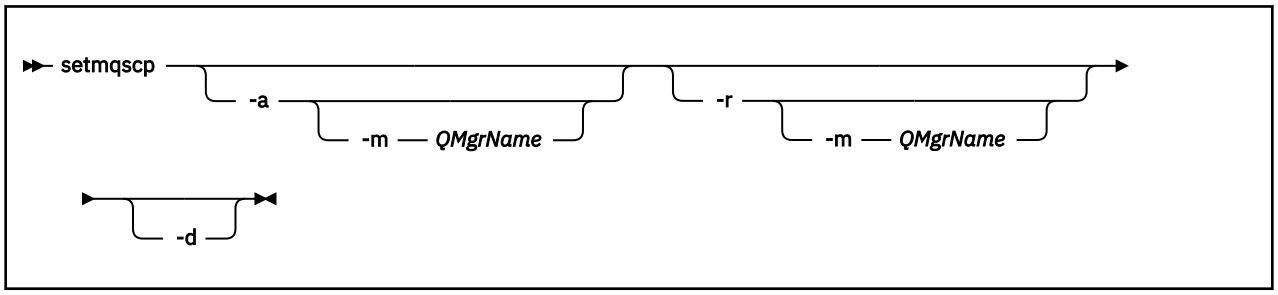
Use the `setmqscp` command to configure and administer support for publishing client connection channel definitions in an Active Directory.

Initially, this command is used by a domain administrator to:

- Prepare the Active Directory for WebSphere MQ use
- Grant WebSphere MQ users and administrators the relevant authorities to access and update the WebSphere MQ Active Directory objects

You can also use the `setmqscp` command to display all the currently configured client connection channel definitions available on the Active Directory.

Syntax



Optional parameters

You must specify one of -a (add), -r (remove) or -d (display).

-a
Adds the WebSphere MQ MQI client connections Active Directory container, if it does not already exist. You must be a user with the appropriate privileges to create subcontainers in the *System* container of your domain. The WebSphere MQ folder is called `CN=IBM-MQClientConnections`. Do not delete this folder in any other way than by using the `setmqscp -r` command.

-d
Displays the service connection points.

-r
Removes the service connection points. If you omit -m, and no client connection definitions exist in the IBM-MQClientConnections folder, the folder itself is removed from the Active Directory.

-m [* | qmgr]
Modifies the specified parameter (-a or -r) so that only the specified queue manager is affected.

*** | qmgr**
* specifies that all queue managers are affected. This enables you to migrate a specific client connection table file from one queue manager alone, if required.

Examples

The following command creates the IBM-MQClientConnections folder and allocates the required permissions to WebSphere MQ administrators for the folder, and to child objects created subsequently:

```
setmqscp -a
```

The following command migrates existing client connection definitions from a local queue manager, Paint.queue.manager, to the Active Directory:

```
setmqscp -a -m Paint.queue.manager
```

The following command migrates all client connection definitions on the local server to the Active Directory:

```
setmqscp -a -m *
```

strmqcfg

Start IBM WebSphere MQ Explorer (Windows, Linux x86, and Linux x86-64 platforms only).

Purpose

For IBM WebSphere MQ for Windows only, note that if you use `runas` to execute this command, you must define the Environment Variable *APPDATA* to set a path to a directory that the user you are running as has access. For example:

```
set APPDATA=C:\Users\user_name\AppData\Roaming
```

You can use the following command to identify the path that *APPDATA* is set to:

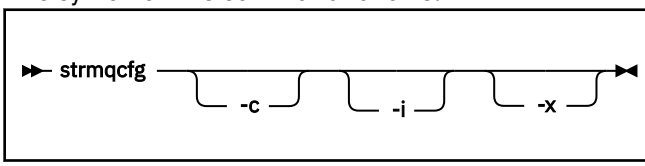
```
set APPDATA
```

On Linux, to start IBM WebSphere MQ Explorer successfully, you must be able to write a file to your home directory, and the home directory must exist.

Note: The preferred way to start IBM WebSphere MQ Explorer on Windows and Linux systems is by using the system menu, or the `MQExplorer` executable file.

Syntax

The syntax of this command follows:



Optional parameters

-c
`-clean` is passed to Eclipse. This parameter causes Eclipse to delete any cached data used by the Eclipse runtime.

-i
`-clean -initialize` is passed to Eclipse. This parameter causes Eclipse to delete any cached data as well as discard configuration information used by the Eclipse runtime. IBM WebSphere MQ Explorer starts briefly and then ends without displaying the user interface.

-x
Output debug messages to the console.

strmqcsv

Start the command server for a queue manager.

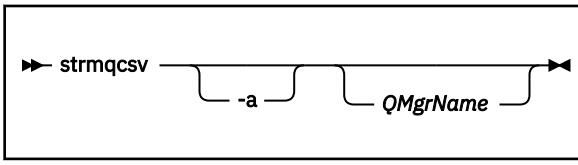
Purpose

Use the **strmqcsv** command to start the command server for the specified queue manager. This enables WebSphere MQ to process commands sent to the command queue.

You must use the **strmqcsv** command from the installation associated with the queue manager that you are working with. You can find out which installation a queue manager is associated with using the `dspmq -o installation` command.

If the queue manager attribute, SCMDSERV, is specified as QMGR then changing the state of the command server using **strmqcsv** does not effect how the queue manager acts upon the SCMDSERV attribute at the next restart.

Syntax



Required parameters

None

Optional parameters

-a
Blocks the following PCF commands from modifying or displaying authority information:

- Inquire authority records (MQCMD_INQUIRE_AUTH_RECS)
- Inquire entity authority (MQCMD_INQUIRE_ENTITY_AUTH)
- Set authority record (MQCMD_SET_AUTH_REC).
- Delete authority record (MQCMD_DELETE_AUTH_REC).

QMgrName
The name of the queue manager on which to start the command server. If omitted, the default queue manager is used.

Return codes

Return code	Description
0	Command completed normally
10	Command completed with unexpected results
20	An error occurred during processing

Examples

The following command starts a command server for queue manager earth:

```
strmqcsv earth
```

Related commands

Command	Description
endmqcsv	End a command server
dspmqcsv	Display the status of a command server

strmqsvc (Start IBM IBM WebSphere MQ service)

The **strmqsvc** command starts the IBM IBM WebSphere MQ service on Windows. Run the command on Windows only.

Purpose

The command starts the IBM IBM WebSphere MQ service on Windows.

Run the command to start the service, if it has not been started automatically, or if the service has ended.

Restart the service for IBM WebSphere MQ processes to pick up a new environment, including new security definitions.

Syntax

strmqsvc

Parameters

The **strmqsvc** command has no parameters.

You must set the path to the installation that contains the service. Either make the installation primary, run the **setmqenv** command, or run the command from the directory containing the **strmqsvc** binary file.

Related reference

“endmqsvc (end IBM WebSphere MQ service)” on page 76
The **endmqsvc** command ends the IBM IBM WebSphere MQ service on Windows. Run the command on Windows only.

strmqm

Start a queue manager or ready it for standby operation.

Purpose

Use the **strmqm** command to start a queue manager.

You must use the **strmqm** command from the installation associated with the queue manager that you are working with. You can find out which installation a queue manager is associated with using the `dspmq -o installation` command.

If a queue manager has no associated installation and there is no installation of IBM WebSphere MQ Version 7.0.1 on the system, the **strmqm** command will associate the queue manager with the installation that issued the **strmqm** command.

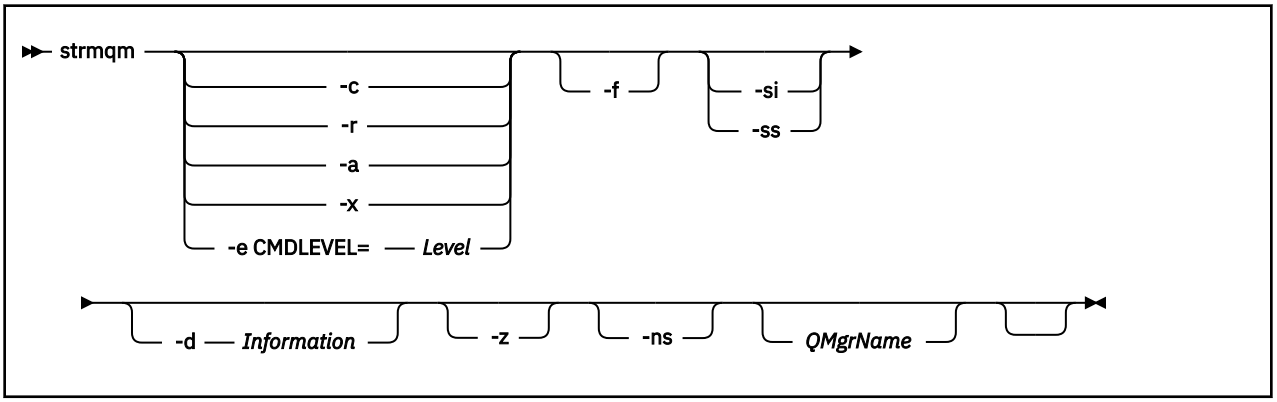
If the queue manager startup takes more than a few seconds IBM WebSphere MQ shows intermittent messages detailing the startup progress.

Usage notes

V 7.5.0.9

From IBM WebSphere MQ Version 7.5.0, Fix Pack 9, the **strmqm** command checks the syntax of the CHANNELS and SSL stanzas in the qm.ini file file early on, before starting the queue manager fully. If the `qm.ini` file contains any errors, this check makes it much easier to see what is wrong, and correct it quickly. If an error is found, **strmqm** outputs an AMQ9224 error message, describing the full details of the position of the error in the `qm.ini` file. It also ends immediately without starting the queue manager.

Syntax



Optional parameters

-a
Activate the specified backup queue manager. The backup queue manager is not started.

When activated, a backup queue manager can be started using the control command `strmqm` *QMgrName*. The requirement to activate a backup queue manager prevents accidental startup.

When activated, a backup queue manager can no longer be updated.

For more information about using backup queue managers, see Backing up and restoring IBM WebSphere MQ queue manager data.

-c

Starts the queue manager, redefines the default and system objects, then stops the queue manager. Any existing system and default objects belonging to the queue manager are replaced if you specify this flag, and any non-default system object values are reset (for example, the value of MCAUSER is set to blank).

Use the `crtmqm` command to create the default and system objects for a queue manager.

-d *Information*

Specifies whether information messages are displayed. Possible values for *Information* follow:

all	All information messages are displayed. This parameter is the default value.
minimal	The minimal number of information messages are displayed.
none	No information messages are displayed. This parameter is equivalent to `-z`.

The *-z* parameter takes precedence over this parameter.

-e CMDLEVEL=*Level*

Enables a command level for this queue manager, and then stops the queue manager.

The queue manager is now able to use all functions provided by the specified command level. You can start the queue manager only with an installation that supports the new command level.

This option is only valid if the current command level used by the queue manager is lower than the maximum command level supported by the installation. Specify a command level that is greater than the current command level of the queue manager and less than or equal to the maximum command level supported by the installation.

Use exactly the command level as a value for *Level* that is associated with the function you want to enable.

This flag cannot be specified with -a, -c, -r or -x.

-f

Use this option if you *know* a queue manager is not starting because its data directories are missing or corrupted.

The **strmqm** `-f` *qmname* command attempts to re-create the queue manager data directory and reset file permissions. If it is successful, the queue manager starts, unless the queue manager configuration information is missing. If the queue manager fails to start because the configuration information is missing, re-create the configuration information, and restart the queue manager.

Before IBM WebSphere MQ Version 7.0.1, **strmqm**, with no `-f` option, automatically repaired missing data directories and then tried to start. This behavior has changed.

From IBM WebSphere MQ Version 7.0.1 onwards, the default behavior of **strmqm**, with no `-f` option, is *not* to recover missing or corrupted data directories automatically, but to report an error, such as AMQ6235 or AMQ7001, and *not* start the queue manager.

You can think of the `-f` option as performing the recover actions that used to be performed automatically by **strmqm**.

The reason for the change to the behavior of **strmqm** is that with the support for networked file storage in IBM WebSphere MQ Version 7.0.1, the most likely cause of missing or corrupted queue

manager data directories is a configuration error that can be rectified, rather than the data directories are corrupted or irretrievably unavailable.

You must *not* use **strmqm** `-f` to re-create the queue manager data directories if you can restore the directories by correcting the configuration.

Possible solutions to problems with **strmqm** are to make the networked file storage location accessible to the queue manager, or to ensure the gid and uid of the mqm group and user ID on the server hosting the queue manager match the gid and uid of the mqm group and user ID on the server hosting the queue manager data directory.

From IBM WebSphere MQ Version 7.0.1, if you are performing media recovery for a queue manager, then you must use the `-f` option to re-create the queue manager data directory.

-ns

Prevents any of the following processes from starting automatically when the queue manager starts:

- The channel initiator
- The command server
- Listeners
- Services

-r

Updates the backup queue manager. The backup queue manager is not started.

WebSphere MQ updates the objects of the backup queue manager by reading the queue manager log and replaying updates to the object files.

For more information about using backup queue managers, see Backing up and restoring IBM WebSphere MQ queue manager data .

-si

Interactive (manual) queue manager startup type. This option is available on IBM WebSphere MQ for Windows only.

The queue manager runs under the logged on (interactive) user. Queue managers configured with interactive startup end when the user who started them logs off.

If you set this parameter, it overrides any startup type set previously by the **crtmqm** command, the **amqmdain** command, or the IBM WebSphere MQ Explorer.

If you do not specify a startup type of either `-si` or `-ss`, the queue manager startup type specified on the **crtmqm** command is used.

-ss

Service (manual) queue manager startup type. This option is available on IBM WebSphere MQ for Windows only.

The queue manager runs as a service. Queue managers configured with service startup continue to run even after the interactive user has logged off.

If you set this parameter, it overrides any startup type set previously by the **crtmqm** command, the **amqmdain** command, or the IBM WebSphere MQ Explorer.

-x

Start an instance of a multi-instance queue manager on the local server, permitting it to be highly available. If an instance of the queue manager is not already running elsewhere, the queue manager starts and the instance becomes active. The active instance is ready to accept local and remote connections to the queue manager on the local server.

If a multi-instance queue manager instance is already active on a *different* server the new instance becomes a standby, permitting it to takeover from the active queue manager instance. While it is in standby, it cannot accept local or remote connections.

You must not start a second instance of a queue manager on the *same* server.

The default behavior, omitting the -x optional parameter, is to start the instance as a single instance queue manager, forbidding standby instances from being started.

-z
Suppresses error messages.

This flag is used within IBM WebSphere MQ to suppress unwanted information messages. Because using this flag can result in loss of information, do not use it when entering commands on a command line.

This parameter takes precedence over the -d parameter.

QMgrName
The name of a local queue manager. If omitted, the default queue manager is used.

Return codes

Return code	Description
0	Queue manager started
3	Queue manager being created
5	Queue manager running
16	Queue manager does not exist
23	Log not available
24	A process that was using the previous instance of the queue manager has not yet disconnected.
30	A standby instance of the queue manager started. The active instance is running elsewhere
31	The queue manager already has an active instance. The queue manager permits standby instances.
39	Invalid parameter specified
43	The queue manager already has an active instance. The queue manager does not permit standby instances.
47	The queue manager already has the maximum number of standby instances
49	Queue manager stopping
58	Inconsistent use of installations detected
62	The queue manager is associated with a different installation
69	Storage not available
71	Unexpected error
72	Queue manager name error
74	The WebSphere MQ service is not started.
91	The command level is outside the range of acceptable values.
92	The queue manager's command level is greater or equal to the specified value.
100	Log location invalid
119	User not authorized to start the queue manager

Examples

The following command starts the queue manager `account`:

```
strmqm account
```

Related commands

Command	Description
“crtmqm” on page 23	Create a queue manager
“dltmqm” on page 31	Delete a queue manager
“dspmqver” on page 66	Display MQ version information
“endmqm” on page 72	End a queue manager

strmqtrc

Enable trace at a specified level of detail, or report the level of tracing in effect.

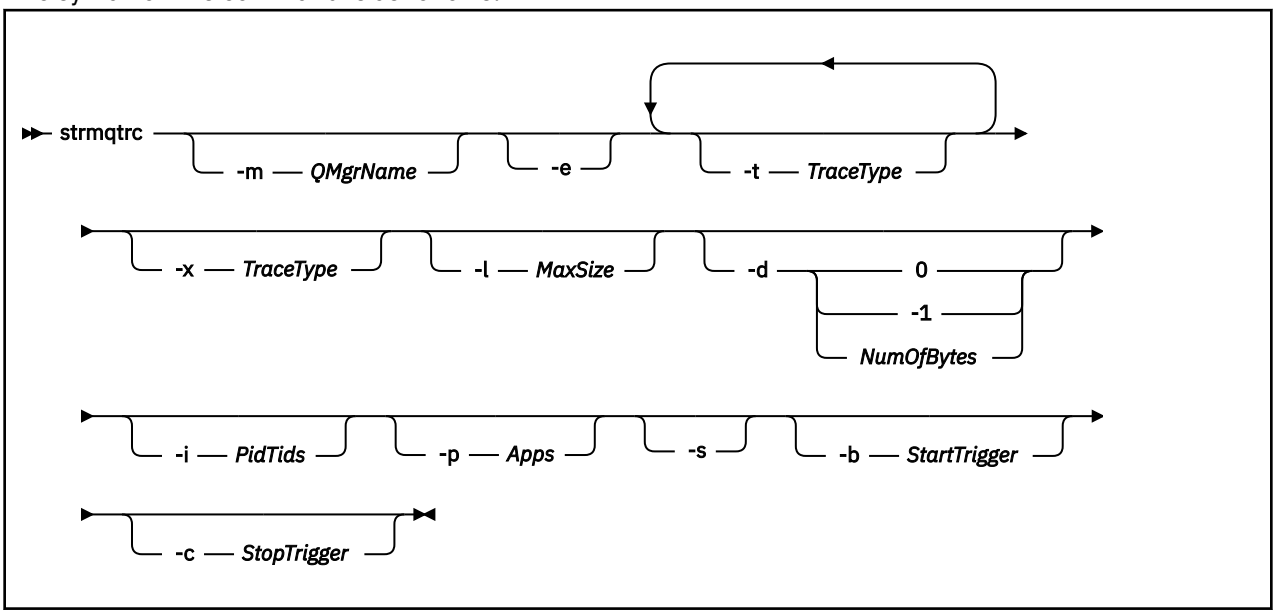
Purpose

Use the **strmqtrc** command to enable tracing.

You must use the **strmqtrc** command from the installation associated with the queue manager that you are working with. You can find out which installation a queue manager is associated with using the `dspmq -o installation` command. This does not apply to a client product (for example, HP Integrity NonStop Server) because there are no queue managers from which to request direct output.

Syntax

The syntax of this command is as follows:



Description

The strmqtrc command enables tracing. The command has optional parameters that specify the level of tracing you want:

- One or more queue managers
- Levels of trace detail
- One or more WebSphere MQ processes. The processes can be either part of the WebSphere MQ product or customer applications that use the WebSphere MQ API
- Specific threads within customer applications, either by WebSphere MQ thread number or by operating system thread number
- Events. These can be either the entry or exit from internal WebSphere MQ functions or the occurrence of a first failure data capture (FDC).

Each combination of parameters on an individual invocation of the command are interpreted by WebSphere MQ as having a logical AND between them. You can start the strmqtrc command multiple times, regardless of whether tracing is already enabled. If tracing is already enabled, the trace options that are in effect are modified to those specified on the most recent invocation of the command. Multiple invocations of the command, without an intervening enqmqtrc command, are interpreted by WebSphere MQ as having a logical OR between them. The maximum number of concurrent strmqtrc commands that can be in effect at one time is 16.

For the IBM WebSphere MQ client on HP Integrity NonStop Server, you must direct your trace commands to specific processors. For example, if your client is running on processor 2 and your shell is on processor 1, initiating trace with **strmqtrc <options>** does not trace the client. In this case, `run -cpu=2 strmqtrc` is required.

Optional parameters

-m *QMgrName*
The name of the queue manager to trace. This parameter applies to server products only.

The following wildcards are allowed: asterisk (*), replacing zero or more characters, and question mark (?), replacing any single character. In command environments such as the UNIX shell, where the asterisk (*) and question mark (?) characters have special meaning, you must either escape the wildcard character or enclose it in quotation marks to prevent the command environment from operating on the wildcard character.

-e
Requests early tracing of all processes, making it possible to trace the creation or startup of a queue manager. If you include this flag, any process belonging to any component of any queue manager traces its early processing. The default is not to perform early tracing.

Use the following command to trace a client:

```
strmqtrc -e
```

You cannot use the -e flag with the -m flag, -i flag, the -p flag, the -c flag, or the -b flag. If you try to use the -e flag with the -m flag, the -i flag, the -p flag, the -c flag, or the -b flag, then an error message is issued.

-t *TraceType*
The points to trace and the amount of trace detail to record. By default **all** trace points are enabled and a default-detail trace is generated.

Alternatively, you can supply one or more of the options in the following list. For each *tracetype* value you specify, including `-t all`, specify either `-t parms` or `-t detail` to obtain the appropriate level of trace detail. If you do not specify either `-t parms` or `-t detail` for any particular trace type, only a default-detail trace is generated for that trace type.

If you supply multiple trace types, each must have its own -t flag. You can include any number of -t flags, if each has a valid trace type associated with it.

It is not an error to specify the same trace type on multiple -t flags.

all	Output data for every trace point in the system (the default). The all parameter activates tracing at default detail level.
api	Output data for trace points associated with the MQI and major queue manager components.
commentary	Output data for trace points associated with comments in the WebSphere MQ components.
comms	Output data for trace points associated with data flowing over communications networks.
csdata	Output data for trace points associated with internal data buffers in common services.
csflows	Output data for trace points associated with processing flow in common services.
detail	Activate tracing at high-detail level for flow processing trace points.
Explorer	Output data for trace points associated with the WebSphere MQ Explorer.
java	Output data for trace points associated with applications using the WebSphere MQ classes for Java API.
lqmdata	Output data for trace points associated with internal data buffers in the local queue manager.
lqmflows	Output data for trace points associated with processing flow in the local queue manager.
otherdata	Output data for trace points associated with internal data buffers in other components.
otherflows	Output data for trace points associated with processing flow in other components.
parms	Activate tracing at default-detail level for flow processing trace points.
remotedata	Output data for trace points associated with internal data buffers in the communications component.
remoteflows	Output data for trace points associated with processing flow in the communications component.
servicedata	Output data for trace points associated with internal data buffers in the service component.
serviceflows	Output data for trace points associated with processing flow in the service component.
spldata	Output data for trace points associated with buffers and control blocks that use a security policy (AMS) operation.
splflows	Output data for trace points associated with entry and exit data for functions that use a security policy (AMS) operation.
soap	Output data for trace points associated with WebSphere MQ Transport for SOAP.
ssl	Output data associated with using GSKit to enable Secure Sockets Layer (SSL) channel security.

versiondata Output data for trace points associated with the version of WebSphere MQ running.

-x *TraceType*
The points **not** to trace. By default **all** trace points are enabled and a default-detail trace is generated. The trace points you can specify are those listed for the -t flag.

You can use the -x flag with *tracetype* values to exclude those entry points you do not want to record. This is useful in reducing the amount of trace produced.

If you supply multiple trace types, each must have its own -x flag. You can include any number of -x flags, if each has a valid *tracetype* associated with it.

-l *MaxSize*
The maximum size of a trace file (AMQ*ppppp*.*qq*.TRC) in megabytes (MB). For example, if you specify a MaxSize of 1, the size of the trace is limited to 1 MB.

When a trace file reaches the specified maximum, it is renamed to AMQ*ppppp*.*qq*.TRS and a new AMQ*ppppp*.*qq*.TRC file is started. If a previous copy of an AMQ*ppppp*.*qq*.TRS file exists, it is deleted.

The highest value that *MaxSize* can be set to is 2048 MB.

-d 0
Trace no user data.

-d -1 or all
Trace all user data.

-d *NumOfBytes*

- For a communication trace; trace the specified number of bytes of data including the transmission segment header (TSH).
- For an MQPUT or MQGET call; trace the specified number of bytes of message data held in the message buffer.
- Values in the range 1 through 15 are not allowed.

-i *PidTids*
Process identifier (PID) and thread identifier (TID) to which the trace generation is restricted. You cannot use the -i flag with the -e flag. If you try to use the -i flag with the -e flag, then an error message is issued.

The precise format of this parameter is PID[.TID]. For example:

Coding **-i** *12345* traces all threads in PID 12345, whereas
Coding **-i** *12345.67* traces only thread 67 in PID 12345

This parameter is not supported for .NET clients if NMQ_MQ_LIB is set to managed, so that the client uses managed WebSphere MQ problem diagnostics.

-p *Apps*
The named processes to which the trace generation is restricted. *Apps* is a comma-separated list. You must specify each name in the list exactly as the program name would be displayed in the "Program Name" FDC header. Asterisk (*) or question mark (?) wildcards are allowed. You cannot use the -p flag with the -e flag. If you try to use the -p flag with the -e flag, then an error message is issued.

This parameter is not supported for .NET clients if NMQ_MQ_LIB is set to managed, so that the client uses managed IBM WebSphere MQ problem diagnostics.

-s
Reports the tracing options that are currently in effect. You must use this parameter on its own with no other parameters.

A limited number of slots are available for storing trace commands. When all slots are in use, then no more trace commands can be accepted unless they replace an existing slot. Slot numbers are not fixed, so if the command in slot number 0 is removed, for example by an endmqtrc command, then all

the other slots move up, with slot 1 becoming slot 0, for example. An asterisk (*) in a field means that no value is defined, and is equivalent to the asterisk wildcard.

An example of the output from this command is as follows:

```
Listing Trace Control Array

Used slots = 2 of 15

EarlyTrace    [OFF]
TimedTrace    [OFF]
TraceUserData [0]
MaxSize       [0]
Trace Type    [1]

Slot position 1

Untriggered
Queue Manager [avocet]
Application   [*]
PID.TID       [*]
TraceOptions  [1f4ffff]
TraceInterval    [0]
Trace Start Time [0]
Trace Stop  Time [0]
Start Trigger [KN346050K]
Start Trigger [KN346080]

Slot position 2

Untriggered
Queue Manager [*]
Application   [*]
PID.TID       [*]
TraceOptions  [1fcffff]
TraceInterval    [0]
Trace Start Time [0]
Trace Stop  Time [0]
Start Trigger [KN346050K]
Start Trigger [KN346080]
```

This parameter is not supported for .NET clients if NMQ_MQ_LIB is set to `managed`, so that the client uses managed WebSphere MQ problem diagnostics.

-b *Start_Trigger*

FDC probe IDs for which tracing must be turned on. *Start_Trigger* is a comma-separated list of FDC probe IDs. You can use asterisk (*) and question mark (?) wildcards in the specification of probe IDs. You cannot use the -b flag with the -e flag. If you try to use the -b flag with the -e flag, then an error message is issued. This parameter must only be used under the guidance of IBM Service personnel.

Start_Trigger	Effect
FDC=comma-separated list of FDC probe IDs.	Turns on tracing when any FDCs with the specified FDC probe IDs are generated.

This parameter is not supported for .NET clients if NMQ_MQ_LIB is set to `managed`, so that the client uses managed WebSphere MQ problem diagnostics.

-c *Stop_Trigger*

FDC probe IDs for which tracing must be turned off, or interval in seconds after which tracing must be turned off. *Stop_Trigger* is a comma-separated list of FDC probe IDs. You can use asterisk (*) and question mark (?) wildcards in the specification of probe IDs. This parameter should be used only under the guidance of IBM Service personnel.

Stop_Trigger	Effect
FDC=comma-separated list of FDC probe IDs.	Turns tracing off when any FDCs with the specified FDC probe IDs are generated.

Stop_Trigger	Effect
interval=n where n is an unsigned integer between 1 and 32,000,000.	Turns tracing off n seconds after it starts or, if it tracing is already enabled, turns tracing off n seconds after this instance of the command is issued.

This parameter is not supported for .NET clients if NMQ_MQ_LIB is set to `managed`, so that the client uses managed WebSphere MQ problem diagnostics.

Return codes

Return code	Description
AMQ7024	Non-valid arguments supplied to the command.
AMQ7077	You are not authorized to perform the requested operation.
AMQ8304	Nine concurrent traces (the maximum) already running.
58	Inconsistent use of installations detected

Examples

This command enables tracing of processing flow from common services and the local queue manager for a queue manager called QM1 in IBM WebSphere MQ for UNIX systems. Trace data is generated at the default level of detail.

```
strmqtrc -m QM1 -t csflows -t lqmflows -t parms
```

This command disables tracing of SSL activity on a queue manager called QM1. Other trace data is generated at the parms level of detail.

```
strmqtrc -m QM1 -x ssl -t parms
```

This command enables high-detail tracing of the processing flow for all components:

```
strmqtrc -t all -t detail
```

This command enables tracing when FDC KN346050 or FDC KN346080 occur on any process that is using queue manager QM1:

```
strmqtrc -m QM1 -b FDC=KN346050,KN346080
```

This command enables tracing when FDC KN34650 occurs, and stops tracing when FDC KN346080 occurs. In both cases the FDC must occur on a process that is using queue manager QM1:

```
strmqtrc -m QM1 -b FDC=KN346050 -c FDC=KN346080
```

The next examples use the -p and -m flags to show the following:

- How a combination of parameters on an individual invocation of the command are interpreted by WebSphere MQ as having a logical AND between them.
- How multiple invocations of the command, without an intervening enqmqtrc command, are interpreted by WebSphere MQ as having a logical OR between them:

1. This command enables tracing for all threads that result from any executing process called amqxxx.exe:

```
strmqtrc -p amqxxx.exe
```

2.

- If you start the following command after the command in step 1, without an intervening endmqtrc command, then tracing is limited to all threads that result from any executing process called amqxxx.exe *and* that are using queue manager QM2:

```
strmqtrc -p amqxxx.exe -m QM2
```

- If you start the following command after the command in step 1, without an intervening endmqtrc command, then tracing is limited to all processes and threads that result from executing amqxxx.exe *or* that are using queue manager QM2:

```
strmqtrc -m QM2
```

Related commands

Command	Description
dspmqtrc	Display formatted trace output
endmqtrc	End trace

Comparing command sets

The tables in this section compare the facilities available from the different administration command sets, and also show whether you can perform each function from within the IBM WebSphere MQ Explorer.

Note: The following tables do not apply to IBM WebSphere MQ for z/OS or IBM WebSphere MQ for IBM i.

Queue manager commands

A table of queue manager commands, showing the command description, and its PCF command, MQSC command, control command equivalents, and IBM WebSphere MQ Explorer equivalents, if available.

Table 18. Queue manager commands

Description	PCF command	MQSC command	Control command	WebSphere MQ Explorer equivalent?
Change Queue Manager	Change Queue Manager	ALTER QMGR	No equivalent	Yes
Create Queue Manager	No equivalent	No equivalent	`crtmqm`	Yes
Delete Queue Manager	No equivalent	No equivalent	`dltmqm`	Yes
Inquire Queue Manager	Inquire Queue Manager	DISPLAY QMGR	No equivalent	Yes
Inquire Queue Manager Status	Inquire Queue Manager Status	DISPLAY QMSTATUS	`dspmq`	Yes
Ping Queue Manager	Ping Queue Manager	PING QMGR	No equivalent	No

Table 18. Queue manager commands (continued)				
Description	**PCF command**	**MQSC command**	**Control command**	**WebSphere MQ Explorer equivalent?**
Refresh Queue Manager	No equivalent	REFRESH QMGR	No equivalent	No
Reset Queue Manager	Reset Queue Manager	RESET QMGR	No equivalent	No
Start Queue Manager	No equivalent	No equivalent	`strmqm`	Yes
Stop Queue Manager	No equivalent	No equivalent	`endmqm`	Yes

Command server commands

A table of command server commands, showing the command description, and its PCF command, MQSC command, control command equivalents, and IBM WebSphere MQ Explorer equivalents, if available.

Table 19. Commands for command server administration				
Description	**PCF command**	**MQSC command**	**Control command**	**WebSphere MQ Explorer equivalent?**
Display command server	Inquire Queue Manager Status	DISPLAY QMSTATUS	`dspmqcsv`	Yes
Start command server	Change Queue Manager	ALTER QMGR	`strmqcsv`	Yes
Stop command server	No equivalent	No equivalent	`endmqcsv`	Yes

Authority commands

A table of authority commands, showing the command description, and its PCF command, MQSC command, control command equivalents, and IBM WebSphere MQ Explorer equivalents, if available.

Table 20. Commands for authority administration			
PCF command	**MQSC command**	**Control command**	**IBM WebSphere MQ Explorer equivalent?**
Delete authority record	DELETE AUTHREC	`setmqaut`	Yes
Inquire authority records	DISPLAY AUTHREC	`dmpmqaut`	Yes
Inquire entity authority	DISPLAY ENTAUTH	`dspmqaut`	Yes
Refresh Security	REFRESH SECURITY	No equivalent	Yes
Set authority record	SET AUTHREC	`setmqaut`	Yes

Cluster commands

A table of cluster commands, showing the command description, and its PCF command, MQSC command, control command equivalents, and IBM WebSphere MQ Explorer equivalents, if available.

Table 21. Cluster commands

PCF command	MQSC command	Control command	IBM WebSphere MQ Explorer equivalent?
Inquire Cluster Queue Manager	DISPLAY CLUSQMGR	No equivalent	Yes
Refresh Cluster	REFRESH CLUSTER	No equivalent	Yes
Reset Cluster	RESET CLUSTER	No equivalent	No
Resume Queue Manager Cluster	RESUME QMGR	No equivalent	Yes
Suspend Queue Manager Cluster	SUSPEND QMGR	No equivalent	Yes

Authentication information commands

A table of authentication information commands, showing the command description, and its PCF command, MQSC command, control command equivalents, and IBM WebSphere MQ Explorer equivalents, if available.

Table 22. Authentication information commands

PCF command	MQSC command	Control command	IBM WebSphere MQ Explorer equivalent?
Change Authentication Information Object	ALTER AUTHINFO	No equivalent	Yes
Copy Authentication Information Object	DEFINE AUTHINFO(x) LIKE(y)	No equivalent	Yes
Create Authentication Information Object	DEFINE AUTHINFO	No equivalent	Yes
Delete Authentication Information Object	DELETE AUTHINFO	No equivalent	Yes
Inquire Authentication Information Object	DISPLAY AUTHINFO	No equivalent	Yes

Channel commands

A table of channel commands, showing the command description, and its PCF command, MQSC command, control command equivalents, and IBM WebSphere MQ Explorer equivalents, if available.

Table 23. Channel commands

PCF command	MQSC command	Control command	IBM WebSphere MQ Explorer equivalent?
Change Channel	ALTER CHANNEL	No equivalent	Yes
Copy Channel	DEFINE CHANNEL(x) LIKE(y)	No equivalent	Yes
Create Channel	DEFINE CHANNEL	No equivalent	Yes

Table 23. Channel commands (continued)			
PCF command	**MQSC command**	**Control command**	**IBM WebSphere MQ Explorer equivalent?**
Delete Channel	DELETE CHANNEL	No equivalent	Yes
Inquire Channel	DISPLAY CHANNEL	No equivalent	Yes
Inquire Channel Names	DISPLAY CHANNEL	No equivalent	Yes
Inquire Channel Status	DISPLAY CHSTATUS	No equivalent	Yes
Ping Channel	PING CHANNEL	No equivalent	Yes
Purge Channel	PURGE CHANNEL	No equivalent	Yes
Reset Channel	RESET CHANNEL	No equivalent	Yes
Resolve Channel	RESOLVE CHANNEL	No equivalent	Yes
Start Channel	START CHANNEL	`runmqchl`	Yes
Start Channel Initiator	START CHINIT	`runmqchi`	No
Stop Channel	STOP CHANNEL	No equivalent	Yes

Listener commands

A table of listener commands, showing the command description, and its PCF command, MQSC command, control command equivalents, and IBM WebSphere MQ Explorer equivalents, if available.

Table 24. Listener commands			
PCF command	**MQSC command**	**Control command**	**WebSphere MQ Explorer equivalent?**
Change Listener	ALTER LISTENER	No equivalent	Yes
Copy Listener	DEFINE LISTENER(x) LIKE(y)	No equivalent	Yes
Create Listener	DEFINE LISTENER	No equivalent	Yes
Delete Listener	DELETE LISTENER	No equivalent	Yes
Inquire Listener	DISPLAY LISTENER	No equivalent	Yes
Inquire Listener Status	DISPLAY LSSTATUS	No equivalent	Yes
Start Channel Listener	START LISTENER "1" on page 146	`runmqlsr`	Yes
Stop Listener	STOP LISTENER	`endmqlsr` "2" on page 146	Yes

Notes:

1. Used with listener objects only
2. Stops all active listeners

Namelist commands

A table of namelist commands, showing the command description, and its PCF command, MQSC command, control command equivalents, and IBM WebSphere MQ Explorer equivalents, if available.

Table 25. Namelist commands

PCF command	MQSC command	Control command	IBM WebSphere MQ Explorer equivalent?
Change Namelist	ALTER NAMELIST	No equivalent	Yes
Copy Namelist	DEFINE NAMELIST(x) LIKE(y)	No equivalent	Yes
Create Namelist	DEFINE NAMELIST	No equivalent	Yes
Delete Namelist	DELETE NAMELIST	No equivalent	Yes
Inquire Namelist	DISPLAY NAMELIST	No equivalent	Yes
Inquire Namelist Names	DISPLAY NAMELIST	No equivalent	Yes

Process commands

A table of process commands, showing the command description, and its PCF command, MQSC command, control command equivalents, and IBM WebSphere MQ Explorer equivalents, if available.

Table 26. Process commands

PCF command	MQSC command	Control command	IBM WebSphere MQ Explorer equivalent?
Change Process	ALTER PROCESS	No equivalent	Yes
Copy Process	DEFINE PROCESS(x) LIKE(y)	No equivalent	Yes
Create Process	DEFINE PROCESS	No equivalent	Yes
Delete Process	DELETE PROCESS	No equivalent	Yes
Inquire Process	DISPLAY PROCESS	No equivalent	Yes
Inquire Process Names	DISPLAY PROCESS	No equivalent	Yes

Queue commands

A table of queue commands, showing the command description, and its PCF command, MQSC command, control command equivalents, and IBM WebSphere MQ Explorer equivalents, if available.

Table 27. Queue commands

PCF command	MQSC command	Control command	IBM WebSphere MQ Explorer equivalent?
Change Queue	ALTER QLOCAL ALTER QALIAS ALTER QMODEL ALTER QREMOTE	No equivalent	Yes
Clear Queue	CLEAR QLOCAL	No equivalent	Yes

Table 27. Queue commands (continued)

PCF command	MQSC command	Control command	IBM WebSphere MQ Explorer equivalent?
Copy Queue	DEFINE QLOCAL(x) LIKE(y) DEFINE QALIAS(x) LIKE(y) DEFINE QMODEL(x) LIKE(y) DEFINE QREMOTE(x) LIKE(y)	No equivalent	Yes
Create Queue	DEFINE QLOCAL DEFINE QALIAS DEFINE QMODEL DEFINE QREMOTE	No equivalent	Yes
Delete Queue	DELETE QLOCAL DELETE QALIAS DELETE QMODEL DELETE QREMOTE	No equivalent	Yes
Inquire Queue	DISPLAY QUEUE	No equivalent	Yes
Inquire Queue Names	DISPLAY QUEUE	No equivalent	Yes
Inquire Queue Status	DISPLAY QSTATUS	No equivalent	Yes
Reset Queue Statistics	No equivalent	No equivalent	No

Service commands

A table of service commands, showing the command description, and its PCF command, MQSC command, control command equivalents, and IBM WebSphere MQ Explorer equivalents, if available.

Table 28. Service commands

PCF command	MQSC command	Control command	IBM WebSphere MQ Explorer equivalent?
Change Service	ALTER SERVICE	No equivalent	Yes
Copy Service	DEFINE SERVICE(x) LIKE(y)	No equivalent	Yes
Create Service	DEFINE SERVICE	No equivalent	Yes
Delete Service	DELETE SERVICE	No equivalent	Yes
Inquire Service	DISPLAY SERVICE	No equivalent	Yes
Inquire Service Status	DISPLAY SVSTATUS	No equivalent	Yes
Start Service	START SERVICE	No equivalent	Yes
Stop Service	STOP SERVICE	No equivalent	Yes

Other commands

A table of other commands, showing the command description, and its PCF command, MQSC command, control command equivalents, and WebSphere MQ Explorer equivalents, if available.

Table 29. Other commands

Description	PCF command	MQSC command	Control command	WebSphere MQ Explorer equivalent?
Create conversion exit	No equivalent	No equivalent	`crtmqcvx`	No
Display files used by objects	No equivalent	No equivalent	`dspmqfls`	No
Display formatted trace	No equivalent	No equivalent	`dspmqtrc` "1" on page 149	No
Display version information	No equivalent	No equivalent	`dspmqver`	No
Display transactions	No equivalent	No equivalent	`dspmqtrn`	No
Dump log	No equivalent	No equivalent	`dmpmqlog`	No
Dump MQ Configuration	No equivalent	No equivalent	`dmpmqcfg`	No
End trace	No equivalent	No equivalent	`endmqtrc`	Yes
Escape	Escape	No equivalent	No equivalent	No
Record media image	No equivalent	No equivalent	`rcdmqimg`	No
Re-create media object	No equivalent	No equivalent	`rcrmqobj`	No
Resolve transactions	No equivalent	No equivalent	`rsvmqtrn`	No
Run client trigger monitor	No equivalent	No equivalent	`runmqtmc`	No
Run dead-letter queue handler	No equivalent	No equivalent	`runmqdlq`	No
Run MQSC commands	No equivalent	No equivalent	`runmqsc`	No
Run trigger monitor	No equivalent	No equivalent	`runmqtrm`	No
Set service connection points	No equivalent	No equivalent	`setmqscp` "2" on page 149	No
Start WebSphere MQ trace	No equivalent	No equivalent	`strmqtrc`	Yes
WebSphere MQ Services control	No equivalent	No equivalent	`amqmdain` "2" on page 149	No

Notes:

1. Not supported on WebSphere MQ for Windows.
2. Supported by WebSphere MQ for Windows only.

Managing keys and certificates

Use the runmqckm command (Windows and UNIX systems) to manage keys, certificates, and certificate requests.

The runmqckm command

The runmqckm command is available on Windows and UNIX systems.

The runmqckm command provides functions that are similar to those of iKeyman, described in Security.

Use the runmqckm command to do the following:

- Create the type of CMS key database files that WebSphere MQ requires
- Create certificate requests
- Import personal certificates
- Import CA certificates
- Manage self-signed certificates

Preparing to use the runmqckm and runmqakm commands

If you are using certificates or keys stored on PKCS #11 cryptographic hardware, note that iKeycmd and iKeyman are 64-bit programs. External modules required for PKCS #11 support will be loaded into a 64-bit process, therefore you must have a 64-bit PKCS #11 library installed for the administration of cryptographic hardware. The Windows and Linux x86 32-bit platforms are the only exceptions, as the iKeyman and iKeycmd programs are 32-bit on those platforms.

To run the **runmqckm** command line interfaces, ensure that the systems environment variables are correctly configured. For primary installations of WebSphere MQ v7.1, you can run the **setmqinst** command. For further information on this command please see “setmqinst” on page 123

runmqckm, and runmqakm commands

This section describes the runmqckm, and runmqakm commands according to the object of the command.

An overview of the main differences between the two commands:

- **runmqakm**
  - Supports the creation of certificates and certificate requests with Elliptic Curve public keys whereas the **runmqckm** command does not.
  - Supports stronger encryption of the key repository file than the **runmqckm** command through the **-strong** parameter.
  - Has been certified as FIPS 140-2 compliant, and can be configured to operate in a FIPS compliant manner, using the **-fips** parameter, unlike the **runmqckm** command.
- **runmqckm** supports the JKS and JCEKS key repository file formats whereas the **runmqakm** command does not.

Each command specifies at least one *object*. Commands for PKCS #11 device operations might specify additional objects. Commands for key database, certificate, and certificate request objects also specify an *action*. The object can be one of the following:

-keydb
Actions apply to a key database

-cert
Actions apply to a certificate

-certreq
Actions apply to a certificate request

-help
Displays help

-version
Displays version information

The following subtopics describe the actions that you can take on key database, certificate, and certificate request objects; See “runmqckm and runmqakm options” on page 159 for a description of the options on these commands.

Commands for a CMS key database only

You can use the **runmqckm**, and **runmqakm** commands to manage keys and certificates for a CMS key database.

-keydb -changepw
Change the password for a CMS key database:

```
-keydb -changepw -db filename -pw password -new_pw new_password

-stash
```

-keydb -create
Create a CMS key database:

```
-keydb -create -db filename -pw password -type cms -expire days -stash
```

-keydb -stashpw
Stash the password of a CMS key database into a file:

```
-keydb -stashpw -db filename -pw password
```

-cert -getdefault
Get the default personal certificate:

```
-cert -getdefault -db filename -pw password
```

-cert -modify
Modify a certificate.

Note: Currently, the only field that can be modified is the Certificate Trust field.

```
-cert -modify -db filename -pw password -label label
    -trust enable | disable
```

-cert -setdefault
Set the default personal certificate:

```
-cert -setdefault -db filename -pw password -label label
```

Command for CMS or PKCS #12 key databases

You can use the runmqckm, and runmqakm commands to manage keys and certificates for a CMS key database or PKCS #12 key database.

Note: WebSphere MQ does not support SHA-3 or SHA-5 algorithms. You can use the digital signature algorithm names SHA384WithRSA and SHA512WithRSA because both algorithms are members of the SHA-2 family.

The digital signature algorithm names SHA3WithRSA and SHA5WithRSA are deprecated because they are an abbreviated form of SHA384WithRSA and SHA512WithRSA respectively.

-keydb -changepw
Change the password for a key database:

```
-keydb -changepw -db filename -pw password -new_pw
new_password -expire days
```

-keydb -convert
convert the key database from one format to another:

```
-keydb -convert -db filename -pw password
    -old_format cms | pkcs12 -new_format cms
```

-keydb -create
Create a key database:

```
-keydb -create -db filename -pw password -type cms
 | pkcs12
```

-keydb -delete
Delete a key database:

```
-keydb -delete -db filename -pw password
```

-keydb -list
List currently-supported types of key database:

```
-keydb -list
```

-cert -add
Add a certificate from a file into a key database:

```
-cert -add -db filename -pw password -label label
 -file filename
    -format ascii | binary
```

-cert -create
Create a self-signed certificate:

```
-cert -create -db filename -pw password -label label
 -dn distinguished_name
    -size 1024 | 512 -x509version 3 | 1
 | 2
    -expire days -sig_alg MD2_WITH_RSA | MD2WithRSA
 |
                               MD5_WITH_RSA | MD5WithRSA
 |
                               SHA1WithDSA | SHA1WithRSA
 |
                               SHA256_WITH_RSA | SHA256WithRSA
 |
                               SHA2WithRSA | SHA384_WITH_RSA
 |
                               SHA384WithRSA |  SHA512_WITH_RSA
 |
                               SHA512WithRSA | SHA_WITH_DSA
 |
                               SHA_WITH_RSA | SHAWithDSA
 |
                               SHAWithRSA
```

-cert -delete
Delete a certificate:

```
-cert -delete -db filename -pw password -label label
```

-cert -details
List the detailed information for a specific certificate:

```
-cert -details -db filename -pw password -label label
```

-cert -export
Export a personal certificate and its associated private key from a key database into a PKCS #12 file, or to another key database:

```
-cert -export -db filename -pw password -label label
 -type cms | pkcs12
    -target filename -target_pw password -target_type
cms | pkcs12
```

-cert -extract
Extract a certificate from a key database:

```
-cert -extract -db filename -pw password -label label
 -target filename
    -format ascii | binary
```

-cert -import
Import a personal certificate from a key database:

```
 -cert -import -file filename -pw password -type
pkcs12 -target filename
       -target_pw password -target_type cms -label
label
```

The `-label` option is required and specifies the label of the certificate that is to be imported from the source key database.

The `-new_label` option is optional and allows the imported certificate to be given a different label in the target key database from the label in the source database.

-cert -list
List all certificates in a key database:

```
-cert -list all | personal | CA
    -db filename -pw password
```

-cert -receive
Receive a certificate from a file:

```
-cert -receive -file filename -db filename -pw password

    -format ascii | binary -default_cert yes |
no
```

-cert -sign
Sign a certificate:

```
-cert -sign -db filename -file filename  -pw password
   -label label -target filename
   -format ascii | binary -expire days
   -sig_alg MD2_WITH_RSA | MD2WithRSA | MD5_WITH_RSA
 |
          MD5WithRSA | SHA1WithDSA | SHA1WithRSA
 |
```

```
            SHA256_WITH_RSA | SHA256WithRSA |
            SHA2WithRSA | SHA384_WITH_RSA |
            SHA384WithRSA |  SHA512_WITH_RSA |
            SHA512WithRSA | SHA_WITH_DSA  |
            SHA_WITH_RSA | SHAWithDSA |
            SHAWithRSA
```

-certreq -create

Create a certificate request:

```
-certreq -create -db filename -pw password
    -label label -dn distinguished_name
    -size 1024 | 512 -file filename
    -sig_alg MD2_WITH_RSA | MD2WithRSA |
             MD5_WITH_RSA | MD5WithRSA |
             SHA1WithDSA | SHA1WithRSA |
             SHA256_WITH_RSA | SHA256WithRSA |
             SHA2WithRSA | SHA384_WITH_RSA |
             SHA384WithRSA |  SHA512_WITH_RSA |
             SHA512WithRSA | SHA_WITH_DSA  |
             SHA_WITH_RSA | SHAWithDSA |
             SHAWithRSA
```

-certreq -delete

Delete a certificate request:

```
-certreq -delete -db filename -pw password -label
label
```

-certreq -details

List the detailed information of a specific certificate request:

```
-certreq -details -db filename -pw password -label
label
```

List the detailed information about a certificate request and show the full certificate request:

```
-certreq -details -showOID -db filename
    -pw password -label label
```

-certreq -extract

Extract a certificate request from a certificate request database into a file:

```
-certreq -extract -db filename -pw password
     -label label -target filename
```

-certreq -list

List all certificate requests in the certificate request database:

```
-certreq -list -db filename -pw password
```

-certreq -recreate

Re-create a certificate request:

```
-certreq -recreate -db filename -pw password
    -label label -target filename
```

Commands for cryptographic device operations

You can use the runmqckm, and runmqakm commands to manage keys and certificates for cryptographic device operations.

Note: WebSphere MQ does not support SHA-3 or SHA-5 algorithms. You can use the digital signature algorithm names SHA384WithRSA and SHA512WithRSA because both algorithms are members of the SHA-2 family.

The digital signature algorithm names SHA3WithRSA and SHA5WithRSA are deprecated because they are an abbreviated form of SHA384WithRSA and SHA512WithRSA respectively.

-keydb -changepw

Change the password for a cryptographic device:

```
-keydb -changepw -crypto module_name -tokenlabel token_label
    -pw password -new_pw new_password
```

If you are using certificates or keys stored on PKCS #11 cryptographic hardware, note that iKeycmd and iKeyman are 64-bit programs. External modules required for PKCS #11 support will be loaded into a 64-bit process, therefore you must have a 64-bit PKCS #11 library installed for the administration of cryptographic hardware. The Windows and Linux x86 32-bit platforms are the only exceptions, as the iKeyman and iKeycmd programs are 32-bit on those platforms.

-keydb -list

List currently-supported types of key database:

```
-keydb -list
```

If you are using certificates or keys stored on PKCS #11 cryptographic hardware, note that iKeycmd and iKeyman are 64-bit programs. External modules required for PKCS #11 support will be loaded into a 64-bit process, therefore you must have a 64-bit PKCS #11 library installed for the administration of cryptographic hardware. The Windows and Linux x86 32-bit platforms are the only exceptions, as the iKeyman and iKeycmd programs are 32-bit on those platforms.

-cert -add

Add a certificate from a file to a cryptographic device:

```
-cert -add -crypto module_name -tokenlabel token_label
    -pw password -label label -file filename -format
ascii | binary
```

If you are using certificates or keys stored on PKCS #11 cryptographic hardware, note that iKeycmd and iKeyman are 64-bit programs. External modules required for PKCS #11 support will be loaded into a 64-bit process, therefore you must have a 64-bit PKCS #11 library installed for the administration of cryptographic hardware. The Windows and Linux x86 32-bit platforms are the only exceptions, as the iKeyman and iKeycmd programs are 32-bit on those platforms.

-cert -create

Create a self-signed certificate on a cryptographic device:

```
-cert -create -crypto module_name -tokenlabel token_label

    -pw password -label label -dn distinguished_name
 -size 1024 | 512
    -x509version 3 | 1 | 2 -default_cert no
 | yes -expire days
    -sig_alg MD2_WITH_RSA | MD2WithRSA |
             MD5_WITH_RSA | MD5WithRSA |
             SHA1WithDSA | SHA1WithRSA |
             SHA256_WITH_RSA | SHA256WithRSA |
             SHA2WithRSA | SHA384_WITH_RSA |
             SHA384WithRSA | SHA512_WITH_RSA |
             SHA512WithRSA | SHA_WITH_DSA  |
```

```
              SHA_WITH_RSA | SHAWithDSA |
              SHAWithRSA
```

Note: You cannot import a certificate containing multiple OU (organizational unit) attributes in the distinguished name.

If you are using certificates or keys stored on PKCS #11 cryptographic hardware, note that iKeycmd and iKeyman are 64-bit programs. External modules required for PKCS #11 support will be loaded into a 64-bit process, therefore you must have a 64-bit PKCS #11 library installed for the administration of cryptographic hardware. The Windows and Linux x86 32-bit platforms are the only exceptions, as the iKeyman and iKeycmd programs are 32-bit on those platforms.

-cert -delete

Delete a certificate on a cryptographic device:

```
-cert -delete -crypto module_name -tokenlabel token_label
    -pw password -label label
```

If you are using certificates or keys stored on PKCS #11 cryptographic hardware, note that iKeycmd and iKeyman are 64-bit programs. External modules required for PKCS #11 support will be loaded into a 64-bit process, therefore you must have a 64-bit PKCS #11 library installed for the administration of cryptographic hardware. The Windows and Linux x86 32-bit platforms are the only exceptions, as the iKeyman and iKeycmd programs are 32-bit on those platforms.

-cert -details

List the detailed information for a specific certificate on a cryptographic device:

```
-cert -details -crypto module_name -tokenlabel token_label

    -pw password -label label
```

If you are using certificates or keys stored on PKCS #11 cryptographic hardware, note that iKeycmd and iKeyman are 64-bit programs. External modules required for PKCS #11 support will be loaded into a 64-bit process, therefore you must have a 64-bit PKCS #11 library installed for the administration of cryptographic hardware. The Windows and Linux x86 32-bit platforms are the only exceptions, as the iKeyman and iKeycmd programs are 32-bit on those platforms.

List the detailed information and show the full certificate for a specific certificate on a cryptographic device:

```
-cert -details -showOID -crypto module_name -tokenlabel
token_label
    -pw password -label label
```

If you are using certificates or keys stored on PKCS #11 cryptographic hardware, note that iKeycmd and iKeyman are 64-bit programs. External modules required for PKCS #11 support will be loaded into a 64-bit process, therefore you must have a 64-bit PKCS #11 library installed for the administration of cryptographic hardware. The Windows and Linux x86 32-bit platforms are the only exceptions, as the iKeyman and iKeycmd programs are 32-bit on those platforms.

-cert -extract

Extract a certificate from a key database:

```
-cert -extract -crypto module_name -tokenlabel token_label
    -pw password -label label -target filename
 -format ascii | binary
```

If you are using certificates or keys stored on PKCS #11 cryptographic hardware, note that iKeycmd and iKeyman are 64-bit programs. External modules required for PKCS #11 support will be loaded into a 64-bit process, therefore you must have a 64-bit PKCS #11 library installed for the

administration of cryptographic hardware. The Windows and Linux x86 32-bit platforms are the only exceptions, as the iKeyman and iKeycmd programs are 32-bit on those platforms.

-cert -import
Import a certificate to a cryptographic device with secondary key database support:

```
-cert -import -db filename -pw password -label label
 -type cms
    -crypto module_name -tokenlabel token_label -pw
password
    -secondaryDB filename -secondaryDBpw password
```

If you are using certificates or keys stored on PKCS #11 cryptographic hardware, note that iKeycmd and iKeyman are 64-bit programs. External modules required for PKCS #11 support will be loaded into a 64-bit process, therefore you must have a 64-bit PKCS #11 library installed for the administration of cryptographic hardware. The Windows and Linux x86 32-bit platforms are the only exceptions, as the iKeyman and iKeycmd programs are 32-bit on those platforms.

```
-cert -import -db filename -pw password -label label
 -type cms
    -crypto module_name -tokenlabel token_label -pw
password
    -secondaryDB filename -secondaryDBpw password -fips
```

Import a PKCS #12 certificate to a cryptographic device with secondary key database support:

```
-cert -import -file filename -pw password -type pkcs12
    -crypto module_name -tokenlabel token_label -pw
password
    -secondaryDB filename -secondaryDBpw password
```

If you are using certificates or keys stored on PKCS #11 cryptographic hardware, note that iKeycmd and iKeyman are 64-bit programs. External modules required for PKCS #11 support will be loaded into a 64-bit process, therefore you must have a 64-bit PKCS #11 library installed for the administration of cryptographic hardware. The Windows and Linux x86 32-bit platforms are the only exceptions, as the iKeyman and iKeycmd programs are 32-bit on those platforms.

```
-cert -import -file filename -pw password -type pkcs12
    -crypto module_name -tokenlabel token_label -pw
password
    -secondaryDB filename -secondaryDBpw password -fips
```

Note: You cannot import a certificate containing multiple OU (organizational unit) attributes in the distinguished name.

-cert -list
List all certificates on a cryptographic device:

```
-cert -list all | personal | CA
    -crypto module_name -tokenlabel token_label -pw
password
```

If you are using certificates or keys stored on PKCS #11 cryptographic hardware, note that iKeycmd and iKeyman are 64-bit programs. External modules required for PKCS #11 support will be loaded into a 64-bit process, therefore you must have a 64-bit PKCS #11 library installed for the administration of cryptographic hardware. The Windows and Linux x86 32-bit platforms are the only exceptions, as the iKeyman and iKeycmd programs are 32-bit on those platforms.

-cert -receive
Receive a certificate from a file to a cryptographic device with secondary key database support:

```
-cert -receive -file filename -crypto module_name -tokenlabel
token_label
    -pw password  -default_cert yes | no
    -secondaryDB filename -secondaryDBpw password -format
ascii | binary
```

If you are using certificates or keys stored on PKCS #11 cryptographic hardware, note that iKeycmd and iKeyman are 64-bit programs. External modules required for PKCS #11 support will be loaded into a 64-bit process, therefore you must have a 64-bit PKCS #11 library installed for the administration of cryptographic hardware. The Windows and Linux x86 32-bit platforms are the only exceptions, as the iKeyman and iKeycmd programs are 32-bit on those platforms.

Using the **runmqakm** command:

-certreq -create
Create a certificate request on a cryptographic device:

```
-certreq -create -crypto module_name -tokenlabel token_label

    -pw password -label label -dn distinguished_name
    -size 1024 | 512 -file filename
    -sig_alg MD2_WITH_RSA | MD2WithRSA |MD5_WITH_RSA
 |
             MD5WithRSA |SHA1WithDSA | SHA1WithRSA
 |
             SHA256_WITH_RSA | SHA256WithRSA
             SHA2WithRSA | SHA384_WITH_RSA |
             SHA384WithRSA | SHA512_WITH_RSA |
             SHA512WithRSA | SHA_WITH_DSA  |
             SHA_WITH_RSA | SHAWithDSA |
             SHAWithRSA
```

Note: You cannot import a certificate containing multiple OU (organizational unit) attributes in the distinguished name.

If you are using certificates or keys stored on PKCS #11 cryptographic hardware, note that iKeycmd and iKeyman are 64-bit programs. External modules required for PKCS #11 support will be loaded into a 64-bit process, therefore you must have a 64-bit PKCS #11 library installed for the administration of cryptographic hardware. The Windows and Linux x86 32-bit platforms are the only exceptions, as the iKeyman and iKeycmd programs are 32-bit on those platforms.

-certreq -delete
Delete a certificate request from a cryptographic device:

```
-certreq -delete -crypto module_name -tokenlabel token_label

    -pw password -label label
```

If you are using certificates or keys stored on PKCS #11 cryptographic hardware, note that iKeycmd and iKeyman are 64-bit programs. External modules required for PKCS #11 support will be loaded into a 64-bit process, therefore you must have a 64-bit PKCS #11 library installed for the administration of cryptographic hardware. The Windows and Linux x86 32-bit platforms are the only exceptions, as the iKeyman and iKeycmd programs are 32-bit on those platforms.

-certreq -details
List the detailed information of a specific certificate request on a cryptographic device:

```
-certreq -details -crypto module_name -tokenlabel token_label

    -pw password -label label
```

If you are using certificates or keys stored on PKCS #11 cryptographic hardware, note that iKeycmd and iKeyman are 64-bit programs. External modules required for PKCS #11 support will be loaded into a 64-bit process, therefore you must have a 64-bit PKCS #11 library installed for the

administration of cryptographic hardware. The Windows and Linux x86 32-bit platforms are the only exceptions, as the iKeyman and iKeycmd programs are 32-bit on those platforms.

List the detailed information about a certificate request and show the full certificate request on a cryptographic device:

```
-certreq -details -showOID -crypto module_name -tokenlabel
token_label
    -pw password -label label
```

If you are using certificates or keys stored on PKCS #11 cryptographic hardware, note that iKeycmd and iKeyman are 64-bit programs. External modules required for PKCS #11 support will be loaded into a 64-bit process, therefore you must have a 64-bit PKCS #11 library installed for the administration of cryptographic hardware. The Windows and Linux x86 32-bit platforms are the only exceptions, as the iKeyman and iKeycmd programs are 32-bit on those platforms.

-certreq -extract
Extract a certificate request from a certificate request database on a cryptographic device into a file:

```
-certreq -extract -crypto module_name -tokenlabel token_label

    -pw password -label label -target filename
```

If you are using certificates or keys stored on PKCS #11 cryptographic hardware, note that iKeycmd and iKeyman are 64-bit programs. External modules required for PKCS #11 support will be loaded into a 64-bit process, therefore you must have a 64-bit PKCS #11 library installed for the administration of cryptographic hardware. The Windows and Linux x86 32-bit platforms are the only exceptions, as the iKeyman and iKeycmd programs are 32-bit on those platforms.

-certreq -list
List all certificate requests in the certificate request database on a cryptographic device:

```
-certreq -list -crypto module_name -tokenlabel token_label

    -pw password
```

If you are using certificates or keys stored on PKCS #11 cryptographic hardware, note that iKeycmd and iKeyman are 64-bit programs. External modules required for PKCS #11 support will be loaded into a 64-bit process, therefore you must have a 64-bit PKCS #11 library installed for the administration of cryptographic hardware. The Windows and Linux x86 32-bit platforms are the only exceptions, as the iKeyman and iKeycmd programs are 32-bit on those platforms.

runmqckm and runmqakm options

A table of the runmqckm and runmqakm options that can be present on the command line.

Note: WebSphere MQ does not support SHA-3 or SHA-5 algorithms. You can use the digital signature algorithm names SHA384WithRSA and SHA512WithRSA because both algorithms are members of the SHA-2 family.

The digital signature algorithm names SHA3WithRSA and SHA5WithRSA are deprecated because they are an abbreviated form of SHA384WithRSA and SHA512WithRSA respectively.

The meaning of an option can depend on the object and action specified in the command.

*Table 30. Options that can be used with **runmqckm** and **runmqakm***

Option	Description
`-create`	Option to create a key database.

*Table 30. Options that can be used with **runmqckm** and **runmqakm** (continued)*	
Option	**Description**
`-crypto`	Name of the module to manage a PKCS #11 cryptographic device. The value after `-crypto` is optional if you specify the module name in the properties file. If you are using certificates or keys stored on PKCS #11 cryptographic hardware, note that iKeycmd and iKeyman are 32-bit programs. External modules required for PKCS #11 support will be loaded into a 32-bit process, therefore you must have a 32-bit PKCS #11 library installed for the administration of cryptographic hardware, and must specify this library to iKeycmd or iKeyman. The HP Itanium platform is the only exception, as the iKeyman program is 64-bit on the HP Itanium platform.
`-db`	Fully qualified path name of a key database.
`-default_cert`	Sets a certificate as the default certificate. The value can be `yes` or `no`. The default is `no`.
`-dn`	X.500 distinguished name. The value is a string enclosed in double quotation marks, for example "`CN=John Smith,O=IBM,OU=Test,C=GB`". Note that the CN, O, and C attributes are required. **Note:** Avoid using multiple OU attributes in distinguished names when you create self-signed certificates. When you create such certificates, only the **last entered** OU value is accepted into the certificate.
`-encryption`	Strength of encryption used in certificate export command. The value can be `strong` or `weak` . The default is `strong`.
`-expire`	Expiration time in days of either a certificate or a database password. The default is 365 days for a certificate password. There is no default time for a database password: use the `-expire` option to set a database password expiration time explicitly.
`-file`	File name of a certificate or certificate request.
`-format`	Format of a certificate. The value can be `ascii` for Base64_encoded ASCII or `binary` for Binary DER data. The default is `ascii`.
`-label`	Label attached to a certificate or certificate request.
`-new_format`	New format of key database.
`-new_label`	Used on a certificate import command, this option allows a certificate to be imported with a different label from the label it had in the source key database.
`-new_pw`	New database password.
`-old_format`	Old format of key database.
`-pw`	Password for the key database or PKCS #12 file.
`-secondaryDB`	Name of a secondary key database for PKCS #11 device operations.
`-secondaryDBpw`	Password for the secondary key database for PKCS #11 device operations.
`-showOID`	Displays the full certificate or certificate request.

*Table 30. Options that can be used with **runmqckm** and **runmqakm** (continued)*	
Option	**Description**
-sig_alg	The hashing algorithm used during the creation of a certificate request, a self-signed certificate, or the signing of a certificate. This hashing algorithm is used to create the signature associated with the newly-created certificate or certificate request. For runmqckm, the value can be MD2_WITH_RSA, MD2WithRSA, MD5_WITH_RSA, MD5WithRSA , SHA1WithDSA, SHA1WithRSA, SHA256_WITH_RSA, SHA256WithRSA, SHA2WithRSA, SHA384_WITH_RSA, SHA384WithRSA , SHA512_WITH_RSA, SHA512WithRSA , SHA_WITH_DSA, SHA_WITH_RSA, SHAWithDSA, or SHAWithRSA. The default value is SHA1WithRSA. For runmqakm, the value can be md5, MD5_WITH_RSA, MD5WithRSA, SHA_WITH_DSA, SHA_WITH_RSA , sha1, SHA1WithDSA, SHA1WithECDSA , SHA1WithRSA, sha224, SHA224_WITH_RSA, SHA224WithDSA, SHA224WithECDSA, SHA224WithRSA, sha256, SHA256_WITH_RSA, SHA256WithDSA , SHA256WithECDSA, SHA256WithRSA , SHA2WithRSA, sha384, SHA384_WITH_RSA, SHA384WithECDSA, SHA384WithRSA, sha512, SHA512_WITH_RSA , SHA512WithECDSA, SHA512WithRSA , SHAWithDSA, SHAWithRSA, EC_ecdsa_with_SHA1, EC_ecdsa_with_SHA224 , EC_ecdsa_with_SHA256, EC_ecdsa_with_SHA384 , or EC_ecdsa_with_SHA512. The default value is SHA1WithRSA.
-size	Key size. For runmqckm, the value can be 512, 1024, or 2048. The default value is 1024 bits. For runmqakm, the value depends upon the signature algorithm: • For RSA signature algorithms (the default algorithm used if no -sig_alg is specified), the value can be 512, 1024, 2048, or 4096. An RSA key size of 512 bits os not permitted if the **-fips** parameter is enabled. The default RSA key size is 1024 bits. • For Elliptic Curve algorithms, the value can be 256, 384, or 512. The default Elliptic Curve key size depends upon the signature algorithm. For SHA256, it is 256; for SHA384 , it is 384; and for SHA512, it is 512.
-stash	Stash the key database password to a file.
-target	Destination file or database.
-target_pw	Password for the key database if -target specifies a key database.
-target_type	Type of database specified by -target operand. See -type option for permitted values.
-tokenLabel	Label of a PKCS #11 cryptographic device.
-trust	Trust status of a CA certificate. The value can be enable or disable. The default is enable.
-type	Type of database. The value can be: • cms for a CMS key database • pkcs12 for a PKCS #12 file.
-x509version	Version of X.509 certificate to create. The value can be 1, 2, or 3. The default is 3.

Note: Properties provided with IBM Global Secure Toolkit (GSKit) relating to symmetric-key encryption -seckey option in the 'runmqckm' utility are ignored and not supported by WebSphere MQ.

runmqakm error codes

A table of the numeric error codes issued by runmqakm, and what they mean.

Error code	Error Message
0	Success
1	Unknown error occurred
2	An ASN.1 encoding/decoding error occurred.
3	An error occurred while initializing ASN.1 encoder/decoder.
4	An ASN.1 encoding/decoding error occurred because of an out-of-range index or non-existent optional field.
5	A database error occurred.
6	An error occurred while opening the database file, check for file existence and permission.
7	An error occurred while re-opening the database file.
8	Database creation failed.
9	The database already exists.
10	An error occurred while deleting the database file.
11	The database could not be opened.
12	An error occurred while reading the database file.
13	An error occurred while writing data to the database file.
14	A database validation error occurred.
15	An invalid database version was encountered.
16	An invalid database password was encountered.
17	An invalid database file type was encountered.
18	The specified database has been corrupted.
19	An invalid password was provided or the key database has been tampered with or corrupted.
20	A database key entry integrity error occurred.
21	A duplicate certificate already exists in the database.
22	A duplicate key already exists in the database (Record ID).
23	A certificate with the same label already existed in the key database.

Error code	Error Message
24	A duplicate key already exists in the database (Signature).
25	A duplicate key already exists in the database (Unsigned Certificate).
26	A duplicate key already exists in the database (Issuer and Serial Number).
27	A duplicate key already exists in the database (Subject Public Key Info).
28	A duplicate key already exists in the database (Unsigned CRL).
29	The label has been used in the database.
30	A password encryption error occurred.
31	An LDAP related error occurred. (LDAP is not supported by this program)
32	A cryptographic error occurred.
33	An encryption/decryption error occurred.
34	An invalid cryptographic algorithm was found.
35	An error occurred while signing data.
36	An error occurred while verifying data.
37	An error occurred while computing digest of data.
38	An invalid cryptographic parameter was found.
39	An unsupported cryptographic algorithm was encountered.
40	The specified input size is greater than the supported modulus size.
41	An unsupported modulus size was found.
42	A database validation error occurred.
43	Key entry validation failed.
44	A duplicate extension field exists.
45	The version of the key is wrong.
46	A required extension field does not exist.
47	The validity period does not include today or does not fall within its issuer's validity period
48	The validity period does not include today or does not fall within its issuer's validity period.
49	An error occurred while validating private key usage extension.
50	The issuer of the key was not found.
51	A required certificate extension is missing.

Error code	Error Message
52	An invalid basic constraint extension was found.
53	The key signature validation failed.
54	The root key of the key is not trusted.
55	The key has been revoked.
56	An error occurred while validating authority key identifier extension.
57	An error occurred while validating private key usage extension.
58	An error occurred while validating subject alternative name extension.
59	An error occurred while validating issuer alternative name extension.
60	An error occurred while validating key usage extension.
61	An unknown critical extension was found.
62	An error occurred while validating key pair entries.
63	An error occurred while validating CRL.
64	A mutex error occurred.
65	An invalid parameter was found.
66	A null parameter or memory allocation error was encountered.
67	Number or size is too large or too small.
68	The old password is invalid.
69	The new password is invalid.
70	The password has expired.
71	A thread related error occurred.
72	An error occurred while creating threads.
73	An error occurred while a thread was waiting to exit.
74	An I/O error occurred.
75	An error occurred while loading CMS.
76	A cryptography hardware related error occurred.
77	The library initialization routine was not successfully called.
78	The internal database handle table is corrupted.
79	A memory allocation error occurred.
80	An unrecognized option was found.
81	An error occurred while getting time information.

Error code	Error Message
82	Mutex creation error occurred.
83	An error occurred while opening message catalog.
84	An error occurred while opening error message catalog
85	A null file name was found.
86	An error occurred while opening files, check for file existence and permissions.
87	An error occurred while opening files to read.
88	An error occurred while opening files to write.
89	There is no such file.
90	The file cannot be opened because of its permission setting.
91	An error occurred while writing data to files.
92	An error occurred while deleting files.
93	Invalid Base64-encoded data was found.
94	An invalid Base64 message type was found.
95	An error occurred while encoding data with Base64 encoding rule.
96	An error occurred while decoding Base64-encoded data.
97	An error occurred while getting a distinguished name tag.
98	The required common name field is empty.
99	The required country or region name field is empty.
100	An invalid database handle was found.
101	The key database does not exist.
102	The request key pair database does not exist.
103	The password file does not exist.
104	The new password is identical to the old one.
105	No key was found in the key database.
106	No request key was found.
107	No trusted CA was found.
108	No request key was found for the certificate.
109	There is no private key in the key database.
110	There is no default key in the key database.
111	There is no private key in the key record.
112	There is no certificate in the key record.

Error code	Error Message
113	There is no CRL entry.
114	An invalid key database file name was found.
115	An unrecognized private key type was found.
116	An invalid distinguished name input was found.
117	No key entry was found that has the specified key label.
118	The key label list has been corrupted.
119	The input data is not valid PKCS12 data.
120	The password is invalid or the PKCS12 data has been corrupted or been created with later version of PKCS12
121	An unrecognized key export type was found.
122	An unsupported password-based encryption algorithm was found.
123	An error occurred while converting the key ring file to a CMS key database.
124	An error occurred while converting the CMS key database to a key ring file.
125	An error occurred while creating a certificate for the certificate request.
126	A complete issuer chain cannot be built.
127	Invalid WEBDB data was found.
128	There is no data to be written to the key ring file.
129	The number of days that you entered extends beyond the permitted validity period.
130	The password is too short; it must consist of at least {0} characters.
131	A password must contain at least one numeric digit.
132	All characters in the password are either alphabetic or numeric characters.
133	An unrecognized or unsupported signature algorithm was specified.
134	An invalid database type was encountered.
135	The specified secondary key database is in use by another PKCS#11 device.
136	No secondary key database was specified.
137	The label does not exist on the PKCS#11 device.
138	Password required to access the PKCS#11 device.

Error code	Error Message
139	Password not required to access the PKCS#11 device.
140	Unable to load the cryptographic library.
141	PKCS#11 is not supported for this operation.
142	An operation on a PKCS#11 device has failed.
143	The LDAP user is not a valid user. (LDAP is not supported by this program)
144	The LDAP user is not a valid user. (LDAP is not supported by this program)
145	The LDAP query failed. (LDAP is not supported by this program)
146	An invalid certificate chain was found.
147	The root certificate is not trusted.
148	A revoked certificate was encountered.
149	A cryptographic object function failed.
150	There is no certificate revocation list data source available.
151	There is no cryptographic token available.
152	FIPS mode is not available.
153	There is a conflict with the FIPS mode settings.
154	The password entered does not meet the minimum required strength.
200	There was a failure during initialization of the program.
201	Tokenization of the arguments passed to the runmqakm Program failed.
202	The object identified in the command is not a recognized object.
203	The action passed is not a known -keydb action.
204	The action passed is not a known -cert action.
205	The action passed is not a known -certreq action.
206	There is a tag missing for the requested command.
207	The value passed with the -version tag is not a recognized value.
208	The value passed with the -size tag is not a recognized value.
209	The value passed in with the -dn tag is not in the correct format.
210	The value passed in with the -format tag is not a recognized value.

Error code	Error Message
211	There was an error associated with opening the file.
212	PKCS12 is not supported at this stage.
213	The cryptographic token you are trying to change the password for is not password protected.
214	PKCS12 is not supported at this stage.
215	The password entered does not meet the minimum required strength.
216	FIPS mode is not available.
217	The number of days you have entered as the expiry date is out of the allowed range.
218	Password strength failed the minimum requirements.
219	No Default certificate was found in the requested key database.
220	An invalid trust status was encountered.
221	An unsupported signature algorithm was encountered. At this stage only MD5 and SHA1 are supported.
222	PCKS11 not supported for that particular operation.
223	The action passed is not a known -random action.
224	A length than less than zero is not allowed.
225	When using the -strong tag the minimum length password is 14 characters.
226	When using the -strong tag the maximum length password is 300 characters.
227	The MD5 algorithm is not supported when in FIPS mode.
228	The site tag is not supported for the -cert -list command. This attribute is added for backward compatibility and potential future enhancement.
229	The value associated with the -ca tag is not recognized. The value must be either 'true' or 'false'.
230	The value passed in with the -type tag is not valid.
231	The value passed in with the -expire tag is below the allowed range.
232	The encryption algorithm used or requested is not supported.
233	The target already exists.

MQSC reference

Use MQSC commands to manage queue manager objects, including the queue manager itself, queues, process definitions, channels, client connection channels, listeners, services, namelists, clusters, and authentication information objects.

For an overview of using MQSC commands for administering IBM WebSphere MQ, see Performing local administration tasks using MQSC commands.

MQSC commands use certain special characters to have certain meanings. For more information about these special characters and how to use them, see “Generic values and characters with special meanings” on page 169.

To find out how you can build scripts using MQSC commands, see “Building command scripts” on page 170.

For the full list of MQSC commands, see “The MQSC commands” on page 171.

Related concepts

“IBM WebSphere MQ Control commands” on page 6
Find out how to use the WebSphere MQ control commands.

“Programmable command formats reference” on page 685
Programmable Command Formats (PCFs) define command and reply messages that can be exchanged between a program and any queue manager (that supports PCFs) in a network. PCFs simplify queue manager administration and other network administration.

Generic values and characters with special meanings

The following information describes generic values, and characters that have special meaning when you build MQSC commands.

Wherever a parameter can have a generic value, it is entered ending with an asterisk (*), for example ABC*. A generic value means 'all values beginning with'; so ABC* means 'all values beginning with ABC'.

If characters that require quotation marks are used in the value, the asterisk must be placed inside the quotation marks, thus 'abc*'. The asterisk must be the last or only character in the value.

The question mark (?) and colon (:) are not allowed in generic values.

Character	Description
	Blanks are used as separators. Multiple blanks are equivalent to a single blank, except in strings that have apostrophes (') round them. Any trailing blanks in those string attributes which are based on MQCHARV types are treated as significant.
,	Commas are used as separators. Multiple commas are equivalent to a single comma, except in strings that have apostrophes (') round them.
'	An apostrophe indicates the beginning or end of a string. IBM WebSphere MQ leaves all characters that have quotation marks round them exactly as they are entered. The containing apostrophes are not included when calculating the length of the string.
''	Single quotation marks inside a string are treated by IBM WebSphere MQ as one character when calculating the length of the string and the string is not terminated.
=	On z/OS, an equals sign indicates the start of a parameter value which is ended by a comma or blank.
(	An open parenthesis indicates the beginning of a parameter value or list of values.
)	A close parenthesis indicates the end of a parameter value or list of values.

Character	Description
:	A colon indicates an inclusive range. For example (1:5) means (1,2,3,4,5). This notation can be used only in TRACE commands.
*	An asterisk means "all". For example, DISPLAY TRACE (*) means display all traces, and DISPLAY QUEUE (PAY*) means display all queues with names that begin with PAY.

When you need to use any of these special characters in a field (for example as part of a description), you must enclose the whole string in single quotation marks.

Building command scripts

Use this information to learn how to build command scripts.

You might want to build the MQSC commands into a script when you use:

- The CSQINP1, CSQINP2, and CSQINPX initialization data sets or the CSQUTIL batch utility on z/OS.
- The STRMQM command on IBM i.
- The `runmqsc` command on UNIX, Linux, and Windows systems.

When you do this, follow these rules:

- Each command must start on a new line.
- On each platform, there might be platform-specific rules about the line length and record format. If scripts are to be readily portable to different platforms, the significant length of each line should be restricted to 72 characters.
  - On z/OS, scripts are held in a fixed-format data set, with a record length of 80. Only columns 1 through 72 can contain meaningful information; columns 73 through 80 are ignored.
  - On AIX, HP-UX, Linux, IBM i, Solaris, and Windows, each line can be of any length up to a maximum of 2048 characters.
  - On other UNIX systems, each line can be of any length up to and including 80 characters.
- A line must not end in a keyboard control character (for example, a tab).
- If the last nonblank character on a line is:
  - A minus sign (-), this indicates that the command is to be continued from the start of the next line.
  - A plus sign (+), this indicates that the command is to be continued from the first nonblank character in the next line. If you use + to continue a command remember to leave at least one blank before the next parameter (except on z/OS where this is not necessary).

  Either of these can occur within a parameter, data value, or a string enclosed in quotation marks. For example,

```
   'Fr+
    ed'
```

and

```
   'Fr-
ed'
```

(where the 'e' of the second line of the second example is in the first position of the line) are both equivalent to

```
   'Fred'
```

MQSC commands that are contained within an Escape PCF (Programmable Command Format) command cannot be continued in this way. The entire command must be contained within a single Escape command. (For information about the PCF commands, see Introduction to Programmable Command Formats).

- + and - values used at the ends of lines are discarded when the command is reassembled into a single string.
- On AIX, HP-UX, Linux, IBM i, SolarisSolaris, and Windows you can use a semicolon character (;) to terminate a command, even if you have entered a plus sign (+) at the end of the previous line. You can also use the semicolon in the same way on z/OS for commands issued from the CSQUTIL batch utility program.
- A line starting with an asterisk (*) in the first position is ignored. This can be used to insert comments into the file.

  A blank line is also ignored.

  If a line ends with a continuation character (- or +), the command continues with the next line that is not a comment line or a blank line.
- When running MQSC commands interactively, you end the interactive session by typing the END command. This applies to:
  - UNIX, Linux, and Windows systems, where you start the interactive session by entering `runmqsc`
  - IBM i systems, where you start the interactive session from the WRKMQM panel
- On Windows, if certain special characters such as the pound sign (£) and the logical NOT (¬) are used in a command script (for example, as part of an object description), they will be displayed differently in the output from a command such as DISPLAY QLOCAL.

The MQSC commands

Use this topic as a reference to the MQSC commands.

This section describes, in alphabetical order, all the MQSC commands that can be issued by operators and administrators.

Related information

Clustering: Using REFRESH CLUSTER best practices

ALTER AUTHINFO

Use the MQSC command ALTER AUTHINFO to alter an authentication information object.

These objects contain the definitions required to perform certificate revocation checking using OCSP or Certificate Revocation Lists (CRLs) on LDAP servers.

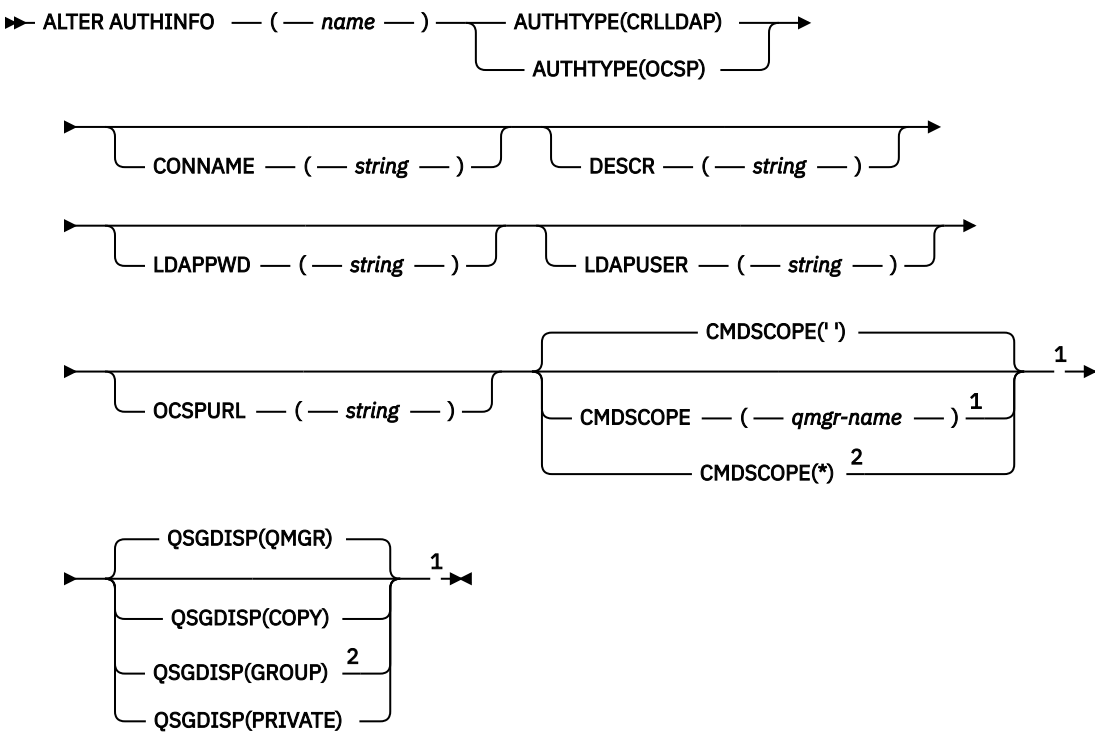
UNIX and Linux	Windows
✓	✓

Parameters not specified in the ALTER AUTHINFO command result in the existing values for those parameters being left unchanged.

- Syntax diagram
- “Parameter descriptions for ALTER AUTHINFO” on page 172

Synonym: ALT AUTHINFO

ALTER AUTHINFO



Notes:

[1] Valid only on z/OS.

[2] Valid only when the queue manager is a member of a queue-sharing group. You can use queue-sharing groups only on WebSphere MQ for z/OS.

Parameter descriptions for ALTER AUTHINFO

name

Name of the authentication information object. This parameter is required.

The name must not be the same as any other authentication information object name currently defined on this queue manager (unless REPLACE or ALTER is specified). See Rules for naming IBM WebSphere MQ objects.

AUTHTYPE

The type of authentication information.

CRLLDAP

Certificate Revocation List checking is done using LDAP servers.

OCSP

Certificate revocation checking is done using OCSP.

An authentication information object with AUTHTYPE(OCSP) does not apply for use on IBM i or z/OS queue managers. However, it can be specified on those platforms to be copied to the client channel definition table (CCDT) for client use.

This parameter is required.

You cannot define an authentication information object as LIKE one with a different AUTHTYPE. You cannot alter the AUTHTYPE of an authentication information object after you have created it.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if QSGDISP is set to GROUP.

' '
The command is executed on the queue manager on which it was entered.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name other than the queue manager on which it was entered, only if you are using a shared queue environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of * is the same as entering the command on every queue manager in the queue-sharing group.

CONNAME(*string*)
The host name, IPv4 dotted decimal address, or IPv6 hexadecimal notation of the host on which the LDAP server is running, with an optional port number.

CONNAME is required if AUTHTYPE(CRLLDAP) is specified. CONNAME is not valid if AUTHTYPE(CRLLDAP) is not specified.

If you specify the connection name as an IPv6 address, only systems with an IPv6 stack are able to resolve this address. If the AUTHINFO object is part of the CRL namelist of the queue manager, ensure that any clients using the client channel table generated by the queue manager can resolve the connection name.

On z/OS, if a CONNAME is to resolve to an IPv6 network address, a level of z/OS that supports IPv6 for connection to an LDAP server is required.

The syntax for CONNAME is the same as for channels. For example,

```
conname('hostname(nnn)')
```

where *nnn* is the port number.

The maximum length for the field is 264 characters on IBM i, UNIX systems, and Windows, and 48 characters on z/OS.

DESCR(*string*)
Plain-text comment. It provides descriptive information about the authentication information object when an operator issues the DISPLAY AUTHINFO command (see “DISPLAY AUTHINFO” on page 466).

It must contain only displayable characters. The maximum length is 64 characters. In a DBCS installation, it can contain DBCS characters (subject to a maximum length of 64 bytes).

Note: If characters are used that are not in the coded character set identifier (CCSID) for this queue manager, they might be translated incorrectly if the information is sent to another queue manager.

LDAPPWD(*string*)
The password associated with the Distinguished Name of the user who is accessing the LDAP server. Its maximum size is 32 characters.

This parameter is valid only for AUTHTYPE(CRLLDAP).

On z/OS, the LDAPPWD used for accessing the LDAP server might not be the one defined in the AUTHINFO object. If more than one AUTHINFO object is placed in the namelist referred to by the QMGR parameter SSLCRLNL, the LDAPPWD in the first AUTHINFO object is used for accessing all LDAP Servers.

LDAPUSER(*string*)
The Distinguished Name of the user who is accessing the LDAP server. (See the SSLPEER parameter for more information about distinguished names.)

This parameter is valid only for AUTHTYPE(CRLLDAP).

The maximum size for the user name is 1024 characters on IBM i, UNIX systems, and Windows, and 256 characters on z/OS.

On z/OS, the LDAPUSER used for accessing the LDAP Server might not be the one defined in the AUTHINFO object. If more than one AUTHINFO object is placed in the namelist referred to by the QMGR parameter SSLCRLNL, the LDAPUSER in the first AUTHINFO object is used for accessing all LDAP Servers.

On IBM i, UNIX systems, and Windows, the maximum accepted line length is defined to be BUFSIZ, which can be found in stdio.h.

OCSPURL
The URL of the OCSP responder used to check for certificate revocation. This value must be an HTTP URL containing the host name and port number of the OCSP responder. If the OCSP responder is using port 80, which is the default for HTTP, then the port number can be omitted. HTTP URLs are defined in RFC 1738.

This field is case sensitive. It must start with the string http:// in lowercase. The rest of the URL might be case sensitive, depending on the OCSP server implementation. To preserve case, use single quotation marks to specify the OCSPURL parameter value, for example:

```
OCSPURL('http://ocsp.example.ibm.com')
```

This parameter is applicable only for AUTHTYPE(OCSP), when it is mandatory.

QSGDISP
This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves).

QSGDISP	**ALTER**
COPY	The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameters QSGDISP(COPY). Any object residing in the shared repository, or any object defined using a command that had the parameters QSGDISP(QMGR), is not affected by this command.

GROUP	The object definition resides in the shared repository. The object was defined using a command that had the parameters QSGDISP(GROUP). Any object residing on the page set of the queue manager that executes the command (except a local copy of the object) is not affected by this command. If the command is successful, the following command is generated and sent to all active queue managers in the queue-sharing group to attempt to refresh local copies on page set zero:
	`DEFINE AUTHINFO(name)`
	`REPLACE QSGDISP(COPY)`
	The ALTER for the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.

PRIVATE	The object resides on the page set of the queue manager that executes the command, and was defined with QSGDISP(QMGR) or QSGDISP(COPY). Any object residing in the shared repository is unaffected.

QSGDISP	ALTER
QMGR	The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameters QSGDISP(QMGR). Any object residing in the shared repository, or any local copy of such an object, is not affected by this command.

ALTER CHANNEL

Use the MQSC command ALTER CHANNEL to alter the parameters of a channel.

UNIX and Linux	Windows
✓	✓

Parameters not specified in the ALTER CHANNEL command result in the existing values for those parameters being left unchanged.

Synonym: ALT CHL

- "Usage notes" on page 175
- "Parameter descriptions for ALTER CHANNEL" on page 175

Usage notes

- Changes take effect after the channel is next started.
- For cluster-sender channels, you can only alter channels that have been created manually.
- If you change the XMITQ name or the CONNAME, you must reset the sequence number at both ends of the channel. (See "RESET CHANNEL" on page 648 for information about the SEQNUM parameter.)

Parameter descriptions for ALTER CHANNEL

The following table shows the parameters that are relevant for each type of channel. There is a description of each parameter after the table. Parameters are optional unless the description states that they are required.

Table 31. ALTER CHANNEL parameters

Parameter	SDR	SVR	RCVR	RQSTR	CLNT-CONN	SVR-CONN	CLUS-SDR	CLUS-RCVR	MQTT
AFFINITY					✓				
BATCHHB	✓	✓					✓	✓	
BATCHINT	✓	✓					✓	✓	
BATCHLIM	✓	✓					✓	✓	
BATCHSZ	✓	✓	✓	✓			✓	✓	
channel-name	✓	✓	✓	✓	✓	✓	✓	✓	✓
CHLTYPE	✓	✓	✓	✓	✓	✓	✓	✓	✓
CLNTWGHT					✓				
CLUSNL							✓	✓	

Table 31. ALTER CHANNEL parameters (continued)									
Parameter	**SDR**	**SVR**	**RCVR**	**RQSTR**	**CLNT-CONN**	**SVR-CONN**	**CLUS-SDR**	**CLUS-RCVR**	**MQTT**
CLUSTER							✓	✓	
CLWLPRTY							✓	✓	
CLWLRANK							✓	✓	
CLWLWGHT							✓	✓	
CMDSCOPE	✓	✓	✓	✓	✓	✓	✓	✓	
COMPHDR	✓	✓	✓	✓	✓	✓	✓	✓	
COMPMSG	✓	✓	✓	✓	✓	✓	✓	✓	
CONNAME	✓	✓		✓	✓		✓	✓	
CONVERT	✓	✓					✓	✓	
DEFCDISP	✓	✓	✓	✓		✓			
DEFRECON					✓				
DESCR	✓	✓	✓	✓	✓	✓	✓	✓	✓
DISCINT	✓	✓				✓	✓	✓	
HBINT	✓	✓	✓	✓	✓	✓	✓	✓	
KAINT	✓	✓	✓	✓	✓	✓	✓	✓	
LIKE	✓	✓	✓	✓	✓	✓	✓	✓	✓
LOCLADDR	✓	✓		✓	✓		✓	✓	✓
LONGRTY	✓	✓					✓	✓	
LONGTMR	✓	✓					✓	✓	
MAXINST						✓			
MAXINSTC						✓			
MAXMSGL	✓	✓	✓	✓	✓	✓	✓	✓	
MCANAME	✓	✓		✓			✓	✓	
MCATYPE	✓	✓		✓			✓	✓	
MCAUSER			✓	✓		✓		✓	✓
MODENAME	✓	✓		✓	✓		✓	✓	
MONCHL	✓	✓	✓	✓		✓	✓	✓	

Table 31. ALTER CHANNEL parameters (continued)									
Parameter	**SDR**	**SVR**	**RCVR**	**RQSTR**	**CLNT-CONN**	**SVR-CONN**	**CLUS-SDR**	**CLUS-RCVR**	**MQTT**
MRDATA			✓	✓				✓	
MREXIT			✓	✓				✓	
MRRTY			✓	✓				✓	
MRTMR			✓	✓				✓	
MSGDATA	✓	✓	✓	✓			✓	✓	
MSGEXIT	✓	✓	✓	✓			✓	✓	
NETPRTY								✓	
NPMSPEED	✓	✓	✓	✓			✓	✓	
PASSWORD	✓	✓		✓	✓		✓	✓	
PROPCTL	✓	✓					✓	✓	
PUTAUT			✓	✓		✓		✓	
QMNAME					✓				
QSGDISP	✓	✓	✓	✓	✓	✓	✓	✓	
RCVDATA	✓	✓	✓	✓	✓	✓	✓	✓	
RCVEXIT	✓	✓	✓	✓	✓	✓	✓	✓	
SCYDATA	✓	✓	✓	✓	✓	✓	✓	✓	
SCYEXIT	✓	✓	✓	✓	✓	✓	✓	✓	
SENDDATA	✓	✓	✓	✓	✓	✓	✓	✓	
SENDEXIT	✓	✓	✓	✓	✓	✓	✓	✓	
SEQWRAP	✓	✓	✓	✓			✓	✓	
SHARECNV					✓	✓			
SHORTRTY	✓	✓					✓	✓	
SHORTTMR	✓	✓					✓	✓	
SSLCAUTH		✓	✓	✓		✓		✓	✓
SSLCIPH[1]	✓	✓	✓	✓	✓	✓	✓	✓	✓[1]
SSLPEER	✓	✓	✓	✓	✓	✓	✓	✓	
STATCHL	✓	✓	✓	✓			✓	✓	

Table 31. ALTER CHANNEL parameters (continued)									
Parameter	**SDR**	**SVR**	**RCVR**	**RQSTR**	**CLNT-CONN**	**SVR-CONN**	**CLUS-SDR**	**CLUS-RCVR**	**MQTT**
TPNAME	✓	✓		✓	✓	✓	✓	✓	
TRPTYPE	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEDLQ	✓	✓	✓	✓			✓	✓	
USERID	✓	✓		✓	✓		✓		
XMITQ	✓	✓							

Note:

1. If SSLCIPH is used with MQTT channels, it means SSL Cipher Suite. For all other channel types, it means SSL CipherSpec. See SSLCIPH.

AFFINITY

The channel affinity attribute is used so client applications that connect multiple times using the same queue manager name can choose whether to use the same client channel definition for each connection. This attribute is intended to be used when multiple applicable channel definitions are available.

PREFERRED

The first connection in a process reading a client channel definition table (CCDT) creates a list of applicable definitions based on the weighting with any applicable CLNTWGHT(0) definitions first and in alphabetical order. Each connection in the process attempts to connect using the first definition in the list. If a connection is unsuccessful the next definition is used. Unsuccessful non-CLNTWGHT(0) definitions are moved to the end of the list. CLNTWGHT(0) definitions remain at the start of the list and are selected first for each connection. For C, C++ and .NET (including fully managed .NET) clients the list is updated if the CCDT has been modified since the list was created. Each client process with the same host name creates the same list.

NONE

The first connection in a process reading a CCDT creates a list of applicable definitions. All connections in a process select an applicable definition based on the weighting with any applicable CLNTWGHT(0) definitions selected first in alphabetical order. For C, C++ and .NET (including fully managed .NET) clients the list is updated if the CCDT has been modified since the list was created.

For example, suppose we had the following definitions in the CCDT:

```
CHLNAME(A) QMNAME(QM1) CLNTWGHT(3)
CHLNAME(B) QMNAME(QM1) CLNTWGHT(4)
CHLNAME(C) QMNAME(QM1) CLNTWGHT(4)
```

The first connection in a process creates its own ordered list based on the weightings. So it might, for example, create the ordered list CHLNAME(B), CHLNAME(A), CHLNAME(C).

For AFFINITY(PREFERRED), each connection in the process attempts to connect using CHLNAME(B). If a connection is unsuccessful the definition is moved to the end of the list which now becomes CHLNAME(A), CHLNAME(C), CHLNAME(B). Each connection in the process then attempts to connect using CHLNAME(A).

For AFFINITY(NONE), each connection in the process attempts to connect using one of the three definitions selected at random based on the weightings.

When sharing conversations is enabled with a non-zero channel weighting and AFFINITY(NONE), multiple connections in a process using the same queue manager name can connect using different applicable definitions rather than sharing an existing channel instance.

BATCHHB(*integer*)
Specifies whether batch heartbeats are to be used. The value is the length of the heartbeat in milliseconds.

Batch heartbeats allow a sending channel to verify that the receiving channel is still active just before committing a batch of messages, so that if the receiving channel is not active, the batch can be backed out rather than becoming in-doubt, as would otherwise be the case. By backing out the batch, the messages remain available for processing so they could, for example, be redirected to another channel.

If the sending channel has had a communication from the receiving channel within the batch heartbeat interval, the receiving channel is assumed to be still active. If not, a 'heartbeat' is sent to the receiving channel to check.

The value must be in the range zero through 999999. A value of zero indicates that batch heartbeating is not used.

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, CLUSSDR, and CLUSRCVR.

BATCHINT(*integer*)
The minimum amount of time, in milliseconds, that a channel keeps a batch open.

The batch is terminated when one of the following conditions is met:

- BATCHSZ messages have been sent.
- BATCHLIM bytes have been sent.
- The transmission queue is empty and BATCHINT is exceeded.

The value must be in the range 0 - 999999999. Zero means that the batch is terminated as soon as the transmission queue becomes empty (or the BATCHSZ limit is reached).

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, CLUSSDR, or CLUSRCVR.

BATCHLIM(*integer*)

The limit, in kilobytes, of the amount of data that can be sent through a channel before taking a sync point. A sync point is taken after the message that caused the limit to be reached has flowed across the channel. A value of zero in this attribute means that no data limit is applied to batches over this channel.

The batch is terminated when one of the following conditions is met:

- BATCHSZ messages have been sent.
- BATCHLIM bytes have been sent.
- The transmission queue is empty and BATCHINT is exceeded.

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, CLUSSDR, or CLUSRCVR.

The value must be in the range 0 - 999999. The default value is 5000.

This parameter is supported on all platforms.

BATCHSZ(*integer*)
The maximum number of messages that can be sent through a channel before taking a sync point.

The maximum batch size used is the lowest of the following values:

- The BATCHSZ of the sending channel.
- The BATCHSZ of the receiving channel.
- On z/OS, three less than the maximum number of uncommitted messages allowed at the sending queue manager (or one if this value is zero or less). On platforms other than z/OS, the maximum

number of uncommitted messages allowed at the sending queue manager (or one if this value is zero or less).

- On z/OS, three less than the maximum number of uncommitted messages allowed at the receiving queue manager (or one if this value is zero or less). On platforms other than z/OS, the maximum number of uncommitted messages allowed at the receiving queue manager (or one if this value is zero or less).

The maximum number of uncommitted messages is specified by the MAXUMSGS parameter of the ALTER QMGR command.

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, RCVR, RQSTR, CLUSSDR, or CLUSRCVR.

The value must be in the range 1 through 9999.

(channel-name)
The name of the new channel definition.

This parameter is required on all types of channel. On CLUSSDR channels, it can take a different form from the other channel types. If your convention for naming cluster-sender channels includes the name of the queue manager, you can define a cluster-sender channel using the +QMNAME+ construction. After connection to the matching cluster-receiver channel, IBM WebSphere MQ substitutes the correct repository queue manager name in place of +QMNAME+ in the cluster-sender channel definition. This facility applies to AIX, HP-UX, Linux, IBM i, Solaris, and Windows only; for further information see Components of a cluster.

The name must not be the same as any existing channel defined on this queue manager (unless REPLACE or ALTER is specified). On z/OS, client-connection channel names can duplicate others.

The maximum length of the string is 20 characters, and the string must contain only valid characters; see Rules for naming IBM WebSphere MQ objects.

CHLTYPE
Channel type. This parameter is required. It must follow immediately after the *(channel-name)* parameter on all platforms except z/OS.

SDR
Sender channel

SVR
Server channel

RCVR
Receiver channel

RQSTR
Requester channel

CLNTCONN
Client-connection channel

SVRCONN
Server-connection channel

CLUSSDR
Cluster-sender channel

CLUSRCVR
Cluster-receiver channel

Note: If you are using the REPLACE option, you cannot change the channel type.

CLNTWGHT
The client channel weighting attribute is used so client channel definitions can be selected at random based on their weighting when more than one suitable definition is available. Specify a value in the range 0 - 99.

The special value 0 indicates that no random load balancing is performed and applicable definitions are selected in alphabetical order. To enable random load balancing the value can be in the range 1 through 99 where 1 is the lowest weighting and 99 is the highest.

When a client issues an MQCONN with queue manager name "*<name>" and more than one suitable definition is available in the CCDT the choice of definition to use is randomly selected based on the weighting with any applicable CLNTWGHT(0) definitions selected first in alphabetical order. The distribution is not guaranteed.

For example, suppose we had the following two definitions in the CCDT:

```
CHLNAME(TO.QM1) CHLTYPE(CLNTCONN) QMNAME(GRP1) CONNAME(address1) CLNTWGHT(2)
CHLNAME(TO.QM2) CHLTYPE(CLNTCONN) QMNAME(GRP1) CONNAME(address2) CLNTWGHT(4)
```

A client MQCONN with queue manager name "*GRP1" would choose one of the two definitions based on the weighting of the channel definition. (A random integer 1 - 6 would be generated. If the integer was in the range 1 through 2 address1 would be used otherwise address2 would be used). If this connection was unsuccessful the client would then use the other definition.

The CCDT might contain applicable definitions with both zero and non-zero weighting. In this situation, the definitions with zero weightings are chosen first and in alphabetical order. If these connections are unsuccessful the definitions with non-zero weighting are chosen based on their weighting.

For example, suppose we had the following four definitions in the CCDT:

```
CHLNAME(TO.QM1) CHLTYPE(CLNTCONN) QMNAME(GRP1) CONNAME(address1) CLNTWGHT(1)
CHLNAME(TO.QM2) CHLTYPE(CLNTCONN) QMNAME(GRP1) CONNAME(address2) CLNTWGHT(2)
CHLNAME(TO.QM3) CHLTYPE(CLNTCONN) QMNAME(GRP1) CONNAME(address3) CLNTWGHT(0)
CHLNAME(TO.QM4) CHLTYPE(CLNTCONN) QMNAME(GRP1) CONNAME(address4) CLNTWGHT(0)
```

A client MQCONN with queue manager name "*GRP1" would first choose definition "TO.QM3". If this connection was unsuccessful the client would then choose definition "TO.QM4". If this connection was also unsuccessful the client would then randomly choose one of the remaining two definitions based on their weighting.

CLNTWGHT support is added for all supported transport protocols.

CLUSNL(*nlname*)
The name of the namelist that specifies a list of clusters to which the channel belongs.

This parameter is valid only for channels with a channel type (CHLTYPE) of CLUSSDR and CLUSRCVR channels. Only one of the resultant values of CLUSTER or CLUSNL can be nonblank, the other must be blank.

CLUSTER(*clustername*)
The name of the cluster to which the channel belongs. The maximum length is 48 characters conforming to the rules for naming IBM WebSphere MQ objects.

This parameter is valid only for channels with a channel type (CHLTYPE) of CLUSSDR or CLUSRCVR. Only one of the resultant values of CLUSTER or CLUSNL can be nonblank, the other must be blank.

CLWLPRTY(*integer*)
Specifies the priority of the channel for the purposes of cluster workload distribution. The value must be in the range zero through 9 where zero is the lowest priority and 9 is the highest.

This parameter is valid only for channels with a channel type (CHLTYPE) of CLUSSDR or CLUSRCVR.

For more information about this attribute, see CLWLPRTY queue attribute.

CLWLRANK(*integer*)
Specifies the rank of the channel for the purposes of cluster workload distribution. The value must be in the range zero through 9 where zero is the lowest rank and 9 is the highest.

This parameter is valid only for channels with a channel type (CHLTYPE) of CLUSSDR or CLUSRCVR.

For more information about this attribute, see CLWLRANK channel attribute.

CLWLWGHT(*integer*)
Specifies the weighting to be applied to the channel for the purposes of cluster workload distribution so that the proportion of messages sent down the channel can be controlled. The value must be in the range 1 through 99 where 1 is the lowest rank and 99 is the highest.

This parameter is valid only for channels with a channel type (CHLTYPE) of CLUSSDR or CLUSRCVR.

For more information about this attribute, see CLWLWGHT channel attribute .

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if QSGDISP is set to GROUP.

' '
The command is executed on the queue manager on which it was entered.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name other than the queue manager on which it was entered, only if you are using a shared queue environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of * is the same as entering the command on every queue manager in the queue-sharing group.

COMPHDR
The list of header data compression techniques supported by the channel. For sender, server, cluster-sender, cluster-receiver, and client-connection channels, the values specified are in order of preference with the first compression technique supported by the remote end of the channel being used.

The mutually supported compression techniques of the channel are passed to the message exit of the sending channel where the compression technique used can be altered on a per message basis. Compression alters the data passed to send and receive exits.

NONE
No header data compression is performed.

SYSTEM
Header data compression is performed.

COMPMSG
The list of message data compression techniques supported by the channel. For sender, server, cluster-sender, cluster-receiver, and client-connection channels, the values specified are in order of preference with the first compression technique supported by the remote end of the channel being used.

The mutually supported compression techniques of the channel are passed to the message exit of the sending channel where the compression technique used can be altered on a per message basis. Compression alters the data passed to send and receive exits.

NONE
No message data compression is performed.

RLE
Message data compression is performed using run-length encoding.

ZLIBFAST
Message data compression is performed using ZLIB encoding with speed prioritized.

ZLIBHIGH
Message data compression is performed using ZLIB encoding with compression prioritized.

ANY
Any compression technique supported by the queue manager can be used. This value is only valid for receiver, requester, and server-connection channels.

CONNAME(*string*)
Connection name.

For cluster-receiver channels (when specified) CONNAME relates to the local queue manager, and for other channels it relates to the target queue manager.

The maximum length of the string is 48 characters on z/OS, and 264 characters on other platforms.

A workaround to the 48 character limit might be one of the following suggestions:

- Set up your DNS servers so that you use, for example, host name of "myserver" instead of "myserver.location.company.com", ensuring you can use the short host name.
- Use IP addresses.

Specify CONNAME as a comma-separated list of names of machines for the stated TRPTYPE. Typically only one machine name is required. You can provide multiple machine names to configure multiple connections with the same properties. The connections are usually tried in the order they are specified in the connection list until a connection is successfully established. The order is modified for clients if the CLNTWGHT attribute is provided. If no connection is successful, the channel attempts the connection again, as determined by the attributes of the channel. With client channels, a connection-list provides an alternative to using queue manager groups to configure multiple connections. With message channels, a connection list is used to configure connections to the alternative addresses of a multi-instance queue manager.

This parameter is required for channels with a channel type (CHLTYPE) of SDR, RQSTR, CLNTCONN, and CLUSSDR. It is optional for SVR channels, and for CLUSRCVR channels of TRPTYPE(TCP), and is not valid for RCVR or SVRCONN channels.

Providing multiple connection names in a list was first supported in IBM WebSphere MQ Version 7.0.1. It changes the syntax of the CONNAME parameter. Earlier clients and queue managers connect using the first connection name in the list, and do not read the rest of the connection names in the list. In order for the earlier clients and queue managers to parse the new syntax, you must specify a port number on the first connection name in the list. Specifying a port number avoids problems when connecting to the channel from a client or queue manager that is running at a level earlier than IBM WebSphere MQ Version 7.0.1.

On AIX, HP-UX, IBM i, Linux, Solaris, and Windows platforms, the TCP/IP connection name parameter of a cluster-receiver channel is optional. If you leave the connection name blank, IBM WebSphere MQ generates a connection name for you, assuming the default port and using the current IP address of the system. You can override the default port number, but still use the current IP address of the system. For each connection name leave the IP name blank, and provide the port number in parentheses; for example:

```
(1415)
```

The generated CONNAME is always in the dotted decimal (IPv4) or hexadecimal (IPv6) form, rather than in the form of an alphanumeric DNS host name.

Note: If you are using any of the special characters in your connection name (for example, parentheses) you must enclose the string in single quotation marks.

The value you specify depends on the transport type (TRPTYPE) to be used:

LU 6.2

- On z/OS, there are two forms in which to specify the value:

  Logical unit name
  The logical unit information for the queue manager, comprising the logical unit name, TP name, and optional mode name. Logical unit name can be specified in one of three forms:

Form	Example
luname	IGY12355
luname/TPname	IGY12345/APING
luname/TPname/modename	IGY12345/APINGD/#INTER

For the first form, the TP name and mode name must be specified for the TPNAME and MODENAME parameters; otherwise these parameters must be blank.

Note: For client-connection channels, only the first form is allowed.

Symbolic name
The symbolic destination name for the logical unit information for the queue manager, as defined in the side information data set. The TPNAME and MODENAME parameters must be blank.

Note: For cluster-receiver channels, the side information is on the other queue managers in the cluster. Alternatively, in this case it can be a name that a channel auto-definition exit can resolve into the appropriate logical unit information for the local queue manager.

The specified or implied LU name can be that of a VTAM® generic resources group.

- On IBM i, Windows, UNIX and Linux systems, CONNAME is the name of the CPI-C communications side object or, if the TPNAME is not blank, CONNAME is the fully qualified name of the partner logical unit.

NetBIOS
A unique NetBIOS name (limited to 16 characters).

SPX
The 4 byte network address, the 6 byte node address, and the 2 byte socket number. These values must be entered in hexadecimal, with a period separating the network and node addresses. The socket number must be enclosed in brackets, for example:

```
CONNAME('0a0b0c0d.804abcde23a1(5e86)')
```

TCP
Either the host name, or the network address of the remote machine (or the local machine for cluster-receiver channels). This address can be followed by an optional port number, enclosed in parentheses.

If the CONNAME is a host name, the host name is resolved to an IP address.

The IP stack used for communication depends on the value specified for CONNAME **and** the value specified for LOCLADDR. See LOCLADDR for information about how this value is resolved.

On z/OS, the connection name can include the IP_name of an z/OS dynamic DNS group or a Network Dispatcher input port. Do **not** include the IP_name or input port for channels with a channel type (CHLTYPE) of CLUSSDR.

When you define a channel with a channel type (CHLTYPE) of CLUSRCVR that is using TCP/IP, you do not need to specify the network address of your queue manager. IBM WebSphere MQ generates a CONNAME for you, assuming the default port and using the current IPv4 address of the system. If the system does not have an IPv4 address, the current IPv6 address of the system is used.

Note: If you are using clustering between IPv6-only and IPv4-only queue managers, do not specify an IPv6 network address as the CONNAME for CLUSRCVR channels. A queue manager that is capable only of IPv4 communication is unable to start a cluster sender channel definition that specifies the CONNAME in IPv6 hexadecimal form. Consider, instead, using host names in a heterogeneous IP environment.

CONVERT
Specifies whether the sending message channel agent attempts conversion of the application message data, if the receiving message channel agent cannot perform this conversion.

NO
No conversion by sender

YES
Conversion by sender

On z/OS, N and Y are accepted as synonyms of NO and YES.

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, CLUSSDR, or CLUSRCVR.

DEFCDISP
Specifies the default channel disposition of the channel.

PRIVATE
The intended disposition of the channel is as a PRIVATE channel.

FIXSHARED
The intended disposition of the channel is as a FIXSHARED channel.

SHARED
The intended disposition of the channel is as a SHARED channel.

This parameter does not apply to channels with a channel type (CHLTYPE) of CLNTCONN, CLUSSDR, or CLUSRCVR.

DEFRECON
Specifies whether a client connection automatically reconnects a client application if its connection breaks.

NO
Unless overridden by MQCONNX, the client is not reconnected automatically.

YES
Unless overridden by MQCONNX, the client reconnects automatically.

QMGR
Unless overridden by MQCONNX, the client reconnects automatically, but only to the same queue manager. The QMGR option has the same effect as MQCNO_RECONNECT_Q_MGR.

DISABLED
Reconnection is disabled, even if requested by the client program using the MQCONNX MQI call.

Table 32. Automatic reconnection depends on the values set in the application and in the channel definition

DEFRECON	**Reconnection options set in the application**			
	MQCNO_RECONNECT	MQCNO_RECONNECT_Q_MGR	MQCNO_RECONNECT_AS_DEF	MQCNO_RECONNECT_DISABLED
NO	YES	QMGR	NO	NO
YES	YES	QMGR	YES	NO
QMGR	YES	QMGR	QMGR	NO
DISABLED	NO	NO	NO	NO

DESCR(*string*)
Plain-text comment. It provides descriptive information about the channel when an operator issues the DISPLAY CHANNEL command.

It must contain only displayable characters. The maximum length is 64 characters. In a DBCS installation, it can contain DBCS characters (subject to a maximum length of 64 bytes).

Note: If characters are used that are not in the coded character set identifier (CCSID) for this queue manager, they might be translated incorrectly if the information is sent to another queue manager.

DISCINT(*integer*)
The minimum time in seconds for which the channel waits for a message to arrive on the transmission queue, after a batch ends, before terminating the channel. A value of zero causes the message channel agent to wait indefinitely.

The value must be in the range zero through 999 999.

This parameter is valid only for channels with a channel type (CHLTYPE) of SVRCONN , SDR, SVR, CLUSSDR, CLUSRCVR.

For SVRCONN channels using the TCP protocol, this parameter is the minimum time in seconds for which the SVRCONN instance remains active without any communication from its partner client. A value of zero disables this disconnect processing. The SVRCONN inactivity interval only applies between IBM WebSphere MQ API calls from a client, so no client is disconnected during an extended MQGET with wait call. This attribute is ignored for SVRCONN channels using protocols other than TCP.

HBINT(*integer*)

This attribute specifies the approximate time between heartbeat flows that are to be passed from a sending MCA when there are no messages on the transmission queue.

Heartbeat flows unblock the receiving MCA, which is waiting for messages to arrive or for the disconnect interval to expire. When the receiving MCA is unblocked it can disconnect the channel without waiting for the disconnect interval to expire. Heartbeat flows also free any storage buffers that have been allocated for large messages and close any queues that have been left open at the receiving end of the channel.

The value is in seconds and must be in the range 0 through 999999. A value of zero means that no heartbeat flows are to be sent. The default value is 300. To be most useful, the value needs to be less than the disconnect interval value.

For server-connection and client-connection channels, heartbeats can flow from both the server side as well as the client side independently. If no data has been transferred across the channel for the heartbeat interval, the client-connection MQI agent sends a heartbeat flow and the server-connection MQI agent responds to it with another heartbeat flow. This happens irrespective of the state of the channel, for example, irrespective of whether it is inactive while making an API call, or is inactive waiting for client user input. The server-connection MQI agent is also capable of initiating a heartbeat to the client, again irrespective of the state of the channel. To prevent both server-connection and client-connection MQI agents heart beating to each other at the same time, the server heartbeat is flowed after no data has been transferred across the channel for the heartbeat interval plus 5 seconds.

For server-connection and client-connection channels working in the channel mode before IBM WebSphere MQ Version 7.0, heartbeats flow only when a server MCA is waiting for an MQGET command with the WAIT option specified, which it has issued on behalf of a client application.

For more information, see Heartbeat interval (HBINT).

KAINT(*integer*)
The value passed to the communications stack for KeepAlive timing for this channel.

For this attribute to be effective, TCP/IP keepalive must be enabled both in the queue manager and in TCP/IP. On z/OS, you enable TCP/IP keepalive in the queue manager by issuing the ALTER QMGR TCPKEEP(YES) command; if the TCPKEEP queue manager parameter is NO, the value is ignored, and the KeepAlive facility is not used. On other platforms, TCP/IP keepalive is enabled when the KEEPALIVE=YES parameter is specified in the TCP stanza in the distributed queuing configuration file, `qm.ini`, or through the IBM WebSphere MQ Explorer.

Keepalive must also be switched on within TCP/IP itself. Refer to your TCP/IP documentation for information about configuring keepalive. On AIX, use the **no** command. On HP-UX, use the **ndd**

command. On Windows, edit the registry. On z/OS, update your TCP/IP PROFILE data set and add or change the INTERVAL parameter in the TCPCONFIG section.

Although this parameter is available on all platforms, its setting is implemented only on z/OS. On platforms other than z/OS, you can access and modify the parameter, but it is only stored and forwarded; there is no functional implementation of the parameter. This functionality is useful in a clustered environment where a value set in a cluster-receiver channel definition on Solaris, for example, flows to (and is implemented by) z/OS queue managers that are in, or join, the cluster.

On platforms other than z/OS, if you need the functionality provided by the KAINT parameter, use the Heartbeat Interval (HBINT) parameter, as described in HBINT.

(*integer*)
The KeepAlive interval to be used, in seconds, in the range 1 through 99 999.

0
The value used is that specified by the INTERVAL statement in the TCP profile configuration data set.

AUTO
The KeepAlive interval is calculated based upon the negotiated heartbeat value as follows:

- If the negotiated HBINT is greater than zero, KeepAlive interval is set to that value plus 60 seconds.
- If the negotiated HBINT is zero, the value used is that specified by the INTERVAL statement in the TCP profile configuration data set.

This parameter is valid for all channel types. It is ignored for channels with a TRPTYPE other than TCP or SPX.

LIKE(*channel-name*)
The name of a channel. The parameters of this channel are used to model this definition.

If this field is not completed, and you do not complete the parameter fields related to the command, the values are taken from one of the following default channels, depending upon the channel type:

SYSTEM.DEF.SENDER
Sender channel

SYSTEM.DEF.SERVER
Server channel

SYSTEM.DEF.RECEIVER
Receiver channel

SYSTEM.DEF.REQUESTER
Requester channel

SYSTEM.DEF.SVRCONN
Server-connection channel

SYSTEM.DEF.CLNTCONN
Client-connection channel

SYSTEM.DEF.CLUSSDR
Cluster-sender channel

SYSTEM.DEF.CLUSRCVR
Cluster-receiver channel

This parameter is equivalent to defining the following object for a sender channel, and similarly for other channel types:

```
LIKE(SYSTEM.DEF.SENDER)
```

These default channel definitions can be altered by the installation to the default values required.

On z/OS, the queue manager searches page set zero for an object with the name you specify and a disposition of QMGR or COPY. The disposition of the LIKE object is not copied to the object and channel type you are defining.

Note:

1. QSGDISP (GROUP) objects are not searched.
2. # LIKE is ignored if QSGDISP(COPY) is specified. However, the group object defined is used as a LIKE object.

LOCLADDR(*string*)

LOCLADDR is the local communications address for the channel. Use this parameter if you want a channel to use a particular IP address, port, or port range for outbound communications. LOCLADDR might be useful in recovery scenarios where a channel is restarted on a different TCP/IP stack. LOCLADDR is also useful to force a channel to use an IPv4 or IPv6 stack on a dual-stack system. You can also use LOCLADDR to force a channel to use a dual-mode stack on a single-stack system.

This parameter is valid only for channels with a transport type (TRPTYPE) of TCP. If TRPTYPE is not TCP, the data is ignored and no error message is issued.

The value is the optional IP address, and optional port or port range used for outbound TCP/IP communications. The format for this information is as follows:

```
LOCLADDR([ip-addr][(low-port[,high-port])][,[ip-addr][(low-port[,high-port])]])
```

The maximum length of LOCLADDR, including multiple addresses, is MQ_LOCAL_ADDRESS_LENGTH.

If you omit LOCLADDR, a local address is automatically allocated.

Note, that you can set LOCLADDR for a C client using the Client Channel Definition Table (CCDT).

All the parameters are optional. Omitting the `ip-addr` part of the address is useful to enable the configuration of a fixed port number for an IP firewall. Omitting the port number is useful to select a particular network adapter without having the identify a unique local port number. The TCP/IP stack generates a unique port number.

Specify *[,[ip-addr][(low-port[,high-port])]]* multiple times for each additional local address. Use multiple local addresses if you want to specify a specific subset of local network adapters. You can also use *[,[ip-addr][(low-port[,high-port])]]* to represent a particular local network address on different servers that are part of a multi-instance queue manager configuration.

ip-addr

`ip-addr` is specified in one of three forms:

IPv4 dotted decimal
For example `192.0.2.1`

IPv6 hexadecimal notation
For example `2001:DB8:0:0:0:0:0:0`

Alphanumeric host name form
For example `WWW.EXAMPLE.COM`

low-port and high-port

`low-port` and `high-port` are port numbers enclosed in parentheses.

Table 41 on page 340 shows how the LOCLADDR parameter can be used:

Table 33. Examples of how the LOCLADDR parameter can be used

LOCLADDR	Meaning
9.20.4.98	Channel binds to this address locally

Table 33. Examples of how the LOCLADDR parameter can be used (continued)	
LOCLADDR	**Meaning**
9.20.4.98, 9.20.4.99	Channel binds to either IP address. The address might be two network adapters on one server, or a different network adapter on two different servers in a multi-instance configuration.
9.20.4.98(1000)	Channel binds to this address and port 1000 locally
9.20.4.98(1000,2000)	Channel binds to this address and uses a port in the range 1000 - 2000 locally
(1000)	Channel binds to port 1000 locally
(1000,2000)	Channel binds to port in range 1000 - 2000 locally

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, RQSTR, CLNTCONN, CLUSSDR, CLUSRCVR, or MQTT.

On CLUSSDR channels, the IP address and port to which the outbound channel binds, is a combination of fields. It is a concatenation of the IP address, as defined in the LOCLADDR parameter, and the port range from the cluster cache. If there is no port range in the cache, the port range defined in the LOCLADDR parameter is used. This port range does not apply to z/OS.

Even though this parameter is similar in form to CONNAME, it must not be confused with it. The LOCLADDR parameter specifies the characteristics of the local communications, whereas the CONNAME parameter specifies how to reach a remote queue manager.

When a channel is started, the values specified for CONNAME and LOCLADDR determine the IP stack to be used for communication; see Table 3 and Local Address (LOCLADDR) .

If the TCP/IP stack for the local address is not installed or configured, the channel does not start and an exception message is generated. The message indicates that the `connect()` request specifies an interface address that is not known on the default IP stack. To direct the connect() request to the alternative stack, specify the **LOCLADDR** parameter in the channel definition as either an interface on the alternative stack, or a DNS host name. The same specification also works for listeners that might not use the default stack. To find the value to code for **LOCLADDR**, run the **NETSTAT HOME** command on the IP stacks that you want to use as alternatives.

For channels with a channel type (CHLTYPE) of MQTT the usage of this parameter is slightly different. Specifically, a telemetry channel (MQTT) **LOCLADDR** parameter expects only an IPv4 or IPv6 IP address, or a valid host name as a string. This string must not contain a port number or port range. If an IP address is entered, only the address format is validated. The IP address itself is not validated.

Table 34. How the IP stack to be used for communication is determined

Protocols supported	CONNAME	LOCLADDR	Action of channel
IPv4 only	IPv4 address[1]		Channel binds to IPv4 stack
	IPv6 address[2]		Channel fails to resolve CONNAME
	IPv4 and 6 host name[3]		Channel binds to IPv4 stack
	IPv4 address	IPv4 address	Channel binds to IPv4 stack
	IPv6 address	IPv4 address	Channel fails to resolve CONNAME
	IPv4 and 6 host name	IPv4 address	Channel binds to IPv4 stack
	Any address[4]	IPv6 address	Channel fails to resolve LOCLADDR
	IPv4 address	IPv4 and 6 host name	Channel binds to IPv4 stack
	IPv6 address	IPv4 and 6 host name	Channel fails to resolve CONNAME
	IPv4 and 6 host name	IPv4 and 6 host name	Channel binds to IPv4 stack
IPv4 and IPv6	IPv4 address		Channel binds to IPv4 stack
	IPv6 address		Channel binds to IPv6 stack
	IPv4 and 6 host name		Channel binds to stack determined by IPADDRV
	IPv4 address	IPv4 address	Channel binds to IPv4 stack
	IPv6 address	IPv4 address	Channel fails to resolve CONNAME
	IPv4 and 6 host name	IPv4 address	Channel binds to IPv4 stack
	IPv4 address	IPv6 address	Channel maps CONNAME to IPv6[5]
	IPv6 address	IPv6 address	Channel binds IPv6 stack
	IPv4 and 6 host name	IPv6 address	Channel binds IPv6 stack
	IPv4 address	IPv4 and 6 host name	Channel binds to IPv4 stack
	IPv6 address	IPv4 and 6 host name	Channel binds to IPv6 stack
	IPv4 and 6 host name	IPv4 and 6 host name	Channel binds to stack determined by IPADDRV

Table 34. How the IP stack to be used for communication is determined (continued)

Protocols supported	CONNAME	LOCLADDR	Action of channel
IPv6 only	IPv4 address		Channel maps CONNAME to IPv6[5]
	IPv6 address		Channel binds to IPv6 stack
	IPv4 and 6 host name		Channel binds to IPv6 stack
	Any address	IPv4 address	Channel fails to resolve LOCLADDR
	IPv4 address	IPv6 address	Channel maps CONNAME to IPv6[5]
	IPv6 address	IPv6 address	Channel binds to IPv6 stack
	IPv4 and 6 host name	IPv6 address	Channel binds to IPv6 stack
	IPv4 address	IPv4 and 6 host name	Channel maps CONNAME to IPv6[5]
	IPv6 address	IPv4 and 6 host name	Channel binds to IPv6 stack
	IPv4 and 6 host name	IPv4 and 6 host name	Channel binds to IPv6 stack

Notes:

1. IPv4 address. An IPv4 host name that resolves only to an IPv4 network address or a specific dotted notation IPv4 address, for example `1.2.3.4`. This note applies to all occurrences of 'IPv4 address' in this table.
2. IPv6 address. An IPv6 host name that resolves only to an IPv6 network address or a specific hexadecimal notation IPv6 address, for example `4321:54bc`. This note applies to all occurrences of 'IPv6 address' in this table.
3. IPv4 and 6 host name. A host name that resolves to both IPv4 and IPv6 network addresses. This note applies to all occurrences of 'IPv4 and 6 host name' in this table.
4. Any address. IPv4 address, IPv6 address, or IPv4 and 6 host name. This note applies to all occurrences of 'Any address' in this table.
5. Maps IPv4 CONNAME to IPv4 mapped IPv6 address. IPv6 stack implementations that do not support IPv4 mapped IPv6 addressing fail to resolve the CONNAME. Mapped addresses might require protocol translators in order to be used. The use of mapped addresses is not recommended.

LONGRTY(*integer*)

When a sender, server, or cluster-sender channel is attempting to connect to the remote queue manager, and the count specified by SHORTRTY has been exhausted, this parameter specifies the maximum number of further attempts that are made to connect to the remote queue manager, at intervals specified by LONGTMR.

If this count is also exhausted without success, an error is logged to the operator, and the channel is stopped. The channel must then be restarted with a command (it is not started automatically by the channel initiator).

The value must be in the range zero through 999999999.

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, CLUSSDR, or CLUSRCVR.

LONGTMR(*integer*)
For long retry attempts, this parameter is the maximum number of seconds to wait before reattempting connection to the remote queue manager.

The time is approximate; zero means that another connection attempt is made as soon as possible.

The interval between retries might be extended if the channel has to wait to become active.

The value must be in the range zero through 999999999.

Note: For implementation reasons, the maximum retry interval that can be used is 999,999; values exceeding this maximum are treated as 999,999. Similarly, the minimum retry interval that can be used is 2; values less than this minimum are treated as 2.

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, CLUSSDR, or CLUSRCVR.

MAXINST(*integer*)
The maximum number of simultaneous instances of an individual server-connection channel that can be started.

The value must be in the range zero through 999999999.

A value of zero prevents all client access on this channel.

If the value of this parameter is reduced to a number that is less than the number of instances of the server-connection channel that are currently running, then those running instances are not affected. However, new instances cannot start until sufficient existing instances have ceased to run so that the number of currently running instances is less than the value of this parameter.

On z/OS, without the Client Attachment feature installed, a maximum of five instances are allowed on the channel named SYSTEM.ADMIN.SVRCONN. If MAXINST is set to a larger number than five, it is interpreted as zero without the CAF installed.

This parameter is valid only for channels with a channel type (CHLTYPE) of SVRCONN.

MAXINSTC(*integer*)
The maximum number of simultaneous individual server-connection channels that can be started from a single client. In this context, connections that originate from the same remote network address are regarded as coming from the same client.

The value must be in the range zero through 999999999.

A value of zero prevents all client access on this channel.

If the value of this parameter is reduced to a number that is less than the number of instances of the server-connection channel that is currently running from individual clients, then those running instances are not affected. However, new instances from those clients cannot start until sufficient instances have ceased to run that the number of running instances is less than the value of this parameter.

On z/OS, without the Client Attachment feature installed, only a maximum of five instances are allowed on the channel named SYSTEM.ADMIN.SVRCONN.

This parameter is valid only for channels with a channel type (CHLTYPE) of SVRCONN.

MAXMSGL(*integer*)
Specifies the maximum message length that can be transmitted on the channel. This parameter is compared with the value for the partner and the actual maximum used is the lower of the two values. The value is ineffective if the MQCB function is being executed and the channel type (CHLTYPE) is SVRCONN.

The value zero means the maximum message length for the queue manager.

On platforms other than z/OS, specify a value in the range zero through to the maximum message length for the queue manager.

On z/OS, specify a value in the range zero through 104857600 bytes (100 MB).

See the MAXMSGL parameter of the ALTER QMGR command for more information.

MCANAME(*string*)
Message channel agent name.

This parameter is reserved, and if specified must only be set to blanks (maximum length 20 characters).

MCATYPE
Specifies whether the message-channel-agent program on an outbound message channel runs as a thread or a process.

PROCESS
The message channel agent runs as a separate process.

THREAD
The message channel agent runs as a separate thread

In situations where a threaded listener is required to service many incoming requests, resources can become strained. In this case, use multiple listener processes and target incoming requests at specific listeners though the port number specified on the listener.

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, RQSTR, CLUSSDR, or CLUSRCVR. It is not supported on z/OS.

On z/OS, it is supported only for channels with a channel type of CLUSRCVR. When specified in a CLUSRCVR definition, MCATYPE is used by a remote machine to determine the corresponding CLUSSDR definition.

MCAUSER(*string*)
Message channel agent user identifier.

Note: An alternative way of providing a user ID for a channel to run under is to use channel authentication records. With channel authentication records, different connections can use the same channel while using different credentials. If both MCAUSER on the channel is set and channel authentication records are used to apply to the same channel, the channel authentication records take precedence. The MCAUSER on the channel definition is only used if the channel authentication record uses USERSRC(CHANNEL). For more details, see Channel authentication records.

This parameter interacts with PUTAUT, see the definition of that parameter for more information.

If it is nonblank, it is the user identifier that is to be used by the message channel agent for authorization to access IBM WebSphere MQ resources, including (if PUTAUT is DEF) authorization to put the message to the destination queue for receiver or requester channels.

If it is blank, the message channel agent uses its default user identifier.

The default user identifier is derived from the user ID that started the receiving channel. The possible values are:

- On z/OS, the user ID assigned to the channel-initiator started task by the z/OS started-procedures table.
- For TCP/IP, other than z/OS, the user ID from the `inetd.conf` entry, or the user that started the listener.
- For SNA, other than z/OS, the user ID from the SNA server entry or, in the absence of this user ID the incoming attach request, or the user that started the listener.
- For NetBIOS or SPX, the user ID that started the listener.

The maximum length of the string is 64 characters on Windows and 12 characters on other platforms. On Windows, you can optionally qualify a user identifier with the domain name in the format `user@domain`.

This parameter is not valid for channels with a channel type (CHLTYPE) of SDR, SVR, CLNTCONN, CLUSSDR.

MODENAME(*string*)
LU 6.2 mode name (maximum length 8 characters).

This parameter is valid only for channels with a transport type (TRPTYPE) of LU 6.2. If TRPTYPE is not LU 6.2, the data is ignored and no error message is issued.

If specified, this parameter must be set to the SNA mode name unless the CONNAME contains a side-object name, in which case it must be set to blanks. The actual name is then taken from the CPI-C Communications Side Object, or APPC side information data set.

This parameter is not valid for channels with a channel type (CHLTYPE) of RCVR or SVRCONN.

MONCHL
Controls the collection of online monitoring data for channels:

QMGR
Collect monitoring data according to the setting of the queue manager parameter MONCHL.

OFF
Monitoring data collection is turned off for this channel.

LOW
If the value of the queue manager MONCHL parameter is not NONE, online monitoring data collection is turned on, with a low rate of data collection, for this channel.

MEDIUM
If the value of the queue manager MONCHL parameter is not NONE, online monitoring data collection is turned on, with a moderate rate of data collection, for this channel.

HIGH
If the value of the queue manager MONCHL parameter is not NONE, online monitoring data collection is turned on, with a high rate of data collection, for this channel.

Changes to this parameter take effect only on channels started after the change occurs.

For cluster channels, the value of this parameter is not replicated in the repository and, therefore, not used in the auto-definition of cluster-sender channels. For auto-defined cluster-sender channels, the value of this parameter is taken from the queue manager attribute MONACLS. This value might then be overridden in the channel auto-definition exit.

MRDATA(*string*)
Channel message-retry exit user data. The maximum length is 32 characters.

This parameter is passed to the channel message-retry exit when it is called.

This parameter is valid only for channels with a channel type (CHLTYPE) of RCVR, RQSTR, or CLUSRCVR.

MREXIT(*string*)
Channel message-retry exit name.

The format and maximum length of the name is the same as for MSGEXIT, however you can only specify one message-retry exit.

This parameter is valid only for channels with a channel type (CHLTYPE) of RCVR, RQSTR, or CLUSRCVR.

MRRTY(*integer*)
The number of times the channel tries again before it decides it cannot deliver the message.

This parameter controls the action of the MCA only if the message-retry exit name is blank. If the exit name is not blank, the value of MRRTY is passed to the exit to use, but the number of retries performed (if any) is controlled by the exit, and not by this parameter.

The value must be in the range zero through 999999999. A value of zero means that no retries are performed.

This parameter is valid only for channels with a channel type (CHLTYPE) of RCVR, RQSTR, or CLUSRCVR.

MRTMR(*integer*)
The minimum interval of time that must pass before the channel can try the MQPUT operation again. This time interval is in milliseconds.

This parameter controls the action of the MCA only if the message-retry exit name is blank. If the exit name is not blank, the value of MRTMR is passed to the exit to use, but the retry interval is controlled by the exit, and not by this parameter.

The value must be in the range zero through 999 999 999. A value of zero means that the retry is performed as soon as possible (if the value of MRRTY is greater than zero).

This parameter is valid only for channels with a channel type (CHLTYPE) of RCVR, RQSTR, or CLUSRCVR.

MSGDATA(*string*)
User data for the channel message exit. The maximum length is 32 characters.

This data is passed to the channel message exit when it is called.

On AIX, HP-UX, Linux, Solaris, and Windows, you can specify data for more than one exit program by specifying multiple strings separated by commas. The total length of the field must not exceed 999 characters.

On IBM i, you can specify up to 10 strings, each of length 32 characters. The first string of data is passed to the first message exit specified, the second string to the second exit, and so on.

On z/OS, you can specify up to eight strings, each of length 32 characters. The first string of data is passed to the first message exit specified, the second string to the second exit, and so on.

On other platforms, you can specify only one string of message exit data for each channel.

Note: This parameter is accepted but ignored for server-connection and client-connection channels.

MSGEXIT(*string*)
Channel message exit name.

If this name is nonblank, the exit is called at the following times:

- Immediately after a message has been retrieved from the transmission queue (sender or server), or immediately before a message is put to a destination queue (receiver or requester).

  The exit is given the entire application message and transmission queue header for modification.
- At initialization and termination of the channel.

On AIX, HP-UX, Linux, Solaris, and Windows, you can specify the name of more than one exit program by specifying multiple strings separated by commas. However, the total number of characters specified must not exceed 999.

On IBM i, you can specify the names of up to 10 exit programs by specifying multiple strings separated by commas.

On z/OS, you can specify the names of up to eight exit programs by specifying multiple strings separated by commas.

On other platforms, you can specify only one message exit name for each channel.

For channels with a channel type (CHLTYPE) of CLNTCONN or SVRCONN, this parameter is accepted but ignored, because message exits are not invoked for such channels.

The format and maximum length of the name depends on the environment:

- On UNIX and Linux systems, it is of the form:

```
libraryname(functionname)
```

  The maximum length of the string is 128 characters.

- On Windows, it is of the form:

```
dllname(functionname)
```

  where *dllname* is specified without the suffix (".DLL"). The maximum length of the string is 128 characters.
- On IBM i, it is of the form:

```
progname libname
```

  where *program name* occupies the first 10 characters and *libname* the second 10 characters (both padded to the right with blanks if necessary). The maximum length of the string is 20 characters.
- On z/OS, it is a load module name, maximum length 8 characters (128 characters are allowed for exit names for client-connection channels, subject to a maximum total length including commas of 999).

NETPRTY(*integer*)
The priority for the network connection. Distributed queuing chooses the path with the highest priority if there are multiple paths available. The value must be in the range zero through 9; zero is the lowest priority.

This parameter is valid only for CLUSRCVR channels.

NPMSPEED
The class of service for nonpersistent messages on this channel:

FAST
Fast delivery for nonpersistent messages; messages might be lost if the channel is lost. Messages are retrieved using MQGMO_SYNCPOINT_IF_PERSISTENT and so are not included in the batch unit of work.

NORMAL
Normal delivery for nonpersistent messages.

If the sending side and the receiving side do not agree about this parameter, or one does not support it, NORMAL is used.

This parameter is valid only for channels with a CHLTYPE of SDR, SVR, RCVR, RQSTR, CLUSSDR, or CLUSRCVR.

PASSWORD(*string*)
Password used by the message channel agent when attempting to initiate a secure LU 6.2 session with a remote message channel agent. The maximum length is 12 characters.

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, RQSTR, CLNTCONN, or CLUSSDR. On z/OS, it is supported only for channels with a channel type (CHLTYPE) of CLNTCONN.

Although the maximum length of the parameter is 12 characters, only the first 10 characters are used.

PROPCTL
Property control attribute.

Specifies what happens to properties of messages when the message is about to be sent to a V6 or prior queue manager (a queue manager that does not understand the concept of a property descriptor).

This parameter is applicable to Sender, Server, Cluster Sender, and Cluster Receiver channels.

This parameter is optional.

Permitted values are:

COMPAT
COMPAT allows applications which expect JMS-related properties to be in an MQRFH2 header in the message data to continue to work unmodified.

Message properties	Result
The message contains a property with a prefix of **mcd.**, **jms.**, **usr.** or **mqext.**	All optional message properties (where the **Support** value is MQPD_SUPPORT_OPTIONAL), except properties in the message descriptor or extension, are placed in one or more MQRFH2 headers in the message data before the message it sent to the remote queue manager.
The message does not contain a property with a prefix of **mcd.**, **jms.**, **usr.** or **mqext.**	All message properties, except properties in the message descriptor or extension, are removed from the message before the message is sent to the remote queue manager.
The message contains a property where the **Support** field of the property descriptor is not set to MQPD_SUPPORT_OPTIONAL	The message is rejected with reason MQRC_UNSUPPORTED_PROPERTY and treated in accordance with its report options.
The message contains one or more properties where the **Support** field of the property descriptor is set to MQPD_SUPPORT_OPTIONAL but other fields of the property descriptor are set to non-default values.	The properties with non-default values are removed from the message before the message is sent to the remote queue manager.
The MQRFH2 folder that would contain the message property needs to be assigned with the *content='properties'* attribute	The properties are removed to prevent MQRFH2 headers with unsupported syntax flowing to a V6 or prior queue manager.

NONE
All properties of the message, except properties in the message descriptor or extension, are removed from the message before the message is sent to the remote queue manager.

If the message contains a property where the **Support** field of the property descriptor is not set to MQPD_SUPPORT_OPTIONAL then the message is rejected with reason MQRC_UNSUPPORTED_PROPERTY and treated in accordance with its report options.

ALL
All properties of the message are included with the message when it is sent to the remote queue manager. The properties, except properties in the message descriptor (or extension), are placed in one or more MQRFH2 headers in the message data.

PUTAUT
Specifies which user identifiers are used to establish authority to put messages to the destination queue (for messages channels) or to execute an MQI call (for MQI channels).

DEF
The default user ID is used. On z/OS, DEF might involve using both the user ID received from the network and that derived from MCAUSER.

CTX
The user ID from the *UserIdentifier* field of the message descriptor is used. On z/OS, CTX might involve also using the user ID received from the network or that derived from MCAUSER, or both.

ONLYMCA
The default user ID is used. Any user ID received from the network is not used. This value is supported only on z/OS.

ALTMCA
The user ID from the *UserIdentifier* field of the message descriptor is used. Any user ID received from the network is not used. This value is supported only on z/OS.

On z/OS, the user IDs that are checked, and how many user IDs are checked, depends on the setting of the MQADMIN RACF® class hlq.RESLEVEL profile. Depending on the level of access the user ID of the channel initiator has to hlq.RESLEVEL, zero, one or two user IDs are checked.

This parameter is valid only for channels with a channel type (CHLTYPE) of RCVR, RQSTR, CLUSRCVR, or, on z/OS only, SVRCONN. CTX and ALTMCA are not valid for SVRCONN channels.

QMNAME(*string*)
Queue manager name.

For channels with a channel type (CHLTYPE) of CLNTCONN, this parameter is the name of a queue manager to which an application that is running in a client environment and using the client channel definition table can request connection. This parameter need not be the name of the queue manager on which the channel is defined, to allow a client to connect to different queue managers.

For channels of other types, this parameter is not valid.

QSGDISP
This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves).

QSGDISP	ALTER
COPY	The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameters QSGDISP(COPY). Any object residing in the shared repository, or any object defined using a command that had the parameters QSGDISP(QMGR), is not affected by this command.

GROUP	The object definition resides in the shared repository. The object was defined using a command that had the parameters QSGDISP(GROUP). Any object residing on the page set of the queue manager that executes the command (except a local copy of the object) is not affected by this command. If the command is successful, the following command is generated and sent to all active queue managers in the queue-sharing group to attempt to refresh local copies on page set zero:
	`DEFINE CHANNEL(channel-name) CHLTYPE(type)`
	`REPLACE QSGDISP(COPY)`
	The ALTER for the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.

PRIVATE	The object resides on the page set of the queue manager that executes the command, and was defined with QSGDISP(QMGR) or QSGDISP(COPY). Any object residing in the shared repository is unaffected.
QMGR	The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameters QSGDISP(QMGR). Any object residing in the shared repository, or any local copy of such an object, is not affected by this command.

RCVDATA(*string*)
Channel receive exit user data (maximum length 32 characters).

This parameter is passed to the channel receive exit when it is called.

On AIX, HP-UX, Linux, Solaris, and Windows, you can specify data for more than one exit program by specifying multiple strings separated by commas. The total length of the field must not exceed 999 characters.

On IBM i, you can specify up to 10 strings, each of length 32 characters. The first string of data is passed to the first receive exit specified, the second string to the second exit, and so on.

On z/OS, you can specify up to eight strings, each of length 32 characters. The first string of data is passed to the first receive exit specified, the second string to the second exit, and so on.

On other platforms, you can specify only one string of receive exit data for each channel.

RCVEXIT(*string*)
Channel receive exit name.

If this name is nonblank, the exit is called at the following times:

- Immediately before the received network data is processed.

  The exit is given the complete transmission buffer as received. The contents of the buffer can be modified as required.
- At initialization and termination of the channel.

On AIX, HP-UX, Linux, Solaris, and Windows, you can specify the name of more than one exit program by specifying multiple strings separated by commas. However, the total number of characters specified must not exceed 999.

On IBM i, you can specify the names of up to 10 exit programs by specifying multiple strings separated by commas.

On z/OS, you can specify the names of up to eight exit programs by specifying multiple strings separated by commas.

On other platforms, you can specify only one receive exit name for each channel.

The format and maximum length of the name is the same as for MSGEXIT.

SCYDATA(*string*)
Channel security exit user data (maximum length 32 characters).

This parameter is passed to the channel security exit when it is called.

SCYEXIT(*string*)
Channel security exit name.

If this name is nonblank, the exit is called at the following times:

- Immediately after establishing a channel.

  Before any messages are transferred, the exit is able to instigate security flows to validate connection authorization.
- Upon receipt of a response to a security message flow.

  Any security message flows received from the remote processor on the remote queue manager are given to the exit.
- At initialization and termination of the channel.

The format and maximum length of the name is the same as for MSGEXIT but only one name is allowed.

SENDDATA(*string*)
Channel send exit user data. The maximum length is 32 characters.

This parameter is passed to the channel send exit when it is called.

On AIX, HP-UX, Linux, Solaris, and Windows, you can specify data for more than one exit program by specifying multiple strings separated by commas. The total length of the field must not exceed 999 characters.

On IBM i, you can specify up to 10 strings, each of length 32 characters. The first string of data is passed to the first send exit specified, the second string to the second exit, and so on.

On z/OS, you can specify up to eight strings, each of length 32 characters. The first string of data is passed to the first send exit specified, the second string to the second exit, and so on.

On other platforms, you can specify only one string of send exit data for each channel.

SENDEXIT(*string*)
Channel send exit name.

If this name is nonblank, the exit is called at the following times:

- Immediately before data is sent out on the network.

  The exit is given the complete transmission buffer before it is transmitted. The contents of the buffer can be modified as required.
- At initialization and termination of the channel.

On AIX, HP-UX, Linux, Solaris, and Windows, you can specify the name of more than one exit program by specifying multiple strings separated by commas. However, the total number of characters specified must not exceed 999.

On IBM i, you can specify the names of up to 10 exit programs by specifying multiple strings separated by commas.

On z/OS, you can specify the names of up to eight exit programs by specifying multiple strings separated by commas.

On other platforms, you can specify only one send exit name for each channel.

The format and maximum length of the name is the same as for MSGEXIT.

SEQWRAP(*integer*)
When this value is reached, sequence numbers wrap to start again at 1.

This value is nonnegotiable and must match in both the local and remote channel definitions.

The value must be in the range 100 through 999999999.

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, RCVR, RQSTR, CLUSSDR, or CLUSRCVR.

SHARECNV(*integer*)
Specifies the maximum number of conversations that can be sharing each TCP/IP channel instance. A SHARECNV value of:

1
Specifies no sharing of conversations over a TCP/IP channel instance. Client heartbeating is available whether in an MQGET call or not. Read ahead and client asynchronous consumption are also available, and channel quiescing is more controllable.

0
Specifies no sharing of conversations over a TCP/IP channel instance. The channel instance runs in a mode before that of IBM WebSphere MQ Version 7.0, regarding:

- Administrator stop-quiesce
- Heartbeating
- Read ahead
- Client asynchronous consumption

The value must be in the range zero through 999999999.

This parameter is valid only for channels with a channel type (CHLTYPE) of CLNTCONN or SVRCONN. If the client-connection SHARECNV value does not match the server-connection SHARECNV value, the lower of the two values is used. This parameter is ignored for channels with a transport type (TRPTYPE) other than TCP.

All the conversations on a socket are received by the same thread.

High SHARECNV limits have the advantage of reducing queue manager thread usage. However, if many conversations sharing a socket are all busy, there is a possibility of delays as the conversations contend with one another to use the receiving thread. In this situation, a lower SHARECNV value is better.

The number of shared conversations does not contribute to the MAXINST or MAXINSTC totals.

Note: You should restart the client for this change to take effect.

SHORTRTY(*integer*)
The maximum number of attempts that are made by a sender, server, or cluster-sender channel to connect to the remote queue manager, at intervals specified by SHORTTMR, before the (normally longer) LONGRTY and LONGTMR are used.

Retry attempts are made if the channel fails to connect initially (whether it is started automatically by the channel initiator or by an explicit command), and also if the connection fails after the channel has successfully connected. However, if the cause of the failure is such that more attempts are unlikely to be successful, they are not attempted.

The value must be in the range zero through 999999999.

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, CLUSSDR, or CLUSRCVR.

SHORTTMR(*integer*)
For short retry attempts, this parameter is the maximum number of seconds to wait before reattempting connection to the remote queue manager.

The time is approximate; zero means that another connection attempt is made as soon as possible.

The interval between retries might be extended if the channel has to wait to become active.

The value must be in the range zero through 999999999.

Note: For implementation reasons, the maximum retry interval that can be used is 999999; values exceeding this maximum are treated as 999999. Similarly, the minimum retry interval that can be used is 2; values less than this minimum are treated as 2.

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, CLUSSDR, or CLUSRCVR.

SSLCAUTH
Defines whether IBM WebSphere MQ requires a certificate from the SSL client. The initiating end of the channel acts as the SSL client, so this parameter applies to the end of the channel that receives the initiation flow, which acts as the SSL server.

This parameter is valid only for channels with a channel type (CHLTYPE) of RCVR, SVRCONN, CLUSRCVR, SVR, or RQSTR.

The parameter is used only for channels with SSLCIPH specified. If SSLCIPH is blank, the data is ignored and no error message is issued.

REQUIRED
IBM WebSphere MQ requires and validates a certificate from the SSL client.

OPTIONAL
The peer SSL client system might still send a certificate. If it does, the contents of this certificate are validated as normal.

SSLCIPH*(string)*
SSLCIPH specifies the CipherSpec that is used on the channel. The maximum length is 32 characters. This parameter is valid on all channel types which use transport type TRPTYPE(TCP). If the SSLCIPH parameter is blank, no attempt is made to use SSL on the channel.

Note: When SSLCIPH is used with a telemetry channel, it means "SSL Cipher Suite". See the SSLCIPH description in "ALTER CHANNEL (MQTT)".

Specify the name of the CipherSpec you are using. The CipherSpecs that can be used with IBM WebSphere MQ SSL support are shown in the following table. The SSLCIPH values must specify the same CipherSpec on both ends of the channel.

A table describing the CipherSpecs you can use with WebSphere MQ SSL and TLS support.

CipherSpec name	Protocol used	Data integrity	Encryption algorithm	Encryption bits	FIPS[1]	Suite B 128 bit	Suite B 192 bit
NULL_MD5 [a]	SSL 3.0	MD5	None	0	No	No	No
NULL_SHA [a]	SSL 3.0	SHA-1	None	0	No	No	No
RC4_MD5_EXPORT [2] [a]	SSL 3.0	MD5	RC4	40	No	No	No
RC4_MD5_US [a]	SSL 3.0	MD5	RC4	128	No	No	No
RC4_SHA_US [a]	SSL 3.0	SHA-1	RC4	128	No	No	No
RC2_MD5_EXPORT [2] [a]	SSL 3.0	MD5	RC2	40	No	No	No
DES_SHA_EXPORT [2] [a]	SSL 3.0	SHA-1	DES	56	No	No	No
RC4_56_SHA_EXPORT1024 [3] [b]	SSL 3.0	SHA-1	RC4	56	No	No	No
DES_SHA_EXPORT1024 [3] [b]	SSL 3.0	SHA-1	DES	56	No	No	No
TLS_RSA_WITH_AES_128_CBC_SHA [a]	TLS 1.0	SHA-1	AES	128	Yes	No	No
TLS_RSA_WITH_AES_256_CBC_SHA [4] [a]	TLS 1.0	SHA-1	AES	256	Yes	No	No
TLS_RSA_WITH_DES_CBC_SHA [a]	TLS 1.0	SHA-1	DES	56	No[5]	No	No
FIPS_WITH_DES_CBC_SHA [b]	SSL 3.0	SHA-1	DES	56	No[6]	No	No
TLS_RSA_WITH_AES_128_GCM_SHA256 [b]	TLS 1.2	AEAD AES-128 GCM	AES	128	Yes	No	No
TLS_RSA_WITH_AES_256_GCM_SHA384 [b]	TLS 1.2	AEAD AES-256 GCM	AES	256	Yes	No	No
TLS_RSA_WITH_AES_128_CBC_SHA256 [b]	TLS 1.2	SHA-256	AES	128	Yes	No	No
TLS_RSA_WITH_AES_256_CBC_SHA256 [b]	TLS 1.2	SHA-256	AES	256	Yes	No	No
ECDHE_ECDSA_RC4_128_SHA256 [b]	TLS 1.2	SHA-1	RC4	128	No	No	No
ECDHE_RSA_RC4_128_SHA256 [b]	TLS 1.2	SHA_1	RC4	128	No	No	No
ECDHE_ECDSA_AES_128_CBC_SHA256 [b]	TLS 1.2	SHA-256	AES	128	Yes	No	No
ECDHE_ECDSA_AES_256_CBC_SHA384 [b]	TLS 1.2	SHA-384	AES	256	Yes	No	No
ECDHE_RSA_AES_128_CBC_SHA256 [b]	TLS 1.2	SHA-256	AES	128	Yes	No	No
ECDHE_RSA_AES_256_CBC_SHA384 [b]	TLS 1.2	SHA-384	AES	256	Yes	No	No
ECDHE_ECDSA_AES_128_GCM_SHA256 [b]	TLS 1.2	AEAD AES-128 GCM	AES	128	Yes	Yes	No
ECDHE_ECDSA_AES_256_GCM_SHA384 [b]	TLS 1.2	AEAD AES-256 GCM	AES	256	Yes	No	Yes

A table describing the CipherSpecs you can use with WebSphere MQ SSL and TLS support.

(continued)

CipherSpec name	Protocol used	Data integrity	Encryption algorithm	Encryption bits	FIPS[1]	Suite B 128 bit	Suite B 192 bit
ECDHE_RSA_AES_128_GCM_SHA256 [b]	TLS 1.2	AEAD AES-128 GCM	AES	128	Yes	No	No
ECDHE_RSA_AES_256_GCM_SHA384 [b]	TLS 1.2	AEAD AES-256 GCM	AES	256	Yes	No	No
TLS_RSA_WITH_NULL_SHA256 [b]	TLS 1.2	SHA-256	None	0	No	No	No
ECDHE_RSA_NULL_SHA256 [b]	TLS 1.2	SHA-1	None	0	No	No	No
ECDHE_ECDSA_NULL_SHA256 [b]	TLS 1.2	SHA-1	None	0	No	No	No
TLS_RSA_WITH_NULL_NULL [b]	TLS 1.2	None	None	0	No	No	No
TLS_RSA_WITH_RC4_128_SHA256 [b]	TLS 1.2	SHA-1	RC4	128	No	No	No

Notes:

1. Specifies whether the CipherSpec is FIPS-certified on a FIPS-certified platform. See Federal Information Processing Standards (FIPS) for an explanation of FIPS.
2. The maximum handshake key size is 512 bits. If either of the certificates exchanged during the SSL handshake has a key size greater than 512 bits, a temporary 512-bit key is generated for use during the handshake.
3. The handshake key size is 1024 bits.
4. This CipherSpec cannot be used to secure a connection from the WebSphere MQ Explorer to a queue manager unless the appropriate unrestricted policy files are applied to the JRE used by the Explorer.
5. This CipherSpec was FIPS 140-2 certified before 19 May 2007.
6. This CipherSpec was FIPS 140-2 certified before 19 May 2007. The name FIPS_WITH_DES_CBC_SHA is historical and reflects the fact that this CipherSpec was previously (but is no longer) FIPS-compliant. This CipherSpec is deprecated and its use is not recommended.
7. This CipherSpec can be used to transfer up to 32 GB of data before the connection is terminated with error AMQ9288. To avoid this error, either avoid using triple DES, or enable secret key reset when using this CipherSpec.

Platform support:

- a Available on all supported platforms.
- b Available only on UNIX, Linux, and Windows platforms.

When you request a personal certificate, you specify a key size for the public and private key pair. The key size that is used during the SSL handshake can depend on the size stored in the certificate and on the CipherSpec:

- On z/OS, Windows, UNIX and Linux systems, when a CipherSpec name includes _EXPORT, the maximum handshake key size is 512 bits. If either of the certificates exchanged during the SSL handshake has a key size greater than 512 bits, a temporary 512-bit key is generated for use during the handshake.
- On Windows, UNIX and Linux systems, when a CipherSpec name includes _EXPORT1024, the handshake key size is 1024 bits.

- Otherwise the handshake key size is the size stored in the certificate.

SSLPEER(*string*)

Specifies the filter to use to compare with the Distinguished Name of the certificate from the peer queue manager or client at the other end of the channel. (A Distinguished Name is the identifier of the SSL certificate.) If the Distinguished Name in the certificate received from the peer does not match the SSLPEER filter, the channel does not start.

Note: An alternative way of restricting connections into channels by matching against the SSL or TLS Subject Distinguished Name, is to use channel authentication records. With channel authentication records, different SSL or TLS Subject Distinguished Name patterns can be applied to the same channel. If both SSLPEER on the channel and a channel authentication record are used to apply to the same channel, the inbound certificate must match both patterns in order to connect. For more information, see Channel authentication records.

This parameter is optional; if it is not specified, the Distinguished Name of the peer is not checked at channel start up. (The Distinguished Name from the certificate is still written into the SSLPEER definition held in memory, and passed to the security exit). If SSLCIPH is blank, the data is ignored and no error message is issued.

This parameter is valid for all channel types.

The SSLPEER value is specified in the standard form used to specify a Distinguished Name. For example:

```
SSLPEER('SERIALNUMBER=4C:D0:49:D5:02:5F:38,CN="H1_C_FR1",O=IBM,C=GB')
```

You can use a semi-colon as a separator instead of a comma.

The possible attribute types supported are:

Table 35. Attribute types supported by SSLPEER.

A two column table descibing the attributes supported by the SSLPEER attribute

Summary attribute	Description
SERIALNUMBER	Certificate serial number
MAIL	Email address
E	Email address (Deprecated in preference to MAIL)
UID or USERID	User identifier
CN	Common Name
T	Title
OU	Organizational Unit name
DC	Domain component
O	Organization name
STREET	Street / First line of address
L	Locality name
ST (or SP or S)	State or Province name
PC	Postal code / zip code

Table 35. Attribute types supported by SSLPEER.

A two column table descibing the attributes supported by the SSLPEER attribute

(continued)

Summary attribute	Description
C	Country
UNSTRUCTUREDNAME	Host name
UNSTRUCTUREDADDRESS	IP address
DNQ	Distinguished name qualifier

IBM WebSphere MQ accepts only uppercase letters for the attribute types.

If any of the unsupported attribute types are specified in the SSLPEER string, an error is output either when the attribute is defined or at run time (depending on which platform you are running on), and the string is deemed not to have matched the Distinguished Name of the flowed certificate.

If the Distinguished Name of the flowed certificate contains multiple OU (organizational unit) attributes, and SSLPEER specifies these attributes to be compared, they must be defined in descending hierarchical order. For example, if the Distinguished Name of the flowed certificate contains the OUs `OU=Large Unit, OU=Medium Unit, OU=Small Unit`, specifying the following SSLPEER values works:

```
('OU=Large Unit,OU=Medium Unit')
('OU=*,OU=Medium Unit,OU=Small Unit')
('OU=*,OU=Medium Unit')
```

but specifying the following SSLPEER values fails:

```
('OU=Medium Unit,OU=Small Unit')
('OU=Large Unit,OU=Small Unit')
('OU=Medium Unit')
('OU=Small Unit, Medium Unit, Large Unit')
```

As indicated in these examples, attributes at the low end of the hierarchy can be omitted. For example, `('OU=Large Unit,OU=Medium Unit')` is equivalent to `('OU=Large Unit,OU=Medium Unit,OU=*')`

If two DNs are equal in all respects except for their DC values, the same matching rules apply as for OUs except that in DC values the left-most DC is the lowest-level (most specific) and the comparison ordering differs accordingly.

Any or all the attribute values can be generic, either an asterisk (*) on its own, or a stem with initiating or trailing asterisks. Asterisks allow the SSLPEER to match any Distinguished Name value, or any value starting with the stem for that attribute.

If an asterisk is specified at the beginning or end of any attribute value in the Distinguished Name on the certificate, you can specify '*' to check for an exact match in SSLPEER. For example, if you have an attribute of `CN='Test*'` in the Distinguished Name of the certificate, you can use the following command:

```
SSLPEER('CN=Test\*')
```

The maximum length of the parameter is 1024 bytes on Windows, IBM i, UNIX and Linux platforms, and 256 bytes on z/OS.

STATCHL
Controls the collection of statistics data for channels:

QMGR
The value of the STATCHL parameter of the queue manager is inherited by the channel.

OFF
Statistics data collection is turned off for this channel.

LOW
If the value of the STATCHL parameter of the queue manager is not NONE, statistics data collection is turned on, with a low rate of data collection, for this channel.

MEDIUM
If the value of the STATCHL parameter of the queue manager is not NONE, statistics data collection is turned on, with a moderate rate of data collection, for this channel.

HIGH
If the value of the STATCHL parameter of the queue manager is not NONE, statistics data collection is turned on, with a high rate of data collection, for this channel.

Changes to this parameter take effect only on channels started after the change occurs.

For cluster channels, the value of this parameter is not replicated in the repository and used in the auto-definition of cluster-sender channels. For auto-defined cluster-sender channels, the value of this parameter is taken from the attribute STATACLS of the queue manager. This value might then be overridden in the channel auto-definition exit.

This parameter is valid only on AIX, IBM i, HP-UX, Linux, Solaris, and Windows.

TPNAME(*string*)
LU 6.2 transaction program name (maximum length 64 characters).

This parameter is valid only for channels with a transport type (TRPTYPE) of LU 6.2.

Set this parameter to the SNA transaction program name, unless the CONNAME contains a side-object name in which case set it to blanks. The actual name is taken instead from the CPI-C Communications Side Object, or the APPC side information data set.

On Windows SNA Server, and in the side object on z/OS, the TPNAME is wrapped to uppercase.

This parameter is not valid for channels with a channel type (CHLTYPE) of RCVR.

TRPTYPE
Transport type to be used.

On AIX, IBM i, HP-UX, Linux, Solaris, and Windows, and z/OS, this parameter is optional because, if you do not enter a value, the value specified in the SYSTEM.DEF.*channel-type* definition is used. However, no check is made that the correct transport type has been specified if the channel is initiated from the other end. On z/OS, if the SYSTEM.DEF.*channel-type* definition does not exist, the default is LU62.

This parameter is required on all other platforms.

LU62
SNA LU 6.2

NETBIOS
NetBIOS (supported only on Windows, and DOS; it also applies to z/OS for defining client-connection channels that connect to servers on the platforms supporting NetBIOS)

SPX
Sequenced packet exchange (supported only on Windows, and DOS; it also applies to z/OS for defining client-connection channels that connect to servers on the platforms supporting SPX)

TCP
Transmission Control Protocol - part of the TCP/IP protocol suite

USEDLQ
Determines whether the dead-letter queue is used when messages cannot be delivered by channels.

NO
Messages that cannot be delivered by a channel are treated as a failure. The channel either discards the message, or the channel ends, in accordance with the NPMSPEED setting.

YES
When the DEADQ queue manager attribute provides the name of a dead-letter queue, then it is used, else the behavior is as for NO. YES is the default value.

USERID(*string*)
Task user identifier. The maximum length is 12 characters.

This parameter is used by the message channel agent when attempting to initiate a secure LU 6.2 session with a remote message channel agent.

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, RQSTR, CLNTCONN, or CLUSSDR. On z/OS, it is supported only for CLNTCONN channels.

Although the maximum length of the parameter is 12 characters, only the first 10 characters are used.

On the receiving end, if passwords are kept in encrypted format and the LU 6.2 software is using a different encryption method, an attempt to start the channel fails with invalid security details. You can avoid invalid security details by modifying the receiving SNA configuration to either:

- Turn off password substitution, or
- Define a security user ID and password.

XMITQ(*string*)
Transmission queue name.

The name of the queue from which messages are retrieved. See Rules for naming IBM WebSphere MQ objects.

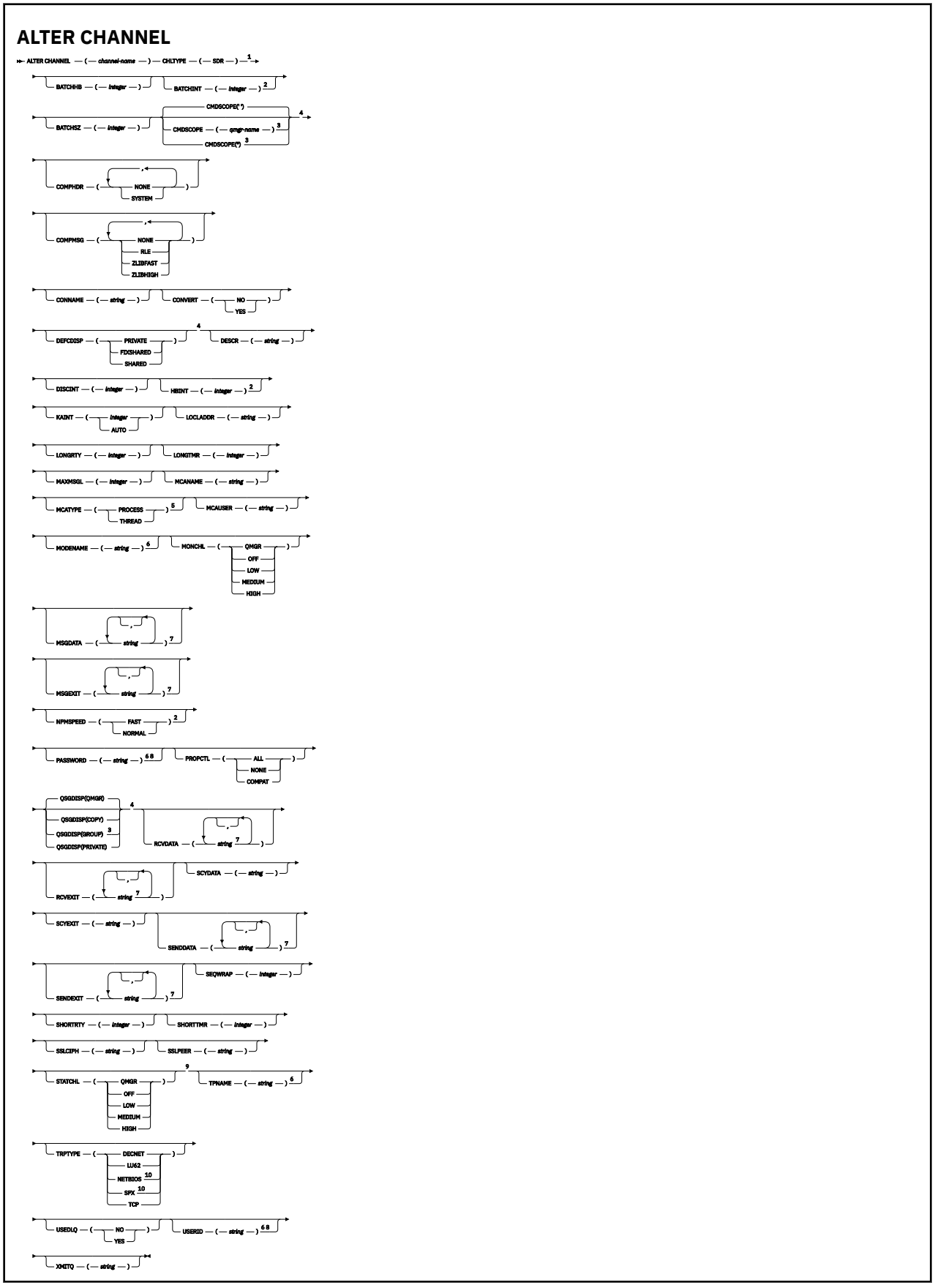
This parameter is valid only for channels with a channel type (CHLTYPE) of SDR or SVR. For these channel types, this parameter is required.

There is a separate syntax diagram for each type of channel:

- “Sender channel” on page 208
- “Server channel” on page 210
- “Receiver channel” on page 212
- “Requester channel” on page 214
- “Client-connection channel” on page 216
- “Server-connection channel” on page 218
- “Cluster-sender channel” on page 220
- “Cluster-receiver channel” on page 222

Sender channel

Syntax diagram for a sender channel when using the ALTER CHANNEL command.



Notes:

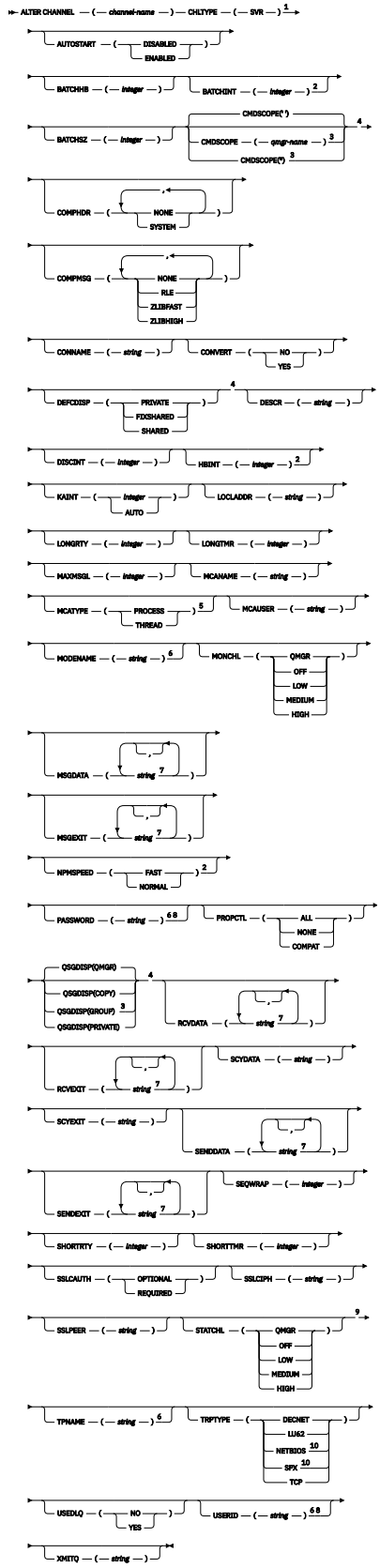
[1] This parameter must follow immediately after the channel name except on z/OS.
[2] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, Windows and z/OS.
[3] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[4] Valid only on z/OS.
[5] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.
[6] Valid only if TRPTYPE is LU62.
[7] You can specify more than one value on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS only.
[8] Not valid on z/OS.
[9] This parameter is valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.
[10] Valid only Windows.

The parameters are described in "ALTER CHANNEL" on page 175.

Server channel

Syntax diagram for a server channel when using the ALTER CHANNEL command.

ALTER CHANNEL



Notes:

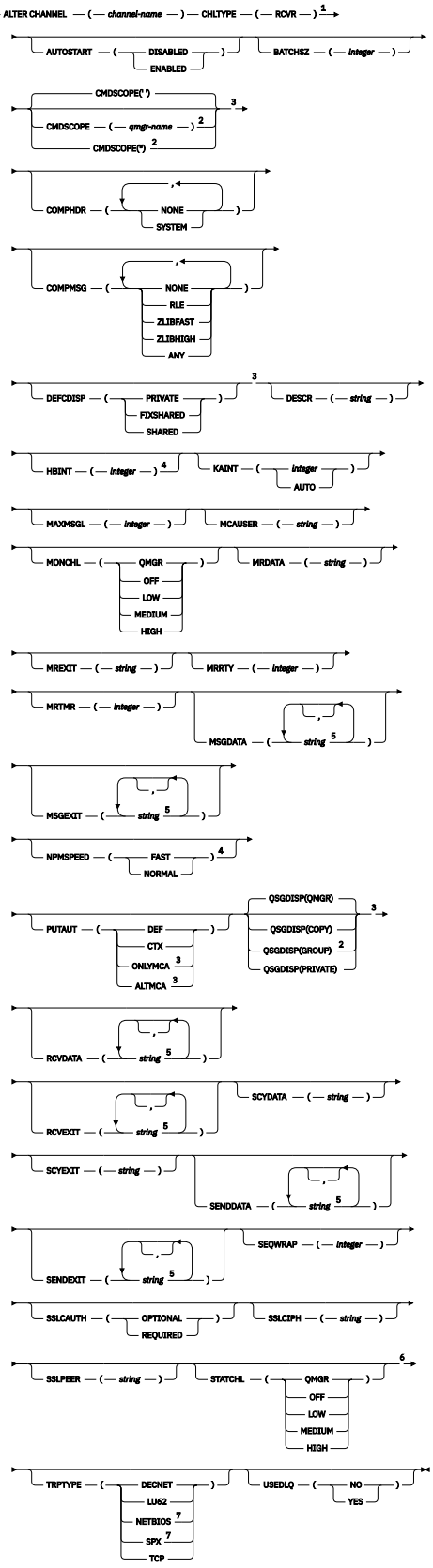
[1] This parameter must follow immediately after the channel name except on z/OS.
[2] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, Windows and z/OS.
[3] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[4] Valid only on z/OS.
[5] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.
[6] Valid only if TRPTYPE is LU62.
[7] You can specify more than one value on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS only.
[8] Not valid on z/OS.
[9] This parameter is valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.
[10] Valid only on Windows.

The parameters are described in "ALTER CHANNEL" on page 175.

Receiver channel

Syntax diagram for a receiver channel when using the ALTER CHANNEL command.

ALTER CHANNEL



Notes:

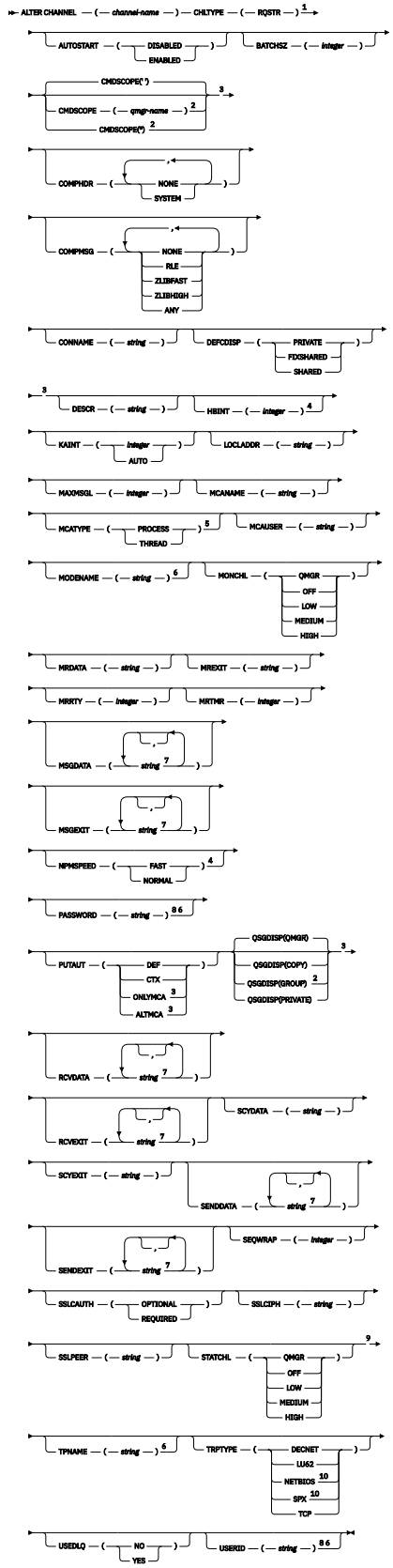
[1] This parameter must follow immediately after the channel name except on z/OS.
[2] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[3] Valid only on z/OS.
[4] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.
[5] You can specify more than one value on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS only.
[6] This parameter is valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.
[7] Valid only on Windows.

The parameters are described in “ALTER CHANNEL” on page 175.

Requester channel

Syntax diagram for a requester channel when using the ALTER CHANNEL command.

ALTER CHANNEL



Notes:

[1] This parameter must follow immediately after the channel name except on z/OS.
[2] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[3] Valid only on z/OS.
[4] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.
[5] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.
[6] Valid only if TRPTYPE is LU62.
[7] You can specify more than one value on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS only.
[8] Not valid on z/OS.
[9] This parameter is valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.
[10] Valid only on Windows.

The parameters are described in "ALTER CHANNEL" on page 175.

Client-connection channel

Syntax diagram for a client-connection channel when using the ALTER CHANNEL command.

ALTER CHANNEL

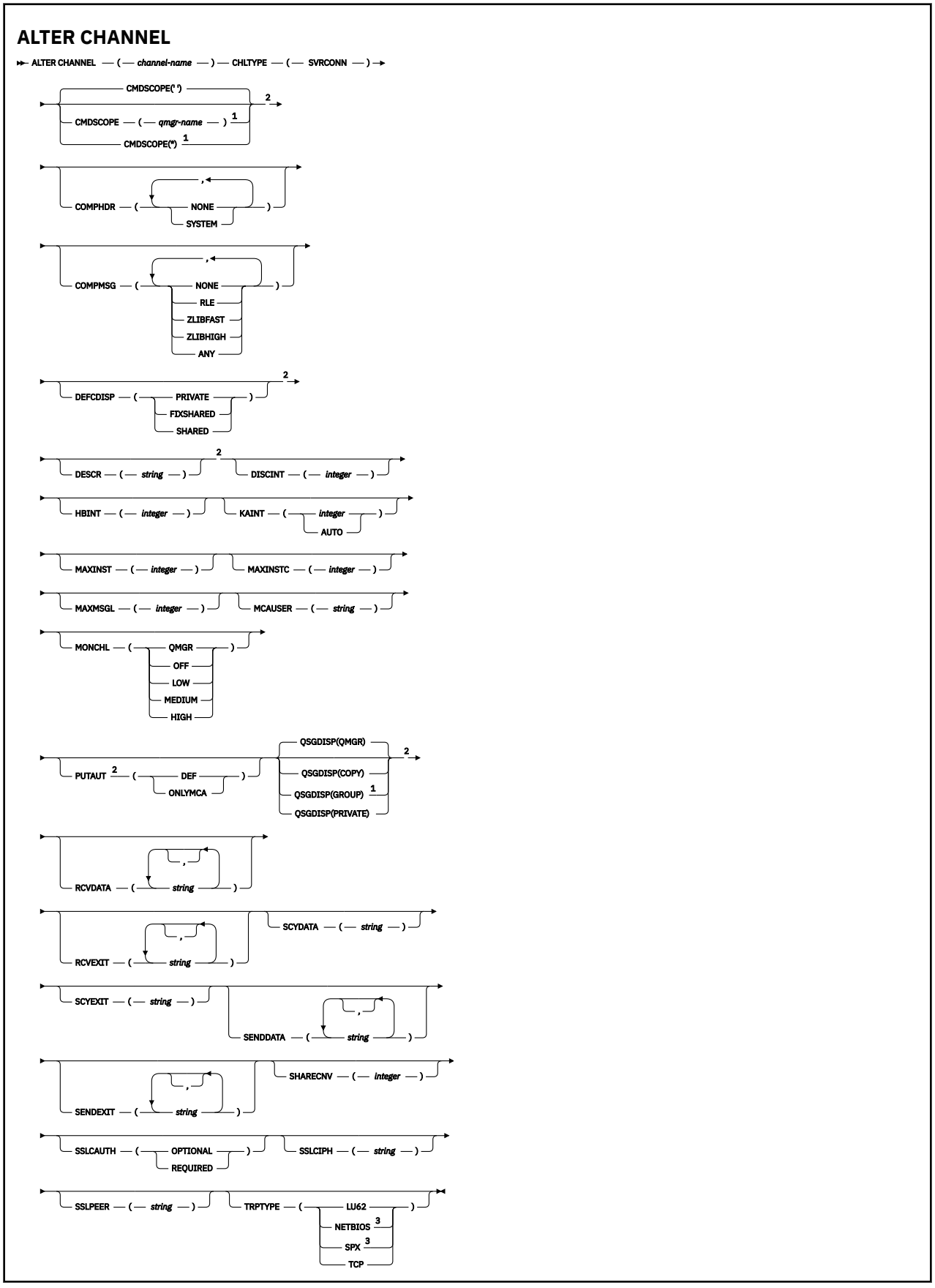
Notes:

[1] This parameter must follow immediately after the channel name except on z/OS.
[2] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[3] Valid only on z/OS.
[4] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.
[5] Valid only if TRPTYPE is LU62.
[6] You can specify more than one value on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS only.
[7] Valid only for clients to be run on DOS and Windows.

The parameters are described in “ALTER CHANNEL” on page 175.

Server-connection channel

Syntax diagram for a server-connection channel when using the ALTER CHANNEL command.



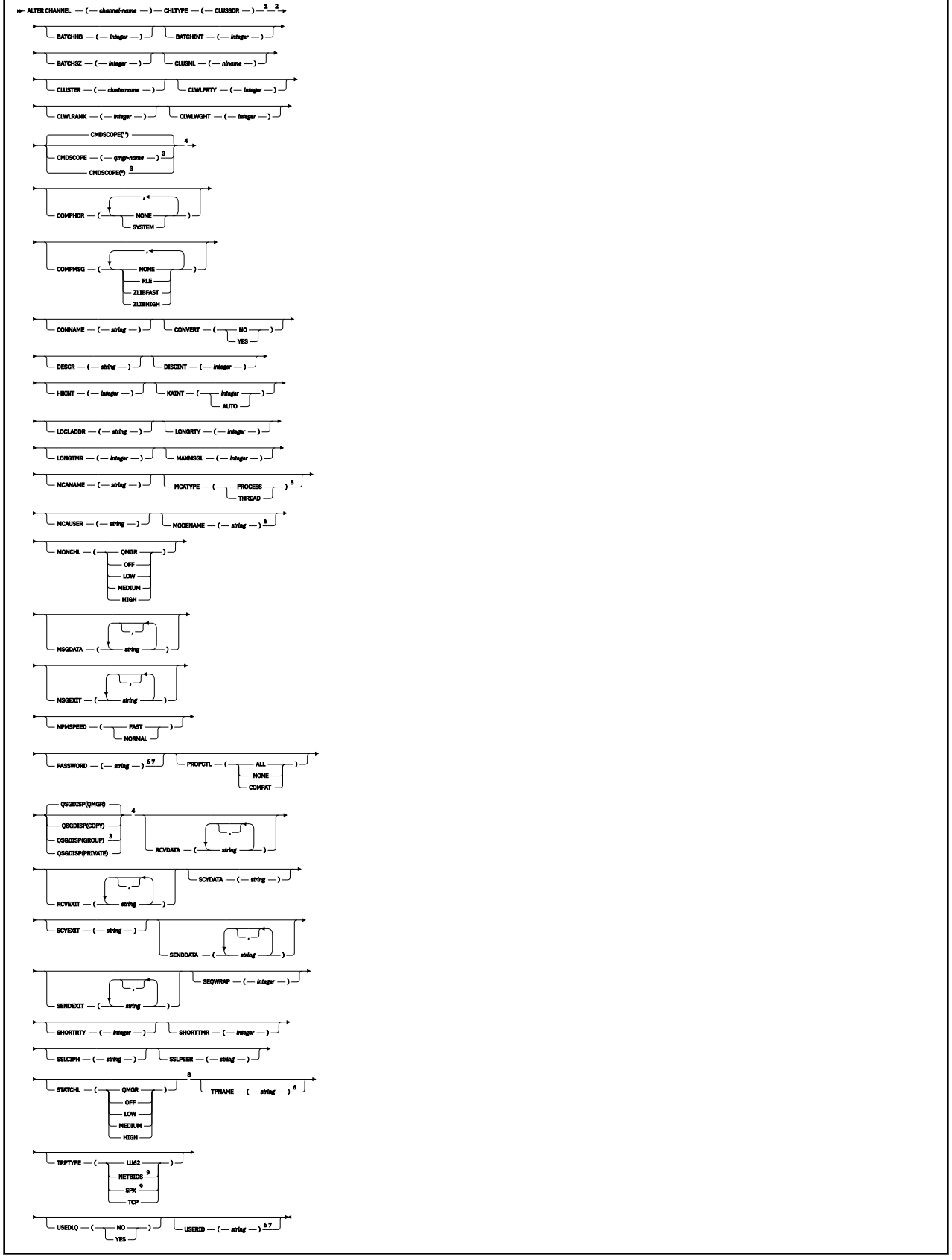
Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[2] Valid only on z/OS.
[3] Valid only for clients to be run on Windows.

The parameters are described in “ALTER CHANNEL” on page 175.

Cluster-sender channel

Syntax diagram for a cluster-sender channel when using the ALTER CHANNEL command.



Notes:

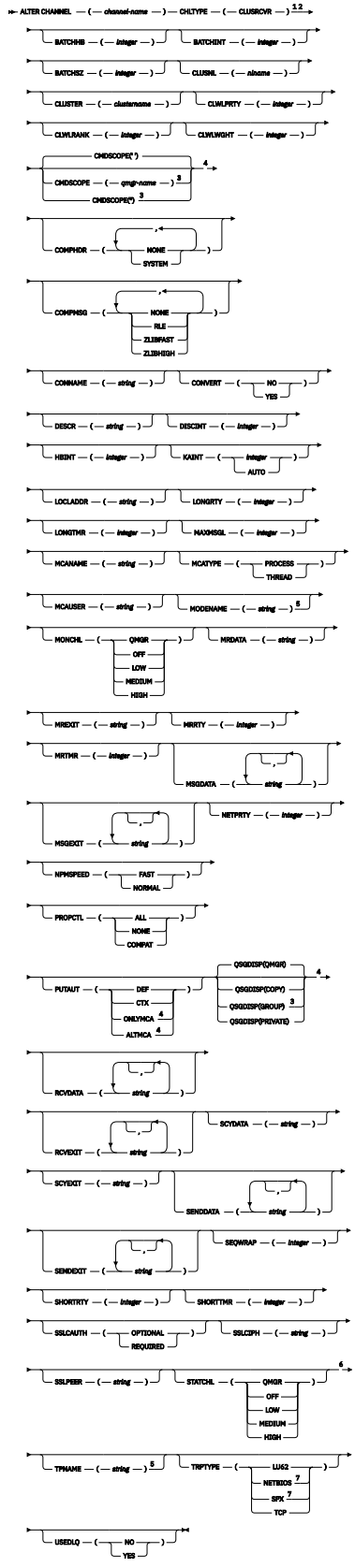
[1] This parameter must follow immediately after the channel name except on z/OS.
[2] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.
[3] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[4] Valid only on z/OS.
[5] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.
[6] Valid only if TRPTYPE is LU62.
[7] Not valid on z/OS.
[8] This parameter is valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.
[9] Valid only Windows.

The parameters are described in "ALTER CHANNEL" on page 175.

Cluster-receiver channel

Syntax diagram for a cluster-receiver channel when using the ALTER CHANNEL command.

ALTER CHANNEL



Notes:

[1] This parameter must follow immediately after the channel name except on z/OS.
[2] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.
[3] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[4] Valid only on z/OS.
[5] Valid only if TRPTYPE is LU62.
[6] This parameter is valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.
[7] Valid only on Windows.

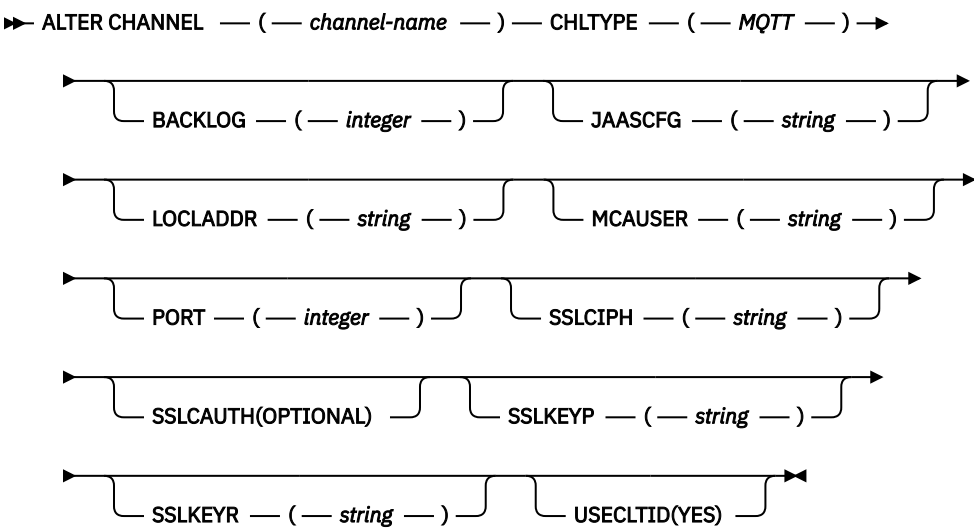
The parameters are described in "ALTER CHANNEL" on page 175.

ALTER CHANNEL (MQTT)

Syntax diagram for a telemetry channel when using the ALTER CHANNEL command. This is separate from the regular ALTER CHANNEL syntax diagram and parameter descriptions.

UNIX and Linux	Windows
✓	✓

Note: For the telemetry server, AIX is the only supported UNIX platform.



Parameter descriptions for ALTER CHANNEL (MQTT)

(channel-name)
The name of the new channel definition.

The name must not be the same as any existing channel defined on this queue manager (unless REPLACE or ALTER is specified).

The maximum length of the string is 20 characters, and the string must contain only valid characters; see Rules for naming IBM WebSphere MQ objects.

CHLTYPE
Channel type. This parameter is required.

MQTT
Telemetry channel

BACKLOG(*integer*)
The number of outstanding connection requests that the telemetry channel can support at any one time. When the backlog limit is reached, any further clients trying to connect will be refused connection until the current backlog is processed.

The value is in the range 0 - 999999999.

The default value is 4096.

JAASCFG(*string*)
The file path of the JAAS configuration.

LOCLADDR(*string*)
LOCLADDR is the local communications address for the channel. Use this parameter if you want a channel to use a particular IP address, port, or port range for outbound communications. LOCLADDR might be useful in recovery scenarios where a channel is restarted on a different TCP/IP stack. LOCLADDR is also useful to force a channel to use an IPv4 or IPv6 stack on a dual-stack system. You can also use LOCLADDR to force a channel to use a dual-mode stack on a single-stack system.

This parameter is valid only for channels with a transport type (TRPTYPE) of TCP. If TRPTYPE is not TCP, the data is ignored and no error message is issued.

The value is the optional IP address, and optional port or port range used for outbound TCP/IP communications. The format for this information is as follows:

```
LOCLADDR([ip-addr][(low-port[,high-port])][,[ip-addr][(low-port[,high-port])]])
```

The maximum length of LOCLADDR, including multiple addresses, is MQ_LOCAL_ADDRESS_LENGTH.

If you omit LOCLADDR, a local address is automatically allocated.

Note, that you can set LOCLADDR for a C client using the Client Channel Definition Table (CCDT).

All the parameters are optional. Omitting the `ip-addr` part of the address is useful to enable the configuration of a fixed port number for an IP firewall. Omitting the port number is useful to select a particular network adapter without having the identify a unique local port number. The TCP/IP stack generates a unique port number.

Specify *[,[ip-addr][(low-port[,high-port])]]* multiple times for each additional local address. Use multiple local addresses if you want to specify a specific subset of local network adapters. You can also use *[,[ip-addr][(low-port[,high-port])]]* to represent a particular local network address on different servers that are part of a multi-instance queue manager configuration.

ip-addr
`ip-addr` is specified in one of three forms:

IPv4 dotted decimal
For example `192.0.2.1`

IPv6 hexadecimal notation
For example `2001:DB8:0:0:0:0:0:0`

Alphanumeric host name form
For example `WWW.EXAMPLE.COM`

low-port and high-port
`low-port` and `high-port` are port numbers enclosed in parentheses.

Table 41 on page 340 shows how the LOCLADDR parameter can be used:

Table 36. Examples of how the LOCLADDR parameter can be used

LOCLADDR	Meaning
9.20.4.98	Channel binds to this address locally

Table 36. Examples of how the LOCLADDR parameter can be used (continued)	
LOCLADDR	**Meaning**
9.20.4.98, 9.20.4.99	Channel binds to either IP address. The address might be two network adapters on one server, or a different network adapter on two different servers in a multi-instance configuration.
9.20.4.98(1000)	Channel binds to this address and port 1000 locally
9.20.4.98(1000,2000)	Channel binds to this address and uses a port in the range 1000 - 2000 locally
(1000)	Channel binds to port 1000 locally
(1000,2000)	Channel binds to port in range 1000 - 2000 locally

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, RQSTR, CLNTCONN, CLUSSDR, CLUSRCVR, or MQTT.

On CLUSSDR channels, the IP address and port to which the outbound channel binds, is a combination of fields. It is a concatenation of the IP address, as defined in the LOCLADDR parameter, and the port range from the cluster cache. If there is no port range in the cache, the port range defined in the LOCLADDR parameter is used. This port range does not apply to z/OS.

Even though this parameter is similar in form to CONNAME, it must not be confused with it. The LOCLADDR parameter specifies the characteristics of the local communications, whereas the CONNAME parameter specifies how to reach a remote queue manager.

When a channel is started, the values specified for CONNAME and LOCLADDR determine the IP stack to be used for communication; see Table 3 and Local Address (LOCLADDR) .

If the TCP/IP stack for the local address is not installed or configured, the channel does not start and an exception message is generated. The message indicates that the `connect()` request specifies an interface address that is not known on the default IP stack. To direct the connect() request to the alternative stack, specify the **LOCLADDR** parameter in the channel definition as either an interface on the alternative stack, or a DNS host name. The same specification also works for listeners that might not use the default stack. To find the value to code for **LOCLADDR**, run the **NETSTAT HOME** command on the IP stacks that you want to use as alternatives.

For channels with a channel type (CHLTYPE) of MQTT the usage of this parameter is slightly different. Specifically, a telemetry channel (MQTT) **LOCLADDR** parameter expects only an IPv4 or IPv6 IP address, or a valid host name as a string. This string must not contain a port number or port range. If an IP address is entered, only the address format is validated. The IP address itself is not validated.

Table 37. How the IP stack to be used for communication is determined

Protocols supported	CONNAME	LOCLADDR	Action of channel
IPv4 only	IPv4 address[1]		Channel binds to IPv4 stack
	IPv6 address[2]		Channel fails to resolve CONNAME
	IPv4 and 6 host name[3]		Channel binds to IPv4 stack
	IPv4 address	IPv4 address	Channel binds to IPv4 stack
	IPv6 address	IPv4 address	Channel fails to resolve CONNAME
	IPv4 and 6 host name	IPv4 address	Channel binds to IPv4 stack
	Any address[4]	IPv6 address	Channel fails to resolve LOCLADDR
	IPv4 address	IPv4 and 6 host name	Channel binds to IPv4 stack
	IPv6 address	IPv4 and 6 host name	Channel fails to resolve CONNAME
	IPv4 and 6 host name	IPv4 and 6 host name	Channel binds to IPv4 stack
IPv4 and IPv6	IPv4 address		Channel binds to IPv4 stack
	IPv6 address		Channel binds to IPv6 stack
	IPv4 and 6 host name		Channel binds to stack determined by IPADDRV
	IPv4 address	IPv4 address	Channel binds to IPv4 stack
	IPv6 address	IPv4 address	Channel fails to resolve CONNAME
	IPv4 and 6 host name	IPv4 address	Channel binds to IPv4 stack
	IPv4 address	IPv6 address	Channel maps CONNAME to IPv6[5]
	IPv6 address	IPv6 address	Channel binds IPv6 stack
	IPv4 and 6 host name	IPv6 address	Channel binds IPv6 stack
	IPv4 address	IPv4 and 6 host name	Channel binds to IPv4 stack
	IPv6 address	IPv4 and 6 host name	Channel binds to IPv6 stack
	IPv4 and 6 host name	IPv4 and 6 host name	Channel binds to stack determined by IPADDRV

Table 37. How the IP stack to be used for communication is determined (continued)

Protocols supported	CONNAME	LOCLADDR	Action of channel
IPv6 only	IPv4 address		Channel maps CONNAME to IPv6[5]
	IPv6 address		Channel binds to IPv6 stack
	IPv4 and 6 host name		Channel binds to IPv6 stack
	Any address	IPv4 address	Channel fails to resolve LOCLADDR
	IPv4 address	IPv6 address	Channel maps CONNAME to IPv6[5]
	IPv6 address	IPv6 address	Channel binds to IPv6 stack
	IPv4 and 6 host name	IPv6 address	Channel binds to IPv6 stack
	IPv4 address	IPv4 and 6 host name	Channel maps CONNAME to IPv6[5]
	IPv6 address	IPv4 and 6 host name	Channel binds to IPv6 stack
	IPv4 and 6 host name	IPv4 and 6 host name	Channel binds to IPv6 stack

Notes:

1. IPv4 address. An IPv4 host name that resolves only to an IPv4 network address or a specific dotted notation IPv4 address, for example `1.2.3.4`. This note applies to all occurrences of 'IPv4 address' in this table.
2. IPv6 address. An IPv6 host name that resolves only to an IPv6 network address or a specific hexadecimal notation IPv6 address, for example `4321:54bc`. This note applies to all occurrences of 'IPv6 address' in this table.
3. IPv4 and 6 host name. A host name that resolves to both IPv4 and IPv6 network addresses. This note applies to all occurrences of 'IPv4 and 6 host name' in this table.
4. Any address. IPv4 address, IPv6 address, or IPv4 and 6 host name. This note applies to all occurrences of 'Any address' in this table.
5. Maps IPv4 CONNAME to IPv4 mapped IPv6 address. IPv6 stack implementations that do not support IPv4 mapped IPv6 addressing fail to resolve the CONNAME. Mapped addresses might require protocol translators in order to be used. The use of mapped addresses is not recommended.

MCAUSER(*string*)

Message channel agent user identifier.

Note: An alternative way of providing a user ID for a channel to run under is to use channel authentication records. With channel authentication records, different connections can use the same channel while using different credentials. If both MCAUSER on the channel is set and channel authentication records are used to apply to the same channel, the channel authentication records take precedence. The MCAUSER on the channel definition is only used if the channel authentication record uses USERSRC(CHANNEL). For more details, see Channel authentication records.

This parameter interacts with PUTAUT, see the definition of that parameter for more information.

If it is nonblank, it is the user identifier that is to be used by the message channel agent for authorization to access IBM WebSphere MQ resources, including (if PUTAUT is DEF) authorization to put the message to the destination queue for receiver or requester channels.

If it is blank, the message channel agent uses its default user identifier.

The default user identifier is derived from the user ID that started the receiving channel. The possible values are:

- For TCP/IP, the user ID from the `inetd.conf` entry, or the user that started the listener.
- For SNA, the user ID from the SNA server entry or, in the absence of this user ID the incoming attach request, or the user that started the listener.
- For NetBIOS or SPX, the user ID that started the listener.

The maximum length of the string is 64 characters on Windows and 12 characters on other platforms. On Windows, you can optionally qualify a user identifier with the domain name in the format `user@domain`.

PORT(*integer*)
The port number for TCP/IP. This parameter is the port number on which the listener is to stop listening. It is valid only if the transmission protocol is TCP/IP.

The PORT parameter accepts a value of zero. This value causes an available port to be assigned to the channel.

SSLCAUTH
Defines whether IBM WebSphere MQ requires a certificate from the SSL client. The initiating end of the channel acts as the SSL client, so this parameter applies to the end of the channel that receives the initiation flow, which acts as the SSL server.

This parameter is valid only for channels with a channel type (CHLTYPE) of RCVR, SVRCONN, CLUSRCVR, SVR, RQSTR, or MQTT.

The parameter is used only for channels with SSLCIPH specified. If SSLCIPH is blank, the data is ignored and no error message is issued.

REQUIRED
IBM WebSphere MQ requires and validates a certificate from the SSL client.

OPTIONAL
The peer SSL client system might still send a certificate. If it does, the contents of this certificate are validated as normal.

SSLCIPH*(string)*

When `SSLCIPH` is used with a telemetry channel, it means "SSL Cipher Suite". The SSL cipher suite is the one supported by the JVM that is running the telemetry (MQXR) service. If the `SSLCIPH` parameter is blank, no attempt is made to use SSL on the channel.

Here is an alphabetic list of the SSL cipher suites that are currently supported:

- `SSL_DH_anon_EXPORT_WITH_DES40_CBC_SHA`
- `SSL_DH_anon_EXPORT_WITH_RC4_40_MD5`
- `SSL_DH_anon_WITH_3DES_EDE_CBC_SHA`
- `SSL_DH_anon_WITH_AES_128_CBC_SHA`
- `SSL_DH_anon_WITH_DES_CBC_SHA`
- `SSL_DH_anon_WITH_RC4_128_MD5`
- `SSL_DHE_DSS_EXPORT_WITH_DES40_CBC_SHA`
- `SSL_DHE_DSS_WITH_3DES_EDE_CBC_SHA`
- `SSL_DHE_DSS_WITH_AES_128_CBC_SHA`
- `SSL_DHE_DSS_WITH_DES_CBC_SHA`
- `SSL_DHE_DSS_WITH_RC4_128_SHA`
- `SSL_DHE_RSA_EXPORT_WITH_DES40_CBC_SHA`
- `SSL_DHE_RSA_WITH_3DES_EDE_CBC_SHA`

- SSL_DHE_RSA_WITH_AES_128_CBC_SHA
- SSL_DHE_RSA_WITH_DES_CBC_SHA
- SSL_KRB5_EXPORT_WITH_DES_CBC_40_MD5
- SSL_KRB5_EXPORT_WITH_DES_CBC_40_SHA
- SSL_KRB5_EXPORT_WITH_RC4_40_MD5
- SSL_KRB5_EXPORT_WITH_RC4_40_SHA
- SSL_KRB5_WITH_3DES_EDE_CBC_MD5
- SSL_KRB5_WITH_3DES_EDE_CBC_SHA
- SSL_KRB5_WITH_DES_CBC_MD5
- SSL_KRB5_WITH_DES_CBC_SHA
- SSL_KRB5_WITH_RC4_128_MD5
- SSL_KRB5_WITH_RC4_128_SHA
- SSL_RSA_EXPORT_WITH_DES40_CBC_SHA
- SSL_RSA_EXPORT_WITH_RC4_40_MD5
- SSL_RSA_FIPS_WITH_3DES_EDE_CBC_SHA
- V 7.5.0.2 SSL_RSA_FIPS_WITH_AES_128_CBC_SHA256
- V 7.5.0.2 SSL_RSA_FIPS_WITH_AES_256_CBC_SHA256
- SSL_RSA_FIPS_WITH_DES_CBC_SHA
- SSL_RSA_WITH_3DES_EDE_CBC_SHA
- SSL_RSA_WITH_AES_128_CBC_SHA
- V 7.5.0.2 SSL_RSA_WITH_AES_128_CBC_SHA256
- V 7.5.0.2 SSL_RSA_WITH_AES_256_CBC_SHA256
- SSL_RSA_WITH_DES_CBC_SHA
- SSL_RSA_WITH_NULL_MD5
- SSL_RSA_WITH_NULL_SHA
- V 7.5.0.2 SSL_RSA_WITH_NULL_SHA256
- SSL_RSA_WITH_RC4_128_MD5
- SSL_RSA_WITH_RC4_128_SHA

V 7.5.0.2 If you plan to use SHA-2 cipher suites, see System requirements for using SHA-2 cipher suites with MQTT channels.

SSLKEYP(*string*)
The store for digital certificates and their associated private keys. If you do not specify a key file, SSL is not used.

SSLKEYR(*string*)
The password for the key repository. If no passphrase is entered, then unencrypted connections must be used.

USECLTID
Decide whether you want to use the MQTT client ID for the new connection as the IBM WebSphere MQ user ID for that connection. If this property is specified, the user name supplied by the client is ignored.

Related concepts

Telemetry channel configuration for MQTT client authentication using SSL

Telemetry channel configuration for channel authentication using SSL

CipherSpecs and CipherSuites

V 7.5.0.2 System requirements for using SHA-2 cipher suites with MQTT channels

Related reference

"DEFINE CHANNEL (MQTT)" on page 376

Syntax diagram for a telemetry channel when using the **DEFINE CHANNEL** command.

ALTER COMMINFO

Use the MQSC command ALTER COMMINFO to alter the parameters of a communication information object.

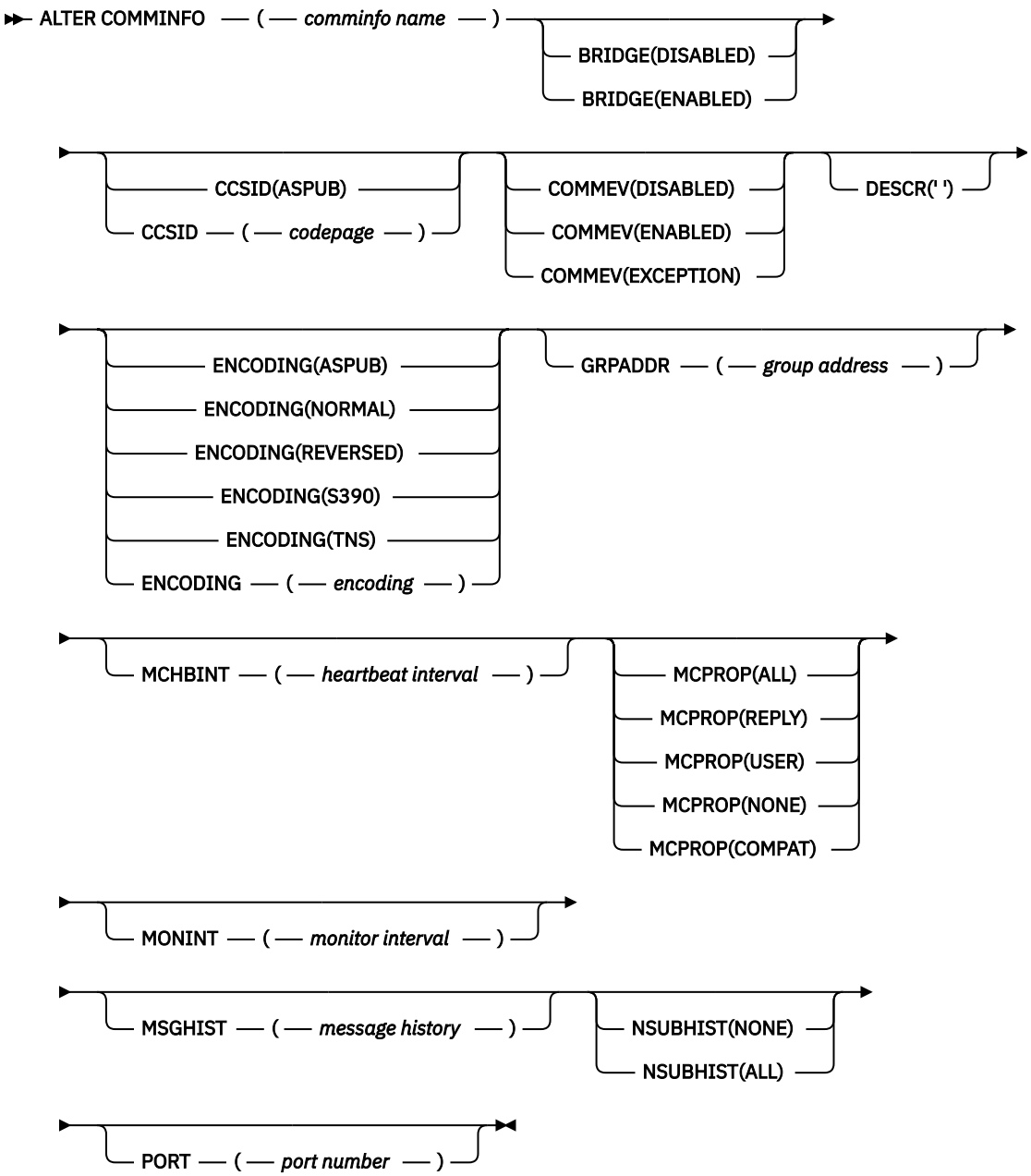
UNIX and Linux	Windows
✓	✓

Parameters not specified in the ALTER COMMINFO command result in the existing values for those parameters being left unchanged.

- Syntax diagram
- "Parameter descriptions for ALTER COMMINFO" on page 231

Synonym: ALT COMMINFO

ALTER COMMINFO



Notes:

Parameter descriptions for ALTER COMMINFO

(comminfo name)
Name of the communications information object. This parameter is required.

The name must not be the same as any other communications information object name currently defined on this queue manager. See Rules for naming IBM WebSphere MQ objects .

BRIDGE
Controls whether publications from applications not using Multicast are bridged to applications using Multicast. Bridging does not apply to topics that are marked as **MCAST(ONLY)**. As these topics can only be Multicast traffic, it is not applicable to bridge to the queue's publish/subscribe domain.

DISABLED
Publications from applications not using Multicast are not bridged to applications that do use Multicast.

ENABLED
Publications from applications not using Multicast are bridged to applications that do use Multicast.

CCSID(*integer*)
The coded character set identifier that messages are transmitted on. Specify a value in the range 1 through 65535.

The CCSID must specify a value that is defined for use on your platform, and use a character set that is appropriate to the queue manager's platform. If you use this parameter to change the CCSID, applications that are running when the change is applied continue to use the original CCSID therefore you must stop and restart all running applications before you continue. Running applications include the command server and channel programs. Stop and restart all running applications, stop and restart the queue manager after changing this parameter.

The CCSID can also be set to ASPUB which means that the coded character set is taken from that supplied in the published message.

COMMEV
Controls whether event messages are generated for Multicast handles that are created using this COMMINFO object. Events will only be generated if they are enabled using the **MONINT** parameter.

DISABLED
Publications from applications not using Multicast are not bridged to applications that do use Multicast.

ENABLED
Publications from applications not using Multicast are bridged to applications that do use Multicast.

EXCEPTION
Event messages are written if the message reliability is below the reliability threshold The reliability threshold is set to 90 by default.

DESCR(*string*)
Plain-text comment. It provides descriptive information about the communication information object when an operator issues the DISPLAY COMMINFO command (see “DISPLAY COMMINFO” on page 524).

It must contain only displayable characters. The maximum length is 64 characters. In a DBCS installation, it can contain DBCS characters (subject to a maximum length of 64 bytes).

Note: If characters are used that are not in the coded character set identifier (CCSID) for this queue manager, they might be translated incorrectly if the information is sent to another queue manager.

ENCODING
The encoding that the messages are transmitted in.

ASPUB
The encoding of the message is taken from that supplied in the published message.

NORMAL

REVERSED

S390

TNS

encoding

GRPADDR
The group IP address or DNS name.

It is the responsibility of the administrator to manage the group addresses. It is possible for all multicast clients to use the same group address for every topic; only the messages that match outstanding subscriptions on the client are delivered. Using the same group address can be inefficient because every client has to examine and process every multicast packet in the network. It is more efficient to allocate different IP group addresses to different topics or sets of topics, but this allocation requires careful management, especially if other non-MQ multicast applications are in use on the network.

MCHBINT
The heartbeat interval is measured in milliseconds, and specifies the frequency at which the transmitter notifies any receivers that there is no further data available.

MCPROP
The multicast properties control how many of the MQMD properties and user properties flow with the message.

All
All user properties and all the fields of the MQMD are transported.

Reply
Only user properties, and MQMD fields that deal with replying to the messages, are transmitted. These properties are:

- MsgType
- MessageId
- CorrelId
- ReplyToQ
- ReplyToQmgr

User
Only the user properties are transmitted.

NONE
No user properties or MQMD fields are transmitted.

COMPAT
This value causes the transmission of the message to be done in a compatible mode to RMM allowing some inter-operation with the current XMS applications and Broker RMM applications.

MONINT(*integer*)
How frequently, in seconds, that monitoring information is updated. If events messages are enabled, this parameter also controls how frequently event messages are generated about the status of the Multicast handles created using this COMMINFO object.

A value of 0 means that there is no monitoring.

MSGHIST
The maximum message history is the amount of message history that is kept by the system to handle retransmissions in the case of NACKs (negative acknowledgments).

A value of `0` gives the least level of reliability.

NSUBHIST
The new subscriber history controls whether a subscriber joining a publication stream receives as much data as is currently available, or receives only publications made from the time of the subscription.

NONE
A value of `NONE` causes the transmitter to transmit only publication made from the time of the subscription.

ALL
A value of `ALL` causes the transmitter to retransmit as much history of the topic as is known. In some circumstances, this retransmission can give a similar behavior to retained publications.

Note: Using the value of ALL might have a detrimental effect on performance if there is a large topic history because all the topic history is retransmitted.

PORT(*integer*)
The port number to transmit on.

ALTER LISTENER

Use MQSC command ALTER LISTENER to alter the parameters of an existing WebSphere MQ listener definition. If the listener is already running, any changes you make to its definition are effective only after the next time that the listener is started.

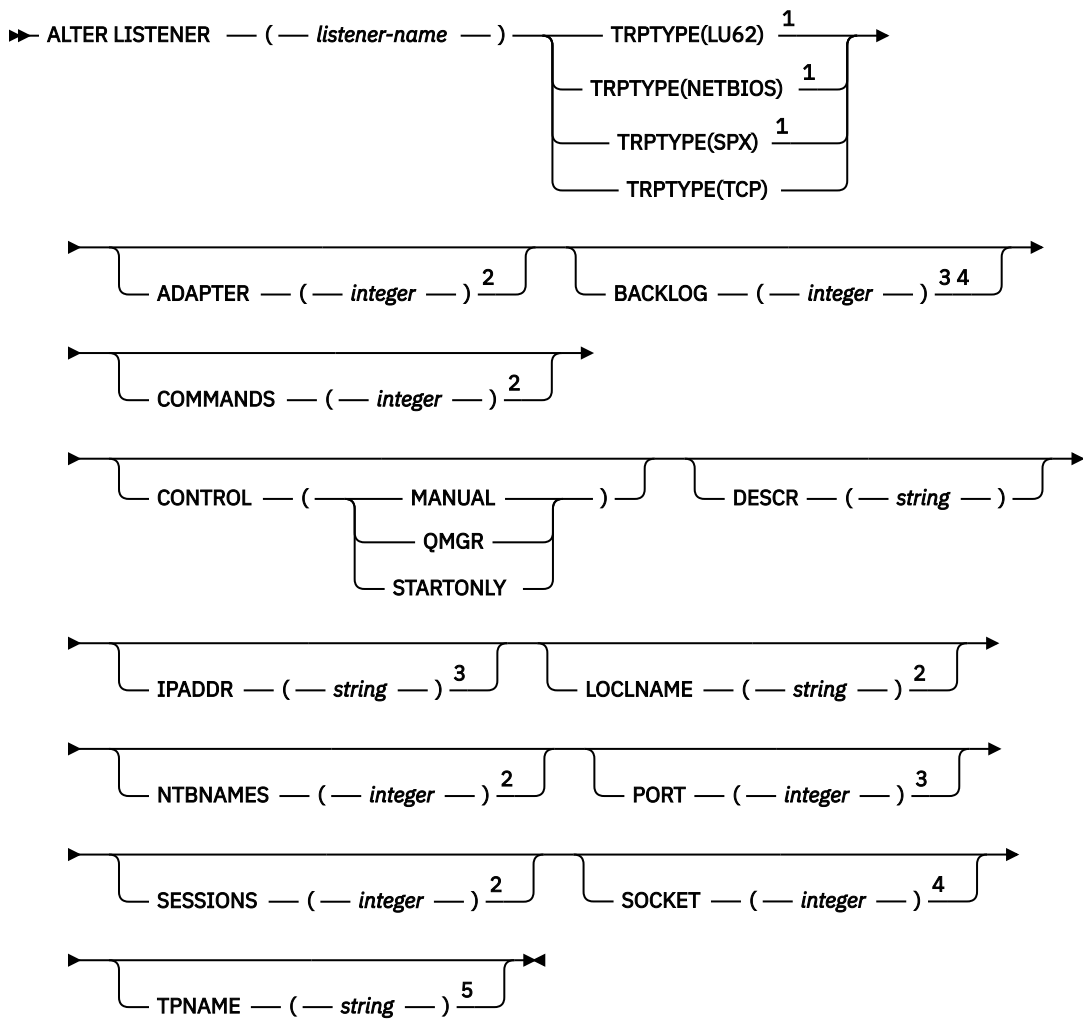
UNIX and Linux	Windows
✓	✓

Parameters not specified in the ALTER LISTENER command result in the existing values for those parameters being left unchanged.

- Syntax diagram
- "Parameter descriptions for ALTER LISTENER" on page 235

Synonym: ALT LSTR

ALTER LISTENER



Notes:

[1] Valid only on Windows.
[2] Valid only on Windows when TRPTYPE is NETBIOS.
[3] Valid when TRPTYPE is TCP.
[4] Valid on Windows when TRPTYPE is SPX.
[5] Valid only on Windows when TRPTYPE is LU62.

Parameter descriptions for ALTER LISTENER

(listener-name)
Name of the WebSphere MQ listener definition (see Rules for naming IBM WebSphere MQ objects). This is required.

The name must not be the same as any other listener definition currently defined on this queue manager (unless REPLACE is specified).

ADAPTER(*integer*)
The adapter number on which NetBIOS listens. This parameter is valid only on Windows when TRPTYPE is NETBIOS.

BACKLOG(*integer*)
The number of concurrent connection requests that the listener supports.

COMMANDS(*integer*)
The number of commands that the listener can use. This parameter is valid only on Windows when TRPTYPE is NETBIOS.

CONTROL(*string*)
Specifies how the listener is to be started and stopped.:

MANUAL
The listener is not to be started automatically or stopped automatically. It is to be controlled by use of the START LISTENER and STOP LISTENER commands.

QMGR
The listener being defined is to be started and stopped at the same time as the queue manager is started and stopped.

STARTONLY
The listener is to be started at the same time as the queue manager is started, but is not requested to stop when the queue manager is stopped.

DESCR(*string*)
Plain-text comment. It provides descriptive information about the listener when an operator issues the DISPLAY LISTENER command (see “DISPLAY LISTENER” on page 542).

It should contain only displayable characters. The maximum length is 64 characters. In a DBCS installation, it can contain DBCS characters (subject to a maximum length of 64 bytes).

Note: If characters are used that are not in the coded character set identifier (CCSID) for this queue manager, they might be translated incorrectly if the information is sent to another queue manager.

IPADDR(*string*)
IP address for the listener specified in IPv4 dotted decimal, IPv6 hexadecimal notation, or alphanumeric host name form. If you do not specify a value for this parameter, the listener listens on all configured IPv4 and IPv6 stacks.

LIKE(*listener-name*)
The name of a listener, with parameters that are used to model this definition.

This parameter applies only to the DEFINE LISTENER command.

If this field is not filled in, and you do not complete the parameter fields related to the command, the values are taken from the default definition for listeners on this queue manager. This is equivalent to specifying:

```
LIKE(SYSTEM.DEFAULT.LISTENER)
```

A default listener is provided but it can be altered by the installation of the default values required. See Rules for naming IBM WebSphere MQ objects .

LOCLNAME(*string*)
The NetBIOS local name that the listener uses. This parameter is valid only on Windows when TRPTYPE is NETBIOS.

NTBNAMES(*integer*)
The number of names that the listener can use. This parameter is valid only on Windows when TRPTYPE is NETBIOS.

PORT(*integer*)
The port number for TCP/IP. This is valid only when TRPTYPE is TCP. It must not exceed 65535.

SESSIONS(*integer*)
The number of sessions that the listener can use. This parameter is valid only on Windows when TRPTYPE is NETBIOS.

SOCKET(*integer*)
The SPX socket on which to listen. This is valid only if TRPTYPE is SPX.

TPNAME(*string*)
The LU 6.2 transaction program name (maximum length 64 characters). This parameter is valid only on Windows when TRPTYPE is LU62.

TRPTYPE(*string*)
The transmission protocol to be used:

LU62
SNA LU 6.2. This is valid only on Windows.

NETBIOS
NetBIOS. This is valid only on Windows.

SPX
Sequenced packet exchange. This is valid only on Windows.

TCP
TCP/IP.

ALTER NAMELIST

Use the MQSC command ALTER NAMELIST to alter a list of names. This list is most commonly a list of cluster names or queue names.

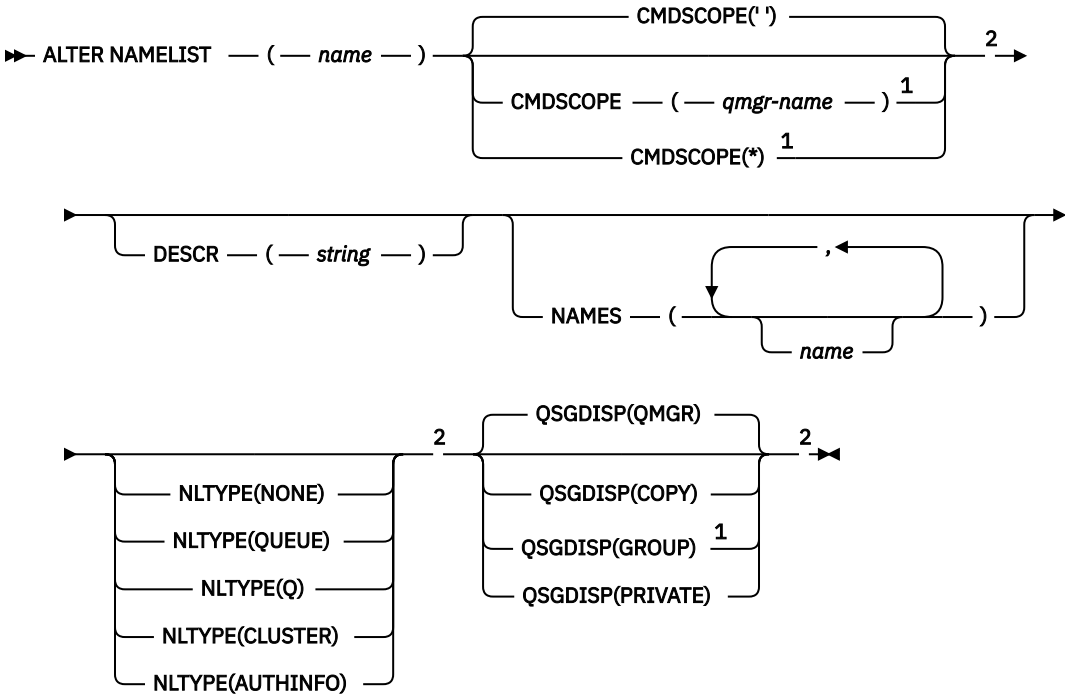
UNIX and Linux	Windows
✓	✓

Parameters not specified in the ALTER NAMELIST command result in the existing values for those parameters being left unchanged.

- Syntax diagram
- “Usage notes” on page 237
- “Parameter descriptions for ALTER NAMELIST” on page 237

Synonym: ALT NL

ALTER NAMELIST



Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[2] Valid only on z/OS.

Usage notes

On UNIX systems, the command is valid only on AIX, HP-UX, and Solaris.

Parameter descriptions for ALTER NAMELIST

(name)
Name of the list.

The name must not be the same as any other namelist name currently defined on this queue manager (unless REPLACE or ALTER is specified). See Rules for naming IBM WebSphere MQ objects.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if QSGDISP is set to GROUP.

' '
The command is executed on the queue manager on which it was entered.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name other than the queue manager on which it was entered, only if you are using a shared queue environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of specifying * is the same as entering the command on every queue manager in the queue-sharing group.

DESCR(*string*)
Plain-text comment. It provides descriptive information about the namelist when an operator issues the DISPLAY NAMELIST command (see "DISPLAY NAMELIST" on page 548).

It must contain only displayable characters. The maximum length is 64 characters. In a DBCS installation, it can contain DBCS characters (subject to a maximum length of 64 bytes).

Note: If characters are used that are not in the coded character set identifier (CCSID) for this queue manager, they might be translated incorrectly if the information is sent to another queue manager.

NAMES(*name, ...*)
List of names.

The names can be of any type, but must conform to the rules for naming WebSphere MQ objects, with a maximum length of 48 characters.

An empty list is valid: specify NAMES(). The maximum number of names in the list is 256.

NLTYPE
Indicates the type of names in the namelist.

This parameter is valid only on z/OS.

NONE
The names are of no particular type.

QUEUE or Q
A namelist that holds a list of queue names.

CLUSTER
A namelist that is associated with clustering, containing a list of the cluster names.

AUTHINFO
This namelist is associated with SSL and contains a list of authentication information object names.

Namelists used for clustering must have NLTYPE(CLUSTER) or NLTYPE(NONE).

Namelists used for SSL must have NLTYPE(AUTHINFO).

QSGDISP
This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves).

QSGDISP	**ALTER**
COPY	The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameters QSGDISP(COPY). Any object residing in the shared repository, or any object defined using a command that had the parameters QSGDISP(QMGR), is not affected by this command.

QSGDISP	ALTER

GROUP	The object definition resides in the shared repository. The object was defined using a command that had the parameters QSGDISP(GROUP). Any object residing on the page set of the queue manager that executes the command (except a local copy of the object) is not affected by this command. If the command is successful, the following command is generated and sent to all active queue managers in the queue-sharing group to attempt to refresh local copies on page set zero:
	`DEFINE NAMELIST(name)`
	`REPLACE QSGDISP(COPY)`
	The ALTER for the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.

PRIVATE	The object resides on the page set of the queue manager that executes the command, and was defined with QSGDISP(QMGR) or QSGDISP(COPY). Any object residing in the shared repository is unaffected.
QMGR	The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameters QSGDISP(QMGR). Any object residing in the shared repository, or any local copy of such an object, is not affected by this command.

ALTER PROCESS

Use the MQSC command ALTER PROCESS to alter the parameters of an existing WebSphere MQ process definition.

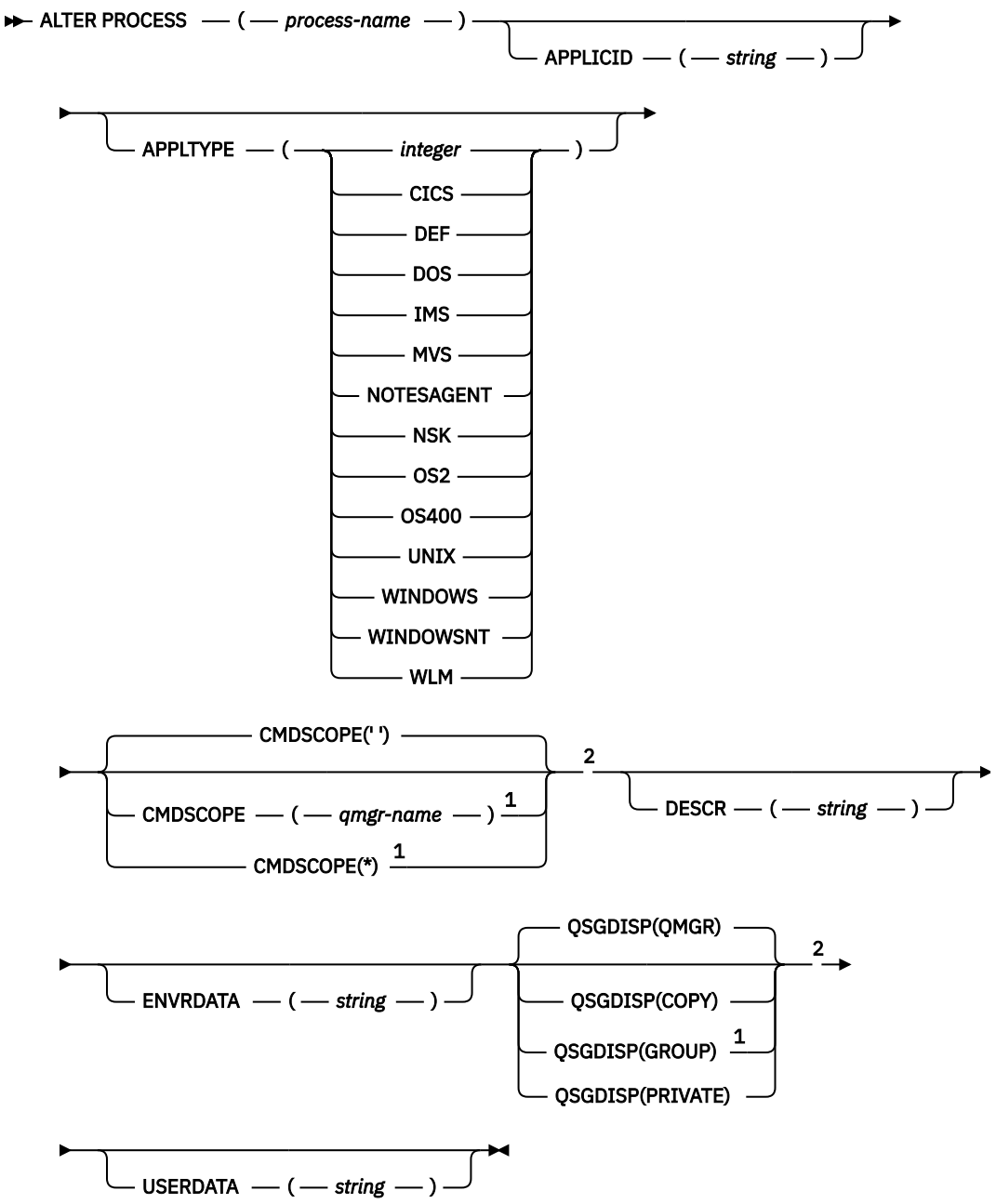
UNIX and Linux	Windows
✓	✓

Parameters not specified in the ALTER PROCESS command result in the existing values for those parameters being left unchanged.

- Syntax diagram
- “Parameter descriptions for ALTER PROCESS” on page 240

Synonym: ALT PRO

ALTER PROCESS



Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[2] Valid only on z/OS.

Parameter descriptions for ALTER PROCESS

(process-name)
Name of the WebSphere MQ process definition (see Rules for naming IBM WebSphere MQ objects). *process-name* is required.

The name must not be the same as any other process definition currently defined on this queue manager (unless REPLACE is specified).

APPLICID(*string*)
The name of the application to be started. The name might typically be a fully qualified file name of an executable object. Qualifying the file name is particularly important if you have multiple IBM WebSphere MQ installations, to ensure the correct version of the application is run. The maximum length is 256 characters.

For a CICS® application the name is a CICS transaction ID, and for an IMS application it is an IMS transaction ID.

On z/OS, for distributed queuing, it must be "CSQX start".

APPLTYPE(*string*)
The type of application to be started. Valid application types are:

integer
A system-defined application type in the range zero through 65 535 or a user-defined application type in the range 65 536 through 999 999 999.

For certain values in the system range, a parameter from the following list can be specified instead of a numeric value:

CICS
Represents a CICS transaction.

DOS
Represents a DOS application.

IMS
Represents an IMS transaction.

MVS
Represents a z/OS application (batch or TSO).

NOTESAGENT
Represents a Lotus Notes agent.

NSK
Represents an HP Integrity NonStop Server application.

OS400
Represents an IBM i application.

UNIX
Represents a UNIX application.

WINDOWS
Represents a Windows application.

WINDOWSNT
Represents a Windows NT, Windows 2000, or Windows XP application.

WLM
Represents a z/OS workload manager application.

DEF
Specifying DEF causes the default application type for the platform at which the command is interpreted to be stored in the process definition. This default cannot be changed by the installation. If the platform supports clients, the default is interpreted as the default application type of the server.

Only use application types (other than user-defined types) that are supported on the platform at which the command is executed:

- On z/OS, CICS, DOS, IMS, MVS, OS2, UNIX, WINDOWS, WINDOWSNT, WLM, and DEF are supported
- On IBM i, OS400, CICS, and DEF are supported
- On UNIX systems, UNIX, OS2, DOS, WINDOWS, CICS, and DEF are supported
- On Windows, WINDOWSNT, DOS, WINDOWS, OS2, UNIX, CICS, and DEF are supported

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if QSGDISP is set to GROUP.

' '
The command is executed on the queue manager on which it was entered.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

In a shared queue environment, you can provide a different queue manager name from the one you are using to enter the command. The command server must be enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect is the same as entering the command on every queue manager in the queue-sharing group.

DESCR(*string*)
Plain-text comment. It provides descriptive information about the object when an operator issues the DISPLAY PROCESS command.

It must contain only displayable characters. The maximum length is 64 characters. In a DBCS installation, it can contain DBCS characters (subject to a maximum length of 64 bytes).

Note: Use characters from the coded character set identifier (CCSID) for this queue manager. Other characters might be translated incorrectly if the information is sent to another queue manager.

ENVRDATA(*string*)
A character string that contains environment information pertaining to the application to be started. The maximum length is 128 characters.

The meaning of ENVRDATA is determined by the trigger-monitor application. The trigger monitor provided by IBM WebSphere MQ appends ENVRDATA to the parameter list passed to the started application. The parameter list consists of the MQTMC2 structure, followed by one blank, followed by ENVRDATA with trailing blanks removed.

Note:

1. On z/OS, ENVRDATA is not used by the trigger-monitor applications provided by WebSphere MQ.
2. On z/OS, if APPLTYPE is WLM, the default values for the ServiceName and ServiceStep fields in the work information header (MQWIH) can be supplied in ENVRDATA. The format must be:

```
SERVICENAME=servname,SERVICESTEP=stepname
```

where:

SERVICENAME=
is the first 12 characters of ENVRDATA.

servname
is a 32-character service name. It can contain embedded blanks or any other data, and have trailing blanks. It is copied to the MQWIH as is.

SERVICESTEP=
is the next 13 characters of ENVRDATA.

stepname
is a 1 - 8 character service step name. It is copied as-is to the MQWIH, and padded to eight characters with blanks.

If the format is incorrect, the fields in the MQWIH are set to blanks.

3. On UNIX systems, ENVRDATA can be set to the ampersand character to make the started application run in the background.

QSGDISP

This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves).

QSGDISP	ALTER
COPY	The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameters QSGDISP(COPY). Any object residing in the shared repository, or any object defined using a command that had the parameters QSGDISP(QMGR), is not affected by this command.

GROUP	The object definition resides in the shared repository. The object was defined using a command that had the parameters QSGDISP(GROUP). On the page set of the queue manager that executes the command, only a local copy of the object is altered by this command. If the command is successful, the following command is generated.
	`DEFINE PROCESS(process-name)`
	`REPLACE QSGDISP(COPY)`
	The command is sent to all active queue managers in the queue-sharing group to attempt to refresh local copies on page set zero. The ALTER for the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.

PRIVATE	The object resides on the page set of the queue manager that executes the command, and was defined with QSGDISP(QMGR) or QSGDISP(COPY). Any object residing in the shared repository is unaffected.
QMGR	The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameters QSGDISP(QMGR). Any object residing in the shared repository, or any local copy of such an object, is not affected by this command.

USERDATA(*string*)

A character string that contains user information pertaining to the application defined in the APPLICID that is to be started. The maximum length is 128 characters.

The meaning of USERDATA is determined by the trigger-monitor application. The trigger monitor provided by WebSphere MQ simply passes USERDATA to the started application as part of the parameter list. The parameter list consists of the MQTMC2 structure (containing USERDATA), followed by one blank, followed by ENVRDATA with trailing blanks removed.

For WebSphere MQ message channel agents, the format of this field is a channel name of up to 20 characters. See Managing objects for triggering for information about what APPLICID to provide to message channel agents.

For Microsoft Windows, the character string must not contain double quotation marks if the process definition is going to be passed to **runmqtrm**.

ALTER QMGR

Use the MQSC command **ALTER QMGR** to alter the queue manager parameters for the local queue manager.

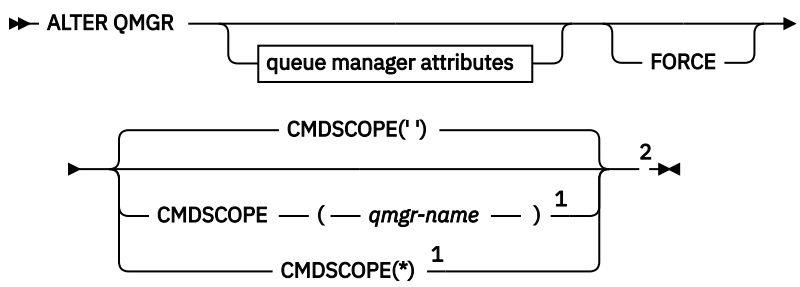
UNIX and Linux	Windows
✓	✓

Parameters not specified in the **ALTER QMGR** command result in the existing values for those parameters being left unchanged.This information is divided into three sections:

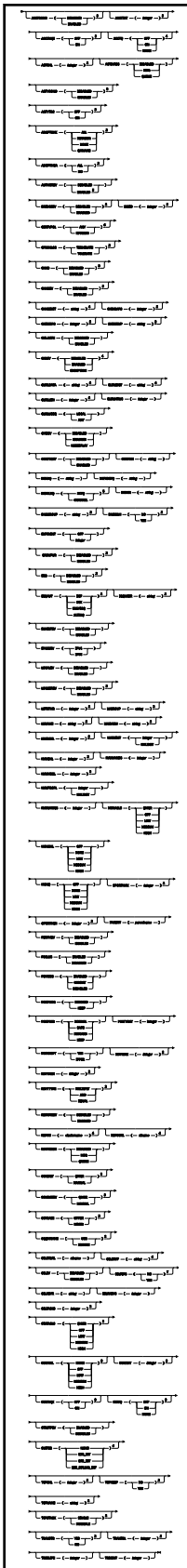
- “ALTER QMGR” on page 244
- “Parameter descriptions for ALTER QMGR” on page 246
- “Queue manager parameters” on page 246

ALTER QMGR

Synonym: ALT QMGR



Queue manager attributes



Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.

[2] Valid only on z/OS.

[3] Valid only on IBM i, UNIX, Linux, and Windows.
[4] Valid only on z/OS, UNIX, Linux, and Windows.
[5] Not valid on z/OS.
[6] Valid only on UNIX, Linux, and Windows.
[7] Not valid on IBM i

Parameter descriptions for ALTER QMGR

The parameters you specify override the current values. Attributes that you do not specify are unchanged.

Note:

1. If you do not specify any parameters, the command completes successfully, but no queue manager options are changed.
2. Changes made using this command persist when the queue manager is stopped and restarted.

FORCE
Specify this parameter to force completion of the command if both of the following are true:

- The DEFXMITQ parameter is specified
- An application has a remote queue open, the resolution for which would be affected by this change

If FORCE is not specified in these circumstances, the command is unsuccessful.

Queue manager parameters

These parameters are the queue manager parameters for the **ALTER QMGR** command:

ACCTCONO
Specifies whether applications can override the settings of the ACCTQ and ACCTMQI queue manager parameters:

DISABLED
Applications cannot override the settings of the ACCTQ and ACCTMQI parameters.

This is the queue manager's initial default value.

ENABLED
Applications can override the settings of the ACCTQ and ACCTMQI parameters by using the options field of the MQCNO structure of the MQCONNX API call.

Changes to this parameter are effective for connections to the queue manager that occur after the change.

This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

ACCTINT(*integer*)
The time interval, in seconds, at which intermediate accounting records are written.

Specify a value in the range 1 through 604800.

Changes to this parameter are effective for connections to the queue manager that occur after the change.

This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

ACCTMQI
Specifies whether accounting information for MQI data is to be collected:

OFF
MQI accounting data collection is disabled.

This is the queue manager's initial default value.

ON
MQI accounting data collection is enabled.

If queue manager attribute ACCTCONO is set to ENABLED, the value of this parameter can be overridden using the options field of the MQCNO structure.

Changes to this parameter are effective for connections to the queue manager that occur after the change.

This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

ACCTQ
Specifies whether accounting data is to be collected for all queues. On z/OS, the data collected is class 3 accounting data (thread-level and queue-level accounting).

OFF
Accounting data collection is disabled for all queues which specify QMGR as the value for their ACCTQ parameter.

ON
Accounting data collection is enabled for all queues which specify QMGR as the value of their ACCTQ parameter. On z/OS systems, you must switch on class 3 accounting by the START TRACE command.

NONE
Accounting data collection for all queues is disabled regardless of the value of the ACCTQ parameter of the queue.

Changes to this parameter are effective only for connections to the queue manager occurring after the change to the parameter.

ACTCHL(*integer*)
The maximum number of channels that can be *active* at any time, unless the value is reduced below the number of currently active channels.

Specify a value from 1 through 9999 that is not greater than the value of MAXCHL. MAXCHL defines the maximum number of channels available.

If you change this value, you must also review the MAXCHL, LU62CHL, and TCPCHL values to ensure that there is no conflict of values

For an explanation of which channel states are considered active; see Channel states.

If the value of ACTCHL is reduced to less than its value when the channel initiator was initialized, channels continue to run until they stop. When the number of running channels falls below the value of ACTCHL , more channels can be started. Increasing the value of ACTCHL to more than its value when the channel initiator was initialized does not have immediate effect. The higher value of ACTCHL takes effect at the next channel initiator restart.

Sharing conversations do not contribute to the total for this parameter.

This parameter is valid on z/OS only.

ACTIVREC
Specifies whether activity reports are generated if requested in the message:

DISABLED
Activity reports are not generated.

MSG
Activity reports are generated and sent to the reply queue specified by the originator in the message causing the report.

This is the queue manager's initial default value.

QUEUE
Activity reports are generated and sent to SYSTEM.ADMIN.ACTIVITY.QUEUE

See Activity recording.

ACTVCONO
Specifies whether applications can override the settings of the ACTVTRC queue manager parameter:

DISABLED
Applications cannot override the settings of the ACTVTRC queue manager parameter.

This is the queue manager's initial default value.

ENABLED
Applications can override the settings of the ACTVTRC queue manager parameter by using the options field of the MQCNO structure of the MQCONNX API call.

Changes to this parameter are effective for connections to the queue manager that occur after the change.

This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

ACTVTRC
Specifies whether MQI application activity tracing information is to be collected. See Setting ACTVTRC to control collection of activity trace information.

OFF
WebSphere MQ MQI application activity tracing information collection is not enabled.

This is the queue manager's initial default value.

ON
WebSphere MQ MQI application activity tracing information collection is enabled.

If the queue manager attribute ACTVCONO is set to ENABLED, the value of this parameter can be overridden using the options field of the MQCNO structure.

Changes to this parameter are effective for connections to the queue manager that occur after the change.

This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

ADOPTCHK
Specifies which elements are checked to determine whether an MCA is adopted. The check is made when a new inbound channel is detected with the same name as an already active MCA.

ALL
Check the queue manager name and the network address. Perform this check to prevent your channels from being inadvertently or maliciously shut down.

This is the queue manager's initial default value.

NETADDR
Check the network address.

NONE
Do no checking.

QMNAME
Check the queue manager name.

This parameter is valid on z/OS only.

Changes to this parameter take effect the next time that a channel attempts to adopt an MCA.

ADOPTMCA
Specifies whether an orphaned instance of an MCA restarts immediately when a new inbound channel request matching the ADOPTCHK parameter is detected:

ALL
Adopt all channel types.

This is the queue manager's initial default value.

NO
Adoption of orphaned channels is not required.

This parameter is valid on z/OS only

Changes to this parameter take effect the next time that a channel attempts to adopt an MCA.

AUTHOREV
Specifies whether authorization (Not Authorized) events are generated:

DISABLED
Authorization events are not generated.

This is the queue manager's initial default value.

ENABLED
Authorization events are generated.

This value is not supported on z/OS.

BRIDGEEV
Specifies whether IMS Bridge events are generated.

DISABLED
IMS Bridge events are not generated.

This is the queue manager's initial default value.

ENABLED
All IMS Bridge events are generated.

This parameter is valid on z/OS only.

CCSID(*integer*)
The coded character set identifier for the queue manager. The CCSID is the identifier used with all character string fields defined by the API. If the CCSID in the message descriptor is set to the value `MQCCSI_Q_MGR` , the value applies to application data in the body of a message. The value is set when the message is put to a queue.

Specify a value in the range 1 through 65535. The CCSID specifies a value that is defined for use on your platform, and use a character set that is appropriate to the platform.

If you use this parameter to change the CCSID, applications that are running when the change is applied continue to use the original CCSID. Therefore, stop and restart all running applications before you continue including the command server and channel programs. To stop and restart all running applications, stop and restart the queue manager after changing the parameter value.

This parameter is not valid on z/OS. See Code page conversion for details of the supported CCSIDs for each platform.

CERTVPOL
Specifies which SSL/TLS certificate validation policy is used to validate digital certificates received from remote partner systems. This attribute can be used to control how strictly the certificate chain validation conforms to industry security standards.

ANY
Apply each of the certificate validation policies supported by the secure sockets library and accept the certificate chain if any of the policies considers the certificate chain valid. This setting can be used for maximum backwards compatibility with older digital certificates which do not comply with the modern certificate standards.

RFC5280
Apply only the RFC 5280 compliant certificate validation policy. This setting provides stricter validation than the ANY setting, but rejects some older digital certificates.

For more information about certificate validation policies, see Certificate validation policies in WebSphere MQ.

This parameter is valid on only UNIX, Linux, and Windows. Changes to the parameter take effect only after a **REFRESH SECURITY TYPE(SSL)** command is issued.

CFCONLOS
Specifies the action to be taken when the queue manager loses connectivity to the administration structure, or any CF structure with CFCONLOS set to ASQMGR

TERMINATE
The queue manager terminates when connectivity to CF structures is lost.

TOLERATE
The queue manager tolerates loss of connectivity to CF structures without terminating.

This parameter is valid on z/OS only.

All queue managers in the queue-sharing group must be at command level 710 or greater and OPMODE set to NEWFUNC for **TOLERATE** to be selected.

CHAD
Specifies whether receiver and server-connection channels can be defined automatically:

DISABLED
Auto-definition is not used.

This is the queue manager's initial default value.

ENABLED
Auto-definition is used.

Cluster-sender channels can always be defined automatically, regardless of the setting of this parameter.

This parameter is not valid on z/OS.

CHADEV
Specifies whether channel auto-definition events are generated.

DISABLED
Auto-definition events are not generated.

This is the queue manager's initial default value.

ENABLED
Auto-definition events are generated.

This parameter is not valid on z/OS.

CHADEXIT(*string*)
Auto-definition exit name.

If this name is nonblank, the exit is called when an inbound request for an undefined receiver, server-connection, or cluster-sender channel is received. It is also called when starting a cluster-receiver channel.

The format and maximum length of the name depends on the environment:

- On Windows, it is of the form *dllname(functionname)* where *dllname* is specified without the suffix .DLL. The maximum length is 128 characters.
- On IBM i, it is of the form:

```
progname libname
```

  where *program name* occupies the first 10 characters and *libname* the second 10 characters (both blank-padded to the right if necessary). The maximum length of the string is 20 characters.
- On UNIX, and Linux, it is of the form *libraryname(functionname)*. The maximum length is 128 characters.
- On z/OS, it is a load module name, the maximum length is eight characters.

On z/OS, this parameter applies only to cluster-sender and cluster-receiver channels.

CHIADAPS(*integer*)
The number of channel initiator adapter subtasks to use for processing IBM WebSphere MQ calls.

Specify a value in the range 0 - 9999.

Suggested settings:

- Test system: 8
- Production system: 30

This parameter is valid on z/OS only.

Changes to this parameter take effect when the channel initiator is restarted.

CHIDISPS(*integer*)
The number of dispatchers to use in the channel initiator.

Specify a value in the range 1 through 9999.

Suggested settings:

- Test system: 5
- Production system: 20

This parameter is valid on z/OS only.

Changes to this parameter take effect when the channel initiator is restarted.

CHISERVP
This parameter is reserved for IBM use only; it is not for general use.

This parameter is valid on z/OS only.

CHLAUTH
Specifies whether the rules defined by channel authentication records are used. CHLAUTH rules can still be set and displayed regardless of the value of this attribute.

Changes to this parameter take effect the next time that an inbound channel attempts to start.

Channels that are currently started are unaffected by changes to this parameter.

DISABLED
Channel authentication records are not checked.

ENABLED
Channel authentication records are checked.

CHLEV
Specifies whether channel events are generated.

DISABLED
Channel events are not generated.

This is the queue manager's initial default value.

ENABLED
All channel events are generated.

EXCEPTION
All exception channel events are generated.

CLWLDATA(*string*)
Cluster workload exit data. The maximum length of the string is 32 characters.

This string is passed to the cluster workload exit when it is called.

CLWLEXIT(*string*)
Cluster workload exit name.

If this name is nonblank, the exit is called when a message is put to a cluster queue. The format and maximum length of the name depends on the environment:

- On UNIX and Linux systems, it is of the form *libraryname(functionname)* . The maximum length is 128 characters.
- On Windows, it is of the form *dllname(functionname)*, where *dllname* is specified without the suffix `.DLL`. The maximum length is 128 characters.
- On z/OS, it is a load module name. The maximum length is eight characters.
- On IBM i, it is of the form:

```
progname libname
```

  where *program name* occupies the first 10 characters and *libname* the second 10 characters (both blank-padded to the right if necessary). The maximum length is 20 characters.

This parameter is valid only on IBM i, z/OS, UNIX, Linux, and Windows.

CLWLLEN(*integer*)
The maximum number of bytes of message data that is passed to the cluster workload exit.

Specify a value:

- In the range 0 - 100 MB on IBM WebSphere MQ for z/OS systems
- In the range 0 - 999,999,999 on other platforms

This parameter is valid only on IBM i, z/OS, UNIX, Linux, and Windows.

CLWLMRUC(*integer*)
The maximum number of most recently used outbound cluster channels.

Specify a value in the range 1 through 999,999,999.

See CLWLMRUC queue manager attribute.

CLWLUSEQ
The attribute applies to queues with the queue attribute CLWLUSEQ set to QMGR. It specifies the behavior of an MQPUT operation when the target queue has a local instance and at least one remote cluster instance. It does not apply if the MQPUT originates from a cluster channel.

Specify either:

LOCAL
The local queue is the only target for MQPUT operations.

This is the queue manager's initial default value.

ANY
The queue manager treats the local queue as another instance of the cluster queue for the purposes of workload distribution.

See CLWLUSEQ queue manager attribute.

CMDEV
Specifies whether command events are generated:

DISABLED
Command events are not generated.

This is the queue manager's initial default value.

ENABLED
Command events are generated for all successful commands.

NODISPLAY
Command events are generated for all successful commands, other than DISPLAY commands.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is run when the queue manager is a member of a queue-sharing group.

'
The command is run on the queue manager on which it was entered.

qmgr-name
The command is run on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a different queue manager. You can do so if you are using a queue-sharing group environment, and if the command server is enabled. You can then specify a different queue manager to the one on which the command is entered.

*****

The command is run on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of entering this value is the same as entering the command on every queue manager in the queue-sharing group.

CONFIGEV
Specifies whether configuration events are generated:

ENABLED
Configuration events are generated. After setting this value, issue `REFRESH QMGR TYPE(CONFIGEV)` commands for all objects to bring the queue manager configuration up to date.

DISABLED
Configuration events are not generated.

This is the queue manager's initial default value.

CUSTOM(*string*)
The custom attribute for new features.

This attribute is reserved for the configuration of new features before named attributes are introduced. It can contain the values of zero or more attributes as pairs of attribute name and value, separated by at least one space. The attribute name and value pairs have the form `NAME(VALUE)`. Escape a single quotation mark with another single quotation mark.

No values are defined for *`Custom`* .

DEADQ(*string*)
The local name of a dead-letter queue (or undelivered-message queue) on which messages that cannot be routed to their correct destination are put.

The queue named must be a local queue; see Rules for naming IBM WebSphere MQ objects .

DEFCLXQ
The `DEFCLXQ` attribute controls which transmission queue is selected by default by cluster-sender channels to get messages from, to send the messages to cluster-receiver channels.

SCTQ

All cluster-sender channels send messages from `SYSTEM.CLUSTER.TRANSMIT.QUEUE`. The `correlID` of messages placed on the transmission queue identifies which cluster-sender channel the message is destined for.

`SCTQ` is set when a queue manager is defined. This behavior is implicit in versions of IBM WebSphere MQ, earlier than Version 7.5. In earlier versions, the queue manager attribute `DEFCLXQ` was not present.

CHANNEL
Each cluster-sender channel sends messages from a different transmission queue. Each transmission queue is created as a permanent dynamic queue from the model queue `SYSTEM.CLUSTER.TRANSMIT.MODEL.QUEUE`.

If the queue manager attribute, DEFCLXQ, is set to CHANNEL, the default configuration is changed to cluster-sender channels being associated with individual cluster transmission queues. The transmission queues are permanent-dynamic queues created from the model queue SYSTEM.CLUSTER.TRANSMIT.MODEL.QUEUE. Each transmission queue is associated with one cluster-sender channel. As one cluster-sender channel services a cluster transmission queue, the transmission queue contains messages for only one queue manager in one cluster. You can configure clusters so that each queue manager in a cluster contains only one cluster queue. In this case, the message traffic from a queue manager to each cluster queue is transferred separately from messages to other queues.

DEFXMITQ(*string*)
Local name of the default transmission queue on which messages destined for a remote queue manager are put. The default transmission queue is used if there is no other suitable transmission queue defined.

The cluster transmission queue must not be used as the default transmission queue of the queue manager.

The queue named must be a local transmission queue; see Rules for naming IBM WebSphere MQ objects .

DESCR(*string*)
Plain-text comment. It provides descriptive information about the queue manager.

It contains only displayable characters. The maximum length of the string is 64 characters. In a DBCS installation, it can contain DBCS characters (subject to a maximum length of 64 bytes).

If the characters in the descriptive information are in the coded character set identifier (CCSID) for this queue manager they are translated correctly. They are translated when the descriptive information is sent to another queue manager. If they are not in the CCSID for this queue manager, they might be translated incorrectly.

DNSGROUP(*string*)
DNSGROUP applies if you are using Workload Manager for Dynamic Domain Name Services support (WLM/DNS). DNSGROUP is the name of the group that the TCP listener handling inbound transmissions for the queue-sharing group joins when using WLM/DNS.

The maximum length of this parameter is 18 characters.

If this name is blank, the queue-sharing group name is used.

This parameter is valid on z/OS only.

Changes to this parameter take effect for listeners that are later started. Listeners that are currently started are unaffected by changes to this parameter.

DNSWLM
Specifies whether the TCP listener that handles inbound transmissions for the queue-sharing group registers with WLM/DNS:

NO
The listener is not to register with Workload Manager.

This is the queue manager's initial default value.

YES
The listener is to register with Workload Manager.

This parameter is valid on z/OS only.

Changes to this parameter take effect for listeners that are later started. Listeners that are currently started are unaffected by changes to this parameter.

EXPRYINT
Specifies how often queues are scanned to discard expired messages:

OFF
Queues are not scanned. No internal expiry processing is performed.

integer
The approximate interval in seconds at which queues are scanned. Each time that the expiry interval is reached, the queue manager looks for candidate queues that are worth scanning to discard expired messages.

The queue manager maintains information about the expired messages on each queue, and therefore whether a scan for expired messages is worthwhile. So, only a selection of queues is scanned at any time.

The value must be in the range 1 through 99999999. The minimum scan interval used is 5 seconds, even if you specify a lower value.

You must set the same EXPRYINT value for all queue managers within a queue-sharing group that support this attribute. Shared queues are scanned by only one queue manager in a queue-sharing group. This queue manager is either the first queue manager to restart, or the first queue manager for which EXPRYINT is set.

Changes to EXPRYINT take effect when the current interval expires. Changes also take effect if the new interval is less than the unexpired portion of the current interval. In this case, a scan is scheduled and the new interval value takes immediate effect.

This parameter is valid only on z/OS.

GROUPUR
This parameter controls whether CICS and XA client applications can establish transactions with a GROUP unit of recovery disposition.

This parameter is valid only on z/OS. The property can be enabled only when the queue manager is a member of a queue-sharing group.

ENABLED
CICS and XA client applications can establish transactions with a group unit of recovery disposition by specifying a queue-sharing group name when they connect.

DISABLED
CICS and XA client applications must connect using a queue manager name.

IGQ
Specifies whether intra-group queuing is used.

This parameter is valid only on z/OS when the queue manager is a member of a queue-sharing group.

ENABLED
Message transfer between queue managers within a queue-sharing group uses the shared transmission queue, SYSTEM.QSG.TRANSMIT.QUEUE .

DISABLED
Message transfer between queue managers within a queue-sharing group uses non-shared transmission queues and channels. Queue managers that are not part of a queue-sharing group also use this mechanism.

If intra-group queuing is enabled, but the intra-group queuing agent is stopped, issue ALTER QMGR IGQ(ENABLED) to restart it.

IGQAUT
Specifies the type of authority checking and, therefore, the user IDs, to be used by the IGQ agent (IGQA). This parameter establishes the authority to put messages to a destination queue.

This parameter is valid only on z/OS when the queue manager is a member of a queue-sharing group.

DEF
Indicates that the default user ID is used to establish authority to put messages to a destination queue.

For a one user ID check, the default user ID is the user ID of a queue manager within the queue-sharing group. The default user ID is the user ID of the queue manager that put the messages to the SYSTEM.QSG.TRANSMIT.QUEUE . This user ID is referred to as the QSGSEND user ID.

For two user ID checks, the default second user ID is the IGQ user ID.

CTX
Indicates that the user ID from a *UserIdentifier* field is used to establish authority to put messages to a destination queue. The user ID is the *UserIdentifier* field in the message descriptor of a message on the SYSTEM.QSG.TRANSMIT.QUEUE.

For one user ID check, the QSGSEND user ID is used.

For two user ID checks, the QSGSEND user ID, the IGQ user ID and the alternate user ID are used. The alternate user ID is taken from the *UserIdentifier* field in the message descriptor of a message on the SYSTEM.QSG.TRANSMIT.QUEUE. The alternate user ID is referred to as ALT.

ONLYIGQ
Indicates that only the IGQ user ID is used to establish authority to put messages to a destination queue.

For all ID checks, the IGQ user ID is used.

ALTIGQ
Indicates that the IGQ user ID and the ALT user ID are used to establish authority to put messages to a destination queue.

For one user ID check, the IGQ user ID is used.

For two user ID checks, the IGQ user ID and the ALT user ID are used.

IGQUSER
Nominates a user ID to be used by the IGQ agent (IGQA) to establish authority to put messages to a destination queue. The user ID is referred to as the IGQ user ID.

This parameter is valid only on z/OS when the queue manager is a member of a queue-sharing group. Possible values are:

Blanks
Indicates that the user ID of the receiving queue manager within the queue-sharing group is used.

Specific user ID
Indicates that the user ID specified in the IGQUSER parameter of the receiving queue manager is used.

Note:

1. As the receiving queue manager has authority to all queues it can access, security checking might not be performed for this user ID type.
2. As the value of blanks has a special meaning, you cannot use IGQUSER to specify a real user ID of blanks.

INHIBTEV
Specifies whether inhibit events are generated. The events are generated for Inhibit Get and Inhibit Put)

ENABLED
Inhibit events are generated.

DISABLED
Inhibit events are not generated.

This is the queue manager's initial default value.

IPADDRV
Specifies which IP protocol is to be used for channel connections.

IPV4
The IPv4 IP address is to be used.

This is the queue manager's initial default value.

IPV6
The IPv6 IP address is to be used.

This parameter is used only in systems running IPv4 and IPv6. It applies to channels defined only with a TRPTYPE of TCP when either of the following two conditions is true:

- The CONNAME parameter of the channel contains a host name that resolves to both an IPv4 and an IPv6 address, and the LOCLADDR parameter is not specified.
- The value of the CONNAME and LOCLADDR parameters of the channel is a host name that resolves to both an IPv4 and IPv6 address.

LOCALEV
Specifies whether local error events are generated:

ENABLED
Local error events are generated.

DISABLED
Local error events are not generated.

This is the queue manager's initial default value.

LOGGEREV
Specifies whether recovery log events are generated:

DISABLED
Logger events are not generated.

This is the queue manager's initial default value.

ENABLED
Logger events are generated.

This parameter is valid only on IBM i, UNIX, Linux, and Windows.

LSTRTMR(*integer*)
The time interval, in seconds, between attempts by IBM WebSphere MQ to restart a listener after an APPC or TCP/IP failure. When the listener is restarted on TCP/IP, it uses the same port and IP address as it used when it first started.

Specify a value in the range 5 through 9999.

This parameter is valid on z/OS only.

Changes to this parameter take effect for listeners that are later started. Listeners that are currently started are unaffected by changes to this parameter.

LUGROUP(*string*)
The generic LU name to be used by the LU 6.2 listener that handles inbound transmissions for the queue-sharing group. The maximum length of this parameter is eight characters.

If this name is blank, the listener cannot be used.

This parameter is valid on z/OS only.

Changes to this parameter take effect for listeners that are later started. Listeners that are currently started are unaffected by changes to this parameter.

LUNAME(*string*)
The name of the LU to use for outbound LU 6.2 transmissions. Set this parameter to be the same as the name of the LU to be used by the listener for inbound transmissions. The maximum length of this parameter is eight characters.

If this name is blank, the APPC/MVS default LU name is used. This name is variable, so LUNAME must always be set if you are using LU 6.2

This parameter is valid on z/OS only.

Changes to this parameter take effect when the channel initiator is restarted.

LU62ARM(*string*)
The suffix of the APPCPM member of SYS1.PARMLIB. This suffix nominates the LUADD for this channel initiator. When automatic restart manager (ARM) restarts the channel initiator, the z/OS command SET APPC= *xx* is issued.

If you do not provide a value for this parameter, no SET APPC=*xx* command is issued.

The maximum length of this parameter is two characters.

This parameter is valid on z/OS only.

Changes to this parameter take effect when the channel initiator is restarted.

LU62CHL(*integer*)
The maximum number of channels that can be current, or clients that can be connected, that use the LU 6.2 transmission protocol.

Specify a value 0- 9999 that is not greater than the value of MAXCHL. MAXCHL defines the maximum number of channels available. If you specify zero, the LU 6.2 transmission protocol is not used.

If you change this value, also review the MAXCHL, LU62CHL, and ACTCHL values. Ensure that there is no conflict of values and if necessary, raise the value of MAXCHL and ACTCHL.

This parameter is valid on z/OS only.

If the value of this parameter is reduced, any current channels that exceed the new limit continue to run until they stop.

MARKINT(*integer*)
The time interval, expressed in milliseconds, for which messages marked as browsed by a call to MQGET, with the get message option MQGMO_MARK_BROWSE_CO_OP, are expected to remain mark-browsed.

If messages are marked for more than approximately MARKINT milliseconds, the queue manager might automatically unmark messages. It might unmark messages that are marked as browsed for the cooperating set of handles.

This parameter does not affect the state of any message marked as browse by a call to MQGET with the get message option MQGMO_MARK_BROWSE_HANDLE.

Specify a value up to the maximum of 999,999,999. The default value is 5000.

Attention: You should not reduce the value below the default of 5000.

The special value NOLIMIT indicates that the queue manager does not automatically unmark messages by this process.

MAXCHL(*integer*)
The maximum number of channels that can be *current* (including server-connection channels with connected clients).

Specify a value in the range 1- 9999. If you change this value, also review the TCPCHL, LU62CHL , and ACTCHL values to ensure that there is no conflict of values. If necessary, increase the number of active channels with the ACTCHL value. The values of ACTCHL , LU62CHL, and TCPCHL must not be greater than the maximum number of channels.

Suggested settings:

- Test system: 200
- Production system: 1000

For an explanation of which channel states are considered current; see Channel states.

If the value of this parameter is reduced, any current channels that exceed the new limit continue to run until they stop.

If the value of MAXCHL is reduced to less than its value when the channel initiator was initialized, channels continue to run until they stop. When the number of running channels falls below the value of MAXCHL, more channels can be started. Increasing the value of MAXCHL to more than its value when the channel initiator was initialized does not have immediate effect. The higher value of MAXCHL takes effect at the next channel initiator restart.

Sharing conversations do not contribute to the total for this parameter.

This parameter is valid on z/OS only.

MAXHANDS(*integer*)
The maximum number of open handles that any one connection can have at the same time.

This value is a value in the range 0 - 999,999,999.

MAXMSGL(*integer*)
The maximum length of messages allowed on queues for this queue manager.

This value is in the range 32 KB through 100 MB.

Ensure that you also consider the length of any message properties when deciding the value for the MAXMSGL parameter of a channel.

If you reduce the maximum message length for the queue manager, you must also reduce the maximum message length of the SYSTEM.DEFAULT.LOCAL.QUEUE definition. You must also reduce the maximum message length for all other queues connected to the queue manager. This change ensures that the limit of the queue manager is not less than the limit of any of the queues associated with it. If you do not change these lengths, and applications inquire only the MAXMSGL value of the queue, they might not work correctly.

Note that by adding the digital signature and key to the message, IBM WebSphere MQ Advanced Message Security increases the length of the message.

MAXPROPL(*integer*)
The maximum length of property data in bytes that can be associated with a message.

This value is in the range 0 through 100 MB (104 857 600 bytes).

The special value NOLIMIT indicates that the size of the properties is not restricted, except by the upper limit.

MAXUMSGS(*integer*)
The maximum number of uncommitted messages within a sync point.

MAXUMSGS is a limit on the number of messages that can be retrieved, plus the number of messages that can be put, within any single sync point. The limit does not apply to messages that are put or retrieved outside sync point.

The number includes any trigger messages and report messages generated within the same unit of recovery.

If existing applications and queue manager processes are putting and getting a larger number of messages in sync point, reducing MAXUMSGS might cause problems. An example of queue manager processes that might be affected is clustering on z/OS.

Specify a value in the range 1 through 999,999,999. The default value is 10000.

MAXUMSGS has no effect on IBM WebSphere MQ Telemetry. IBM WebSphere MQ Telemetry tries to batch requests to subscribe, unsubscribe, send, and receive messages from multiple clients into batches of work within a transaction.

MONACLS
Controls the collection of online monitoring data for auto-defined cluster-sender channels:

QMGR
Collection of online monitoring data is inherited from the setting of the MONCHL parameter of the queue manager.

This is the queue manager's initial default value.

OFF
Monitoring for the channel is switched off.

LOW
Unless MONCHL is NONE, monitoring is switched on with a low rate of data collection with a minimal effect on system performance. The data collected is not likely to be the most current.

MEDIUM
Unless MONCHL is NONE, monitoring is switched on with a moderate rate of data collection with limited effect on system performance.

HIGH
Unless MONCHL is NONE, monitoring is switched on with a high rate of data collection with a likely effect on system performance. The data collected is the most current available.

A change to this parameter takes effect only on channels started after the change occurs. Any channel started before the change to the parameter continues with the value in force at the time that the channel started.

MONCHL
Controls the collection of online monitoring data for channels. The channels defined with MONCHL(QMGR) are affected by changing the QMGR MONCHL attribute.

OFF
Online monitoring data collection is turned off for channels specifying a value of QMGR in their MONCHL parameter.

This is the queue manager's initial default value.

NONE
Online monitoring data collection is turned off for channels regardless of the setting of their MONCHL parameter.

LOW
Online monitoring data collection is turned on, with a low ratio of data collection, for channels specifying a value of QMGR in their MONCHL parameter.

MEDIUM
Online monitoring data collection is turned on, with a moderate ratio of data collection, for channels specifying a value of QMGRin their MONCHL parameter.

HIGH
Online monitoring data collection is turned on, with a high ratio of data collection, for channels specifying a value of QMGR in their MONCHL parameter.

A change to this parameter takes effect only on channels started after the change occurs. Any channel started before the change to the parameter continues with the value in force at the time that the channel started.

MONQ
Controls the collection of online monitoring data for queues.

OFF
Online monitoring data collection is turned off for queues specifying a value of QMGR in their MONQ parameter.

This is the queue manager's initial default value.

NONE
Online monitoring data collection is turned off for queues regardless of the setting of their MONQ parameter.

LOW
Online monitoring data collection is turned on for queues specifying a value of QMGR in their MONQ parameter.

MEDIUM
Online monitoring data collection is turned on for queues specifying a value of QMGR in their MONQ parameter.

HIGH
Online monitoring data collection is turned on for queues specifying a value of QMGR in their MONQ parameter.

In contrast to MONCHL, there is no distinction between the values LOW, MEDIUM , and HIGH. These values all turn data collection on, but do not affect the rate of collection.

Changes to this parameter are effective only for queues opened after the parameter is changed.

OPORTMAX(*integer*)
The maximum value in the range of port numbers to be used when binding outgoing channels. When all the port numbers in the specified range are used, outgoing channels bind to any available port number.

Specify a value in the range 0 - 65535. A value of zero means that all outgoing channels bind to any available port number.

Specify a corresponding value for OPORTMIN to define a range of port numbers. Ensure that the value you specify for OPORTMAX is greater than or equal to the value you specify for OPORTMIN.

This parameter is valid on z/OS only.

Changes to this parameter take effect for channels that are later started. Channels that are currently started are unaffected by changes to this parameter.

OPORTMIN(*integer*)
The minimum value in the range of port numbers to be used when binding outgoing channels. When all the port numbers in the specified range are used, outgoing channels bind to any available port number.

Specify a value in the range 0 - 65535.

Specify a corresponding value for OPORTMAX to define a range of port numbers. Ensure that the value you specify for OPORTMIN is less than or equal to the value you specify for OPORTMAX .

This parameter is valid on z/OS only.

Changes to this parameter take effect for channels that are later started. Channels that are currently started are unaffected by changes to this parameter.

PARENT(*parentname*)
The name of the parent queue manager to which the local queue manager is to connect as its child in a hierarchy.

A blank value indicates that the queue manager has no parent queue manager.

If there is an existing parent queue manager it is disconnected.

IBM WebSphere MQ hierarchical connections require that the queue manager attribute PSMODE is set to ENABLED.

The value of PARENT can be set to a blank value if PSMODE is set to DISABLED.

Before a queue manager can connect to a queue manager as its child in a hierarchy, channels must exist in both directions. The channels must exist between the parent queue manager and the child queue manager.

If a parent is already defined, the ALTER QMGR PARENT command disconnects from the original parent and sends a connection flow to the new parent queue manager.

Successful completion of the command does not mean that the action completed, or that it is going to complete successfully. Use the DIS PUBSUB TYPE(PARENT) ALL command to track the status of the requested parent relationship.

PERFMEV
Specifies whether performance-related events are generated:

ENABLED
Performance-related events are generated.

DISABLED
Performance-related events are not generated.

This is the queue manager's initial default value.

On IBM WebSphere MQ for z/OS, all the queue managers in a queue-sharing group must have the same setting.

PSCLUS
Controls whether this queue manager participates in publish subscribe activity across any clusters in which it is a member. No clustered topic objects can exist in any cluster when modifying from ENABLED to DISABLED.

For more information about **PSCLUS** and inhibiting clusters publish/subscribe, see Inhibiting clustered publish/subscribe in a cluster .

ENABLED
This queue manager can define clustered topic objects, publish to subscribers on other queue managers, and register subscriptions that receive publications from other queue managers. All queue managers in the cluster running a version of IBM WebSphere MQ that supports this option must specify PSCLUS(ENABLED) for the publish/subscribe activity to function as expected. ENABLED is the default value when a queue manager is created.

DISABLED
This queue manager cannot define clustered topic objects and ignores their definition on any other queue manager in the cluster.

Publications are not forwarded to subscribers elsewhere in the cluster, and subscriptions are not registered other than on the local queue manager.

To ensure that no publish/subscribe activity occurs in the cluster, all queue managers must specify PSCLUS(DISABLED). As a minimum, full repositories must be consistent in enabling or disabling publish/subscribe participation.

PSMODE
Controls whether the publish/subscribe engine and the queued publish/subscribe interface are running. It controls whether applications can publish or subscribe by using the application programming interface. It also controls whether the queues that are monitored by the queued publish/subscribe interface, are monitored.

Changing the PSMODE attribute can change the PSMODE status. Use DISPLAY PUBSUB, or on IBM i **DSPMQM**, to determine the current state of the publish/subscribe engine and the queued publish/subscribe interface.

COMPAT
The publish/subscribe engine is running. It is therefore possible to publish or subscribe by using the application programming interface.

The queued publish/subscribe interface is not running. Any publish/subscribe messages put to the queues that are monitored by the queued publish/subscribe interfaces are not acted upon.

Use this setting for compatibility with WebSphere Message Broker V6 or earlier versions that use this queue manager. WebSphere Message Broker must read the same queues from which the queued publish/subscribe interface would normally read.

DISABLED
The publish/subscribe engine and the queued publish/subscribe interface are not running. It is therefore not possible to publish or subscribe by using the application programming interface. Any publish/subscribe messages put to the queues that are monitored by the queued publish/subscribe interfaces are not acted upon.

If a queue manager is in a publish/subscribe cluster or hierarchy, it might receive publish/subscribe messages from other queue managers in the cluster or hierarchy. Examples of such messages are publication messages or proxy subscriptions. While PSMODE is set to DISABLED those messages are not processed. For this reason, disable any queue manager in a publish/subscribe cluster or hierarchy only for as long as there is little build-up of messages.

ENABLED
The publish/subscribe engine and the queued publish/subscribe interface are running. It is therefore possible to publish or subscribe by using the application programming interface and the queues that are being monitored by the queued publish/subscribe interface.

This is the queue manager's initial default value.

Note: If a queue manager is in a publish/subscribe cluster or hierarchy, and you change PSMODE to ENABLED, you might have to run the command REFRESH QMGR TYPE(PROXY). The command ensures that non-durable subscriptions are known across the cluster or hierarchy when PSMODE is set back to ENABLED. The circumstance in which you must run the command is as follows. If PSMODE is changed from ENABLED to DISABLED and back to ENABLED, and one or more non-durable subscriptions exist across all three stages.

PSNPMSG
If the queued publish/subscribe interface cannot process a non-persistent input message it might attempt to write the input message to the dead-letter queue. Whether it attempts to do so depends on the report options of the input message. The attempt to write the input message to the dead-letter queue might fail. In this case, the queued publish/subscribe interface might discard the input message. If MQRO_DISCARD_MSG is specified on the input message, the input message is discarded. If MQRO_DISCARD_MSG is not set, setting PSNPMSG to KEEP prevents the input message from being discarded. The default is to discard the input message.

Note: If you specify a value of IFPER for PSSYNCPT, you must not specify a value of KEEP for PSNPMSG .

DISCARD
Non-persistent input messages might be discarded if they cannot be processed.

KEEP
Non-persistent input messages are not discarded if they cannot be processed. In this situation, the queued publish/subscribe interface continues to try to process this message again at appropriate intervals and does not continue processing subsequent messages.

PSNPRES
The PSNPRES attribute controls whether the queued publish/subscribe interface writes an undeliverable reply message to the dead-letter queue, or discards the message. The choice is necessary if the queued publish/subscribe interface cannot deliver a reply message to the reply-to queue.

For new queue managers, the initial value is NORMAL. If you specify a value of IFPER for PSSYNCPT, you must not specify a value of KEEP or SAFE for PSNPRES .

For migrated queue managers on IBM i, UNIX, Linux, and Windows systems, the value depends on DLQNonPersistentResponse and DiscardNonPersistentResponse.

NORMAL
Non-persistent responses which cannot be placed on the reply queue are put on the dead-letter queue. If they cannot be placed on the dead-letter queue then they are discarded.

SAFE
Non-persistent responses which cannot be placed on the reply queue are put on the dead-letter queue. If the response cannot be sent and cannot be placed on the dead-letter queue, the queued publish/subscribe interface backs out of the current operation. It tries again at appropriate intervals, and does not continue processing subsequent messages.

DISCARD
Non-persistent responses which cannot be placed on the reply queue are discarded

KEEP

Non-persistent responses are not placed on the dead-letter queue or discarded. Instead the queued publish/subscribe interface backs out the current operation and then tries it again at appropriate intervals and does not continue processing subsequent messages.

PSRTYCNT
If the queued publish/subscribe interface fails to process a command message under sync point, the unit of work is backed out. The command tries to process the message a number of times again, before the publish/subscribe broker processes the command message according to its report options instead. This situation can arise for a number of reasons. For example, if a publish message cannot be delivered to a subscriber, and it is not possible to put the publication on the dead letter queue.

The initial value for this parameter on a new queue manager is 5.

Range is 0 - 999,999,999.

PSSYNCPT
Controls whether the queued publish/subscribe interface processes command messages (publishes or delete publication messages) under sync point.

YES
All messages are processed under sync point.

IFPER
Only persistent messages are part of the sync point

The initial value of the queue manager is IFPER.

RCVTIME(*integer*)
The approximate length of time that a TCP/IP channel waits to receive data, including heartbeats, from its partner before returning to the inactive state. This parameter applies only to message channels and not to MQI channels.

This number can be qualified as follows:

- To specify that this number is a multiplier to apply to the negotiated HBINT value to determine how long a channel is to wait, set RCVTTYPE to MULTIPLY. Specify an RCVTIME value of zero or in the range 2 through 99. If you specify zero, the channel continues to wait indefinitely to receive data from its partner.
- To specify that RCVTIME is the number of seconds to add to the negotiated HBINT value to determine how long a channel is to wait, set RCVTTYPE to ADD. Specify an RCVTIME value in the range 1 through 999999.
- To specify that RCVTIME is a value, in seconds, that the channel is to wait, set RCVTTYPE to EQUAL. Specify an RCVTIME value in the range 0 - 999,999. If you specify zero, the channel continues to wait indefinitely to receive data from its partner.

This parameter is valid on z/OS only.

Changes to this parameter take effect for channels that are later started. Channels that are currently started are unaffected by changes to this parameter.

RCVTMIN(*integer*)
The minimum length of time that a TCP/IP channel waits to receive data, including heartbeats, from its partner before returning to an inactive state. This parameter applies only to message channels (and not to MQI channels).

The TCP/IP channel wait time is relative to the negotiated value of HBINT. If RCVTYPE is MULTIPLY, the resultant value might less than the RCVTMIN. In this case, the TCP/IP channel wait time is set to RCVTMIN.

Specify a value, in seconds, between zero and 999999.

This parameter is valid on z/OS only.

Changes to this parameter take effect for channels that are later started. Channels that are currently started are unaffected by changes to this parameter.

RCVTTYPE
The qualifier to apply to the value in RCVTIME .

MULTIPLY
Specifies that RCVTIME is a multiplier to be applied to the negotiated HBINT value to determine how long a channel waits.

ADD
Specifies that RCVTIME is a value, in seconds, to be added to the negotiated HBINT value to determine how long a channel waits.

EQUAL
Specifies that RCVTIME is a value, in seconds, representing how long the channel waits.

This parameter is valid on z/OS only.

Changes to this parameter take effect for channels that are later started. Channels that are currently started are unaffected by changes to this parameter.

REMOTEEV
Specifies whether remote error events are generated:

DISABLED
Remote error events are not generated.

This is the queue manager's initial default value.

ENABLED
Remote error events are generated.

If you are using the reduced function form of IBM WebSphere MQ for z/OS supplied with WebSphere Application Server, only DISABLED is valid.

REPOS(*clustername*)
The name of a cluster for which this queue manager provides a repository manager service. The maximum length is 48 characters conforming to the rules for naming IBM WebSphere MQ objects.

You can specify either the **REPOS** or the **REPOSNL** parameter, but not both. Both **REPOS** and **REPOSNL** might be blank, or **REPOS** might be blank and the namelist specified by **REPOSNL** might be empty. In these cases, this queue manager does not have a full repository. It might be a client of other repository services defined in the cluster.

Use a cluster-sender channel to connect this queue manager to at least one other full repository queue manager in the cluster (if specifying **REPOS**) or in each cluster named in the namelist (if specifying **REPOSNL**). See the information in Components of a cluster for details about using cluster-sender channels with full repository queue managers.

This parameter is valid on IBM i, z/OS, UNIX, Linux, and Windows.

REPOSNL(*nlname*)
The name of a namelist of clusters for which this queue manager provides a repository manager service. The maximum length is 48 characters conforming to the rules for naming an WebSphere namelist object.

See the description of **REPOS** for information on specifying either **REPOS** or **REPOSNL**.

This parameter is valid on IBM i, z/OS, UNIX, Linux, and Windows.

ROUTEREC
Specifies whether trace-route information is recorded if requested in the message. If this parameter is not set to DISABLED, it controls whether any reply generated is sent to SYSTEM.ADMIN.TRACE.ROUTE.QUEUE, or to the destination specified by the message itself. If ROUTEREC is not DISABLED, messages not yet at the final destination might have information added to them.

DISABLED
Trace-route information is not recorded.

MSG
Trace-route information is recorded and sent to the destination specified by the originator of the message causing the trace route record.

This is the queue manager's initial default value.

QUEUE
Trace-route information is recorded and sent to SYSTEM.ADMIN.TRACE.ROUTE.QUEUE .

SCHINIT
Specifies whether the channel initiator starts automatically when the queue manager starts.

QMGR
The channel initiator starts automatically when the queue manager starts.

MANUAL
The channel initiator does not start automatically.

This parameter is valid only on IBM i, UNIX, Linux, and Windows.

SCMDSERV
Specifies whether the command server starts automatically when the queue manager starts.

QMGR
The command server starts automatically when the queue manager starts.

MANUAL
The command server does not start automatically.

This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

SCYCASE
Specifies whether the security profiles are uppercase or mixed case.

UPPER
The security profiles are uppercase only. However, MXTOPIC and GMXTOPIC are used for topic security, and can contain mixed-case profiles.

MIXED
The security profiles are mixed case. MQCMDS and MQCONN are used for command and connection security but they can contain only uppercase profiles.

Changes to SCYCASE become effective after you run the following command:

```
REFFRESH SECURITY(*) TYPE(CLASSES)
```

This parameter is valid only on z/OS

SQQMNAME
The SQQMNAME attribute specifies whether a queue manager in a queue-sharing group opens a shared queue in the same group directly. The processing queue manager calls MQOPEN for a shared queue and sets the *ObjectQmgrName* parameter for the queue. If the shared queue is in the same queue-sharing group as the processing queue manager, the queue can be opened directly by the processing queue manager. Set the SQQMNAME attribute to control if the queue is opened directly, or by the *ObjectQmgrName* queue manager.

USE
The *ObjectQmgrName* is used, and the appropriate transmission queue is opened.

IGNORE
The processing queue manager opens the shared queue directly. Setting the parameter to this value can reduce the traffic in your queue manager network.

This parameter is valid only on z/OS.

SSLCRLNL(*nlname*)

The name of a namelist of authentication information objects which are used to provide certificate revocation locations to allow enhanced TLS/SSL certificate checking.

If SSLCRLNL is blank, certificate revocation checking is not invoked unless one of the SSL certificates used contains an AuthorityInfoAcces s or CrlDistributionPoint X.509 certificate extension.

Changes to SSLCRLNL, or to the names in a previously specified namelist, or to previously referenced authentication information objects become effective either:

- On IBM i, UNIX, Linux, and Windows systems when a new channel process is started.
- For channels that run as threads of the channel initiator on IBM i, UNIX, Linux, and Windows systems, when the channel initiator is restarted.
- For channels that run as threads of the listener on IBM i, UNIX, Linux, and Windows systems, when the listener is restarted.
- On z/OS, when the channel initiator is restarted.
- When a REFRESH SECURITY TYPE(SSL) command is issued.
- On IBM i queue managers, this parameter is ignored. However, it is used to determine which authentication information objects are written to the AMQCLCHL.TAB file.

SSLCRYP(*string*)
Sets the name of the parameter string required to configure the cryptographic hardware present on the system.

All supported cryptographic hardware supports the PKCS #11 interface. Specify a string of the following format:

```
GSK_PKCS11=<the PKCS #11 driver path and file name>
;<the PKCS #11 token label>;
<the PKCS #11 token password>;<symmetric cipher setting>
;
```

The PKCS #11 driver path is an absolute path to the shared library providing support for the PKCS #11 card. The PKCS #11 driver file name is the name of the shared library. An example of the value required for the PKCS #11 driver path and file name is /usr/lib/pkcs11/PKCS11_API.so

To access symmetric cipher operations through GSKit, specify the symmetric cipher setting parameter. The value of this parameter is either:

SYMMETRIC_CIPHER_OFF
Do not access symmetric cipher operations.

SYMMETRIC_CIPHER_ON
Access symmetric cipher operations.

If the symmetric cipher setting parameter is not specified, it has the same effect as specifying SYMMETRIC_CIPHER_OF F.

The maximum length of the string is 256 characters.

If you specify a string that is not in the format listed, you get an error.

When the SSLCRYP value is changed, the cryptographic hardware parameters specified become the ones used for new SSL connection environments. The new information becomes effective:

- When a new channel process is started.
- For channels that run as threads of the channel initiator, when the channel initiator is restarted.

- For channels that run as threads of the listener, when the listener is restarted.
- When a REFRESH SECURITY TYPE(SSL) command is issued.

SSLEV
Specifies whether SSL events are generated.

DISABLED
SSL events are not generated.

This is the queue manager's initial default value.

ENABLED
All SSL events are generated.

SSLFIPS

This parameter is valid only on z/OS, UNIX, Linux, and Windows systems.

SSLFIPS specifies whether only FIPS-certified algorithms are to be used if cryptography is carried out in IBM WebSphere MQ, rather than in cryptographic hardware. If cryptographic hardware is configured, the cryptographic modules used are those modules provided by the hardware product. These might, or might not, be FIPS-certified to a particular level. Whether the modules are FIPS-certified depends on the hardware product in use. For more information about FIPS, see the Federal Information Processing Standards (FIPS) manual.

NO
If you set SSLFIPS to NO, you can use either FIPS certified or non-FIPS certified CipherSpecs.

If the queue manager runs without using cryptographic hardware, refer to the CipherSpecs listed in Specifying CipherSpecs .

This is the queue manager's initial default value.

YES
Specifies that only FIPS-certified algorithms are to be used in the CipherSpecs allowed on all SSL connections from and to this queue manager.

For a listing of appropriate FIPS 140-2 certified CipherSpecs; see Specifying CipherSpecs .

Changes to SSLFIPS become effective either:

- On UNIX, Linux, and Windows systems, when a new channel process is started.
- For channels that run as threads of the channel initiator on UNIX, Linux, and Windows systems, when the channel initiator is restarted.
- For channels that run as threads of the listener on UNIX, Linux, and Windows systems, when the listener is restarted.
- For channels that run as threads of a process pooling process, when the process pooling process is started or restarted and first runs an SSL channel. If the process pooling process has already run an SSL channel, and you want the change to become effective immediately, run the MQSC command REFRESH SECURITY TYPE(SSL). The process pooling process is **amqrmppa** on UNIX, Linux, and Windows systems.
- On z/OS, when the channel initiator is restarted.
- When aREFRESH SECURITY TYPE(SSL) command is issued, except on z/OS.

SSLKEYR(*string*)
The name of the Secure Sockets Layer key repository.

The maximum length of the string is 256 characters.

The format of the name depends on the environment:

- On z/OS, it is the name of a key ring.
- On IBM i, it is of the form *pathname/keyfile*, where *keyfile* is specified without the suffix .kdb , and identifies a GSKit key database file.

If you specify *SYSTEM, IBM WebSphere MQ uses the system certificate store as the key repository for the queue manager. The queue manager is registered as a server application in the Digital Certificate Manager (DCM). You can assign any server/client certificate in the system store to the queue manager, because you registered it as a server application.

If you change the SSLKEYR parameter to a value other than *SYSTEM, IBM WebSphere MQ unregisters the queue manager as an application with DCM.

- On UNIX and Linux, it is of the form *pathname/keyfile* and on Windows *pathname\keyfile* , where *keyfile* is specified without the suffix .kdb, and identifies a GSKit CMS key database file.

On IBM i, UNIX, Linux, and Windows systems, the syntax of this parameter is validated to ensure that it contains a valid, absolute, directory path.

If SSLKEYR is blank, channels using SSL fail to start. If SSLKEYR is set to a value that does not correspond to a key ring or key database file, channels using SSL also fail to start.

Changes to SSLKEYR become effective either:

- On IBM i, UNIX, Linux, and Windows systems, when a new channel process is started.
- For channels that run as threads of the channel initiator on IBM i, UNIX, Linux, and Windows systems, when the channel initiator is restarted.
- For channels that run as threads of the listener on IBM i, UNIX, Linux, and Windows systems, when the listener is restarted.
- For channels that run as threads of a process pooling process, **amqrmppa**, when the process pooling process is started or restarted and first runs an SSL channel. If the process pooling process has already run an SSL channel, and you want the change to become effective immediately, run the MQSC command REFRESH SECURITY TYPE(SSL).
- On z/OS, when the channel initiator is restarted.
- When a REFRESH SECURITY TYPE(SSL) command is issued.

SSLRKEYC(*integer*)
The number of bytes to be sent and received within an SSL conversation before the secret key is renegotiated. The number of bytes includes control information.

SSLRKEYC is used only by SSL channels which initiate communication from the queue manager. For example, the sender channel initiates communication in a sender and receiver channel pairing.

If a value greater than zero is specified, the secret key is also renegotiated before message data is sent or received following a channel heartbeat. The count of bytes until the next secret key renegotiation is reset after each successful renegotiation.

Specify a value in the range 0 - 999,999,999. A value of zero means that the secret key is never renegotiated. If you specify an SSL/TLS secret key reset count in the range 1 - 32767 bytes (32 KB), SSL/TLS channels use a secret key reset count of 32 KB. The larger reset count value avoids the cost of excessive key resets which would occur for small SSL/TLS secret key reset values.

Attention: Non-zero values less than 4096 (4 KB) might cause channels to fail to start, or might cause inconsistencies in the values of SSLKEYDA, SSLKEYTI, and SSLRKEYS.

SSLTASKS(*integer*)
The number of server subtasks to use for processing SSL calls. To use SSL channels, you must have at least two of these tasks running.

This parameter is valid only on z/OS.

This value is in the range 0 - 9999. To avoid problems with storage allocation, do not set the SSLTASKS parameter to a value greater than 50.

Changes to this parameter are effective when the channel initiator is restarted.

STATACLS
Specifies whether statistics data is to be collected for auto-defined cluster-sender channels:

QMGR
Collection of statistics data is inherited from the setting of the STATCHL parameter of the queue manager.

This is the queue manager's initial default value.

OFF
Statistics data collection for the channel is switched off.

LOW
Unless STATCHL is NONE, statistics data collection is switched on with a low ratio of data collection with a minimal effect on system performance.

MEDIUM
Unless STATCHL is NONE, statistics data collection is switched on with a moderate ratio of data collection.

HIGH
Unless STATCHL is NONE, statistics data collection is switched on with a high ratio of data collection.

This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

A change to this parameter takes effect only on channels started after the change occurs. Any channel started before the change to the parameter continues with the value in force at the time that the channel started.

STATCHL
Specifies whether statistics data is to be collected for channels:

NONE
Statistics data collection is turned off for channels regardless of the setting of their STATCHL parameter.

OFF
Statistics data collection is turned off for channels specifying a value of QMGR in their STATCHL parameter.

This is the queue manager's initial default value.

LOW
Statistics data collection is turned on, with a low ratio of data collection, for channels specifying a value of QMGR in their STATCHL parameter.

MEDIUM
Statistics data collection is turned on, with a moderate ratio of data collection, for channels specifying a value of QMGR in their STATCHL parameter.

HIGH
Statistics data collection is turned on, with a high ratio of data collection, for channels specifying a value of QMGR in their STATCHL parameter.

This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

A change to this parameter takes effect only on channels started after the change occurs. Any channel started before the change to the parameter continues with the value in force at the time that the channel started.

STATINT(*integer*)
The time interval, in seconds, at which statistics monitoring data is written to the monitoring queue.

Specify a value in the range 1 through 604800.

This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

Changes to this parameter take immediate effect on the collection of monitoring and statistics data.

STATMQI
Specifies whether statistics monitoring data is to be collected for the queue manager:

OFF
Data collection for MQI statistics is disabled.

This is the queue manager's initial default value.

ON
Data collection for MQI statistics is enabled.

This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

Changes to this parameter take immediate effect on the collection of monitoring and statistics data.

STATQ
Specifies whether statistics data is to be collected for queues:

NONE
Statistics data collection is turned off for queues regardless of the setting of their STATQ parameter.

OFF
Statistics data collection is turned off for queues specifying a value of QMGR or OFF in their STATQ parameter. OFF is the default value.

ON
Statistics data collection is turned on for queues specifying a value of QMGR or ON in their STATQ parameter.

This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

Statistics messages are generated only for queues which are opened after statistics collection is enabled. You do not need to restart the queue manager for the new value of STATQ to take effect.

STRSTPEV
Specifies whether start and stop events are generated:

ENABLED
Start and stop events are generated.

This is the queue manager's initial default value.

DISABLED
Start and stop events are not generated.

SUITEB
Specifies whether Suite B-compliant cryptography is used and what strength is required.

NONE
Suite B is not used. NONE is the default

128_BIT
Suite B 128-bit level security is used.

192_BIT
Suite B 192-bit level security is used

128_BIT,192_BIT
Both Suite B 128-bit and 192-bit level security is used

TCPCHL(*integer*)
The maximum number of channels that can be current, or clients that can be connected, that use the TCP/IP transmission protocol.

The maximum number of sockets used is the sum of the values in TCPCHL and CHIDISPS. The z/OS UNIX System Services MAXFILEPROC parameter (specified in the BPXPRM*xx* member of SYS1.PARMLIB) controls how many sockets each task is allowed, and thus how many channels each dispatcher is allowed. In this case, the number of channels using TCP/IP is limited to the value of MAXFILEPROC multiplied by the value of CHIDISPS.

Specify a value 0-9999. The value must not be greater than the value of MAXCHL . MAXCHL defines the maximum number of channels available. TCP/IP might not support as many as 9999 channels. If so,

the value you can specify is limited by the number of channels TCP/IP can support. If you specify zero, the TCP/IP transmission protocol is not used.

If you change this value, also review the MAXCHL, LU62CHL, and ACTCHL values to ensure that there is no conflict of values. If necessary, raise the value of MAXCHL and ACTCHL.

If the value of this parameter is reduced, any current channels that exceed the new limit continue to run until they stop.

Sharing conversations do not contribute to the total for this parameter.

This parameter is valid on z/OS only.

TCPKEEP
Specifies whether the KEEPALIVE facility is to be used to check that the other end of the connection is still available. If it is unavailable, the channel is closed.

NO
The TCP KEEPALIVE facility is not to be used.

This is the queue manager's initial default value.

YES
The TCP KEEPALIVE facility is to be used as specified in the TCP profile configuration data set. The interval is specified in the KAINT channel attribute.

This parameter is valid on z/OS only.

Changes to this parameter take effect for channels that are later started. Channels that are currently started are unaffected by changes to this parameter.

Using the TCPKEEP parameter is no longer required for 'modern' queue managers. The replacement is a combination of:

- using 'modern' client channels (SHARECNV <> 0); and
- using receive timeout for message channels RCVTIME.

For more information, see the technote "Setting the TCP/IP KeepAlive interval to be used by WebSphere MQ", at the following address: https://www.ibm.com/support/docview.wss?uid=swg21216834.

TCPNAME(*string*)
The name of either the only, or default, TCP/IP system to be used, depending on the value of TCPSTACK. This name is the name of the z/OS UNIX System Services stack for TCP/IP, as specified in the SUBFILESYSTYPE NAME parameter in the BPXPRM*xx* member of SYS1.PARMLIB.

The maximum length of this parameter is eight characters.

This parameter is valid on z/OS only.

Changes to this parameter take effect when the channel initiator is restarted.

TCPSTACK
Specifies whether the channel initiator can use only the TCP/IP address space specified in TCPNAME, or optionally bind to any selected TCP/IP address.

SINGLE
The channel initiator can use only the TCP/IP address space specified in TCPNAME.

MULTIPLE
The channel initiator can use any TCP/IP address space available to it.

This parameter is valid on z/OS only.

Changes to this parameter take effect when the channel initiator is restarted.

TRAXSTR
Specifies whether the channel initiator trace starts automatically:

YES
Channel initiator trace is to start automatically.

NO
Channel initiator trace is not to start automatically.

This parameter is valid on z/OS only.

Changes to this parameter take effect when the channel initiator is restarted. If you want to start or stop channel initiator trace without restarting the channel initiator, use the START TRACE or STOP TRACE commands after starting the channel initiator.

TRAXTBL(*integer*)
The size, in megabytes, of the trace data space of the channel initiator.

Specify a value in the range 2 through 2048.

This parameter is valid on z/OS only.

Note:

1. Changes to this parameter take effect immediately; any existing trace table contents are lost.
2. The **CHINIT** trace is stored in a dataspace called qmidCHIN.CSQXTRDS. When you use large z/OS data spaces, ensure that sufficient auxiliary storage is available on your system to support any related z/OS paging activity. You might also need to increase the size of your SYS1.DUMP data sets.

TREELIFE(*integer*)
The lifetime, in seconds of non-administrative topics.

Non-administrative topics are those topics created when an application publishes to, or subscribes on, a topic string that does not exist as an administrative node. When this non-administrative node no longer has any active subscriptions, this parameter determines how long the queue manager waits before removing that node. Only non-administrative topics that are in use by a durable subscription remain after the queue manager is recycled.

Specify a value in the range 0 through 604000. A value of 0 means that non-administrative topics are not removed by the queue manager.

TRIGINT(*integer*)
A time interval expressed in milliseconds.

The TRIGINT parameter is relevant only if the trigger type (TRIGTYPE) is set to FIRST (see "DEFINE QLOCAL" on page 424 for details). In this case trigger messages are normally generated only when a suitable message arrives on the queue, and the queue was previously empty. Under certain circumstances, however, an additional trigger message can be generated with FIRST triggering even if the queue was not empty. These additional trigger messages are not generated more often than every TRIGINT milliseconds; see Special case of trigger type FIRST.

Specify a value in the range 0 - 999,999,999.

ALTER queues

Use the MQSC **ALTER** command to alter the parameters of a queue. A queue might be a local queue (ALTER QLOCAL), alias queue (ALTER QALIAS), model queue (ALTER QMODEL), a remote queue, a queue-manager alias, or a reply-to queue alias (ALTER QREMOTE).

This section contains the following commands:

- "ALTER QALIAS" on page 295
- "ALTER QLOCAL" on page 297
- "ALTER QMODEL" on page 300
- "ALTER QREMOTE" on page 302

These commands are supported on the following platforms:

UNIX and Linux	Windows
✓	✓

Parameters not specified in the **ALTER** queue commands result in the existing values for those parameters being left unchanged.

Parameter descriptions for ALTER QUEUE

The parameters that are relevant for each type of queue are tabulated in Table 38 on page 274. Each parameter is described after the table.

Table 38. DEFINE and ALTER QUEUE parameters.

Cross-tabulation of queue parameters and queue types. If the parameter applies to the queue type, the cell contains a check mark.

Parameter	Local queue	Model queue	Alias queue	Remote queue
ACCTQ	✓	✓		
BOQNAME	✓	✓		
BOTHRESH	✓	✓		
CFSTRUCT	✓	✓		
CLCHNAME	✓	✓		
CLUSNL	✓		✓	✓
CLUSTER	✓		✓	✓
CLWLPRTY	✓		✓	✓
CLWLRANK	✓		✓	✓
CLWLUSEQ	✓			
CMDSCOPE	✓	✓	✓	✓
CUSTOM	✓	✓	✓	✓
DEFBIND	✓		✓	✓
DEFPRESP	✓	✓	✓	✓
DEFPRTY	✓	✓	✓	✓
DEFPSIST	✓	✓	✓	✓
DEFREADA	✓	✓	✓	
DEFSOPT	✓	✓		
DEFTYPE	✓	✓		
DESCR	✓	✓	✓	✓

Table 38. DEFINE and ALTER QUEUE parameters.

Cross-tabulation of queue parameters and queue types. If the parameter applies to the queue type, the cell contains a check mark.

(continued)

Parameter	Local queue	Model queue	Alias queue	Remote queue
DISTL	✓	✓		
FORCE	✓		✓	✓
GET	✓	✓	✓	
HARDENBO or NOHARDENBO	✓	✓		
INDXTYPE	✓	✓		
INITQ	✓	✓		
LIKE	✓	✓	✓	✓
MAXDEPTH	✓	✓		
MAXMSGL	✓	✓		
MONQ	✓	✓		
MSGDLVSQ	✓	✓		
NPMCLASS	✓	✓		
PROCESS	✓	✓		
PROPCTL	✓	✓	✓	
PUT	✓	✓	✓	✓
queue-name	✓	✓	✓	✓
QDEPTHHI	✓	✓		
QDEPTHLO	✓	✓		
QDPHIEV	✓	✓		
QDPLOEV	✓	✓		
QDPMAXEV	✓	✓		
QSGDISP	✓	✓	✓	✓
QSVCIEV	✓	✓		
QSVCINT	✓	✓		
RETINTVL	✓	✓		

Table 38. DEFINE and ALTER QUEUE parameters.

Cross-tabulation of queue parameters and queue types. If the parameter applies to the queue type, the cell contains a check mark.

(continued)

Parameter	Local queue	Model queue	Alias queue	Remote queue
RNAME				✓
RQMNAME				✓
SCOPE	✓		✓	✓
SHARE or NOSHARE	✓	✓		
STATQ	✓	✓		
STGCLASS	✓	✓		
TARGET			✓	
TARGQ			✓	
TARGTYPE			✓	
TRIGDATA	✓	✓		
TRIGDPTH	✓	✓		
TRIGGER or NOTRIGGER	✓	✓		
TRIGMPRI	✓	✓		
TRIGTYPE	✓	✓		
USAGE	✓	✓		
XMITQ				✓

queue-name
Local name of the queue, except the remote queue where it is the local definition of the remote queue.

See Rules for naming IBM WebSphere MQ objects.

ACCTQ
Specifies whether accounting data collection is to be enabled for the queue. On z/OS, the data collected is class 3 accounting data (thread-level and queue-level accounting). In order for accounting data to be collected for this queue, accounting data for this connection must also be enabled. Turn on accounting data collection by setting either the **ACCTQ** queue manager attribute, or the options field in the MQCNO structure on the MQCONNX call.

QMGR
The collection of accounting data is based on the setting of the **ACCTQ** parameter on the queue manager definition.

ON
Accounting data collection is enabled for the queue unless the **ACCTQ** queue manager parameter has a value of NONE. On z/OS systems, you must switch on class 3 accounting using the **START TRACE** command.

OFF
Accounting data collection is disabled for the queue.

BOQNAME(*queue-name*)
The excessive backout requeue name.

This parameter is supported only on local and model queues.

Use this parameter to set or change the back out queue name attribute of a local or model queue. Apart from allowing its value to be queried, the queue manager does nothing based on the value of this attribute. IBM WebSphere MQ classes for JMS transfers a message that is backed out the maximum number of times to this queue. The maximum is specified by the **BOTHRESH** attribute.

BOTHRESH(*integer*)
The backout threshold.

This parameter is supported only on local and model queues.

Use this parameter to set or change the value of the back out threshold attribute of a local or model queue. Apart from allowing its value to be queried, the queue manager does nothing based on the value of this attribute. IBM WebSphere MQ classes for JMS use the attribute to determine how many times to allows a message to be backed out. When the value is exceeded, the message is transferred to the queue named by the **BOQNAME** attribute.

Specify a value in the range 0 - 999,999,999.

CFSTRUCT(*structure-name*)
Specifies the name of the coupling facility structure where you want messages stored when you use shared queues.

This parameter is supported only on z/OS for local and model queues.

The name:

- Cannot have more than 12 characters
- Must start with an uppercase letter (A - Z)
- Can include only the characters A - Z and 0 - 9

The name of the queue-sharing group to which the queue manager is connected is prefixed to the name you supply. The name of the queue-sharing group is always four characters, padded with @ symbols if necessary. For example, if you use a queue-sharing group named NY03 and you supply the name PRODUCT7, the resultant coupling facility structure name is NY03PRODUCT7. The administrative structure for the queue-sharing group (in this case NY03CSQ_ADMIN) cannot be used for storing messages.

For ALTER QLOCAL, ALTER QMODEL, DEFINE QLOCAL with **REPLACE**, and DEFINE QMODEL with **REPLACE** the following rules apply:

- On a local queue with **QSGDISP**(SHARED), **CFSTRUCT** cannot change.

  If you change either the **CFSTRUCT** or **QSGDISP** value you must delete and redefine the queue. To preserve any of the messages on the queue you must offload the messages before you delete the queue. Reload the messages after you redefine the queue, or move the messages to another queue.
- On a model queue with **DEFTYPE**(SHAREDYN), **CFSTRUCT** cannot be blank.
- On a local queue with a **QSGDISP** other than SHARED, or a model queue with a **DEFTYPE** other than SHAREDYN, the value of **CFSTRUCT** does not matter.

For DEFINE QLOCAL with **NOREPLACE** and DEFINE QMODEL with **NOREPLACE**, the coupling facility structure:

- On a local queue with **QSGDISP**(SHARED) or a model queue with a **DEFTYPE**(SHAREDYN), **CFSTRUCT** cannot be blank.
- On a local queue with a **QSGDISP** other than SHARED, or a model queue with a **DEFTYPE** other than SHAREDYN, the value of **CFSTRUCT** does not matter.

Note: Before you can use the queue, the structure must be defined in the coupling facility Resource Management (CFRM) policy data set.

CLCHNAME(*channel name*)

This parameter is supported only on transmission queues.

CLCHNAME is the generic name of the cluster-sender channels that use this queue as a transmission queue. The attribute specifies which cluster-sender channels send messages to a cluster-receiver channel from this cluster transmission queue. CLCHNAME is not supported on z/OS.

You can also set the transmission queue attribute CLCHNAME attribute to a cluster-sender channel manually. Messages that are destined for the queue manager connected by the cluster-sender channel are stored in the transmission queue that identifies the cluster-sender channel. They are not stored in the default cluster transmission queue. If you set the CLCHNAME attribute to blanks, the channel switches to the default cluster transmission queue when the channel restarts. The default queue is either SYSTEM.CLUSTER.TRANSMIT.*ChannelName* or SYSTEM.CLUSTER.TRANSMIT.QUEUE, depending on the value of the queue manager DEFCLXQ attribute.

By specifying asterisks, ""*"", in CLCHNAME, you can associate a transmission queue with a set of cluster-sender channels. The asterisks can be at the beginning, end, or any number of places in the middle of the channel name string. CLCHNAME is limited to a length of 48 characters, MQ_OBJECT_NAME_LENGTH. A channel name is limited to 20 characters: MQ_CHANNEL_NAME_LENGTH.

The default queue manager configuration is for all cluster-sender channels to send messages from a single transmission queue, SYSTEM.CLUSTER.TRANSMIT.QUEUE. The default configuration can be modified by changing the queue manager attribute, DEFCLXQ. The default value of the attribute is SCTQ. You can change the value to CHANNEL. If you set the DEFCLXQ attribute to CHANNEL, each cluster-sender channel defaults to using a specific cluster transmission queue, SYSTEM.CLUSTER.TRANSMIT.*ChannelName*.

CLUSNL(*namelist name*)

The name of the namelist that specifies a list of clusters to which the queue belongs.

This parameter is supported only on alias, local, and remote queues.

Changes to this parameter do not affect instances of the queue that are already open.

Only one of the resultant values of **CLUSNL** or **CLUSTER** can be nonblank; you cannot specify a value for both.

On local queues, this parameter cannot be set for transmission, SYSTEM.CHANNEL.*xx*, SYSTEM.CLUSTER.*xx*, or SYSTEM.COMMAND.*xx* queues, and on z/OS only, for SYSTEM.QSG.*xx* queues.

This parameter is valid only on AIX, HP-UX, Linux, Solaris, Windows, and z/OS.

CLUSTER(*cluster name*)

The name of the cluster to which the queue belongs.

This parameter is supported only on alias, local, and remote queues.

The maximum length is 48 characters conforming to the rules for naming IBM WebSphere MQ objects. Changes to this parameter do not affect instances of the queue that are already open.

Only one of the resultant values of **CLUSNL** or **CLUSTER** can be nonblank; you cannot specify a value for both.

On local queues, this parameter cannot be set for transmission, SYSTEM.CHANNEL.*xx*, SYSTEM.CLUSTER.*xx*, or SYSTEM.COMMAND.*xx* queues, and on z/OS only, for SYSTEM.QSG.*xx* queues.

This parameter is valid only on AIX, HP-UX, Linux, Solaris, Windows, and z/OS.

CLWLPRTY(*integer*)
Specifies the priority of the queue for the purposes of cluster workload distribution. This parameter is valid only for local, remote, and alias queues. The value must be in the range zero through 9 where zero is the lowest priority and 9 is the highest. For more information about this attribute, see CLWLPRTY queue attribute.

CLWLRANK(*integer*)
Specifies the rank of the queue for the purposes of cluster workload distribution. This parameter is valid only for local, remote, and alias queues. The value must be in the range zero through 9 where zero is the lowest rank and 9 is the highest. For more information about this attribute, see CLWLRANK queue attribute.

CLWLUSEQ
Specifies the behavior of an MQPUT operation when the target queue has a local instance and at least one remote cluster instance. The parameter has no effect when the MQPUT originates from a cluster channel. This parameter is valid only for local queues.

QMGR
The behavior is as specified by the **CLWLUSEQ** parameter of the queue manager definition.

ANY
The queue manager is to treat the local queue as another instance of the cluster queue for the purposes of workload distribution.

LOCAL
The local queue is the only target of the MQPUT operation.

CMDSCOPE
This parameter applies to z/OS only. It specifies where the command is run when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if **QSGDISP** is set to GROUP or SHARED.

' '
The command is run on the queue manager on which it was entered.

QmgrName
The command is run on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered. You can specify another name, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of * is the same as entering the command on every queue manager in the queue-sharing group.

CUSTOM(*string*)
The custom attribute for new features.

This attribute is reserved for the configuration of new features before separate attributes are introduced. It can contain the values of zero or more attributes as pairs of attribute name and value, separated by at least one space. The attribute name and value pairs have the form NAME(VALUE). Single quotation marks must be escaped with another single quotation mark.

This description is updated when features using this attribute are introduced. At the moment, there are no values for **CUSTOM**.

DEFBIND
Specifies the binding to be used when the application specifies MQOO_BIND_AS_Q_DEF on the MQOPEN call, and the queue is a cluster queue.

OPEN
The queue handle is bound to a specific instance of the cluster queue when the queue is opened.

NOTFIXED
The queue handle is not bound to any instance of the cluster queue. The queue manager selects a specific queue instance when the message is put using MQPUT. It changes that selection later, if the need arises.

GROUP
Allows an application to request that a group of messages is allocated to the same destination instance.

Multiple queues with the same name can be advertised in a queue manager cluster. An application can send all messages to a single instance, MQOO_BIND_ON_OPEN. It can allow a workload management algorithm to select the most suitable destination on a per message basis, MQOO_BIND_NOT_FIXED. It can allow an application to request that a "group" of messages be all allocated to the same destination instance. The workload balancing reselects a destination between groups of messages, without requiring an MQCLOSE and MQOPEN of the queue.

The MQPUT1 call always behaves as if NOTFIXED is specified.

This parameter is valid only on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.

DEFPRESP
Specifies the behavior to be used by applications when the put response type, within the MQPMO options, is set to MQPMO_RESPONSE_AS_Q_DEF.

SYNC
Put operations to the queue specifying MQPMO_RESPONSE_AS_Q_DEF are issued as if MQPMO_SYNC_RESPONSE is specified instead.

ASYNC
Put operations to the queue specifying MQPMO_RESPONSE_AS_Q_DEF are issued as if MQPMO_ASYNC_RESPONSE is specified instead; see MQPMO options (MQLONG).

DEFPRTY(*integer*)
The default priority of messages put on the queue. The value must be in the range 0 - 9. Zero is the lowest priority, through to the **MAXPRTY** queue manager parameter. The default value of **MAXPRTY** is 9.

DEFPSIST
Specifies the message persistence to be used when applications specify the MQPER_PERSISTENCE_AS_Q_DEF option.

NO
Messages on this queue are lost across a restart of the queue manager.

YES
Messages on this queue survive a restart of the queue manager.

On z/OS, N and Y are accepted as synonyms of NO and YES.

DEFREADA
Specifies the default read ahead behavior for non-persistent messages delivered to the client. Enabling read ahead can improve the performance of client applications consuming non-persistent messages.

NO
Non-persistent messages are not read ahead unless the client application is configured to request read ahead.

YES
Non-persistent messages are sent to the client before an application requests them. Non-persistent messages can be lost if the client ends abnormally or if the client does not delete all the messages it is sent.

DISABLED
Read ahead of non-persistent messages in not enabled for this queue. Messages are not sent ahead to the client regardless of whether read ahead is requested by the client application.

DEFSOPT
The default share option for applications opening this queue for input:

EXCL
The open request is for exclusive input from the queue

SHARED
The open request is for shared input from the queue

DEFTYPE
Queue definition type.

This parameter is supported only on model queues.

PERMDYN
A permanent dynamic queue is created when an application issues an MQOPEN MQI call with the name of this model queue specified in the object descriptor (MQOD).

On z/OS, the dynamic queue has a disposition of QMGR.

SHAREDYN
This option is available on z/OS only.

A permanent dynamic queue is created when an application issues an MQOPEN API call with the name of this model queue specified in the object descriptor (MQOD).

The dynamic queue has a disposition of SHARED.

TEMPDYN
A temporary dynamic queue is created when an application issues an MQOPEN API call with the name of this model queue specified in the object descriptor (MQOD).

On z/OS, the dynamic queue has a disposition of QMGR.

Do not specify this value for a model queue definition with a **DEFPSIST** parameter of YES.

If you specify this option, do not specify **INDXTYPE**(MSGTOKEN).

DESCR(*string*)
Plain-text comment. It provides descriptive information about the object when an operator issues the DISPLAY QUEUE command.

It must contain only displayable characters. The maximum length is 64 characters. In a DBCS installation, it can contain DBCS characters (subject to a maximum length of 64 bytes).

Note: Use characters that are in the coded character set identifier (CCSID) of this queue manager. If you do not do so and if the information is sent to another queue manager, they might be translated incorrectly.

DISTL
DISTL sets whether distribution lists are supported by the partner queue manager.

YES
Distribution lists are supported by the partner queue manager.

NO
Distribution lists are not supported by the partner queue manager.

Note: You do not normally change this parameter, because it is set by the MCA. However you can set this parameter when defining a transmission queue if the distribution list capability of the destination queue manager is known.

This parameter is valid only on AIX, HP-UX, Linux, Solaris, and Windows.

FORCE
This parameter applies only to the ALTER command on alias, local and remote queues.

Specify this parameter to force completion of the command in the following circumstances.

For an alias queue, if both of the following are true:

- The **TARGET** parameter specifies a queue
- An application has this alias queue open

For a local queue, if both of the following are true:

- The **NOSHARE** parameter is specified
- More than one application has the queue open for input

FORCE is also needed if both of the following are true:

- The **USAGE** parameter is changed
- Either one or more messages are on the queue, or one or more applications have the queue open

Do not change the **USAGE** parameter while there are messages on the queue; the format of messages changes when they are put on a transmission queue.

For a remote queue, if both of the following are true:

- The **XMITQ** parameter is changed
- One or more applications has this queue open as a remote queue

FORCE is also needed if both of the following are true:

- Any of the **RNAME**, **RQMNAME**, or **XMITQ** parameters are changed
- One or more applications has a queue open that resolved through this definition as a queue manager alias

Note: FORCE is not required if this definition is in use as a reply-to queue alias only.

If **FORCE** is not specified in the circumstances described, the command is unsuccessful.

GET
Specifies whether applications are to be permitted to get messages from this queue:

ENABLED
Messages can be retrieved from the queue, by suitably authorized applications.

DISABLED
Applications cannot retrieve messages from the queue.

This parameter can also be changed using the MQSET API call.

HARDENBO&NOHARDENBO
Specifies whether hardening is used to ensure that the count of the number of times that a message is backed out is accurate.

This parameter is supported only on local and model queues.

HARDENBO
The count is hardened.

NOHARDENBO
The count is not hardened.

Note: This parameter affects only IBM WebSphere MQ for z/OS. It can be set on other platforms but is ineffective.

INDXTYPE
The type of index maintained by the queue manager to expedite MQGET operations on the queue. For shared queues, the type of index determines the type of MQGET operations that can be used.

This parameter is supported only on local and model queues.

Messages can be retrieved using a selection criterion only if an appropriate index type is maintained, as the following table shows:

Retrieval selection criterion	Index type required	
	Shared queue	Other queue
None (sequential retrieval)	Any	Any
Message identifier	MSGID or NONE	Any
Correlation identifier	CORRELID	Any
Message and correlation identifiers	MSGID or CORRELID	Any
Group identifier	GROUPID	Any
Grouping	GROUPID	GROUPID
Message token	Not allowed	MSGTOKEN

where the value of **INDXTYPE** parameter has the following values:

NONE
No index is maintained. Use NONE when messages are typically retrieved sequentially or use both the message identifier and the correlation identifier as a selection criterion on the MQGET call.

MSGID
An index of message identifiers is maintained. Use MSGID when messages are typically retrieved using the message identifier as a selection criterion on the MQGET call with the correlation identifier set to NULL.

CORRELID
An index of correlation identifiers is maintained. Use CORRELID when messages are typically retrieved using the correlation identifier as a selection criterion on the MQGET call with the message identifier set to NULL.

GROUPID
An index of group identifiers is maintained. Use GROUPID when messages are retrieved using message grouping selection criteria.

Note:

1. You cannot set **INDXTYPE** to GROUPID if the queue is a transmission queue.
2. The queue must use a CF structure at CFLEVEL(3), to specify a shared queue with **INDXTYPE**(GROUPID).

MSGTOKEN
An index of message tokens is maintained. Use MSGTOKEN when the queue is a WLM-managed queue that you are using with the Workload Manager functions of z/OS.

Note: You cannot set **INDXTYPE** to MSGTOKEN if:

- The queue is a model queue with a definition type of SHAREDYN
- The queue is a temporary dynamic queue
- The queue is a transmission queue
- You specify **QSGDISP**(SHARED)

For queues that are not shared and do not use grouping or message tokens, the index type does not restrict the type of retrieval selection. However, the index is used to expedite **GET** operations on the queue, so choose the type that corresponds to the most common retrieval selection.

If you are altering or replacing an existing local queue, you can change the **INDXTYPE** parameter only in the cases indicated in the following table:

Queue type		NON-SHARED			SHARED	
Queue state		Uncommitted activity	No uncommitted activity, messages present	No uncommitted activity, and empty	Open or messages present	Not open, and empty
Change INDXTYPE from:	To:	Change allowed?				
NONE	MSGID	No	Yes	Yes	No	Yes
NONE	CORRELID	No	Yes	Yes	No	Yes
NONE	MSGTOKEN	No	No	Yes	-	-
NONE	GROUPID	No	No	Yes	No	Yes
MSGID	NONE	No	Yes	Yes	No	Yes
MSGID	CORRELID	No	Yes	Yes	No	Yes
MSGID	MSGTOKEN	No	No	Yes	-	-
MSGID	GROUPID	No	No	Yes	No	Yes
CORRELID	NONE	No	Yes	Yes	No	Yes
CORRELID	MSGID	No	Yes	Yes	No	Yes
CORRELID	MSGTOKEN	No	No	Yes	-	-
CORRELID	GROUPID	No	No	Yes	No	Yes
MSGTOKEN	NONE	No	Yes	Yes	-	-
MSGTOKEN	MSGID	No	Yes	Yes	-	-
MSGTOKEN	CORRELID	No	Yes	Yes	-	-
MSGTOKEN	GROUPID	No	No	Yes	-	-
GROUPID	NONE	No	No	Yes	No	Yes
GROUPID	MSGID	No	No	Yes	No	Yes
GROUPID	CORRELID	No	No	Yes	No	Yes
GROUPID	MSGTOKEN	No	No	Yes	-	-

This parameter is supported only on z/OS. On other platforms, all queues are automatically indexed.

INITQ(*string*)
The local name of the initiation queue on this queue manager, to which trigger messages relating to this queue are written; see Rules for naming IBM WebSphere MQ objects .

This parameter is supported only on local and model queues.

LIKE(*qtype-name*)
The name of a queue, with parameters that are used to model this definition.

If this field is not completed, the values of undefined parameter fields are taken from one of the following definitions. The choice depends on the queue type:

Queue type	Definition
Alias queue	SYSTEM.DEFAULT.ALIAS.QUEUE

Queue type	Definition
Local queue	SYSTEM.DEFAULT.LOCAL.QUEUE
Model queue	SYSTEM.DEFAULT.MODEL.QUEUE
Remote queue	SYSTEM.DEFAULT.REMOTE.QUEUE

For example, not completing this parameter is equivalent to defining the following value of LIKE for an alias queue:

```
LIKE(SYSTEM.DEFAULT.ALIAS.QUEUE)
```

If you require different default definitions for all queues, alter the default queue definitions instead of using the **LIKE** parameter.

On z/OS, the queue manager searches for an object with the name and queue type you specify with a disposition of QMGR, COPY, or SHARED. The disposition of the **LIKE** object is not copied to the object you are defining.

Note:

1. **QSGDISP** (GROUP) objects are not searched.
2. **LIKE** is ignored if **QSGDISP**(COPY) is specified.

MAXDEPTH(*integer*)
The maximum number of messages allowed on the queue.

This parameter is supported only on local and model queues.

On AIX, HP-UX, Linux, Solaris, Windows, and z/OS, specify a value in the range zero through 999999999.

This parameter is valid only on AIX, HP-UX, Linux, Solaris, Windows, and z/OS.

On any other IBM WebSphere MQ platform, specify a value in the range zero through 640000.

Other factors can still cause the queue to be treated as full, for example, if there is no further hard disk space available.

If this value is reduced, any messages that are already on the queue that exceed the new maximum remain intact.

MAXMSGL(*integer*)
The maximum length (in bytes) of messages on this queue.

This parameter is supported only on local and model queues.

On AIX, HP-UX, Linux, Solaris, and Windows, specify a value in the range zero to the maximum message length for the queue manager. See the **MAXMSGL** parameter of the ALTER QMGR command, ALTER QMGR MAXMSGL.

On z/OS, specify a value in the range zero through 100 MB (104 857 600 bytes).

Message length includes the length of user data and the length of headers. For messages put on the transmission queue, there are additional transmission headers. Allow an additional 4000 bytes for all the message headers.

If this value is reduced, any messages that are already on the queue with length that exceeds the new maximum are not affected.

Applications can use this parameter to determine the size of buffer for retrieving messages from the queue. Therefore, the value can be reduced only if it is known that this reduction does not cause an application to operate incorrectly.

Note that by adding the digital signature and key to the message, IBM WebSphere MQ Advanced Message Security increases the length of the message.

MONQ
Controls the collection of online monitoring data for queues.

This parameter is supported only on local and model queues.

QMGR
Collect monitoring data according to the setting of the queue manager parameter **MONQ**.

OFF
Online monitoring data collection is turned off for this queue.

LOW
If the value of the **MONQ** parameter of the queue manager is not NONE, online monitoring data collection is turned on for this queue.

MEDIUM
If the value of the **MONQ** parameter of the queue manager is not NONE, online monitoring data collection is turned on for this queue.

HIGH
If the value of the **MONQ** parameter of the queue manager is not NONE, online monitoring data collection is turned on for this queue.

There is no distinction between the values LOW, MEDIUM, and HIGH. These values all turn data collection on, but do not affect the rate of collection.

When this parameter is used in an ALTER queue command, the change is effective only when the queue is next opened.

MSGDLVSQ
Message delivery sequence.

This parameter is supported only on local and model queues.

PRIORITY
Messages are delivered (in response to MQGET API calls) in first-in-first-out (FIFO) order within priority.

FIFO
Messages are delivered (in response to MQGET API calls) in FIFO order. Priority is ignored for messages on this queue.

The message delivery sequence parameter can be changed from PRIORITY to FIFO while there are messages on the queue. The order of the messages already on the queue is not changed. Messages added to the queue later take the default priority of the queue, and so might be processed before some of the existing messages.

If the message delivery sequence is changed from FIFO to PRIORITY, the messages put on the queue while the queue was set to FIFO take the default priority.

Note: If **INDXTYPE**(GROUPID) is specified with **MSGDLVSQ**(PRIORITY), the priority in which groups are retrieved is based on the priority of the first message within each group. The priorities 0 and 1 are used by the queue manager to optimize the retrieval of messages in logical order. The first message in each group must not use these priorities. If it does, the message is stored as if it was priority two.

NPMCLASS
The level of reliability to be assigned to non-persistent messages that are put to the queue:

NORMAL
Non-persistent messages are lost after a failure, or queue manager shutdown. These messages are discarded on a queue manager restart.

HIGH
The queue manager attempts to retain non-persistent messages on this queue over a queue manager restart or switch over.

You cannot set this parameter on z/OS.

PROCESS(*string*)
The local name of the IBM WebSphere MQ process.

This parameter is supported only on local and model queues.

This parameter is the name of a process instance that identifies the application started by the queue manager when a trigger event occurs; see Rules for naming IBM WebSphere MQ objects .

The process definition is not checked when the local queue is defined, but it must be available for a trigger event to occur.

If the queue is a transmission queue, the process definition contains the name of the channel to be started. This parameter is optional for transmission queues on AIX, HP-UX, IBM i, Linux, Solaris, Windows, and z/OS. If you do not specify it, the channel name is taken from the value specified for the **TRIGDATA** parameter.

PROPCTL
Property control attribute. The attribute is optional. It is applicable to local, alias, and model queues.

PROPCTL options are as follows. The options do not affect message properties in the MQMD or MQMD extension.

ALL

Set ALL so that an application can read all the properties of the message either in MQRFH2 headers, or as properties of the message handle.

The ALL option enables applications that cannot be changed to access all the message properties from MQRFH2 headers. Applications that can be changed, can access all the properties of the message as properties of the message handle.

In some cases, the format of data in MQRFH2 headers in the received message might be different to the format in the message when it was sent.

COMPAT

Set COMPAT so that unmodified applications that expect JMS-related properties to be in an MQRFH2 header in the message data continue to work as before. Applications that can be changed, can access all the properties of the message as properties of the message handle.

If the message contains a property with a prefix of `mcd.`, `jms.`, `usr.`, or `mqext.`, all message properties are delivered to the application. If no message handle is supplied, properties are returned in an MQRFH2 header. If a message handle is supplied, all properties are returned in the message handle.

If the message does not contain a property with one of those prefixes, and the application does not provide a message handle, no message properties are returned to the application. If a message handle is supplied, all properties are returned in the message handle.

In some cases, the format of data in MQRFH2 headers in the received message might be different to the format in the message when it was sent.

FORCE

Force all applications to read message properties from MQRFH2 headers.

Properties are always returned in the message data in an MQRFH2 header regardless of whether the application specifies a message handle.

A valid message handle supplied in the MsgHandle field of the MQGMO structure on the MQGET call is ignored. Properties of the message are not accessible using the message handle.

In some cases, the format of data in MQRFH2 headers in the received message might be different to the format in the message when it was sent.

NONE

If a message handle is supplied, all the properties are returned in the message handle.

All message properties are removed from the message body before it is delivered to the application.

V6COMPAT

Set V6COMPAT so that applications that expect to receive the same MQRFH2 created by a sending application, can receive it as it was sent. The data in the MQRFH2 header is subject to character set conversion and numeric encoding changes. If the application sets properties using MQSETMP, the properties are not added to the MQRFH2 header created by the application. The properties are accessible only by using the MQINQMP call. The properties are transmitted in an extra MQRFH2 that is visible to channel exits, but not to MQI programs. If properties are inserted in the MQRFH2 header by the sending application, they are only accessible to the receiving application in the MQRFH2 header. You cannot query properties set this way by calling MQINQMP. This behavior of properties and application created MQRFH2 headers occurs only when V6COMPAT is set.

The receiving application can override the setting of V6COMPAT, by setting an MQGMO_PROPERTIES option, such as MQGMO_PROPERTIES_IN_HANDLE. The default setting of MQGMO_PROPERTIES is MQGMO_PROPERTIES_AS_Q_DEF, which leaves the property setting as defined by the **PROPCTL** setting on the resolved receiving queue.

Note: If the **PSPROP** subscription attribute is set to RFH2, the queue manager might add publish/subscribe properties to the psc folder in the application-created MQRFH2 header. Otherwise, the queue manager does not modify the application-created MQRFH2 header.

Special rules apply to setting V6COMPAT:

1. You must set V6COMPAT on both of the queues accessed by MQPUT and MQGET.
   - You might find the effect of V6COMPAT does not require setting V6COMPAT on the queue that MQPUT writes to. The reason is that in many cases MQPUT does not reorganize the contents of an MQRFH2. Setting V6COMPAT has no apparent effect.
   - V6COMPAT appears to take effect only when it is set on the queue that is accessed by the application receiving the message.

   Despite these appearances, it is important you set V6COMPAT for both the sender and receiver of a message. In some circumstances, V6COMPAT works only if it is set at both ends of the transfer.
2. If you set V6COMPAT on either an alias queue or a local queue, the result is the same.

   For example, an alias queue, QA1, has a target queue Q1. An application opens QA1. Whichever of the pairs of definitions in Figure 1 on page 288 are set, the result is the same. A message is placed on Q1, with the MQRFH2 created by the application preserved exactly as it was when it was passed to the queue manager.

   ```
   DEFINE QLOCAL(Q1)  PROPCTL(V6COMPAT)
   DEFINE QALIAS(QA1) TARGET(Q1)
   ```

   ```
   DEFINE QLOCAL(Q1)
   DEFINE QALIAS(QA1) TARGET(Q1) PROPCTL(V6COMPAT)
   ```

   Figure 1. Equivalent definitions of V6COMPAT
3. You can set V6COMPAT on the transmission queue, or a queue that resolves to a transmission queue. The result is to transmit any MQRFH2 in a message exactly as it was created by an application. You cannot set V6COMPAT on a QREMOTE definition.

   No other **PROPCTL** queue options behave this way. To control the way message properties are transmitted to a queue manager running IBM WebSphere MQ Version 6.0 or earlier, set the **PROPCTL** channel attribute.
4. For publish/subscribe, V6COMPAT must be set on a queue that resolves to the destination for a publication.

- For unmanaged publish/subscribe, set V6COMPAT on a queue that is in the name resolution path for the queue passed to MQSUB. If a subscription is created administratively, set V6COMPAT on a queue that is in the name resolution path for the destination set for the subscription.
- For managed publish/subscribe, set V6COMPAT on the model managed durable and managed non-durable queues for subscription topics. The default model managed queues are SYSTEM.MANAGED.DURABLE and SYSTEM.MANAGED.NDURABLE. By using different model queues for different topics, some publications are received with their original MQRFH2, and others with message property control set by other values of **PROPCTL**.
- For queued publish/subscribe, you must identify the queues used by the publishing and subscribing applications. Set V6COMPAT on those queues, as if the publisher and subscriber are using point to point messaging.

The effect of setting V6COMPAT on a message sent to another queue manager is as follows:

To a Version 7.1 queue manager

If a message contains internally set message properties, or message properties set by MQSETMP, the local queue manager adds an MQRFH2. The additional MQRFH2 is placed before any application created MQRFH2 headers. The local queue manager passes the modified message to the channel.

The new MQRFH2 header is flagged MQRFH_INTERNAL (X'8000000') in the MQRFH2 Flags field; see Flags (MQLONG) .

The channel message, and send and receive exits, are passed the entire message including the additional MQRFH2.

The action of the remote channel depends on whether V6COMPAT is set for the target queue. If it is set, then the internally set properties in the initial MQRFH2 are available to an application in the message handle. The application created MQRFH2 is received unchanged, except for character conversion and numeric encoding transformations.

To a Version 7.0.1 queue manager
Internally set properties are discarded. The MQRFH2 header is transferred unmodified.

To a Version 6.0 or earlier queue manager
Internally set properties are discarded. The MQRFH2 header is transferred unmodified. **PROPCTL** channel options are applied after internally set properties are discarded.

PUT
Specifies whether messages can be put on the queue.

ENABLED
Messages can be added to the queue (by suitably authorized applications).

DISABLED
Messages cannot be added to the queue.

This parameter can also be changed using the MQSET API call.

QDEPTHHI(*integer*)
The threshold against which the queue depth is compared to generate a Queue Depth High event.

This parameter is supported only on local and model queues.

This event indicates that an application put a message on a queue resulting in the number of messages on the queue becoming greater than or equal to the queue depth high threshold. See the **QDPHIEV** parameter.

The value is expressed as a percentage of the maximum queue depth (**MAXDEPTH** parameter), and must be in the range zero through 100 and no less than **QDEPTHLO**.

QDEPTHLO(*integer*)
The threshold against which the queue depth is compared to generate a Queue Depth Low event.

This parameter is supported only on local and model queues.

This event indicates that an application retrieved a message from a queue resulting in the number of messages on the queue becoming less than or equal to the queue depth low threshold. See the **QDPLOEV** parameter.

The value is expressed as a percentage of the maximum queue depth (**MAXDEPTH** parameter), and must be in the range zero through 100 and no greater than **QDEPTHHI**.

QDPHIEV
Controls whether Queue Depth High events are generated.

This parameter is supported only on local and model queues.

A Queue Depth High event indicates that an application put a message on a queue resulting in the number of messages on the queue becoming greater than or equal to the queue depth high threshold. See the **QDEPTHHI** parameter.

Note: The value of this parameter can change implicitly, and shared queues on z/OS affect the event. See the description of the Queue Depth High event in Queue Depth High.

ENABLED
Queue Depth High events are generated

DISABLED
Queue Depth High events are not generated

QDPLOEV
Controls whether Queue Depth Low events are generated.

This parameter is supported only on local and model queues.

A Queue Depth Low event indicates that an application retrieved a message from a queue resulting in the number of messages on the queue becoming less than or equal to the queue depth low threshold. See the **QDEPTHLO** parameter.

Note: The value of this parameter can change implicitly. For more information about this event, and the effect that shared queues on z/OS have on this event, see Queue Depth Low .

ENABLED
Queue Depth Low events are generated

DISABLED
Queue Depth Low events are not generated

QDPMAXEV
Controls whether Queue Full events are generated.

This parameter is supported only on local and model queues.

A Queue Full event indicates that a put to a queue was rejected because the queue is full. The queue depth reached its maximum value.

Note: The value of this parameter can change implicitly. For more information about this event, and the effect that shared queues on z/OS have on this event, see Queue Full.

ENABLED
Queue Full events are generated

DISABLED
Queue Full events are not generated

QSGDISP
This parameter applies to z/OS only.

Specifies the disposition of the object within the group.

Action of ALTER depending on different values of **QSGDISP**.	
QSGDISP	**ALTER**
COPY	The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameters **QSGDISP**(COPY). Any object residing in the shared repository, or any object defined using a command that had the parameters **QSGDISP**(QMGR), is not affected by this command.

GROUP	The object definition resides in the shared repository. The object was defined using a command that had the parameters **QSGDISP**(GROUP). Any object residing on the page set of the queue manager that executes the command (except a local copy of the object), or any object defined using a command that had the parameters **QSGDISP**(SHARED), is not affected by this command. If the command is successful, the following command is generated and sent to all active queue managers in the queue-sharing group to attempt to refresh local copies on page set zero:
	`DEFINE QUEUE(QNAME)`
	`REPLACE QSGDISP(COPY)`
	The ALTER for the group object takes effect regardless of whether the generated command with **QSGDISP**(COPY) fails.

PRIVATE	The object resides on the page set of the queue manager that executes the command, and was defined with **QSGDISP**(QMGR) or **QSGDISP**(COPY). Any object residing in the shared repository is unaffected.
QMGR	The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameters **QSGDISP**(QMGR). Any object residing in the shared repository, or any local copy of such an object, is not affected by this command.
SHARED	This value applies only to local queues. The object definition resides in the shared repository. The object was defined using a command that had the parameters **QSGDISP**(SHARED). Any object residing on the page set of the queue manager that executes the command, or any object defined using a command that had the parameters **QSGDISP**(GROUP), is not affected by this command. If the queue is clustered, a command is generated and sent to all active queue managers in the queue-sharing group to notify them of this clustered, shared queue.

QSVCIEV
Controls whether Service Interval High or Service Interval OK events are generated.

This parameter is supported only on local and model queues and is ineffective if it is specified on a shared queue.

A Service Interval High event is generated when a check indicates that no messages were retrieved from the queue for at least the time indicated by the **QSVCINT** parameter.

A Service Interval OK event is generated when a check indicates that messages were retrieved from the queue within the time indicated by the **QSVCINT** parameter.

Note: The value of this parameter can change implicitly. For more information, see the description of the Service Interval High and Service Interval OK events in Queue Service Interval High and Queue Service Interval OK.

HIGH
Service Interval High events are generated

OK
Service Interval OK events are generated

NONE
No service interval events are generated

QSVCINT(*integer*)
The service interval used for comparison to generate Service Interval High and Service Interval OK events.

This parameter is supported only on local and model queues and is ineffective if it is specified on a shared queue.

See the **QSVCIEV** parameter.

The value is in units of milliseconds, and must be in the range zero through 999999999.

RETINTVL(*integer*)
The number of hours from when the queue was defined, after which the queue is no longer needed. The value must be in the range 0 - 999,999,999.

This parameter is supported only on local and model queues.

The CRDATE and CRTIME can be displayed using the **DISPLAY QUEUE** command.

This information is available for use by an operator or a housekeeping application to delete queues that are no longer required.

Note: The queue manager does not delete queues based on this value, nor does it prevent queues from being deleted if their retention interval is not expired. It is the responsibility of the user to take any required action.

RNAME(*string*)
Name of remote queue. This parameter is the local name of the queue as defined on the queue manager specified by **RQMNAME**.

This parameter is supported only on remote queues.

- If this definition is used for a local definition of a remote queue, **RNAME** must not be blank when the open occurs.
- If this definition is used for a queue manager alias definition, **RNAME** must be blank when the open occurs.

  In a queue manager cluster, this definition applies only to the queue manager that made it. To advertise the alias to the whole cluster, add the **CLUSTER** attribute to the remote queue definition.
- If this definition is used for a reply-to queue alias, this name is the name of the queue that is to be the reply-to queue.

The name is not checked to ensure that it contains only those characters normally allowed for queue names; see Rules for naming IBM WebSphere MQ objects .

RQMNAME(*string*)
The name of the remote queue manager on which the queue **RNAME** is defined.

This parameter is supported only on remote queues.

- If an application opens the local definition of a remote queue, **RQMNAME** must not be blank or the name of the local queue manager. When the open occurs, if **XMITQ** is blank there must be a local queue of this name, which is to be used as the transmission queue.
- If this definition is used for a queue manager alias, **RQMNAME** is the name of the queue manager that is being aliased. It can be the name of the local queue manager. Otherwise, if **XMITQ** is blank, when the open occurs there must be a local queue of this name, which is to be used as the transmission queue.
- If **RQMNAME** is used for a reply-to queue alias, **RQMNAME** is the name of the queue manager that is to be the reply-to queue manager.

The name is not checked to ensure that it contains only those characters normally allowed for IBM WebSphere MQ object names; see Rules for naming IBM WebSphere MQ objects.

SCOPE
Specifies the scope of the queue definition.

This parameter is supported only on alias, local, and remote queues.

QMGR
The queue definition has queue manager scope. This means that the definition of the queue does not extend beyond the queue manager that owns it. You can open a queue for output that is owned by another queue manager in either of two ways:

1. Specify the name of the owning queue manager.
2. Open a local definition of the queue on the other queue manager.

CELL
The queue definition has cell scope. Cell scope means that the queue is known to all the queue managers in the cell. A queue with cell scope can be opened for output merely by specifying the name of the queue. The name of the queue manager that owns the queue need not be specified.

If there is already a queue with the same name in the cell directory, the command fails. The **REPLACE** option does not affect this situation.

This value is valid only if a name service supporting a cell directory is configured.

Restriction: The DCE name service is no longer supported.

This parameter is valid only on UNIX and Linux systems, and Windows.

SHARE and NOSHARE
Specifies whether multiple applications can get messages from this queue.

This parameter is supported only on local and model queues.

SHARE
More than one application instance can get messages from the queue.

NOSHARE
Only a single application instance can get messages from the queue.

STATQ
Specifies whether statistics data collection is enabled:

QMGR
Statistics data collection is based on the setting of the **STATQ** parameter of the queue manager.

ON
If the value of the **STATQ** parameter of the queue manager is not NONE, statistics data collection for the queue is enabled.

OFF
Statistics data collection for the queue is disabled.

If this parameter is used in an **ALTER** queue command, the change is effective only for connections to the queue manager made after the change to the parameter.

This parameter is valid only on IBM i, UNIX and Linux systems, and Windows.

STGCLASS(*string*)
The name of the storage class.

This parameter is supported only on local and model queues.

This parameter is an installation-defined name.

This parameter is valid on z/OS only.

The first character of the name must be uppercase A through Z, and subsequent characters either uppercase A through Z or numeric 0 through 9.

Note: You can change this parameter only if the queue is empty and closed.

If you specify **QSGDISP**(SHARED) or **DEFTYPE**(SHAREDYN), this parameter is ignored.

TARGET(*string*)
The name of the queue or topic object being aliased; See Rules for naming IBM WebSphere MQ objects . The object can be a queue or a topic as defined by **TARGTYPE**. The maximum length is 48 characters.

This parameter is supported only on alias queues.

This object needs to be defined only when an application process opens the alias queue.

The TARGQ parameter, defined in IBM WebSphere MQ Version 6.0, is renamed to TARGET from version 7.0 and generalized to allow you to specify the name of either a queue or a topic. The default value for TARGET is a queue, therefore `TARGET(my_queue_name)` is the same as `TARGQ(my_queue_name)`. The TARGQ attribute is retained for compatibility with your existing programs. If you specify **TARGET**, you cannot also specify **TARGQ**.

TARGTYPE(*string*)
The type of object to which the alias resolves.

QUEUE
The alias resolves to a queue.

TOPIC
The alias resolves to a topic.

TRIGDATA(*string*)
The data that is inserted in the trigger message. The maximum length of the string is 64 bytes.

This parameter is supported only on local and model queues.

For a transmission queue on AIX, HP-UX, IBM i, Linux, Solaris, Windows, and z/OS, you can use this parameter to specify the name of the channel to be started.

This parameter can also be changed using the MQSET API call.

TRIGDPTH(*integer*)
The number of messages that have to be on the queue before a trigger message is written, if **TRIGTYPE** is DEPTH. The value must be in the range 1 - 999,999,999.

This parameter is supported only on local and model queues.

This parameter can also be changed using the MQSET API call.

TRIGGER &NOTRIGGER
Specifies whether trigger messages are written to the initiation queue, named by the **INITQ** parameter, to trigger the application, named by the **PROCESS** parameter:

TRIGGER
Triggering is active, and trigger messages are written to the initiation queue.

NOTRIGGER
Triggering is not active, and trigger messages are not written to the initiation queue.

This parameter is supported only on local and model queues.

This parameter can also be changed using the MQSET API call.

TRIGMPRI(*integer*)
The message priority number that triggers this queue. The value must be in the range zero through to the **MAXPRTY** queue manager parameter; see “DISPLAY QMGR” on page 561 for details.

This parameter can also be changed using the MQSET API call.

TRIGTYPE
Specifies whether and under what conditions a trigger message is written to the initiation queue. The initiation queue is (named by the **INITQ** parameter.

This parameter is supported only on local and model queues.

FIRST
Whenever the first message of priority equal to or greater than the priority specified by the **TRIGMPRI** parameter of the queue arrives on the queue.

EVERY
Every time a message arrives on the queue with priority equal to or greater than the priority specified by the **TRIGMPRI** parameter of the queue.

DEPTH
When the number of messages with priority equal to or greater than the priority specified by **TRIGMPRI** is equal to the number indicated by the **TRIGDPTH** parameter.

NONE
No trigger messages are written.

This parameter can also be changed using the MQSET API call.

USAGE
Queue usage.

This parameter is supported only on local and model queues.

NORMAL
The queue is not a transmission queue.

XMITQ
The queue is a transmission queue, which is used to hold messages that are destined for a remote queue manager. When an application puts a message to a remote queue, the message is stored on the appropriate transmission queue. It stays there, awaiting transmission to the remote queue manager.

If you specify this option, do not specify values for **CLUSTER** and **CLUSNL** and do not specify **INDXTYPE**(MSGTOKEN) or **INDXTYPE**(GROUPID).

XMITQ(*string*)
The name of the transmission queue to be used for forwarding messages to the remote queue. **XMITQ** is used with either remote queue or queue manager alias definitions.

This parameter is supported only on remote queues.

If **XMITQ** is blank, a queue with the same name as **RQMNAME** is used as the transmission queue.

This parameter is ignored if the definition is being used as a queue manager alias and **RQMNAME** is the name of the local queue manager.

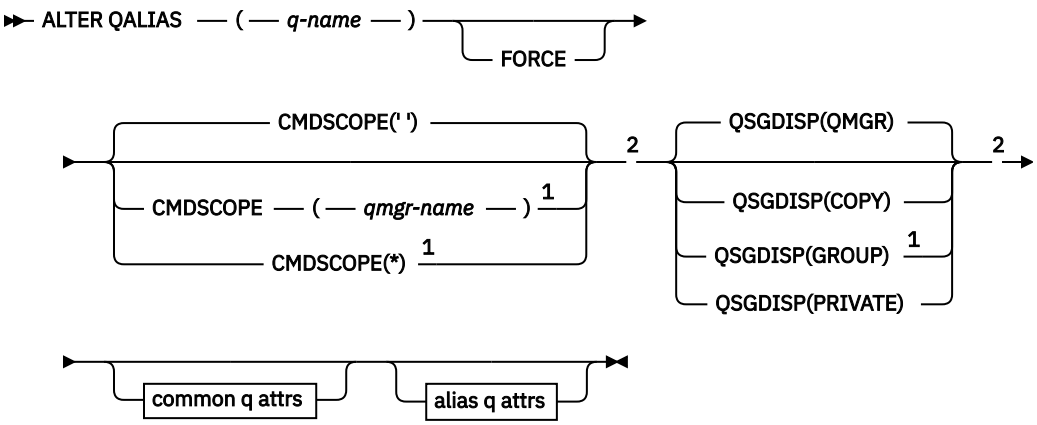
It is also ignored if the definition is used as a reply-to queue alias definition.

ALTER QALIAS

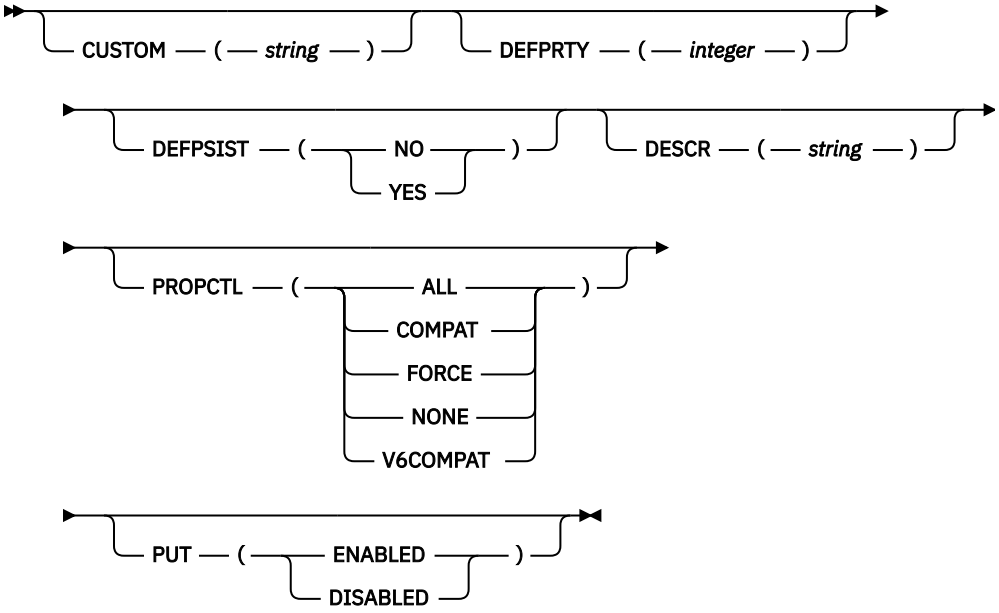
Use the MQSC command ALTER QALIAS to alter the parameters of an alias queue.

Synonym: ALT QA

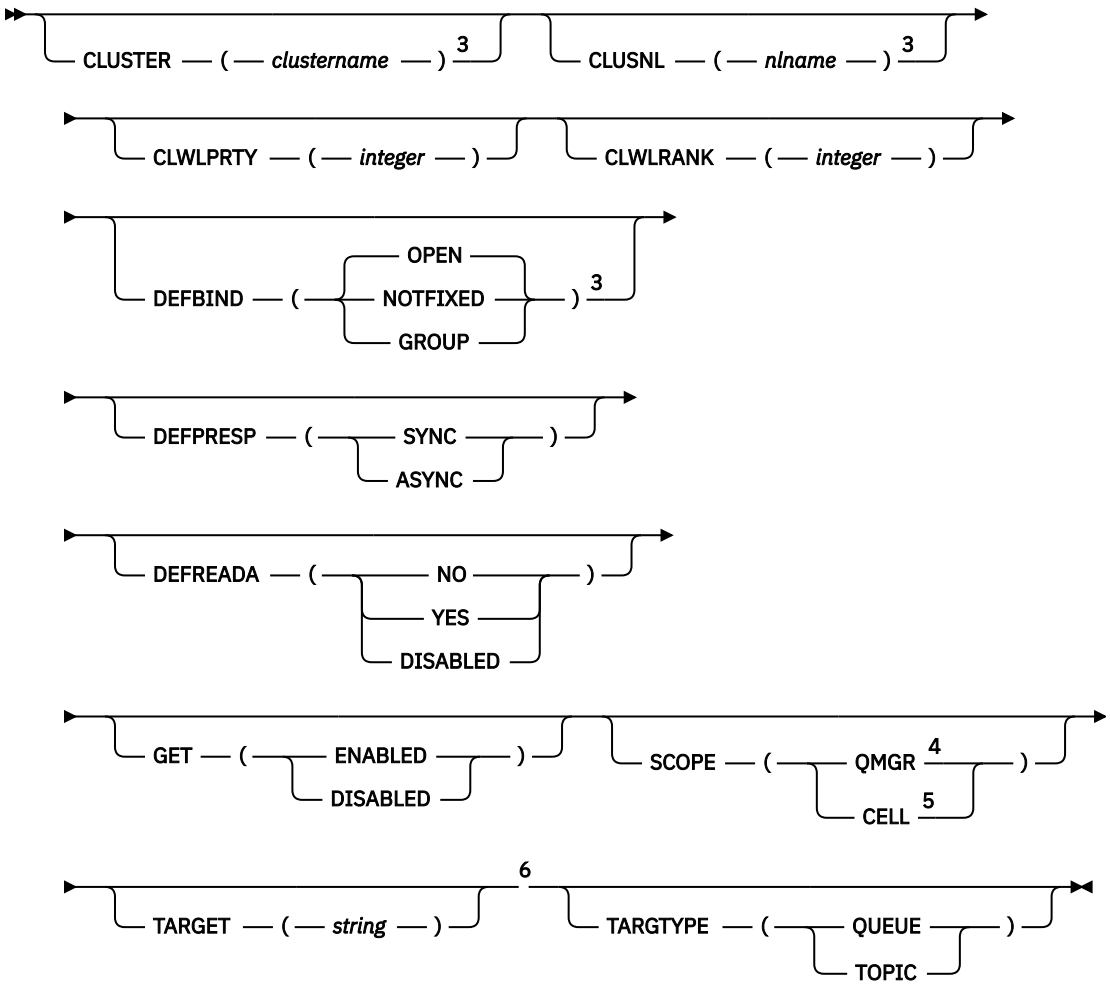
ALTER QALIAS



Common q attrs



Alias q attrs



Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[2] Valid only on z/OS.
[3] Valid only on AIX, HP-UX, z/OS, IBM i, Solaris, and Windows.
[4] Valid only on IBM i, Windows, UNIX, and Linux systems.
[5] Valid only on Windows, UNIX, and Linux systems.
[6] The TARGQ parameter, defined in IBM WebSphere MQ Version 6.0, is renamed to TARGET from Version 7.0 and generalized to allow you to specify the name of either a queue or a topic. The default value for TARGET is a queue, therefore TARGET(my_queue_name) is the same as TARGQ(my_queue_name).

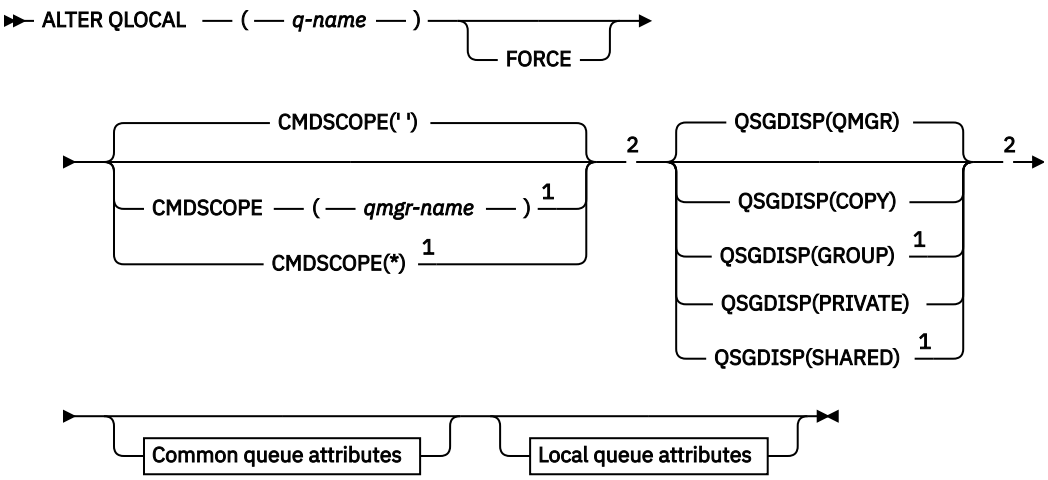
The parameters are described in "ALTER queues" on page 273.

ALTER QLOCAL

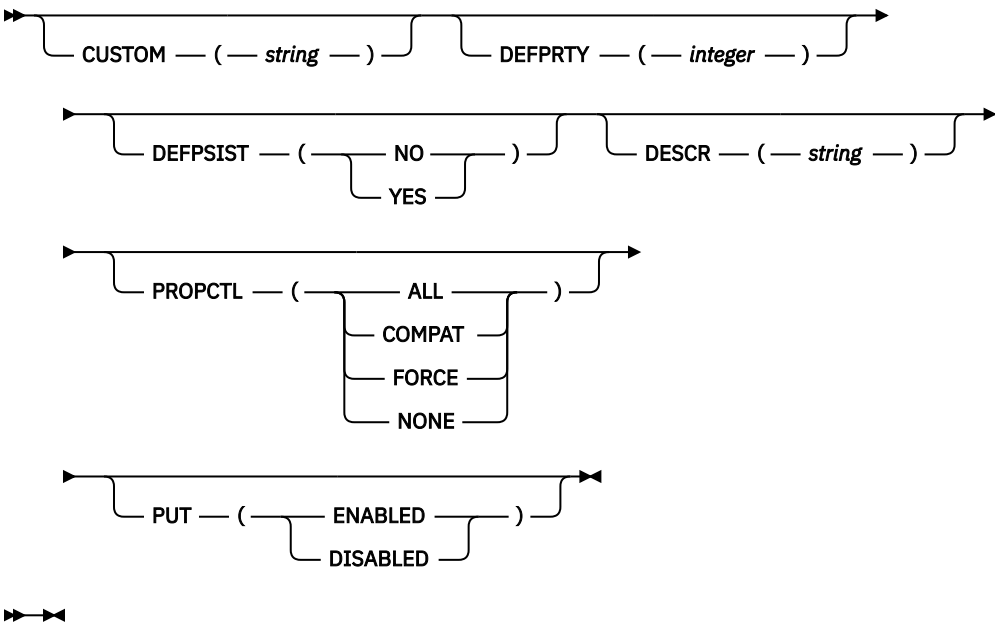
Use the MQSC command **ALTER QLOCAL** to alter the parameters of a local queue.

Synonym: ALT QL

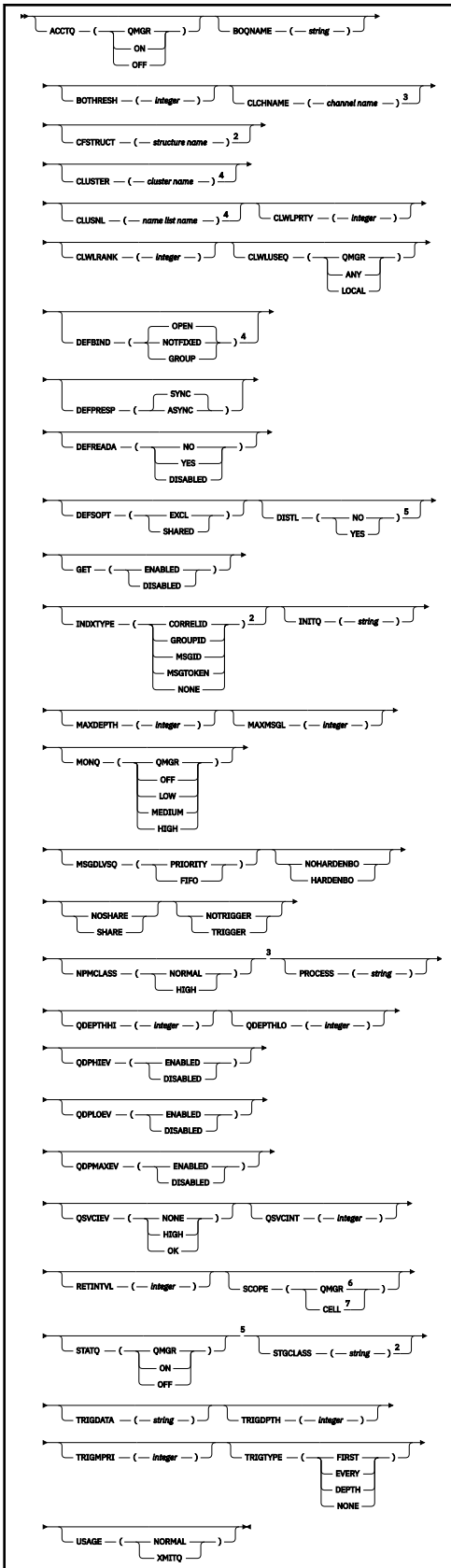
ALTER QLOCAL



Common queue attributes



Local queue attributes



Notes:

1 Valid only on z/OS when the queue manager is a member of a queue-sharing group.

2 Valid only on z/OS.

[3] Not valid on z/OS.
[4] Valid on IBM i, UNIX, Linux,Windows, and z/OS systems.
[5] Valid on IBM i, UNIX, Linux, and Windows systems.
[6] Valid on IBM i, UNIX, Linux, and Windows systems.
[7] Valid on UNIX, Linux, and Windows systems.

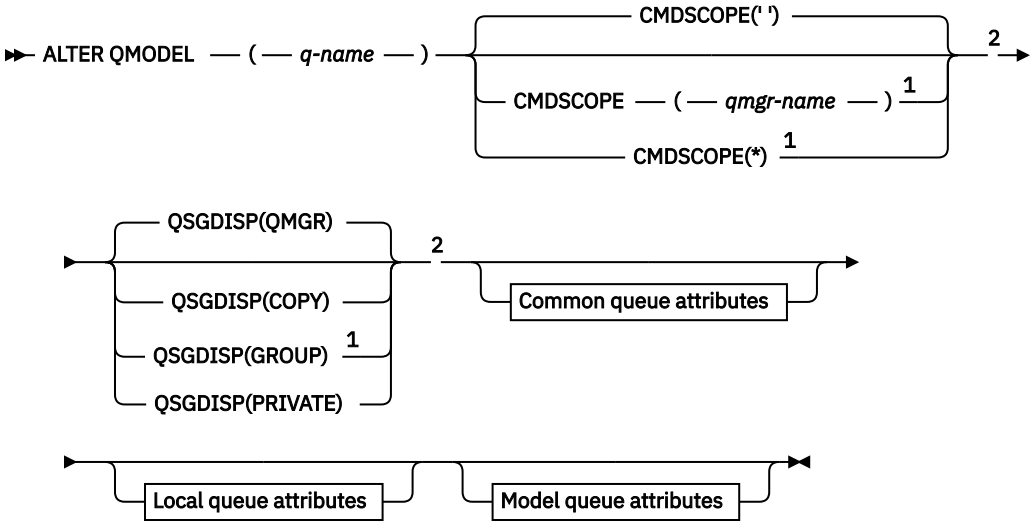
The parameters are described in "ALTER queues" on page 273.

ALTER QMODEL

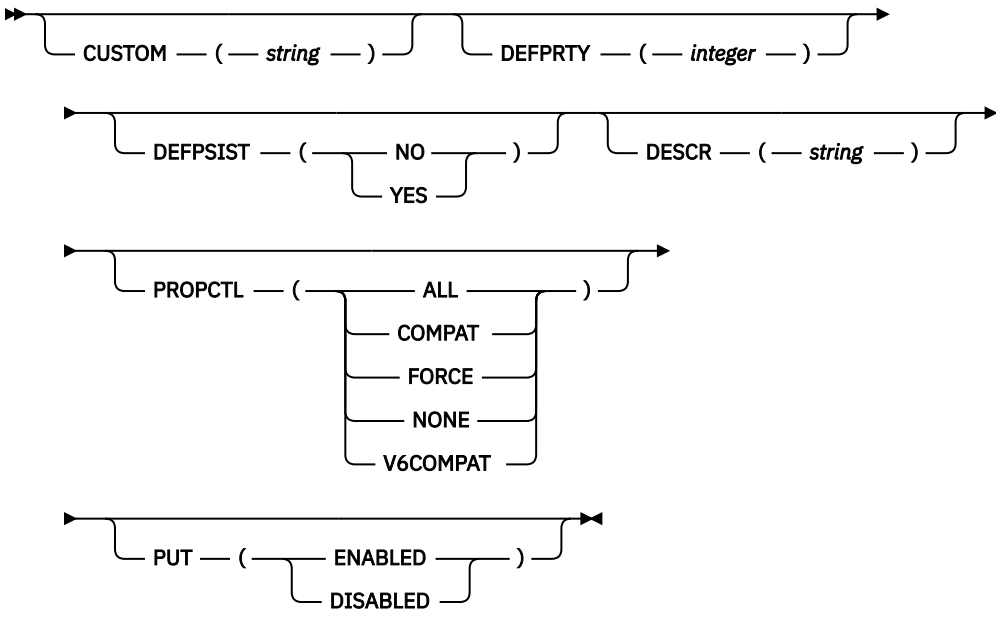
Use the MQSC command ALTER QMODEL to alter the parameters of a model queue.

Synonym: ALT QM

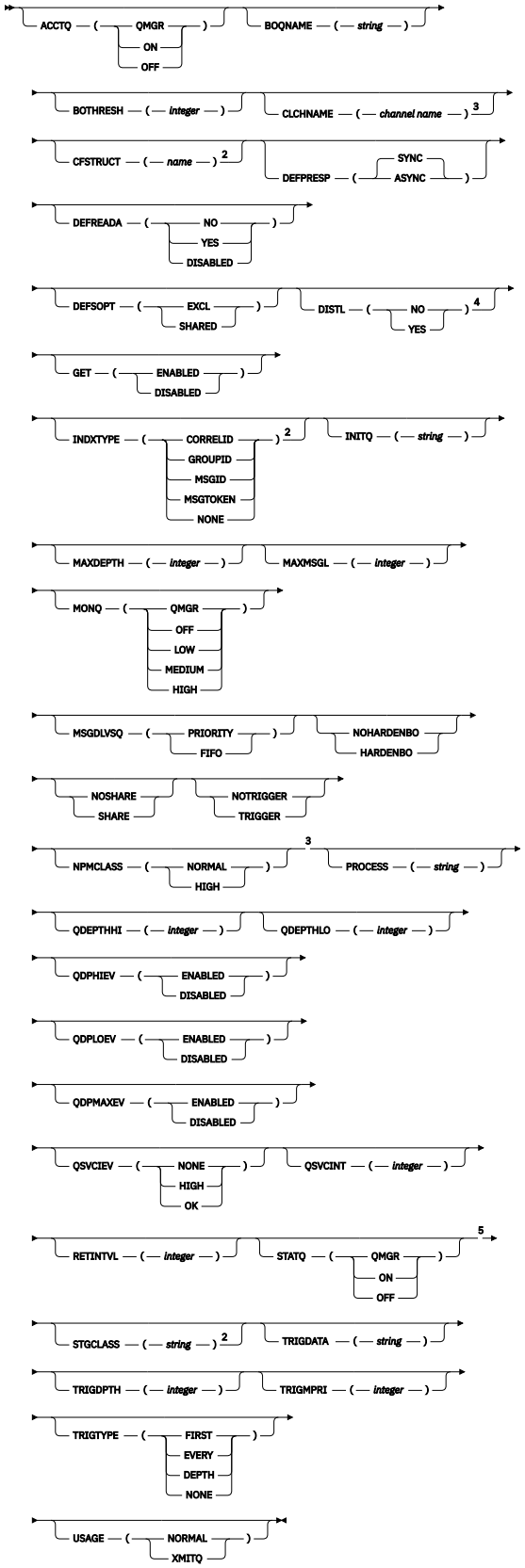
ALTER QMODEL



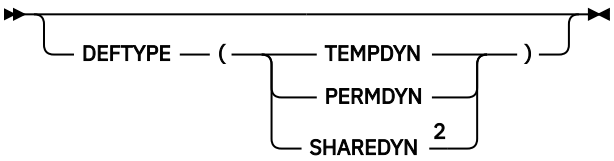
Common queue attributes



Local queue attributes



Model queue attributes



Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[2] Valid only on z/OS.
[3] Not valid on z/OS.
[4] Valid only on AIX, HP-UX, IBM i, Solaris, and Windows.
[5] Valid only on IBM i, UNIX systems, and Windows.

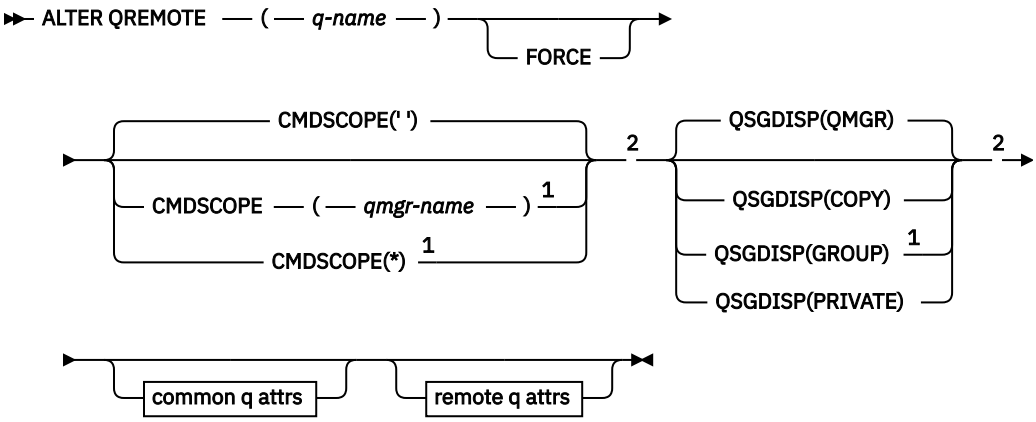
The parameters are described in "ALTER queues" on page 273.

ALTER QREMOTE

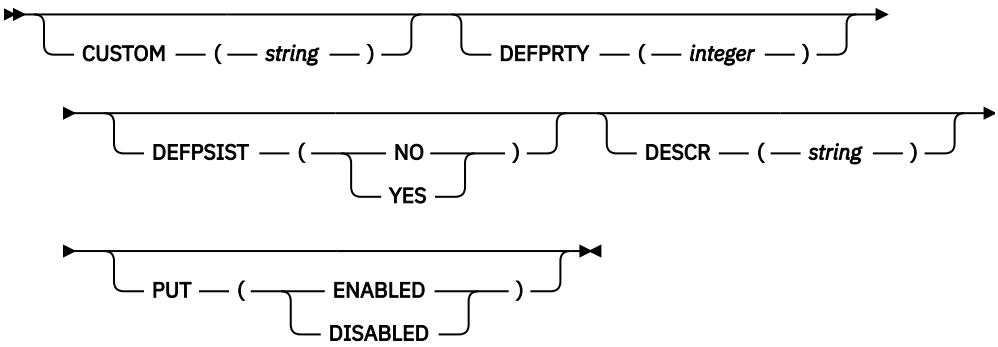
Use the MQSC command ALTER QREMOTE to alter the parameters of a local definition of a remote queue, a queue-manager alias, or a reply-to queue alias.

Synonym: ALT QR

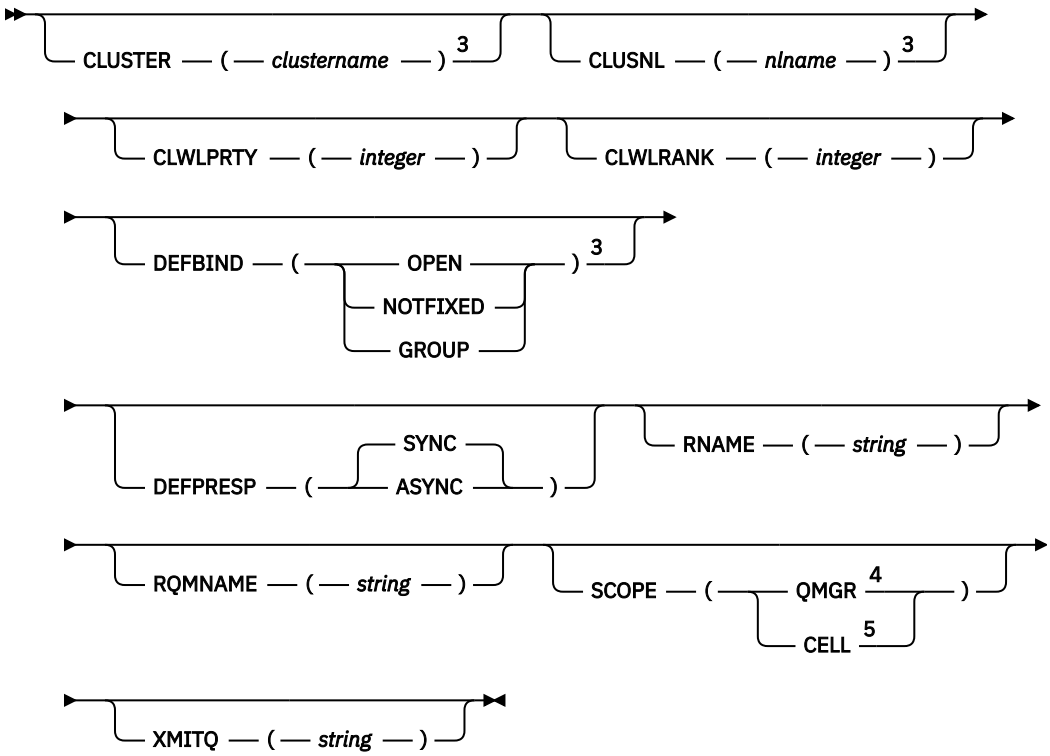
ALTER QREMOTE



Common q attrs



Remote q attrs



Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[2] Valid only on z/OS.
[3] Valid only on AIX, HP-UX, z/OS, IBM i, Solaris, and Windows.
[4] Valid only on IBM i, Windows, UNIX, and Linuxsystems.
[5] Valid only on Windows, UNIX, and Linuxsystems.

The parameters are described in "ALTER queues" on page 273.

ALTER SERVICE

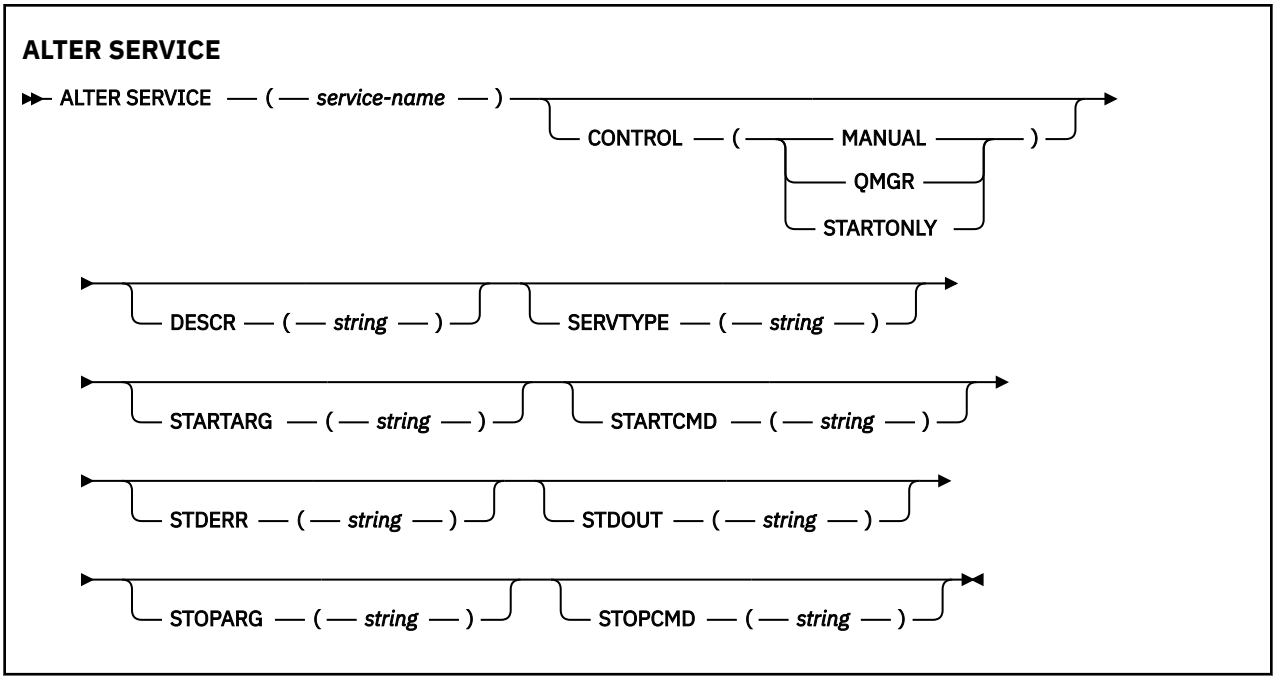
Use the MQSC command ALTER SERVICE to alter the parameters of an existing WebSphere MQ service definition.

UNIX and Linux	Windows
✓	✓

Parameters not specified in the ALTER SERVICE command result in the existing values for those parameters being left unchanged.

- Syntax diagram
- "Parameter descriptions for ALTER SERVICE" on page 304

Synonym:



Parameter descriptions for ALTER SERVICE

The parameter descriptions apply to the ALTER SERVICE and DEFINE SERVICE commands, with the following exceptions:

- The **LIKE** parameter applies only to the DEFINE SERVICE command.
- The **NOREPLACE** and **REPLACE** parameter applies only to the DEFINE SERVICE command.

(service-name)
Name of the WebSphere MQ service definition (see Rules for naming IBM WebSphere MQ objects).

The name must not be the same as any other service definition currently defined on this queue manager (unless REPLACE is specified).

CONTROL(*string*)
Specifies how the service is to be started and stopped:

MANUAL
The service is not to be started automatically or stopped automatically. It is to be controlled by use of the START SERVICE and STOP SERVICE commands.

QMGR
The service being defined is to be started and stopped at the same time as the queue manager is started and stopped.

STARTONLY
The service is to be started at the same time as the queue manager is started, but is not requested to stop when the queue manager is stopped.

DESCR(*string*)
Plain-text comment. It provides descriptive information about the service when an operator issues the DISPLAY SERVICE command (see “DISPLAY SERVICE” on page 606).

It must contain only displayable characters. The maximum length is 64 characters. In a DBCS installation, it can contain DBCS characters (subject to a maximum length of 64 bytes).

Note: If characters are used that are not in the coded character set identifier (CCSID) for this queue manager, they might be translated incorrectly if the information is sent to another queue manager.

LIKE(*service-name*)
The name of a service the parameters of which are used to model this definition.

This parameter applies only to the DEFINE SERVICE command.

If this field is not completed, and you do not complete the parameter fields related to the command, the values are taken from the default definition for services on this queue manager. Not completing this parameter is equivalent to specifying:

```
LIKE(SYSTEM.DEFAULT.SERVICE)
```

A default service is provided but it can be altered by the installation of the default values required. See Rules for naming IBM WebSphere MQ objects .

REPLACE and NOREPLACE
Whether the existing definition is to be replaced with this one.

This parameter applies only to the DEFINE SERVICE command.

REPLACE
The definition must replace any existing definition of the same name. If a definition does not exist, one is created.

NOREPLACE
The definition should not replace any existing definition of the same name.

SERVTYPE
Specifies the mode in which the service is to run:

COMMAND
A command service object. Multiple instances of a command service object can be executed concurrently. You cannot monitor the status of command service objects.

SERVER
A server service object. Only one instance of a server service object can be executed at a time. The status of server service objects can be monitored using the DISPLAY SVSTATUS command.

STARTARG(*string*)
Specifies the arguments to be passed to the user program at queue manager startup.

STARTCMD(*string*)
Specifies the name of the program which is to run. You must specify a fully qualified path name to the executable program.

STDERR(*string*)
Specifies the path to a file to which the standard error (stderr) of the service program is redirected. If the file does not exist when the service program is started, the file is created. If this value is blank then any data written to stderr by the service program is discarded.

STDOUT(*string*)
Specifies the path to a file to which the standard output (stdout) of the service program is redirected. If the file does not exist when the service program is started, the file is created. If this value is blank then any data written to stdout by the service program is discarded.

STOPARG(*string*)
Specifies the arguments to be passed to the stop program when instructed to stop the service.

STOPCMD(*string*)
Specifies the name of the executable program to run when the service is requested to stop. You must specify a fully qualified path name to the executable program.

Replaceable inserts can be used for any of the STARTCMD, STARTARG, STOPCMD, STOPARG, STDOUT or STDERR strings, for more information, see Replaceable inserts on service definitions.

Related information
Working with services

ALTER SUB

Use the MQSC command ALTER SUB to alter the characteristics of an existing subscription.

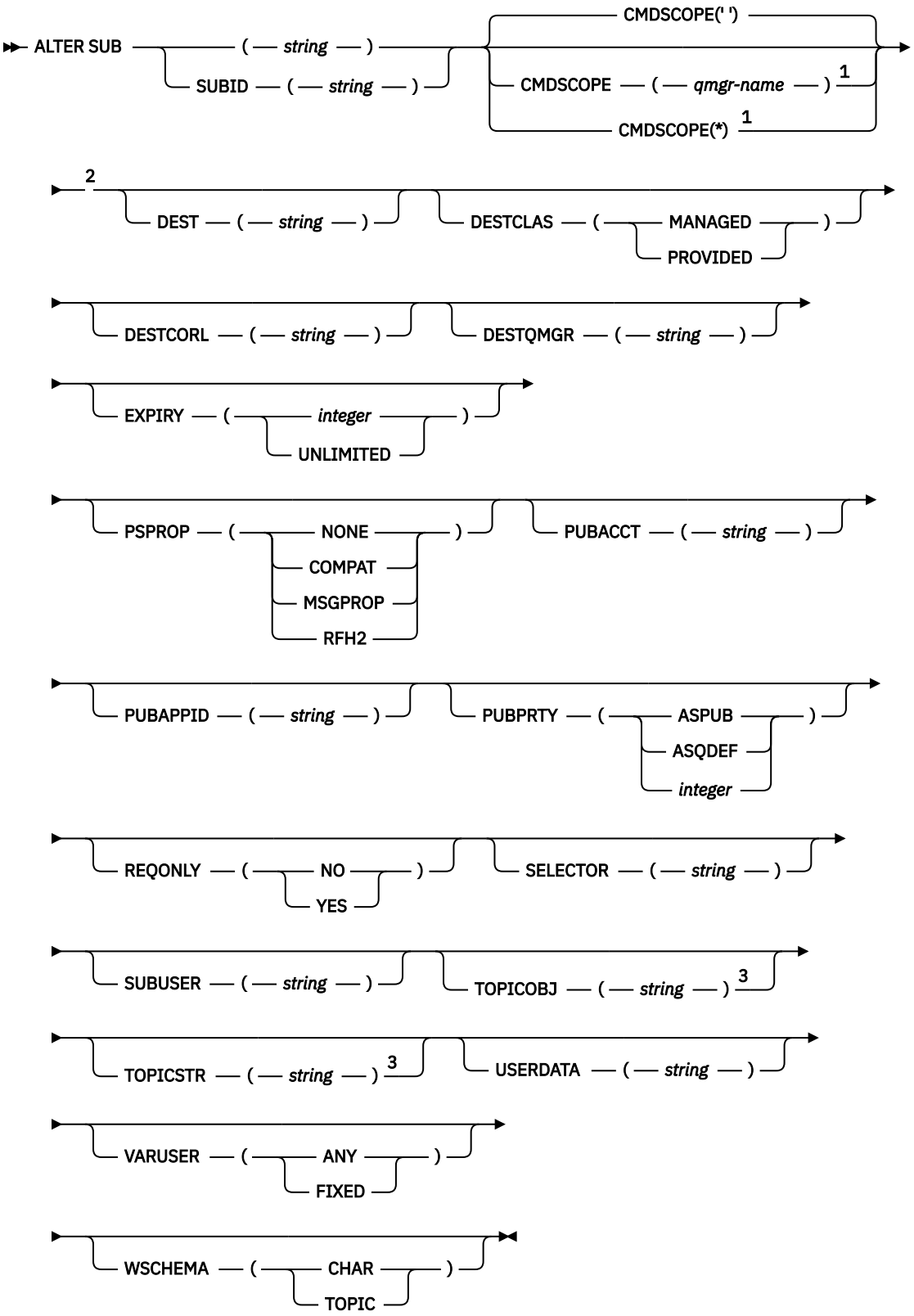
UNIX and Linux	Windows
✓	✓

Parameters not specified in the ALTER SUB command result in the existing values for those parameters being left unchanged.

- Syntax diagram
- “Usage notes for ALTER SUB” on page 308
- “Parameter descriptions for ALTER SUB” on page 308

Synonym: ALT SUB

ALTER SUB



Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[2] Valid only on z/OS.

[3] At least one of **TOPICSTR** and **TOPICOBJ** must be present on **DEFINE**.

Usage notes for ALTER SUB

1. The following are valid forms of the command:

```
ALT SUB(xyz)
ALT SUB SUBID(123)
ALT SUB(xyz) SUBID(123)
```

2. Although permitted on the command, you cannot alter the following fields using DEF SUB (REPLACE) or ALTER SUB:
   - TOPICOBJ
   - TOPICSTR
   - WSCHEMA
   - SELECTOR
   - SUBSCOPE
   - DESTCLAS
3. At the time the ALT SUB command processes, no check is performed that the named DEST or DESTQMGR exists. These names are used at publishing time as the *ObjectName* and *ObjectQMgrName* for an MQOPEN call. These names are resolved according to the WebSphere MQ name resolution rules.

Parameter descriptions for ALTER SUB

(string)
A mandatory parameter. Specifies the unique name for this subscription, see **SUBNAME** property.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is processed when the queue manager is a member of a queue-sharing group.

' '
The command is processed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is processed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is processed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of setting this value is the same as entering the command on every queue manager in the queue-sharing group.

You cannot use CMDSCOPE as a filter keyword.

DEST(*string*)
The destination for messages published to this subscription; this parameter is the name of a queue.

DESTCORL(*string*)
The *CorrelId* used for messages published to this subscription.

DESTQMGR(*string*)
The destination queue manager for messages published to this subscription. You must define the channels to the remote queue manager, for example, the XMITQ, and a sender channel. If you do not, messages do not arrive at the destination.

EXPIRY
The time to expiry of the subscription object from the creation date and time.

(*integer*)
The time to expiry, in tenths of a second, from the creation date and time.

UNLIMITED
There is no expiry time. This is the default option supplied with the product.

PSPROP
The manner in which publish subscribe related message properties are added to messages sent to this subscription.

NONE
Do not add publish subscribe properties to the message.

COMPAT
Publish subscribe properties are added within an MQRFH version 1 header unless the message was published in PCF format.

MSGPROP
Publish subscribe properties are added as message properties.

RFH2
Publish subscribe properties are added within an MQRFH version 2 header.

PUBACCT(*string*)
Accounting token passed by the subscriber, for propagation into messages published to this subscription in the *AccountingToken* field of the MQMD.

PUBAPPID(*string*)
Identity data passed by the subscriber, for propagation into messages published to this subscription in the *ApplIdentityData* field of the MQMD.

PUBPRTY
The priority of the message sent to this subscription.

ASPUB
Priority of the message sent to this subscription is taken from the priority supplied in the published message.

ASQDEF
Priority of the message sent to this subscription is taken from the default priority of the queue defined as a destination.

(integer)
An integer providing an explicit priority for messages published to this subscription.

REQONLY
Indicates whether the subscriber polls for updates using the MQSUBRQ API call, or whether all publications are delivered to this subscription.

NO
All publications on the topic are delivered to this subscription.

YES
Publications are only delivered to this subscription in response to an MQSUBRQ API call.

This parameter is equivalent to the subscribe option MQSO_PUBLICATIONS_ON_REQUEST.

SUBLEVEL(*integer*)
The level within the subscription hierarchy at which this subscription is made. The range is zero through 9.

SUBUSER(*string*)
Specifies the user ID that is used for security checks that are performed to ensure that publications can be put to the destination queue associated with the subscription. This ID is either the user ID associated with the creator of the subscription or, if subscription takeover is permitted, the user ID that last took over the subscription. The length of this parameter must not exceed 12 characters.

USERDATA(*string*)
Specifies the user data associated with the subscription. The string is a variable length value that can be retrieved by the application on an MQSUB API call and passed in a message sent to this subscription as a message property.

V7.5.0.8 From Version 7.5.0, Fix Pack 8, an IBM WebSphere MQ classes for JMS application can retrieve the subscription user data from the message by using the constant `JMS_IBM_SUBSCRIPTION_USER_DATA` in the JmsConstants interface with the method `javax.jms.Message.getStringProperty(java.lang.String)`. For more information, see Retrieval of user subscription data.

VARUSER
Specifies whether a user other than the subscription creator can connect to and take over ownership of the subscription.

ANY
Any user can connect to and takeover ownership of the subscription.

FIXED
Takeover by another **USERID** is not permitted.

ALTER TOPIC

Use ALTER TOPIC to alter the parameters of an existing IBM WebSphere MQ topic object.

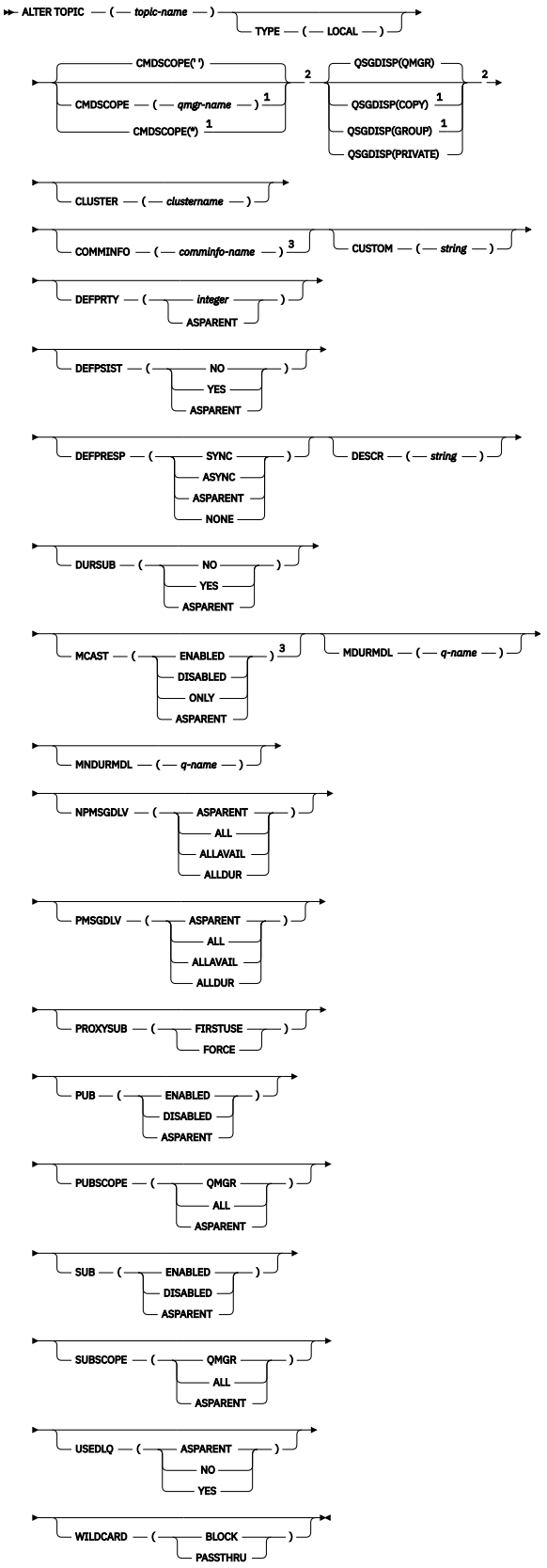
UNIX and Linux	Windows
✓	✓

Parameters not specified in the ALTER TOPIC command result in the existing values for those parameters being left unchanged.

- Syntax diagram
- “Parameter descriptions for ALTER TOPIC” on page 312

Synonym: ALT TOPIC

ALTER TOPIC



Notes:

1 Valid only on z/OS when the queue manager is a member of a queue-sharing group.

[2] Valid only on z/OS.
[3] Not valid on z/OS.

Parameter descriptions for ALTER TOPIC

(topic-name)
Name of the IBM WebSphere MQ topic definition (see Rules for naming IBM WebSphere MQ objects). The maximum length is 48 characters.

The name must not be the same as any other topic definition currently defined on this queue manager (unless REPLACE is specified).

CLUSTER
The name of the cluster to which this topic belongs.

' '
This topic does not belong to a cluster. Publications and subscriptions for this topic are not propagated to publish/subscribe cluster-connected queue managers.

string
The topic belongs to this cluster.

Leave this parameter blank on the system topics SYSTEM.BASE.TOPIC and SYSTEM.DEFAULT.TOPIC, except in special circumstances to do with migration, documented elsewhere.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if QSGDISP is set to GROUP.

' '
The command is executed on the queue manager on which it was entered.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name other than the queue manager on which it was entered, only if you are using a shared queue environment and if the command server is enabled.

****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of * is the same as entering the command on every queue manager in the queue-sharing group.

COMMINFO(*comminfo-name*)
The name of the communication information object associated with this topic object.

CUSTOM(*string*)
The custom attribute for new features.

This attribute is reserved for the configuration of new features before separate attributes have been introduced. It can contain the values of zero or more attributes as pairs of attribute name and value, separated by at least one space. The attribute name and value pairs have the form `NAME(VALUE)`. Single quotes must be escaped with another single quote.

This description will be updated when features using this attribute are introduced. At the moment there are no possible values for *Custom*.

DEFPRTY(*integer*)
The default priority of messages published to the topic.

(*integer*)
The value must be in the range zero (the lowest priority), through to the MAXPRTY queue manager parameter (MAXPRTY is 9).

ASPARENT
The default priority is based on the setting of the closest parent administrative topic object in the topic tree.

DEFPSIST
Specifies the message persistence to be used when applications specify the MQPER_PERSISTENCE_AS_TOPIC_DEF option.

ASPARENT
The default persistence is based on the setting of the closest parent administrative topic object in the topic tree.

NO
Messages on this queue are lost during a restart of the queue manager.

YES
Messages on this queue survive a restart of the queue manager.

On z/OS, N and Y are accepted as synonyms of NO and YES.

DEFPRESP
Specifies the put response to be used when applications specify the MQPMO_RESPONSE_AS_DEF option.

ASPARENT
The default put response is based on the setting of the closest parent administrative topic object in the topic tree.

SYNC
Put operations to the queue that specify MQPMO_RESPONSE_AS_Q_DEF are issued as if MQPMO_SYNC_RESPONSE had been specified instead. Fields in the MQMD and MQPMO are returned by the queue manager to the application.

ASYNC
Put operations to the queue that specify MQPMO_RESPONSE_AS_Q_DEF are always issued as if MQPMO_ASYNC_RESPONSE had been specified instead. Some fields in the MQMD and MQPMO are not returned by the queue manager to the application. However, an improvement in performance might be seen for messages put in a transaction and any non-persistent messages

DESCR(*string*)
Plain-text comment. It provides descriptive information about the object when an operator issues the DISPLAY TOPIC command.

It must contain only displayable characters. The maximum length is 64 characters. In a DBCS installation, it can contain DBCS characters (subject to a maximum length of 64 bytes).

Note: If characters are used that are not in the coded character set identifier (CCSID) for this queue manager, they might be translated incorrectly if the information is sent to another queue manager.

DURSUB
Specifies whether applications are permitted to make durable subscriptions on this topic.

ASPARENT
Whether durable subscriptions can be made on this topic is based on the setting of the closest parent administrative topic object in the topic tree.

NO
Durable subscriptions cannot be made on this topic.

YES
Durable subscriptions can be made on this topic.

MCAST
Specifies whether multicast is allowable in the topic tree. The values are:

ASPARENT
The multicast attribute of the topic is inherited from the parent.

DISABLED
No multicast traffic is allowed at this node.

ENABLED
Multicast traffic is allowed at this node.

ONLY
Only subscriptions from a multicast capable client are allowed.

MDURMDL(*string*)
The name of the model queue to be used for durable subscriptions that request that the queue manager manages the destination of its publications (see Rules for naming IBM WebSphere MQ objects). The maximum length is 48 characters.

If MDURMDL is blank, it operates in the same way as ASPARENT values on other attributes. The name of the model queue to be used is based on the closest parent administrative topic object in the topic tree with a value set for MDURMDL.

The dynamic queue created from this model has a prefix of SYSTEM.MANAGED.DURABLE

MNDURMDL(*string*)
The name of the model queue to be used for non-durable subscriptions that request that the queue manager manages the destination of its publications (see Rules for naming IBM WebSphere MQ objects). The maximum length is 48 characters.

If MNDURMDL is blank, it operates in the same way as ASPARENT values on other attributes. The name of the model queue to be used is based on the closest parent administrative topic object in the topic tree with a value set for MNDURMDL.

The dynamic queue created from this model has a prefix of SYSTEM.MANAGED.NDURABLE.

NPMSGDLV
The delivery mechanism for non-persistent messages published to this topic:

ASPARENT
The delivery mechanism used is based on the setting of the first parent administrative node found in the topic tree relating to this topic.

ALL
Non-persistent messages must be delivered to all subscribers, irrespective of durability for the MQPUT call to report success. If a delivery failure to any subscriber occurs, no other subscribers receive the message and the MQPUT call fails.

ALLAVAIL
Non-persistent messages are delivered to all subscribers that can accept the message. Failure to deliver the message to any subscriber does not prevent other subscribers from receiving the message.

ALLDUR
Non-persistent messages must be delivered to all durable subscribers. Failure to deliver a non-persistent message to any non-durable subscribers does not return an error to the MQPUT call. If a delivery failure to a durable subscriber occurs, no subscribers receive the message and the MQPUT calls fails.

PMSGDLV
The delivery mechanism for persistent messages published to this topic:

ASPARENT
The delivery mechanism used is based on the setting of the first parent administrative node found in the topic tree relating to this topic.

ALL
Persistent messages must be delivered to all subscribers, irrespective of durability for the MQPUT call to report success. If a delivery failure to any subscriber occurs, no other subscribers receive the message and the MQPUT call fails.

ALLAVAIL
Persistent messages are delivered to all subscribers that can accept the message. Failure to deliver the message to any subscriber does not prevent other subscribers from receiving the message.

ALLDUR
Persistent messages must be delivered to all durable subscribers. Failure to deliver a persistent message to any non-durable subscribers does not return an error to the MQPUT call. If a delivery failure to a durable subscriber occurs, no subscribers receive the message and the MQPUT calls fails.

PROXYSUB
Controls when a proxy subscription is sent for this topic, or topic strings below this topic, to neighboring queue managers when in a publish/subscribe cluster or hierarchy. For more details, see More on routing mechanisms.

FIRSTUSE
For each unique topic string at or below this topic object, a proxy subscription is asynchronously sent to all neighboring queue managers when a local subscription is created or a proxy subscription is received that is propagated to further directly connected queue managers in a hierarchy.

FORCE
A wildcard proxy subscription that matches all topic strings at and below this point in the topic tree is sent to neighboring queue managers even if no local subscriptions exist.

Note: The proxy subscription is sent when this value is set on DEFINE or ALTER. When set on a clustered topic, all queue managers in the cluster issue the wildcard proxy subscription to all other queue managers in the cluster.

PUB
Controls whether messages can be published to this topic.

ASPARENT
Whether messages can be published to the topic is based on the setting of the closest parent administrative topic object in the topic tree.

ENABLED
Messages can be published to the topic (by suitably authorized applications).

DISABLED
Messages cannot be published to the topic.

PUBSCOPE
Determines whether this queue manager propagates publications to queue managers as part of a hierarchy or as part of a publish/subscribe cluster.

Note: You can restrict the behavior on a publication-by-publication basis, using MQPMO_SCOPE_QMGR on the Put Message options.

ASPARENT
Whether this queue manager propagates publications to queue managers as part of a hierarchy or as part of a publish/subscribe cluster is based on the setting of the first parent administrative node found in the topic tree that relates to this topic.

QMGR
Publications for this topic are not propagated to connected queue managers.

ALL
Publications for this topic are propagated to hierarchically connected queue managers and to publish/subscribe cluster-connected queue managers.

QSGDISP
This parameter applies to z/OS only.

Specifies the disposition of the object within the group.

QSGDISP	ALTER
COPY	The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameters QSGDISP(COPY). Any object residing in the shared repository, or any object defined using a command that had the parameters QSGDISP(QMGR), is not affected by this command.

GROUP	The object definition resides in the shared repository. The object was defined using a command that had the parameters QSGDISP(GROUP). Any object residing on the page set of the queue manager that executes the command (except a local copy of the object) is not affected by this command. If the command is successful, the following command is generated and sent to all active queue managers in the queue-sharing group to attempt to refresh local copies on page set zero:
	`DEFINE TOPIC(name)`
	`REPLACE QSGDISP(COPY)`
	The ALTER for the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.

PRIVATE	The object resides on the page set of the queue manager that executes the command, and was defined with QSGDISP(QMGR) or QSGDISP(COPY). Any object residing in the shared repository is unaffected.
QMGR	The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameters QSGDISP(QMGR). Any object residing in the shared repository, or any local copy of such an object, is not affected by this command.

SUB
Controls whether applications are to be permitted to subscribe to this topic.

ASPARENT
Whether applications can subscribe to the topic is based on the setting of the closest parent administrative topic object in the topic tree.

ENABLED
Subscriptions can be made to the topic (by suitably authorized applications).

DISABLED
Applications cannot subscribe to the topic.

SUBSCOPE
Determines whether this queue manager subscribes to publications in this queue manager or in the network of connected queue managers. If subscribing to all queue managers, the queue manager propagates subscriptions to them as part of a hierarchy or as part of a publish/subscribe cluster.

Note: You can restrict the behavior on a subscription-by-subscription basis, using **MQPMO_SCOPE_QMGR** on the Subscription Descriptor or **SUBSCOPE(QMGR)** on **DEFINE SUB**. Individual subscribers can override the **SUBSCOPE** setting of ALL by specifying the **MQSO_SCOPE_QMGR** subscription option when creating a subscription.

ASPARENT
Whether this queue manager subscribes to publications in the same way as the setting of the first parent administrative node found in the topic tree relating to this topic.

QMGR
Only publications that are published on this queue manager reach the subscriber.

ALL
A publication made on this queue manager or on another queue manager reaches the subscriber. Subscriptions for this topic are propagated to hierarchically connected queue managers and to publish/subscribe cluster-connected queue managers.

TOPICSTR(*string*)
The topic string represented by this topic object definition. This parameter is required and cannot contain the empty string.

The topic string must not be the same as any other topic string already represented by a topic object definition.

The maximum length of the string is 10,240 characters.

TYPE (topic-type)
If this parameter is used it must follow immediately after the *topic-name* parameter on all platforms except z/OS.

LOCAL
A local topic object.

USEDLQ
Determines whether the dead-letter queue is used when publication messages cannot be delivered to their correct subscriber queue.

ASPARENT
Determines whether to use the dead-letter queue using the setting of the closest administrative topic object in the topic tree.

NO
Publication messages that cannot be delivered to their correct subscriber queue are treated as a failure to put the message. The MQPUT of an application to a topic fails in accordance with the settings of NPMSGDLV and PMSGDLV.

YES
When the DEADQ queue manager attribute provides the name of a dead-letter queue, then it is used. If the queue manager does not provide the name of a dead-letter queue, then the behavior is as for NO.

WILDCARD
The behavior of wildcard subscriptions with respect to this topic.

PASSTHRU
Subscriptions made to a wildcarded topic less specific than the topic string at this topic object receive publications made to this topic and to topic strings more specific than this topic.

BLOCK
Subscriptions made to a wildcarded topic less specific than the topic string at this topic object do not receive publications made to this topic or to topic strings more specific than this topic.

The value of this attribute is used when subscriptions are defined. If you alter this attribute, the set of topics covered by existing subscriptions is not affected by the modification. This scenario applies also if the topology is changed when topic objects are created or deleted; the set of topics matching subscriptions created following the modification of the WILDCARD attribute is created using the modified topology. If you want to force the matching set of topics to be re-evaluated for existing subscriptions, you must restart the queue manager.

CLEAR QLOCAL

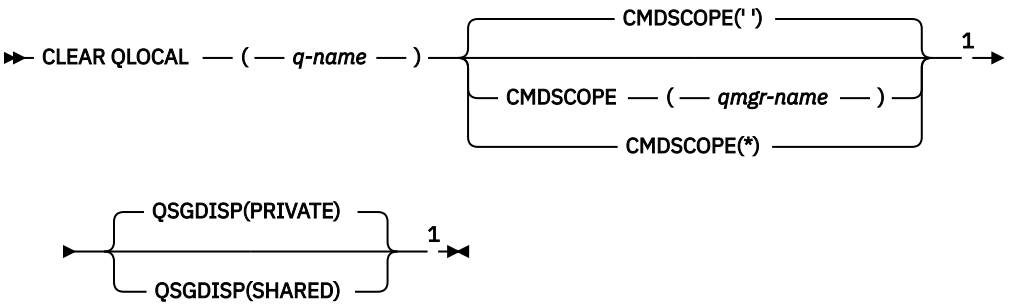
Use the MQSC command CLEAR QLOCAL to clear the messages from a local queue.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- "Parameter descriptions for CLEAR QLOCAL" on page 318

Synonym: CLEAR QL

CLEAR QLOCAL



Notes:

1 Valid only on z/OS.

Parameter descriptions for CLEAR QLOCAL

You must specify which local queue you want to clear.

The command fails if either:

- The queue has uncommitted messages that have been put on the queue under syncpoint
- The queue is currently open by an application (with any open options)

If an application has this queue open, or has a queue open that eventually resolves to this queue, the command fails. The command also fails if this queue is a transmission queue, and any queue that is, or resolves to, a remote queue that references this transmission queue, is open.

(q-name)
The name of the local queue to be cleared. The name must be defined to the local queue manager.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if QSGDISP is set to SHARED.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of this is the same as entering the command on every queue manager in the queue-sharing group.

QSGDISP
Specifies whether the queue definition is shared. This parameter applies to z/OS only.

PRIVATE
Clear only the private queue named *q-name*. The queue is private if it was defined using a command that had the parameters QSGDISP(COPY) or QSGDISP(QMGR). This is the default value.

SHARED
Clear only the shared queue named *q-name*. The queue is shared if it was defined using a command that had the parameters QSGDISP(SHARED).

CLEAR TOPICSTR

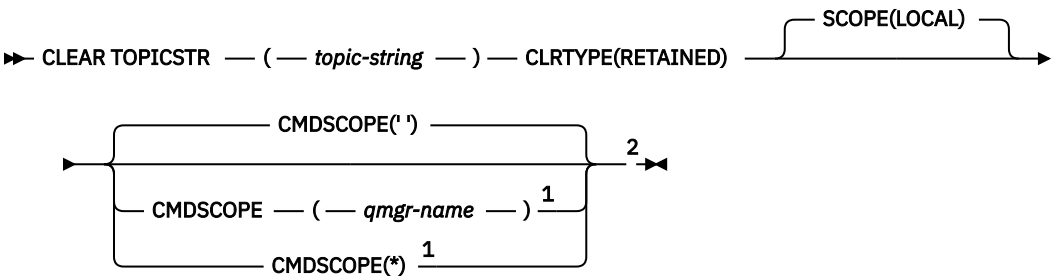
Use the MQSC command CLEAR TOPICSTR to clear the retained message which is stored for the specified topic string.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- Usage notes for CLEAR TOPICSTR
- Parameter descriptions for CLEAR TOPICSTR

Synonym: None.

CLEAR TOPICSTR



Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[2] Valid only on z/OS.

Usage notes for CLEAR TOPICSTR

1. If the topic string specified has no retained message the command will complete successfully. You can find out whether a topic string has a retained message by using the DISPLAY TPSTATUS command. The RETAINED field shows whether there is a retained message.
2. The topic-string input parameter on this command must match the topic you want to act on. You are advised to keep the character strings in your topic strings as characters that can be used from location issuing the command. If you issue commands using MQSC, you will have fewer characters available to you than if you are using an application submitting PCF messages, such as the WebSphere MQ Explorer.

Parameter descriptions for CLEAR TOPICSTR

You must specify which topic string you want to remove the retained publication from.

(topic-string)
The topic string to be cleared. This string can represent several topics to be cleared by using wildcards as shown in the following table:

Special Character	Behavior
#	Wildcard, multiple topic level
+	Wildcard, single topic level
Note: the '+' and '#' are not treated as wildcards if they are mixed in with other characters (including themselves) within a topic level. In the following string, the '#' and '+' characters are treated as ordinary characters. `level0/level1/#+/level3/level#`	

To illustrate the effect of wildcards, the following example is used.

Clearing the following topic:

```
/a/b/#/z
```

clears the following topics:

```
/a/b/z
/a/b/c/z
/a/b/c/y/z
```

CLRTYPE
This is a mandatory parameter.

The value must be:

RETAINED
Remove the retained publication from the specified topic string.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the name of the local queue manager, if the shared queue object definition has its queue-sharing group disposition attribute QSGDISP set to SHARED.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of this is the same as entering the command on every queue manager in the queue-sharing group.

SCOPE
The scope of the deletion of retained messages.

The value can be:

LOCAL
The retained message is removed from the specified topic string at the local queue manager only. This is the default value.

DEFINE AUTHINFO

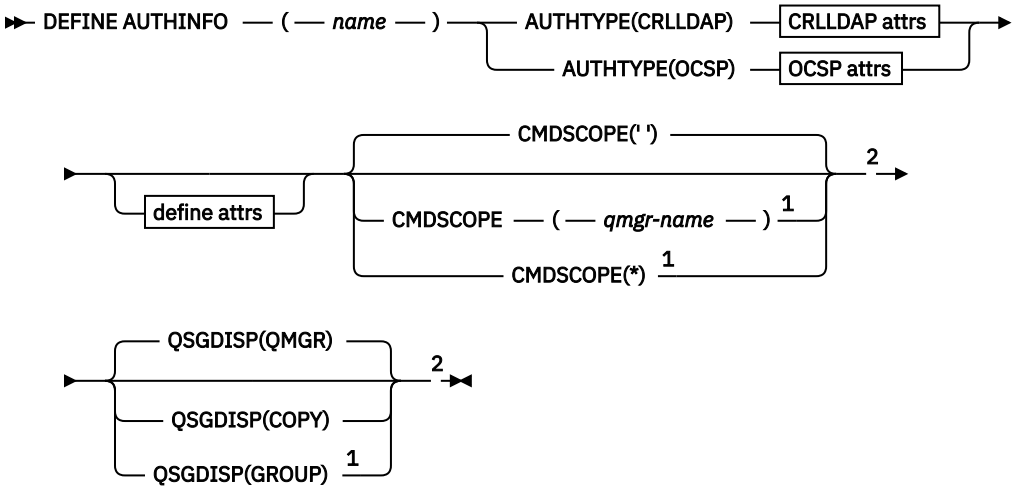
Use the MQSC command DEFINE AUTHINFO to define an authentication information object. These objects contain the definitions required to perform certificate revocation checking using OCSP or Certificate Revocation Lists (CRLs) on LDAP servers.

UNIX and Linux	Windows
✓	✓

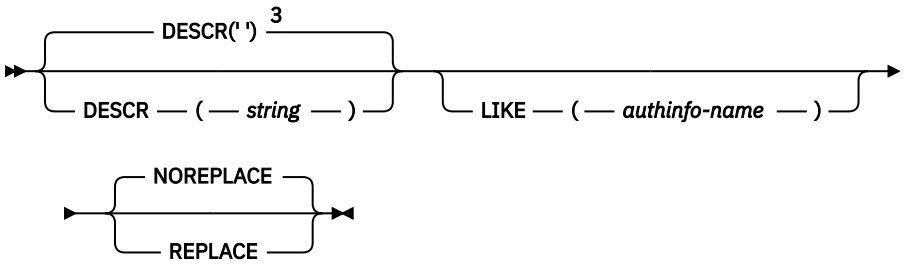
- Syntax diagram
- “Usage Notes for DEFINE AUTHINFO” on page 322
- “Parameter descriptions for DEFINE AUTHINFO” on page 322

Synonym: DEF AUTHINFO

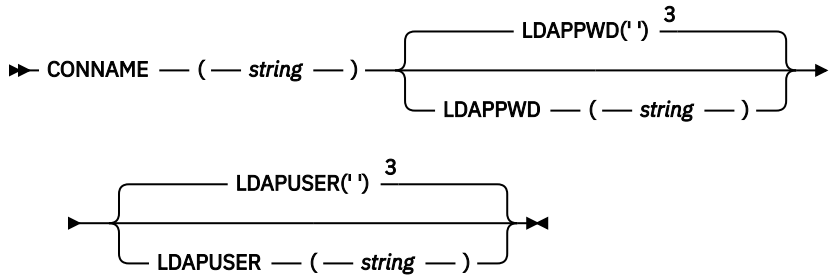
DEFINE AUTHINFO



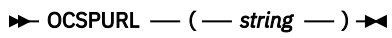
Define attrs



CRLLDAP attrs



OCSP attrs



Notes:

[1] Valid only when the queue manager is a member of a queue-sharing group. You can use queue-sharing groups only on WebSphere MQ for z/OS.
[2] Valid only on z/OS.
[3] This command is the default supplied with WebSphere MQ, but your installation might have changed it.

Usage Notes for DEFINE AUTHINFO

On IBM i, authentication information objects are only used for channels of type CLNTCONN through use of the AMQCLCHL.TAB. Certificates are defined by Digital Certificate Manager for each certificate authority, and are verified against the LDAP servers.

Parameter descriptions for DEFINE AUTHINFO

name
Name of the authentication information object. This parameter is required.

The name must not be the same as any other authentication information object name currently defined on this queue manager (unless REPLACE or ALTER is specified). See Rules for naming IBM WebSphere MQ objects.

AUTHTYPE
The type of authentication information.

CRLLDAP
Certificate Revocation List checking is done using LDAP servers.

OCSP
Certificate revocation checking is done using OCSP.

An authentication information object with AUTHTYPE(OCSP) does not apply for use on IBM i or z/OS queue managers. However, it can be specified on those platforms to be copied to the client channel definition table (CCDT) for client use.

This parameter is required.

You cannot define an authentication information object as LIKE one with a different AUTHTYPE. You cannot alter the AUTHTYPE of an authentication information object after you have created it.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if QSGDISP is set to GROUP.

' '
The command is executed on the queue manager on which it was entered.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name other than the queue manager on which it was entered, only if you are using a shared queue environment and if the command server is enabled.

***
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of * is the same as entering the command on every queue manager in the queue-sharing group.

CONNAME(*string*)
The host name, IPv4 dotted decimal address, or IPv6 hexadecimal notation of the host on which the LDAP server is running, with an optional port number.

This parameter is valid only for AUTHTYPE(CRLLDAP), when it is mandatory.

If you specify the connection name as an IPv6 address, only systems with an IPv6 stack are able to resolve this address. If the AUTHINFO object is part of the CRL namelist of the queue manager, ensure that any clients using the client channel table generated by the queue manager can resolve the connection name.

On z/OS, if a CONNAME is to resolve to an IPv6 network address, a level of z/OS that supports IPv6 for connection to an LDAP server is required.

The syntax for CONNAME is the same as for channels. For example,

```
conname('hostname(nnn)')
```

where *nnn* is the port number.

The maximum length for the field is 264 characters on IBM i, UNIX systems, and Windows, and 48 characters on z/OS.

DESCR(*string*)
Plain-text comment. It provides descriptive information about the authentication information object when an operator issues the DISPLAY AUTHINFO command (see “DISPLAY AUTHINFO” on page 466).

It must contain only displayable characters. The maximum length is 64 characters. In a DBCS installation, it can contain DBCS characters (subject to a maximum length of 64 bytes).

Note: If characters are used that are not in the coded character set identifier (CCSID) for this queue manager, they might be translated incorrectly if the information is sent to another queue manager.

LDAPPWD(*string*)
The password associated with the Distinguished Name of the user who is accessing the LDAP server. Its maximum size is 32 characters.

This parameter is valid only for AUTHTYPE(CRLLDAP).

On z/OS, the LDAPPWD used for accessing the LDAP server might not be the one defined in the AUTHINFO object. If more than one AUTHINFO object is placed in the namelist referred to by the QMGR parameter SSLCRLNL, the LDAPPWD in the first AUTHINFO object is used for accessing all LDAP Servers.

LDAPUSER(*string*)
The Distinguished Name of the user who is accessing the LDAP server. (See the SSLPEER parameter for more information about distinguished names.)

This parameter is valid only for AUTHTYPE(CRLLDAP).

The maximum size for the user name is 1024 characters on IBM i, UNIX systems, and Windows, and 256 characters on z/OS.

On z/OS, the LDAPUSER used for accessing the LDAP Server might not be the one defined in the AUTHINFO object. If more than one AUTHINFO object is placed in the namelist referred to by the

QMGR parameter SSLCRLNL, the LDAPUSER in the first AUTHINFO object is used for accessing all LDAP Servers.

On IBM i, UNIX systems, and Windows, the maximum accepted line length is defined to be BUFSIZ, which can be found in stdio.h.

LIKE(*authinfo-name*)
The name of an authentication information object, with parameters that are used to model this definition.

On z/OS, the queue manager searches for an object with the name you specify and a disposition of QMGR or COPY. The disposition of the LIKE object is not copied to the object you are defining.

Note:

1. QSGDISP (GROUP) objects are not searched.
2. LIKE is ignored if QSGDISP(COPY) is specified. However, the group object defined is used as a LIKE object.

OCSPURL
The URL of the OCSP responder used to check for certificate revocation. This value must be an HTTP URL containing the host name and port number of the OCSP responder. If the OCSP responder is using port 80, which is the default for HTTP, then the port number can be omitted. HTTP URLs are defined in RFC 1738.

This field is case sensitive. It must start with the string http:// in lowercase. The rest of the URL might be case sensitive, depending on the OCSP server implementation. To preserve case, use single quotation marks to specify the OCSPURL parameter value, for example:

```
OCSPURL('http://ocsp.example.ibm.com')
```

This parameter is applicable only for AUTHTYPE(OCSP), when it is mandatory.

QSGDISP
This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves).

QSGDISP	**DEFINE**
COPY	The object is defined on the page set of the queue manager that executes the command using the QSGDISP(GROUP) object of the same name as the 'LIKE' object.

GROUP	The object definition resides in the shared repository. GROUP is allowed only if the queue manager is in a queue-sharing group. If the definition is successful, the following command is generated and sent to all active queue managers in the queue-sharing group to make or refresh local copies on page set zero:
	`DEFINE AUTHINFO(name)`
	`REPLACE QSGDISP(COPY)`
	The DEFINE for the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.

PRIVATE	Not permitted.
QMGR	The object is defined on the page set of the queue manager that executes the command.

REPLACE and NOREPLACE
Whether the existing definition (and on z/OS, with the same disposition) is to be replaced with this one. This parameter is optional. Any object with a different disposition is not changed.

REPLACE
The definition must replace any existing definition of the same name. If a definition does not exist, one is created.

NOREPLACE
The definition must not replace any existing definition of the same name.

DEFINE CHANNEL

Use the MQSC command **DEFINE CHANNEL** to define a new channel, and set its parameters.

UNIX and Linux	Windows
✓	✓

Synonym: DEF CHL

- "Usage notes" on page 325
- "Parameter descriptions for DEFINE CHANNEL" on page 325

Usage notes

For CLUSSDR channels, you can specify the REPLACE option only for manually created channels.

Parameter descriptions for DEFINE CHANNEL

The following table shows the parameters that are relevant for each type of channel. There is a description of each parameter after the table. Parameters are optional unless the description states that they are required.

SDR
"Sender channel" on page 361

SVR
"Server channel" on page 363

RCVR
"Receiver channel" on page 365

RQSTR
"Requester channel" on page 367

CLNTCONN
"Client-connection channel" on page 369

SVRCONN
"Server-connection channel" on page 371

CLUSSDR
"Cluster-sender channel" on page 373

CLUSRCVR
"Cluster-receiver channel" on page 375

MQTT
"DEFINE CHANNEL (MQTT)" on page 376

Table 39. DEFINE and ALTER CHANNEL parameters									
Parameter	**SDR**	**SVR**	**RCVR**	**RQSTR**	**CLNTCONN**	**SVRCONN**	**CLUSSDR**	**CLUSRCVR**	**MQTT**
AFFINITY					✓				
BACKLOG									✓
BATCHHB	✓	✓					✓	✓	
BATCHINT	✓	✓					✓	✓	
BATCHLIM	✓	✓					✓	✓	
BATCHSZ	✓	✓	✓	✓			✓	✓	
channel-name	✓	✓	✓	✓	✓	✓	✓	✓	✓
CHLTYPE	✓	✓	✓	✓	✓	✓	✓	✓	✓
CLNTWGHT					✓				
CLUSNL							✓	✓	
CLUSTER							✓	✓	
CLWLPRTY							✓	✓	
CLWLRANK							✓	✓	
CLWLWGHT							✓	✓	
CMDSCOPE	✓	✓	✓	✓	✓	✓	✓	✓	
COMPHDR	✓	✓	✓	✓	✓	✓	✓	✓	
COMPMSG	✓	✓	✓	✓	✓	✓	✓	✓	
CONNAME	✓	✓		✓	✓		✓	✓	
CONVERT	✓	✓					✓	✓	
DEFCDISP	✓	✓	✓	✓		✓			
DEFRECON					✓				
DESCR	✓	✓	✓	✓	✓	✓	✓	✓	✓
DISCINT	✓	✓				✓	✓	✓	
HBINT	✓	✓	✓	✓	✓	✓	✓	✓	
JAASCFG									✓
KAINT	✓	✓	✓	✓	✓	✓	✓	✓	
LIKE	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 39. DEFINE and ALTER CHANNEL parameters (continued)									
Parameter	**SDR**	**SVR**	**RCVR**	**RQSTR**	**CLNTCONN**	**SVRCONN**	**CLUSSDR**	**CLUSRCVR**	**MQTT**
LOCLADDR	✓	✓		✓	✓		✓	✓	✓
LONGRTY	✓	✓					✓	✓	
LONGTMR	✓	✓					✓	✓	
MAXINST						✓			
MAXINSTC						✓			
MAXMSGL	✓	✓	✓	✓	✓	✓	✓	✓	
MCANAME	✓	✓		✓			✓	✓	
MCATYPE	✓	✓		✓			✓	✓	
MCAUSER			✓	✓		✓		✓	✓
MODENAME	✓	✓		✓	✓		✓	✓	
MONCHL	✓	✓	✓	✓		✓	✓	✓	
MRDATA			✓	✓				✓	
MREXIT			✓	✓				✓	
MRRTY			✓	✓				✓	
MRTMR			✓	✓				✓	
MSGDATA	✓	✓	✓	✓			✓	✓	
MSGEXIT	✓	✓	✓	✓			✓	✓	
NETPRTY								✓	
NPMSPEED	✓	✓	✓	✓			✓	✓	
PASSWORD	✓	✓		✓	✓		✓	✓	
PORT									✓
PROPCTL	✓	✓					✓	✓	
PUTAUT			✓	✓		✓		✓	
QMNAME					✓				
QSGDISP	✓	✓	✓	✓	✓	✓	✓	✓	
RCVDATA	✓	✓	✓	✓	✓	✓	✓	✓	
RCVEXIT	✓	✓	✓	✓	✓	✓	✓	✓	

Table 39. DEFINE and ALTER CHANNEL parameters (continued)									
Parameter	**SDR**	**SVR**	**RCVR**	**RQSTR**	**CLNTCONN**	**SVRCONN**	**CLUSSDR**	**CLUSRCVR**	**MQTT**
REPLACE	✓	✓	✓	✓	✓	✓	✓	✓	
SCYDATA	✓	✓	✓	✓	✓	✓	✓	✓	
SCYEXIT	✓	✓	✓	✓	✓	✓	✓	✓	
SENDDATA	✓	✓	✓	✓	✓	✓	✓	✓	
SENDEXIT	✓	✓	✓	✓	✓	✓	✓	✓	
SEQWRAP	✓	✓	✓	✓			✓	✓	
SHARECNV					✓	✓			
SHORTRTY	✓	✓					✓	✓	
SHORTTMR	✓	✓					✓	✓	
SSLCAUTH		✓	✓	✓		✓		✓	✓
SSLCIPH[1]	✓	✓	✓	✓	✓	✓	✓	✓	✓[1]
SSLCIPH									✓
SSLKEYR									✓
SSLPEER	✓	✓	✓	✓	✓	✓	✓	✓	
STATCHL	✓	✓	✓	✓			✓	✓	
TPNAME	✓	✓		✓	✓	✓	✓	✓	
TRPTYPE	✓	✓	✓	✓	✓	✓	✓	✓	✓
USECLTID									✓
USEDLQ	✓	✓	✓	✓			✓	✓	
USERID	✓	✓		✓	✓		✓		
XMITQ	✓	✓							

Note:

1. If SSLCIPH is used with MQTT channels, it means SSL Cipher Suite. For all other channel types, it means SSL CipherSpec. See SSLCIPH.

AFFINITY
Use the channel affinity attribute when client applications connect multiple times using the same queue manager name. With the attribute, you can choose whether the client uses the same client channel definition for each connection. This attribute is intended to be used when multiple applicable channel definitions are available.

PREFERRED
The first connection in a process reading a client channel definition table (CCDT) creates a list of applicable definitions. The list is based on the weightings, with any applicable `CLNTWGHT(0)` definitions first and in alphabetic order. Each connection in the process attempts to connect using the first definition in the list. If a connection is unsuccessful the next definition is used. Unsuccessful non-`CLNTWGHT(0)` definitions are moved to the end of the list. `CLNTWGHT(0)` definitions remain at the start of the list and are selected first for each connection. For C, C++ and .NET (including fully managed .NET) clients the list is updated if the CCDT was modified since the list was created. Each client process with the same host name creates the same list.

NONE
The first connection in a process reading a CCDT creates a list of applicable definitions. All connections in a process select an applicable definition based on the weighting with any applicable `CLNTWGHT(0)` definitions selected first in alphabetic order. For C, C++ and .NET (including fully managed .NET) clients the list is updated if the CCDT was modified since the list was created.

For example, suppose that we had the following definitions in the CCDT:

```
CHLNAME(A) QMNAME(QM1) CLNTWGHT(3)
CHLNAME(B) QMNAME(QM1) CLNTWGHT(4)
CHLNAME(C) QMNAME(QM1) CLNTWGHT(4)
```

The first connection in a process creates its own ordered list based on the weightings. So it might, for example, create the ordered list `CHLNAME(B), CHLNAME(A), CHLNAME(C)`.

For `AFFINITY(PREFFERED)`, each connection in the process attempts to connect using `CHLNAME(B)`. If a connection is unsuccessful the definition is moved to the end of the list which now becomes `CHLNAME(A), CHLNAME(C), CHLNAME(B)`. Each connection in the process then attempts to connect using `CHLNAME(A)`.

For `AFFINITY(NONE)`, each connection in the process attempts to connect using one of the three definitions selected at random based on the weightings.

If sharing conversations is enabled with a non-zero channel weighting and `AFFINITY(NONE)`, multiple connections do not have to share an existing channel instance. They can connect to the same queue manager name using different applicable definitions rather than sharing an existing channel instance.

BACKLOG(*integer*)
The number of outstanding connection requests that the telemetry channel can support at any one time. When the backlog limit is reached, any further clients trying to connect are refused connection until the current backlog is processed.

The value is in the range hyphen 0 - 999999999.

The default value is 4096.

BATCHHB(*integer*)
Specifies whether batch heartbeats are to be used. The value is the length of the heartbeat in milliseconds.

Batch heartbeats allow a sending channel to verify that the receiving channel is still active just before committing a batch of messages. If the receiving channel is not active, the batch can be backed out rather than becoming in-doubt, as would otherwise be the case. By backing out the batch, the messages remain available for processing so they could, for example, be redirected to another channel.

If the sending channel received a communication from the receiving channel within the batch heartbeat interval, the receiving channel is assumed to be still active. If not, a 'heartbeat' is sent to the receiving channel to check.

The value must be in the range 0 - 999999. A value of zero indicates that batch heart beats are not used.

This parameter is valid for channels with a channel type (CHLTYPE) of only SDR, SVR, CLUSSDR, and CLUSRCVR.

BATCHINT(*integer*)
The minimum amount of time, in milliseconds, that a channel keeps a batch open.

The batch is terminated when one of the following conditions is met:

- BATCHSZ messages are sent.
- BATCHLIM kilobytes are sent.
- The transmission queue is empty and BATCHINT is exceeded.

The value must be in the range 0 - 999999999. Zero means that the batch is terminated as soon as the transmission queue becomes empty (or the BATCHSZ limit is reached).

This parameter is valid for channels with a channel type (CHLTYPE) of only SDR, SVR, CLUSSDR, and CLUSRCVR.

BATCHLIM(*integer*)

The limit, in kilobytes, of the amount of data that can be sent through a channel before taking a sync point. A sync point is taken after the message that caused the limit to be reached flows across the channel. A value of zero in this attribute means that no data limit is applied to batches over this channel.

The batch is terminated when one of the following conditions is met:

- BATCHSZ messages are sent.
- BATCHLIM kilobytes are sent.
- The transmission queue is empty and BATCHINT is exceeded.

This parameter is valid for channels with a channel type (CHLTYPE) of only SDR, SVR, CLUSSDR, and CLUSRCVR.

The value must be in the range 0 - 999999. The default value is 5000.

This parameter is supported on all platforms.

BATCHSZ (*integer*)
The maximum number of messages that can be sent through a channel before taking a sync point.

The maximum batch size used is the lowest of the following values:

- The BATCHSZ of the sending channel.
- The BATCHSZ of the receiving channel.
- On distributed platforms, the maximum number of uncommitted messages allowed at the sending queue manager (or one if this value is zero or less).
- On distributed platforms, the maximum number of uncommitted messages allowed at the receiving queue manager (or one if this value is zero or less).

While non-persistent messages sent over an NPMSPEED (FAST) channel are delivered to a queue immediately (without waiting for a complete batch), the messages still contribute to the batch size for a channel and, therefore, cause confirm flows to occur when BATCHSZ messages have flowed.

If the batch flows are causing a performance impact when moving only non-persistent messages, and NPMSPEED is set to FAST, you should consider setting the BATCHSZ to the maximum permissible value of 9999, and BATCHLIM to zero.

Additionally, setting BATCHINT to a high value, for example, 999999999 keeps each batch "open" for longer, even if there are no new messages waiting on the transmission queue.

The above settings minimize the frequency of confirm flows, but be aware that if any persistent messages are moved over a channel with these settings, there will be significant delays in the delivery of those persistent messages only.

The maximum number of uncommitted messages is specified by the MAXUMSGS parameter of the ALTER QMGR command.

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, RCVR, RQSTR, CLUSSDR, or CLUSRCVR.

The value must be in the range 1 - 9999.

(channel-name)
The name of the new channel definition.

This parameter is required on all types of channel. On CLUSSDR channels, it can take a different form to the other channel types. If your convention for naming CLUSSDR channels includes the name of the queue manager, you can define a CLUSSDR channel using the +QMNAME+ construction. After connection to the matching CLUSRCVR channel, WebSphere MQ substitutes the correct repository queue manager name in place of +QMNAME+ in the CLUSSDR channel definition. This facility applies to AIX, HP-UX, IBM i, Linux, Solaris, and Windows only; see Components of a cluster

The name must not be the same as any existing channel defined on this queue manager (unless REPLACE or ALTER is specified). On z/OS, CLNTCONN channel names can duplicate others.

The maximum length of the string is 20 characters, and the string must contain only valid characters; see Rules for naming IBM WebSphere MQ objects.

CHLTYPE
Channel type. This parameter is required. It must follow immediately after the *(channel-name)* parameter on all platforms except z/OS.

SDR
Sender channel

SVR
Server channel

RCVR
Receiver channel

RQSTR
Requester channel

CLNTCONN
Client-connection channel

SVRCONN
Server-connection channel

CLUSSDR
CLUSSDR channel.

CLUSRCVR
Cluster-receiver channel.

MQTT
Telemetry channel

When a channel is defined using the **DEFINE** command, it is defined in a stopped state. However, for telemetry channels, the **DEFINE** command defines and attempts to start the channel, and the command might return an error from the start operation. While this error might look like a failure, the channel might still exist because the **DEFINE** command worked, but the start failed. An example of this behavior might be the definition of multiple channels on the default port: the second definition fails with a `port in use` reason code, but the channel is successfully created.

Note: If you are using the REPLACE option, you cannot change the channel type.

CLNTWGHT
Set the client channel weighting attribute to select a client channel definition at random based on its weighting when more than one suitable definition is available. Specify a value in the range 0 - 99.

The special value 0 indicates that no random load balancing is performed and applicable definitions are selected in alphabetic order. To enable random load balancing the value can be in the range 1 - 99, where 1 is the lowest weighting and 99 is the highest.

If a client application issues MQCONN with a queue manager name of **name* a client channel definition can be selected at random. The chosen definition is randomly selected based on the weighting. Any applicable CLNTWGHT(0) definitions selected are selected first in alphabetic order. Randomness in the selection of client connection definitions is not guaranteed.

For example, suppose that we had the following two definitions in the CCDT:

```
CHLNAME(TO.QM1) CHLTYPE(CLNTCONN) QMNAME(GRP1) CONNAME(address1) CLNTWGHT(2)
CHLNAME(TO.QM2) CHLTYPE(CLNTCONN) QMNAME(GRP1) CONNAME(address2) CLNTWGHT(4)
```

A client MQCONN with queue manager name *GRP1 would choose one of the two definitions based on the weighting of the channel definition. (A random integer 1 - 6 would be generated. If the integer was in the range 1 through 2, address1 would be used otherwise address2 would be used). If this connection was unsuccessful the client would then use the other definition.

The CCDT might contain applicable definitions with both zero and non-zero weighting. In this situation, the definitions with zero weighting are chosen first and in alphabetic order. If these connections are unsuccessful the definitions with non-zero weighting are chosen based on their weighting.

For example, suppose that we had the following four definitions in the CCDT:

```
CHLNAME(TO.QM1) CHLTYPE(CLNTCONN) QMNAME(GRP1) CONNAME(address1) CLNTWGHT(1)
CHLNAME(TO.QM2) CHLTYPE(CLNTCONN) QMNAME(GRP1) CONNAME(address2) CLNTWGHT(2)
CHLNAME(TO.QM3) CHLTYPE(CLNTCONN) QMNAME(GRP1) CONNAME(address3) CLNTWGHT(0)
CHLNAME(TO.QM4) CHLTYPE(CLNTCONN) QMNAME(GRP1) CONNAME(address4) CLNTWGHT(0)
```

A client MQCONN with queue manager name *GRP1 would first choose definition TO.QM3. If this connection was unsuccessful the client would then choose definition TO.QM4. If this connection was also unsuccessful the client would then randomly choose one of the remaining two definitions based on their weighting.

CLNTWGHT is supported for all transport protocols.

CLUSNL(*nlname*)
The name of the namelist that specifies a list of clusters to which the channel belongs.

This parameter is valid only for channels with a channel type (CHLTYPE) of CLUSSDR and CLUSRCVR channels. Only one of the resultant values of CLUSTER or CLUSNL can be nonblank, the other must be blank.

CLUSTER(*clustername*)
The name of the cluster to which the channel belongs. The maximum length is 48 characters conforming to the rules for naming IBM WebSphere MQ objects.

This parameter is valid only for channels with a channel type (CHLTYPE) of CLUSSDR and CLUSRCVR channels. Only one of the resultant values of CLUSTER or CLUSNL can be nonblank, the other must be blank.

CLWLPRTY(*integer*)
Specifies the priority of the channel for the purposes of cluster workload distribution. The value must be in the range 0 - 9 where 0 is the lowest priority and 9 is the highest.

This parameter is valid only for channels with a channel type (CHLTYPE) of CLUSSDR and CLUSRCVR channels.

For more information about this attribute, see CLWLPRTY channel attribute.

CLWLRANK(*integer*)
Specifies the rank of the channel for the purposes of cluster workload distribution. The value must be in the range 0 - 9 where 0 is the lowest rank and 9 is the highest.

This parameter is valid only for channels with a channel type (CHLTYPE) of CLUSSDR and CLUSRCVR channels.

For more information about this attribute, see CLWLRANK channel attribute.

CLWLWGHT(*integer*)
Specifies the weighting to be applied to a channel so that the proportion of messages sent down the channel can be controlled by workload management. The value must be in the range 1 - 99 where 1 is the lowest rank and 99 is the highest.

This parameter is valid only for channels with a channel type (CHLTYPE) of CLUSSDR and CLUSRCVR channels.

For more information about this attribute, see CLWLWGHT channel attribute.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must either be left blank, or if QSGDISP is set to GROUP, the local queue manager name.

' '
The command is executed on the queue manager on which it was entered.

QmgrName
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name other than the queue manager on which the command was entered. To do so, you must be using a shared queue environment, and the command server must be enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of * is the same as entering the command on every queue manager in the queue-sharing group.

COMPHDR
The list of header data compression techniques supported by the channel.

For SDR, SVR, CLUSSDR, CLUSRCVR, and CLNTCONN channels, the values are specified in order of preference. The first compression technique in the list that is supported by the remote end of the channel is used.

The mutually supported compression techniques of the channel are passed to the message exit of the sending channel. The message exit can alter the compression technique on a per message basis. Compression alters the data passed to send and receive exits.

NONE
No header data compression is performed.

SYSTEM
Header data compression is performed.

COMPMSG
The list of message data compression techniques supported by the channel.

For SDR, SVR, CLUSSDR, CLUSRCVR, and CLNTCONN channels, the values are specified in order of preference. The first compression technique in the list that is supported by the remote end of the channel is used.

The mutually supported compression techniques of the channel are passed to the message exit of the sending channel. The message exit can alter the compression technique on a per message basis. Compression alters the data passed to send and receive exits.

NONE
No message data compression is performed.

RLE
Message data compression is performed using run-length encoding.

ZLIBFAST
Message data compression is performed using ZLIB encoding with speed prioritized.

ZLIBHIGH
Message data compression is performed using ZLIB encoding with compression prioritized.

ANY
Any compression technique supported by the queue manager can be used. This value is only valid for RCVR, RQSTR, and SVRCONN channels.

CONNAME(*string*)
Connection name.

For CLUSRCVR channels, CONNAME relates to the local queue manager, and for other channels it relates to the target queue manager.

The maximum length of the string is 48 characters on z/OS, and 264 characters on other platforms.

A workaround to the 48 character limit might be one of the following suggestions:

- Set up your DNS servers so that you use, for example, host name of `myserver` instead of `myserver.location.company.com`, ensuring you can use the short host name.
- Use IP addresses.

Specify CONNAME as a comma-separated list of names of machines for the stated TRPTYPE. Typically only one machine name is required. You can provide multiple machine names to configure multiple connections with the same properties. The connections are usually tried in the order they are specified in the connection list until a connection is successfully established. The order is modified for clients if the CLNTWGHT attribute is provided. If no connection is successful, the channel attempts the connection again, as determined by the attributes of the channel. With client channels, a connection-list provides an alternative to using queue manager groups to configure multiple connections. With message channels, a connection list is used to configure connections to the alternative addresses of a multi-instance queue manager.

CONNAME is required for channels with a channel type (CHLTYPE) of SDR, RQSTR, CLNTCONN, and CLUSSDR. It is optional for SVR channels, and for CLUSRCVR channels of TRPTYPE(TCP), and is not valid for RCVR or SVRCONN channels.

Providing multiple connection names in a list was first supported in IBM WebSphere MQ Version 7.0.1. It changes the syntax of the CONNAME parameter. Earlier clients and queue managers connect using the first connection name in the list, and do not read the rest of the connection names in the list. In order for the earlier clients and queue managers to parse the new syntax, you must specify a port number on the first connection name in the list. Specifying a port number avoids problems when connecting to the channel from a client or queue manager that is running at a level earlier than IBM WebSphere MQ Version 7.0.1.

On AIX, HP-UX, IBM i, Linux, Solaris, and Windows platforms, the TCP/IP connection name parameter of a cluster-receiver channel is optional. If you leave the connection name blank, IBM WebSphere MQ generates a connection name for you, assuming the default port and using the current IP address of the system. You can override the default port number, but still use the current IP address of the system. For each connection name leave the IP name blank, and provide the port number in parentheses; for example:

```
(1415)
```

The generated CONNAME is always in the dotted decimal (IPv4) or hexadecimal (IPv6) form, rather than in the form of an alphanumeric DNS host name.

Tip: If you are using any of the special characters in your connection name (for example, parentheses) you must enclose the string in single quotation marks.

The value you specify depends on the transport type (TRPTYPE) to be used:

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- On z/OS, there are two forms in which to specify the value:

  Logical unit name
  The logical unit information for the queue manager, comprising the logical unit name, TP name, and optional mode name. Logical unit name can be specified in one of three forms:

Form	Example
luname	IGY12355
luname/TPname	IGY12345/APING
luname/TPname/modename	IGY12345/APINGD/#INTER

  For the first form, the TP name and mode name must be specified for the TPNAME and MODENAME parameters; otherwise these parameters must be blank.

  Note: For CLNTCONN channels, only the first form is allowed.

  Symbolic name
  The symbolic destination name for the logical unit information for the queue manager, as defined in the side information data set. The TPNAME and MODENAME parameters must be blank.

  Note: For CLUSRCVR channels, the side information is on the other queue managers in the cluster. Alternatively, it can be a name that a channel auto-definition exit can resolve into the appropriate logical unit information for the local queue manager.

  The specified or implied LU name can be that of a VTAM generic resources group.

- On AIX, HP-UX, IBM i, Linux, Solaris, and Windows, CONNAME is the name of the CPI-C communications side object. Alternatively, if the TPNAME is not blank, CONNAME is the fully qualified name of the partner logical unit.

NetBIOS
A unique NetBIOS name (limited to 16 characters).

SPX
The 4-byte network address, the 6-byte node address, and the 2-byte socket number. These values must be entered in hexadecimal, with a period separating the network and node addresses. The socket number must be enclosed in brackets, for example:

```
CONNAME('0a0b0c0d.804abcde23a1(5e86)')
```

TCP
Either the host name, or the network address of the remote machine (or the local machine for CLUSRCVR channels). This address can be followed by an optional port number, enclosed in parentheses.

If the CONNAME is a host name, the host name is resolved to an IP address.

The IP stack used for communication depends on the value specified for CONNAME and the value specified for LOCLADDR. See LOCLADDR for information about how this value is resolved.

On z/OS, the connection name can include the IP_name of an z/OS dynamic DNS group or a Network Dispatcher input port. Do not include the IP_name or input port for channels with a channel type (CHLTYPE) of CLUSSDR.

On AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS, you do not always need to specify the network address of your queue manager. If you define a channel with a channel type (CHLTYPE) of CLUSRCVR that is using TCP/IP, WebSphere MQ generates a CONNAME for you. It assumes the default port and uses the current IPv4 address of the system. If the system does not have an IPv4 address, the current IPv6 address of the system is used.

Note: If you are using clustering between IPv6-only and IPv4-only queue managers, do not specify an IPv6 network address as the CONNAME for CLUSRCVR channels. A queue manager that is capable only of IPv4 communication is unable to start a CLUSSDR channel definition that specifies the CONNAME in IPv6 hexadecimal form. Consider, instead, using host names in a heterogeneous IP environment.

CONVERT
Specifies whether the sending message channel agent attempts conversion of the application message data, if the receiving message channel agent cannot perform this conversion.

NO
No conversion by sender

YES
Conversion by sender

On z/OS, N and Y are accepted as synonyms of NO and YES.

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, CLUSSDR, or CLUSRCVR.

DEFCDISP
Specifies the default channel disposition of the channel.

PRIVATE
The intended disposition of the channel is as a private channel.

FIXSHARED
The intended disposition of the channel is as a shared channel associated with a specific queue manager.

SHARED
The intended disposition of the channel is as a shared channel.

This parameter does not apply to channels with a channel type (CHLTYPE) of CLNTCONN, CLUSSDR, or CLUSRCVR.

DEFRECON
Specifies whether a client connection automatically reconnects a client application if its connection breaks.

NO
Unless overridden by MQCONNX, the client is not reconnected automatically.

YES
Unless overridden by MQCONNX, the client reconnects automatically.

QMGR
Unless overridden by MQCONNX, the client reconnects automatically, but only to the same queue manager. The QMGR option has the same effect as MQCNO_RECONNECT_Q_MGR.

DISABLED
Reconnection is disabled, even if requested by the client program using the MQCONNX MQI call.

Table 40. Automatic reconnection depends on the values set in the application and in the channel definition

DEFRECON	**Reconnection options set in the application**			
	MQCNO_RECONNECT	MQCNO_RECONNECT_Q_MGR	MQCNO_RECONNECT_AS_DEF	MQCNO_RECONNECT_DISABLED
NO	YES	QMGR	NO	NO
YES	YES	QMGR	YES	NO
QMGR	YES	QMGR	QMGR	NO
DISABLED	NO	NO	NO	NO

DESCR(*string*)
Plain-text comment. It provides descriptive information about the channel when an operator issues the **DISPLAY CHANNEL** command.

It must contain only displayable characters. The maximum length is 64 characters. In a DBCS installation, it can contain DBCS characters (subject to a maximum length of 64 bytes).

Note: If the information is sent to another queue manager they might be translated incorrectly. The characters must be in the coded character set identifier (CCSID) of the local queue manager.

DISCINT(*integer*)
The minimum time in seconds for which the channel waits for a message to arrive on the transmission queue. The waiting period starts after a batch ends. After the end of the waiting period, if there are no more messages, the channel is ended. A value of zero causes the message channel agent to wait indefinitely.

The value must be in the range 0 - 999 999.

This parameter is valid only for channels with a channel type (CHLTYPE) of SVRCONN, SDR, SVR, CLUSSDR, CLUSRCVR.

For SVRCONN channels using the TCP protocol, DISCINT has a different interpretation. It is the minimum time in seconds for which the SVRCONN instance remains active without any communication from its partner client. A value of zero disables this disconnect processing. The SVRCONN inactivity interval applies only between IBM WebSphere MQ API calls from a client, so no client is disconnected during an extended MQGET with wait call. This attribute is ignored for SVRCONN channels using protocols other than TCP.

HBINT(*integer*)

HBINT specifies the approximate time between heartbeat flows sent by a message channel agent (MCA). The flows are sent when there are no messages on the transmission queue.

Heartbeat flows unblock the receiving MCA, which is waiting for messages to arrive or for the disconnect interval to expire. When the receiving MCA is unblocked, it can disconnect the channel without waiting for the disconnect interval to expire. Heartbeat flows also free any storage buffers that are allocated for large messages. They also close any queues that are left open at the receiving end of the channel.

The value is in seconds and must be in the range 0 - 999999. A value of zero means that no heartbeat flows are to be sent. The default value is 300. To be most useful, the value needs to be less than the disconnect interval value.

For SVRCONN and CLNTCONN channels, heartbeats can flow from both the server side as well as the client side independently. If no data is transferred across the channel during the heartbeat interval, the CLNTCONN MQI agent sends a heartbeat flow. The SVRCONN MQI agent responds to it with another heartbeat flow. The flows happen irrespective of the state of the channel. For example, irrespective of whether it is inactive while making an API call, or is inactive waiting for client user input. The SVRCONN MQI agent is also capable of initiating a heartbeat to the client, again irrespective of the state of the channel. The SVRCONN and CLNTCONN MQI agents are prevented from heart beating to each other at the same time. The server heartbeat is flowed if no data is transferred across the channel for the heartbeat interval plus 5 seconds.

For server-connection and client-connection channels working in the channel mode before IBM WebSphere MQ Version 7.0, heartbeats flow only when a server MCA is waiting for an MQGET command with the WAIT option specified, which it has issued on behalf of a client application.

For more information, see Heartbeat interval (HBINT).

JAASCFG(*string*)
The name of a stanza in the JAAS configuration file.

KAINT(*integer*)
The value passed to the communications stack for keepalive timing for this channel.

For this attribute to be effective, TCP/IP keepalive must be enabled both in the queue manager and in TCP/IP. On z/OS, enable TCP/IP keepalive in the queue manager by issuing the ALTER QMGR TCPKEEP(YES) command. If the TCPKEEP queue manager parameter is NO, the value is ignored, and the keepalive facility is not used. On other platforms, TCP/IP keepalive is enabled when the KEEPALIVE=YES parameter is specified in the TCP stanza. Modify the TCP stanza in the distributed queuing configuration file, qm.ini, or through the IBM WebSphere MQ Explorer.

Keepalive must also be switched on within TCP/IP itself. Refer to your TCP/IP documentation for information about configuring keepalive. On AIX, use the **no** command. On HP-UX, use the **ndd** command. On Windows, edit the registry. On z/OS, update your TCP/IP PROFILE data set and add or change the INTERVAL parameter in the TCPCONFIG section.

Although this parameter is available on all platforms, its setting is implemented only on z/OS. On platforms other than z/OS, you can access and modify the parameter, but it is only stored and forwarded. It is not implemented, but it is still useful, for instance in a clustered environment. For example, a value set in a CLUSRCVR channel definition on Solaris flows to z/OS queue managers that are in, or join, the cluster.

On platforms other than z/OS, if you need the functionality provided by the KAINT parameter, use the Heartbeat Interval (HBINT) parameter, as described in HBINT.

(*integer*)
The KeepAlive interval to be used, in seconds, in the range 1 through 99999.

0
The value used is that specified by the INTERVAL statement in the TCP profile configuration data set.

AUTO
The KeepAlive interval is calculated based upon the negotiated heartbeat value as follows:

- If the negotiated HBINT is greater than zero, keepalive interval is set to that value plus 60 seconds.
- If the negotiated HBINT is zero, the keepalive value used is that specified by the INTERVAL statement in the TCP/IP PROFILE configuration data set.

If AUTO is specified for KAINT, and it is a server-connection channel, the TCP INTERVAL value is used instead for the keepalive interval.

In this case, KAINT is zero in DISPLAY CHSTATUS; it would be non-zero if an integer had been coded instead of AUTO.

This parameter is valid for all channel types. It is ignored for channels with a TRPTYPE other than TCP or SPX.

LIKE(*channel-name*)
The name of a channel. The parameters of this channel are used to model this definition.

If you do not set LIKE, and do not set a parameter field related to the command, its value is taken from one of the default channels. The default values depend upon the channel type:

SYSTEM.DEF.SENDER
Sender channel

SYSTEM.DEF.SERVER
Server channel

SYSTEM.DEF.RECEIVER
Receiver channel

SYSTEM.DEF.REQUESTER
Requester channel

SYSTEM.DEF.SVRCONN
Server-connection channel

SYSTEM.DEF.CLNTCONN
Client-connection channel

SYSTEM.DEF.CLUSSDR
CLUSSDR channel

SYSTEM.DEF.CLUSRCVR
Cluster-receiver channel

SYSTEM.DEF.MQTT
Telemetry channel

This parameter is equivalent to defining the following object:

```
LIKE(SYSTEM.DEF.SENDER)
```

for a SDR channel, and similarly for other channel types.

These default channel definitions can be altered by the installation to the default values required.

On z/OS, the queue manager searches page set zero for an object with the name you specify and a disposition of QMGR or COPY. The disposition of the LIKE object is not copied to the object and channel type you are defining.

Note:

1. QSGDISP(GROUP) objects are not searched.
2. LIKE is ignored if QSGDISP(COPY) is specified. However, the group object defined is used as a LIKE object.

LOCLADDR(*string*)
LOCLADDR is the local communications address for the channel. Use this parameter if you want a channel to use a particular IP address, port, or port range for outbound communications. LOCLADDR might be useful in recovery scenarios where a channel is restarted on a different TCP/IP stack. LOCLADDR is also useful to force a channel to use an IPv4 or IPv6 stack on a dual-stack system. You can also use LOCLADDR to force a channel to use a dual-mode stack on a single-stack system.

This parameter is valid only for channels with a transport type (TRPTYPE) of TCP. If TRPTYPE is not TCP, the data is ignored and no error message is issued.

The value is the optional IP address, and optional port or port range used for outbound TCP/IP communications. The format for this information is as follows:

```
LOCLADDR([ip-addr][(low-port[,high-port])][,[ip-addr][(low-port[,high-port])]])
```

The maximum length of LOCLADDR, including multiple addresses, is MQ_LOCAL_ADDRESS_LENGTH.

If you omit LOCLADDR, a local address is automatically allocated.

Note, that you can set LOCLADDR for a C client using the Client Channel Definition Table (CCDT).

All the parameters are optional. Omitting the ip-addr part of the address is useful to enable the configuration of a fixed port number for an IP firewall. Omitting the port number is useful to select a particular network adapter without having the identify a unique local port number. The TCP/IP stack generates a unique port number.

Specify *[,[ip-addr][(low-port[,high-port])]]* multiple times for each additional local address. Use multiple local addresses if you want to specify a specific subset of local network adapters. You can also use *[,[ip-addr][(low-port[,high-port])]]* to represent a particular local network address on different servers that are part of a multi-instance queue manager configuration.

ip-addr
ip-addr is specified in one of three forms:

IPv4 dotted decimal
For example 192.0.2.1

IPv6 hexadecimal notation
For example 2001:DB8:0:0:0:0:0:0

Alphanumeric host name form
For example WWW.EXAMPLE.COM

low-port and high-port
low-port and high-port are port numbers enclosed in parentheses.

Table 41 on page 340 shows how the LOCLADDR parameter can be used:

Table 41. Examples of how the LOCLADDR parameter can be used

LOCLADDR	Meaning
9.20.4.98	Channel binds to this address locally
9.20.4.98, 9.20.4.99	Channel binds to either IP address. The address might be two network adapters on one server, or a different network adapter on two different servers in a multi-instance configuration.
9.20.4.98(1000)	Channel binds to this address and port 1000 locally
9.20.4.98(1000,2000)	Channel binds to this address and uses a port in the range 1000 - 2000 locally
(1000)	Channel binds to port 1000 locally
(1000,2000)	Channel binds to port in range 1000 - 2000 locally

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, RQSTR, CLNTCONN, CLUSSDR, CLUSRCVR, or MQTT.

On CLUSSDR channels, the IP address and port to which the outbound channel binds, is a combination of fields. It is a concatenation of the IP address, as defined in the LOCLADDR parameter, and the port range from the cluster cache. If there is no port range in the cache, the port range defined in the LOCLADDR parameter is used. This port range does not apply to z/OS.

Even though this parameter is similar in form to CONNAME, it must not be confused with it.
The LOCLADDR parameter specifies the characteristics of the local communications, whereas the CONNAME parameter specifies how to reach a remote queue manager.

When a channel is started, the values specified for CONNAME and LOCLADDR determine the IP stack to be used for communication; see Table 3 and Local Address (LOCLADDR) .

If the TCP/IP stack for the local address is not installed or configured, the channel does not start and an exception message is generated. The message indicates that the `connect()` request specifies an interface address that is not known on the default IP stack. To direct the connect() request to the alternative stack, specify the **LOCLADDR** parameter in the channel definition as either an interface on the alternative stack, or a DNS host name. The same specification also works for listeners that might not use the default stack. To find the value to code for **LOCLADDR**, run the **NETSTAT HOME** command on the IP stacks that you want to use as alternatives.

For channels with a channel type (CHLTYPE) of MQTT the usage of this parameter is slightly different. Specifically, a telemetry channel (MQTT) **LOCLADDR** parameter expects only an IPv4 or IPv6 IP address, or a valid host name as a string. This string must not contain a port number or port range. If an IP address is entered, only the address format is validated. The IP address itself is not validated.

Table 42. How the IP stack to be used for communication is determined

Protocols supported	CONNAME	LOCLADDR	Action of channel
IPv4 only	IPv4 address[1]		Channel binds to IPv4 stack
	IPv6 address[2]		Channel fails to resolve CONNAME
	IPv4 and 6 host name[3]		Channel binds to IPv4 stack
	IPv4 address	IPv4 address	Channel binds to IPv4 stack
	IPv6 address	IPv4 address	Channel fails to resolve CONNAME
	IPv4 and 6 host name	IPv4 address	Channel binds to IPv4 stack
	Any address[4]	IPv6 address	Channel fails to resolve LOCLADDR
	IPv4 address	IPv4 and 6 host name	Channel binds to IPv4 stack
	IPv6 address	IPv4 and 6 host name	Channel fails to resolve CONNAME
	IPv4 and 6 host name	IPv4 and 6 host name	Channel binds to IPv4 stack

Table 42. How the IP stack to be used for communication is determined (continued)

Protocols supported	CONNAME	LOCLADDR	Action of channel
IPv4 and IPv6	IPv4 address		Channel binds to IPv4 stack
	IPv6 address		Channel binds to IPv6 stack
	IPv4 and 6 host name		Channel binds to stack determined by IPADDRV
	IPv4 address	IPv4 address	Channel binds to IPv4 stack
	IPv6 address	IPv4 address	Channel fails to resolve CONNAME
	IPv4 and 6 host name	IPv4 address	Channel binds to IPv4 stack
	IPv4 address	IPv6 address	Channel maps CONNAME to IPv6[5]
	IPv6 address	IPv6 address	Channel binds IPv6 stack
	IPv4 and 6 host name	IPv6 address	Channel binds IPv6 stack
	IPv4 address	IPv4 and 6 host name	Channel binds to IPv4 stack
	IPv6 address	IPv4 and 6 host name	Channel binds to IPv6 stack
	IPv4 and 6 host name	IPv4 and 6 host name	Channel binds to stack determined by IPADDRV
IPv6 only	IPv4 address		Channel maps CONNAME to IPv6[5]
	IPv6 address		Channel binds to IPv6 stack
	IPv4 and 6 host name		Channel binds to IPv6 stack
	Any address	IPv4 address	Channel fails to resolve LOCLADDR
	IPv4 address	IPv6 address	Channel maps CONNAME to IPv6[5]
	IPv6 address	IPv6 address	Channel binds to IPv6 stack
	IPv4 and 6 host name	IPv6 address	Channel binds to IPv6 stack
	IPv4 address	IPv4 and 6 host name	Channel maps CONNAME to IPv6[5]
	IPv6 address	IPv4 and 6 host name	Channel binds to IPv6 stack
	IPv4 and 6 host name	IPv4 and 6 host name	Channel binds to IPv6 stack

Table 42. How the IP stack to be used for communication is determined (continued)

Protocols supported	CONNAME	LOCLADDR	Action of channel

Notes:

1. IPv4 address. An IPv4 host name that resolves only to an IPv4 network address or a specific dotted notation IPv4 address, for example `1.2.3.4`. This note applies to all occurrences of 'IPv4 address' in this table.
2. IPv6 address. An IPv6 host name that resolves only to an IPv6 network address or a specific hexadecimal notation IPv6 address, for example `4321:54bc`. This note applies to all occurrences of 'IPv6 address' in this table.
3. IPv4 and 6 host name. A host name that resolves to both IPv4 and IPv6 network addresses. This note applies to all occurrences of 'IPv4 and 6 host name' in this table.
4. Any address. IPv4 address, IPv6 address, or IPv4 and 6 host name. This note applies to all occurrences of 'Any address' in this table.
5. Maps IPv4 CONNAME to IPv4 mapped IPv6 address. IPv6 stack implementations that do not support IPv4 mapped IPv6 addressing fail to resolve the CONNAME. Mapped addresses might require protocol translators in order to be used. The use of mapped addresses is not recommended.

LONGRTY(*integer*)

The LONGRTY parameter specifies the maximum number of further attempts that are made by a SDR, SVR, or CLUSSDR channel to connect to a remote queue manager. The interval between attempts is specified by LONGTMR. The LONGRTY parameter takes effect if the count specified by SHORTRTY is exhausted.

If this count is exhausted without success, an error is logged to the operator, and the channel stops. In this circumstance, the channel must be restarted with a command. It is not started automatically by the channel initiator.

The LONGRTY value must be in the range 0 - 9999999.

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, CLUSSDR, or CLUSRCVR.

A channel attempts to reconnect if it fails to connect initially, whether it is started automatically by the channel initiator or by an explicit command. It also tries to connect again if the connection fails after the channel successfully connecting. If the cause of the failure is such that more attempts are unlikely to be successful, they are not attempted.

LONGTMR(*integer*)

For LONGRTY, LONGTMR is the maximum number of seconds to wait before reattempting connection to the remote queue manager.

The time is approximate; zero means that another connection attempt is made as soon as possible.

The interval between attempting to reconnect might be extended if the channel has to wait to become active.

The LONGTMR value must be in the range 0 - 9999999.

Note: For implementation reasons, the maximum LONGTMR value is 999,999; values exceeding this maximum are treated as 999,999. Similarly, the minimum interval between attempting to reconnect is 2 seconds. Values less than this minimum are treated as 2 seconds.

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, CLUSSDR, or CLUSRCVR.

MAXINST(*integer*)
The maximum number of simultaneous instances of an individual SVRCONN channel that can be started.

The value must be in the range 0 - 999999999.

A value of zero prevents all client access on this channel.

New instances cannot start if the number of running instances equals or exceeds the value of this parameter. If MAXINST is changed to less than the number of instances of the SVRCONN channel that are currently running, the number of running instances is not affected.

On z/OS, without the client attachment feature installed, a maximum of five instances are allowed on the SYSTEM.ADMIN.SVRCONN channel. If MAXINST is set to a larger number than five, it is interpreted as zero without the CAF installed.

This parameter is valid only for channels with a channel type (CHLTYPE) of SVRCONN.

MAXINSTC(*integer*)
The maximum number of simultaneous individual SVRCONN channels that can be started from a single client. In this context, connections that originate from the same remote network address are regarded as coming from the same client.

The value must be in the range 0 - 999999999.

A value of zero prevents all client access on this channel.

If you reduce the value of MAXINSTC to less than the number of instances of the SVRCONN channel that is currently running from an individual client, the running instances are not affected. New SVRCONN instances from that client cannot start until the client is running fewer instances than the value of MAXINSTC.

On z/OS, without the client attachment feature installed, only a maximum of five instances are allowed on the channel named SYSTEM.ADMIN.SVRCONN.

This parameter is valid only for channels with a channel type (CHLTYPE) of SVRCONN.

MAXMSGL(*integer*)
Specifies the maximum message length that can be transmitted on the channel. This parameter is compared with the value for the partner and the actual maximum used is the lower of the two values. The value is ineffective if the MQCB function is being executed and the channel type (CHLTYPE) is SVRCONN.

The value zero means the maximum message length for the queue manager; see ALTER QMGR MAXMSGL.

On AIX, HP-UX, IBM i, Linux, Solaris, and Windows, specify a value in the range zero to the maximum message length for the queue manager.

On z/OS, specify a value in the range 0 - 104857600 bytes (100 MB).

Note that by adding the digital signature and key to the message, IBM WebSphere MQ Advanced Message Security increases the length of the message.

MCANAME(*string*)
Message channel agent name.

This parameter is reserved, and if specified must be set to blanks (maximum length 20 characters).

MCATYPE
Specifies whether the message-channel-agent program on an outbound message channel runs as a thread or a process.

PROCESS
The message channel agent runs as a separate process.

THREAD
The message channel agent runs as a separate thread

In situations where a threaded listener is required to service many incoming requests, resources can become strained. In this case, use multiple listener processes and target incoming requests at specific listeners though the port number specified on the listener.

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, RQSTR, CLUSSDR, or CLUSRCVR. It is supported only on AIX, HP-UX, IBM i, Linux, Solaris, and Windows.

On z/OS, it is supported only for channels with a channel type of CLUSRCVR. When specified in a CLUSRCVR definition, MCATYPE is used by a remote machine to determine the corresponding CLUSSDR definition.

MCAUSER(*string*)
Message channel agent user identifier.

Note: An alternative way of providing a user ID for a channel to run under is to use channel authentication records. With channel authentication records, different connections can use the same channel while using different credentials. If both MCAUSER on the channel is set and channel authentication records are used to apply to the same channel, the channel authentication records take precedence. The MCAUSER on the channel definition is only used if the channel authentication record uses USERSRC(CHANNEL). For more details, see Channel authentication records

This parameter interacts with PUTAUT; see PUTAUT.

If MCAUSER is nonblank, a user identifier is used by the message channel agent for authorization to access IBM WebSphere MQ resources. If PUTAUT is DEF, authorization includes authorization to put the message to the destination queue for RCVR or RQSTR channels.

If it is blank, the message channel agent uses its default user identifier.

The default user identifier is derived from the user ID that started the receiving channel. The possible values are:

z/OS,
The user ID assigned to the channel-initiator started task by the z/OS started-procedures table.

TCP/IP, other than z/OS
The user ID from the `inetd.conf` entry, or the user that started the listener.

SNA, other than z/OS
The user ID from the SNA server entry. In the absence of the user ID from the SNA server entry, the user from the incoming attach request, or the user that started the listener.

NetBIOS or SPX
The user ID that started the listener.

The maximum length of the string is 64 characters on Windows and 12 characters on other platforms. On Windows, you can optionally qualify a user identifier with the domain name in the format `user@domain`.

This parameter is not valid for channels with a channel type (CHLTYPE) of SDR, SVR, CLNTCONN, CLUSSDR.

MODENAME(*string*)
LU 6.2 mode name (maximum length 8 characters).

This parameter is valid only for channels with a transport type (TRPTYPE) of LU62. If TRPTYPE is not LU62, the data is ignored and no error message is issued.

If specified, this parameter must be set to the SNA mode name unless the CONNAME contains a side-object name. If CONNAME is a a side-object name it must be set to blanks. The actual name is then taken from the CPI-C Communications Side Object, or APPC side information data set.

This parameter is not valid for channels with a channel type (CHLTYPE) of RCVR or SVRCONN.

MONCHL
Controls the collection of online monitoring data for channels:

QMGR
Collect monitoring data according to the setting of the queue manager parameter MONCHL.

OFF
Monitoring data collection is turned off for this channel.

LOW
If the value of the queue manager MONCHL parameter is not NONE, online monitoring data is turned on. Data us collected at a low rate for this channel.

MEDIUM
If the value of the queue manager MONCHL parameter is not NONE, online monitoring data is turned on. Data us collected at a medium rate for this channel.

HIGH
If the value of the queue manager MONCHL parameter is not NONE, online monitoring data is turned on. Data us collected at a high rate for this channel.

Changes to this parameter take effect only on channels started after the change occurs.

For cluster channels, the value of this parameter is not replicated in the repository and, therefore, not used in the auto-definition of CLUSSDR channels. For auto-defined CLUSSDR channels, the value of this parameter is taken from the queue manager attribute MONACLS. This value might then be overridden in the channel auto-definition exit.

MRDATA(*string*)
Channel message-retry exit user data. The maximum length is 32 characters.

This parameter is passed to the channel message-retry exit when it is called.

This parameter is valid only for channels with a channel type (CHLTYPE) of RCVR, RQSTR, or CLUSRCVR.

MREXIT(*string*)
Channel message-retry exit name.

The format and maximum length of the name is the same as for MSGEXIT, however you can specify only one message-retry exit.

This parameter is valid only for channels with a channel type (CHLTYPE) of RCVR, RQSTR, or CLUSRCVR.

MRRTY(*integer*)
The number of times the channel tries again before it decides it cannot deliver the message.

This parameter controls the action of the MCA only if the message-retry exit name is blank. If the exit name is not blank, the value of MRRTY is passed to the exit to use. The number of attempts to redeliver the message is controlled by the exit, and not by this parameter.

The value must be in the range 0 - 999999999. A value of zero means that no attempts to redeliver the message are tried.

This parameter is valid only for channels with a channel type (CHLTYPE) of RCVR, RQSTR, or CLUSRCVR.

MRTMR(*integer*)
The minimum interval of time that must pass before the channel can try the MQPUT operation again. The time interval is in milliseconds.

This parameter controls the action of the MCA only if the message-retry exit name is blank. If the exit name is not blank, the value of MRTMR is passed to the exit to use. The number of attempts to redeliver the message is controlled by the exit, and not by this parameter.

The value must be in the range 0 - 999999999. A value of zero means that if the value of MRRTY is greater than zero, the channel reattempts delivery as soon as possible.

This parameter is valid only for channels with a channel type (CHLTYPE) of RCVR, RQSTR, or CLUSRCVR.

MSGDATA(*string*)
User data for the channel message exit. The maximum length is 32 characters.

This data is passed to the channel message exit when it is called.

On AIX, HP-UX, Linux, Solaris, and Windows, you can specify data for more than one exit program by specifying multiple strings separated by commas. The total length of the field must not exceed 999 characters.

On IBM i, you can specify up to 10 strings, each of length 32 characters. The first string of data is passed to the first message exit specified, the second string to the second exit, and so on.

On z/OS, you can specify up to eight strings, each of length 32 characters. The first string of data is passed to the first message exit specified, the second string to the second exit, and so on.

On other platforms, you can specify only one string of message exit data for each channel.

Note: This parameter is accepted but ignored for SVRCONN and CLNTCONN channels.

MSGEXIT(*string*)
Channel message exit name.

If MSGEXIT is nonblank the exit is called at the following times:

- Immediately after a SDR or SVR channel retrieves a message from the transmission queue.
- Immediately before a RQSTR channel puts a message on destination queue.
- When the channel is initialized or ended.

The exit is passed the entire application message and transmission queue header for modification.

MSGEXIT is accepted and ignored by CLNTCONN and SVRCONN channels. CLNTCONN or SVRCONN channels do not call message exits.

The format and maximum length of the exit name depends on the platform; see Table 43 on page 347.

If the MSGEXIT, MREXIT, SCYEXIT, SENDEXIT, and RCVEXIT parameters are all left blank, the channel user exit is not invoked. If any of these parameters is nonblank, the channel exit program is called. You can enter text string for these parameters. The maximum length of the string is 128 characters.

Table 43. Message exit format and length

Platform	Exit name format	Maximum length	Comment
AIX, HP-UX, Linux, and Solaris	*libraryname*(*functionname*)	128	You can specify the name of more than one exit program. Specify multiple strings separated by commas. However, the total number of characters specified must not exceed 999.
Windows	*dllname*(*functionname*)	128	1. You can specify the name of more than one exit program. Specify multiple strings separated by commas. However, the total number of characters specified must not exceed 999. 2. *dllname* is specified without the suffix (.DLL).

Table 43. Message exit format and length (continued)

Platform	Exit name format	Maximum length	Comment
IBM i	*progname libname*	20	1. You can specify the names of up to 10 exit programs by specifying multiple strings separated by commas. 2. *program name* occupies the first 10 characters and *libname* the second 10 characters. If necessary, both fields are padded to the right with blanks.
z/OS	*loadModuleName*	8	1. You can specify the names of up to eight exit programs by specifying multiple strings separated by commas. 2. 128 characters are allowed for exit names for CLNTCONN channels, subject to a maximum total length including commas of 999.

- On systems, it is of the form:

NETPRTY(*integer*)
The priority for the network connection. Distributed queuing chooses the path with the highest priority if there are multiple paths available. The value must be in the range 0 - 9; 0 is the lowest priority.

This parameter is valid only for CLUSRCVR channels.

NPMSPEED
The class of service for nonpersistent messages on this channel:

FAST
Fast delivery for nonpersistent messages; messages might be lost if the channel is lost. Messages are retrieved using MQGMO_SYNCPOINT_IF_PERSISTENT and so are not included in the batch unit of work.

NORMAL
Normal delivery for nonpersistent messages.

If the value of NPMSPEED differs between the sender and receiver, or either one does not support it, NORMAL is used.

This parameter is valid only for channels with a CHLTYPE of SDR, SVR, RCVR, RQSTR, CLUSSDR, or CLUSRCVR.

PASSWORD(*string*)
Password used by the message channel agent when attempting to initiate a secure LU 6.2 session with a remote message channel agent. The maximum length is 12 characters.

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, RQSTR, CLNTCONN, or CLUSSDR. On z/OS, it is supported only for channels with a channel type (CHLTYPE) of CLNTCONN.

Although the maximum length of the parameter is 12 characters, only the first 10 characters are used.

PORT(*integer*)
The port number for TCP/IP. This parameter is the port number on which the listener is to stop listening. It is valid only if the transmission protocol is TCP/IP.

PROPCTL
Property control attribute; see **PROPCTL** channel options.

PROPCTL specifies what happens to message properties when a message is sent to another queue manager; see

This parameter is applicable to SDR, SVR, CLUSSDR, and CLUSRCVR channels.

This parameter is optional.

Permitted values are:

COMPAT
COMPAT allows applications which expect JMS-related properties to be in an MQRFH2 header in the message data to continue to work unmodified.

Message properties	Result
The message contains a property with a prefix of mcd., jms., usr. or mqext.	If the Support value is MQPD_SUPPORT_OPTIONAL, all optional message properties are placed in one or more MQRFH2 headers. This rule does not apply to properties in the message descriptor or extension, which remain in the same place. Optional message properties are moved into the message data before the message it sent to the remote queue manager.
The message does not contain a property with a prefix of mcd., jms., usr. or mqext.	All message properties, except properties in the message descriptor or extension, are removed from the message before the message is sent to the remote queue manager.
The message contains a property where the Support field of the property descriptor is not set to MQPD_SUPPORT_OPTIONAL	The message is rejected with reason MQRC_UNSUPPORTED_PROPERTY and treated in accordance with its report options.
The message contains one or more properties where the Support field of the property descriptor is set to MQPD_SUPPORT_OPTIONAL. Other fields of the property descriptor are set to non-default values.	The properties with non-default values are removed from the message before the message is sent to the remote queue manager.
The MQRFH2 folder that would contain the message property needs to be assigned with the content='properties' attribute	The properties are removed to prevent MQRFH2 headers with unsupported syntax flowing to a Version 6.0 or prior queue manager.

NONE
All properties of the message, except properties in the message descriptor or extension, are removed from the message. The properties are removed before the message is sent to the remote queue manager.

If the message contains a property where the Support field of the property descriptor is not set to MQPD_SUPPORT_OPTIONAL then the message is rejected with reason MQRC_UNSUPPORTED_PROPERTY. The error is reported in accordance with the report options set in the message header.

ALL
All properties of the message are included with the message when it is sent to the remote queue manager. The properties, except properties in the message descriptor (or extension), are placed in one or more MQRFH2 headers in the message data.

PUTAUT
PUTAUT specifies which user identifiers are used to establish authority for a channel. It specifies the user identifier to put messages to the destination queue using a message channel, or to run an MQI call using an MQI channel.

DEF
The default user ID is used. On z/OS, DEF might involve using both the user ID received from the network and that derived from MCAUSER.

CTX
The user ID from the *UserIdentifier* field of the message descriptor is used. On z/OS, CTX might involve also using the user ID received from the network or that derived from MCAUSER, or both.

ONLYMCA
The default user ID is used. Any user ID received from the network is not used. This value is supported only on z/OS.

ALTMCA
The user ID from the *UserIdentifier* field of the message descriptor is used. Any user ID received from the network is not used. This value is supported only on z/OS.

On z/OS, the user IDs that are checked, and how many user IDs are checked, depends on the setting of the MQADMIN RACF class hlq.RESLEVEL profile. Depending on the level of access the user ID of the channel initiator has to hlq.RESLEVEL, zero, one, or two user IDs are checked.

This parameter is valid only for channels with a channel type (CHLTYPE) of RCVR, RQSTR, CLUSRCVR, or, on z/OS only, SVRCONN. CTX and ALTMCA are not valid for SVRCONN channels.

QMNAME(*string*)
Queue manager name.

For CLNTCONN channels, QMNAME is the name of a queue manager to which a IBM WebSphere MQ MQI client application can request connection. QMNAME is not necessarily the same as the name of the queue manager on which the channel is defined; see Queue manager groups in the CCDT.

For channels of other types, the QMNAME parameter is not valid.

QSGDISP
This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves).

QSGDISP	**DEFINE**
COPY	The object is defined on the page set of the queue manager that executes the command using the QSGDISP(GROUP) object of the same name as the LIKE object.

GROUP	The object definition resides in the shared repository but only if the queue manager is in a queue-sharing group. If the definition is successful, the following command is generated. The command is sent to all active queue managers in the queue-sharing group to make or refresh local copies on page set zero:
	`DEFINE CHANNEL(channe-name)`
	`CHLTYPE(type) REPLACE QSGDISP(COPY)`
	The **DEFINE** command for the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.

PRIVATE	Not permitted.
QMGR	The object is defined on the page set of the queue manager that executes the command.

RCVDATA(*string*)
Channel receive exit user data (maximum length 32 characters).

This parameter is passed to the channel receive exit when it is called.

On AIX, HP-UX, Linux, Solaris, and Windows, you can specify data for more than one exit program by specifying multiple strings separated by commas. The total length of the field must not exceed 999 characters.

On IBM i, you can specify up to 10 strings, each of length 32 characters. The first string of data is passed to the first receive exit specified, the second string to the second exit, and so on.

On z/OS, you can specify up to eight strings, each of length 32 characters. The first string of data is passed to the first receive exit specified, the second string to the second exit, and so on.

On other platforms, you can specify only one string of receive exit data for each channel.

RCVEXIT(*string*)
Channel receive exit name.

If this name is nonblank, the exit is called at the following times:

- Immediately before the received network data is processed.

  The exit is given the complete transmission buffer as received. The contents of the buffer can be modified as required.

- At initialization and termination of the channel.

On AIX, HP-UX, Linux, Solaris, and Windows, you can specify the name of more than one exit program by specifying multiple strings separated by commas. However, the total number of characters specified must not exceed 999.

On IBM i, you can specify the names of up to 10 exit programs by specifying multiple strings separated by commas.

On z/OS, you can specify the names of up to eight exit programs by specifying multiple strings separated by commas.

On other platforms, you can specify only one receive exit name for each channel.

The format and maximum length of the name is the same as for MSGEXIT.

REPLACE and NOREPLACE
Replace the existing definition with this one, or not. This parameter is optional. On z/OS it must have the same disposition. Any object with a different disposition is not changed.

REPLACE
The definition replaces any existing definition of the same name. If a definition does not exist, one is created. REPLACE does not alter the channel status.

NOREPLACE
The definition does not replace any existing definition of the same name.

SCYDATA(*string*)
Channel security exit user data (maximum length 32 characters).

This parameter is passed to the channel security exit when it is called.

SCYEXIT(*string*)
Channel security exit name.

If this name is nonblank, the exit is called at the following times:

- Immediately after establishing a channel.

  Before any messages are transferred, the exit is able to instigate security flows to validate connection authorization.

- Upon receipt of a response to a security message flow.

  Any security message flows received from the remote processor on the remote queue manager are given to the exit.

- At initialization and termination of the channel.

The format and maximum length of the name is the same as for MSGEXIT but only one name is allowed.

SENDDATA(*string*)
Channel send exit user data. The maximum length is 32 characters.

This parameter is passed to the channel send exit when it is called.

On AIX, HP-UX, Linux, Solaris, and Windows, you can specify data for more than one exit program by specifying multiple strings separated by commas. The total length of the field must not exceed 999 characters.

On IBM i, you can specify up to 10 strings, each of length 32 characters. The first string of data is passed to the first send exit specified, the second string to the second exit, and so on.

On z/OS, you can specify up to eight strings, each of length 32 characters. The first string of data is passed to the first send exit specified, the second string to the second exit, and so on.

On other platforms, you can specify only one string of send exit data for each channel.

SENDEXIT(*string*)
Channel send exit name.

If this name is nonblank, the exit is called at the following times:

- Immediately before data is sent out on the network.

  The exit is given the complete transmission buffer before it is transmitted. The contents of the buffer can be modified as required.
- At initialization and termination of the channel.

On AIX, HP-UX, Linux, Solaris, and Windows, you can specify the name of more than one exit program by specifying multiple strings separated by commas. However, the total number of characters specified must not exceed 999.

On IBM i, you can specify the names of up to 10 exit programs by specifying multiple strings separated by commas.

On z/OS, you can specify the names of up to eight exit programs by specifying multiple strings separated by commas.

On other platforms, you can specify only one send exit name for each channel.

The format and maximum length of the name is the same as for MSGEXIT.

SEQWRAP(*integer*)
When this value is reached, sequence numbers wrap to start again at 1.

This value is nonnegotiable and must match in both the local and remote channel definitions.

The value must be in the range 100 - 999999999.

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, RCVR, RQSTR, CLUSSDR, or CLUSRCVR.

SHARECNV(*integer*)
Specifies the maximum number of conversations that can be sharing each TCP/IP channel instance. A SHARECNV value of:

1
Specifies no sharing of conversations over a TCP/IP channel instance. Client heart beating is available whether in an MQGET call or not. Read ahead and client asynchronous consumption are also available, and channel quiescing is more controllable.

0
Specifies no sharing of conversations over a TCP/IP channel instance. The channel instance runs in a mode that is compatible with WebSphere MQ earlier than version 7.0, regarding:

- Administrator stop-quiesce
- Heart beating
- Read ahead

- Client asynchronous consumption

The value must be in the range zero through 999999999.

This parameter is valid only for channels with a channel type (CHLTYPE) of CLNTCONN or SVRCONN. If the CLNTCONN SHARECNV value does not match the SVRCONN SHARECNV value, the lower of the two values is used. This parameter is ignored for channels with a transport type (TRPTYPE) other than TCP.

All the conversations on a socket are received by the same thread.

High SHARECNV limits have the advantage of reducing queue manager thread usage. If many conversations sharing a socket are all busy, there is a possibility of delays. The conversations contend with one another to use the receiving thread. In this situation, a lower SHARECNV value is better.

The number of shared conversations does not contribute to the MAXINST or MAXINSTC totals.

Note: You should restart the client for this change to take effect.

SHORTRTY(*integer*)
SHORTRTY specifies the maximum number of attempts that are made by a SDR, SVR, or CLUSSDR channel to connect to the remote queue manager, at intervals specified by SHORTTMR. After the number of attempts is exhausted, the channel tries to reconnect using to the schedule defined by LONGRTY.

The value must be in the range 0 - 999999999.

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, CLUSSDR, or CLUSRCVR.

A channel attempts to reconnect if it fails to connect initially, whether it is started automatically by the channel initiator or by an explicit command. It also tries to connect again if the connection fails after the channel successfully connecting. If the cause of the failure is such that more attempts are unlikely to be successful, they are not attempted.

SHORTTMR(*integer*)
For SHORTRTY, SHORTTMR is the maximum number of seconds to wait before reattempting connection to the remote queue manager.

The time is approximate.

The interval between attempting to reconnect might be extended if the channel has to wait to become active.

The value must be in the range 0 - 999999999.

Note: For implementation reasons, the maximum SHORTTMR value is 999,999; values exceeding this maximum are treated as 999,999. The minimum interval between attempting to connect is 10 seconds with SHORTTMR(0) and 2 seconds with SHORTTMR(1).

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, CLUSSDR, or CLUSRCVR.

SSLCAUTH
SSLCAUTH defines whether IBM WebSphere MQ requires a certificate from the SSL client. The SSL client is the initiating end of the channel. SSLCAUTH is applied to the SSL server, to determine the behavior required of the client. The SSL server is the end of the channel that receives the initiation flow.

This parameter is valid only for channels with a channel type (CHLTYPE) of RCVR, SVRCONN, CLUSRCVR, SVR, RQSTR, or MQTT.

The parameter is used only for channels with SSLCIPH specified. If SSLCIPH is blank, the data is ignored and no error message is issued.

REQUIRED
IBM WebSphere MQ requires and validates a certificate from the SSL client.

OPTIONAL
The peer SSL client system might still send a certificate. If it does, the contents of this certificate are validated as normal.

SSLCIPH*(string)*
SSLCIPH specifies the CipherSpec that is used on the channel. The maximum length is 32 characters. This parameter is valid on all channel types which use transport type TRPTYPE(TCP). If the SSLCIPH parameter is blank, no attempt is made to use SSL on the channel.

Note: When SSLCIPH is used with a telemetry channel, it means "SSL Cipher Suite". See the SSLCIPH description in "DEFINE CHANNEL (MQTT)".

Specify the name of the CipherSpec you are using. The CipherSpecs that can be used with IBM WebSphere MQ SSL support are shown in the following table. The SSLCIPH values must specify the same CipherSpec on both ends of the channel.

A table describing the CipherSpecs you can use with WebSphere MQ SSL and TLS support.

CipherSpec name	Protocol used	Data integrity	Encryption algorithm	Encryption bits	FIPS[1]	Suite B 128 bit	Suite B 192 bit
NULL_MD5 [a]	SSL 3.0	MD5	None	0	No	No	No
NULL_SHA [a]	SSL 3.0	SHA-1	None	0	No	No	No
RC4_MD5_EXPORT [2] [a]	SSL 3.0	MD5	RC4	40	No	No	No
RC4_MD5_US [a]	SSL 3.0	MD5	RC4	128	No	No	No
RC4_SHA_US [a]	SSL 3.0	SHA-1	RC4	128	No	No	No
RC2_MD5_EXPORT [2] [a]	SSL 3.0	MD5	RC2	40	No	No	No
DES_SHA_EXPORT [2] [a]	SSL 3.0	SHA-1	DES	56	No	No	No
RC4_56_SHA_EXPORT1024 [3] [b]	SSL 3.0	SHA-1	RC4	56	No	No	No
DES_SHA_EXPORT1024 [3] [b]	SSL 3.0	SHA-1	DES	56	No	No	No
TLS_RSA_WITH_AES_128_CBC_SHA [a]	TLS 1.0	SHA-1	AES	128	Yes	No	No
TLS_RSA_WITH_AES_256_CBC_SHA [4] [a]	TLS 1.0	SHA-1	AES	256	Yes	No	No
TLS_RSA_WITH_DES_CBC_SHA [a]	TLS 1.0	SHA-1	DES	56	No[5]	No	No
FIPS_WITH_DES_CBC_SHA [b]	SSL 3.0	SHA-1	DES	56	No[6]	No	No
TLS_RSA_WITH_AES_128_GCM_SHA256 [b]	TLS 1.2	AEAD AES-128 GCM	AES	128	Yes	No	No
TLS_RSA_WITH_AES_256_GCM_SHA384 [b]	TLS 1.2	AEAD AES-256 GCM	AES	256	Yes	No	No
TLS_RSA_WITH_AES_128_CBC_SHA256 [b]	TLS 1.2	SHA-256	AES	128	Yes	No	No
TLS_RSA_WITH_AES_256_CBC_SHA256 [b]	TLS 1.2	SHA-256	AES	256	Yes	No	No
ECDHE_ECDSA_RC4_128_SHA256 [b]	TLS 1.2	SHA-1	RC4	128	No	No	No
ECDHE_RSA_RC4_128_SHA256 [b]	TLS 1.2	SHA_1	RC4	128	No	No	No
ECDHE_ECDSA_AES_128_CBC_SHA256 [b]	TLS 1.2	SHA-256	AES	128	Yes	No	No
ECDHE_ECDSA_AES_256_CBC_SHA384 [b]	TLS 1.2	SHA-384	AES	256	Yes	No	No

A table describing the CipherSpecs you can use with WebSphere MQ SSL and TLS support.

(continued)

CipherSpec name	Protocol used	Data integrity	Encryption algorithm	Encryption bits	FIPS[1]	Suite B 128 bit	Suite B 192 bit
ECDHE_RSA_AES_128_CBC_SHA256 [b]	TLS 1.2	SHA-256	AES	128	Yes	No	No
ECDHE_RSA_AES_256_CBC_SHA384 [b]	TLS 1.2	SHA-384	AES	256	Yes	No	No
ECDHE_ECDSA_AES_128_GCM_SHA256 [b]	TLS 1.2	AEAD AES-128 GCM	AES	128	Yes	Yes	No
ECDHE_ECDSA_AES_256_GCM_SHA384 [b]	TLS 1.2	AEAD AES-256 GCM	AES	256	Yes	No	Yes
ECDHE_RSA_AES_128_GCM_SHA256 [b]	TLS 1.2	AEAD AES-128 GCM	AES	128	Yes	No	No
ECDHE_RSA_AES_256_GCM_SHA384 [b]	TLS 1.2	AEAD AES-256 GCM	AES	256	Yes	No	No
TLS_RSA_WITH_NULL_SHA256 [b]	TLS 1.2	SHA-256	None	0	No	No	No
ECDHE_RSA_NULL_SHA256 [b]	TLS 1.2	SHA-1	None	0	No	No	No
ECDHE_ECDSA_NULL_SHA256 [b]	TLS 1.2	SHA-1	None	0	No	No	No
TLS_RSA_WITH_NULL_NULL [b]	TLS 1.2	None	None	0	No	No	No
TLS_RSA_WITH_RC4_128_SHA256 [b]	TLS 1.2	SHA-1	RC4	128	No	No	No

Notes:

1. Specifies whether the CipherSpec is FIPS-certified on a FIPS-certified platform. See Federal Information Processing Standards (FIPS) for an explanation of FIPS.
2. The maximum handshake key size is 512 bits. If either of the certificates exchanged during the SSL handshake has a key size greater than 512 bits, a temporary 512-bit key is generated for use during the handshake.
3. The handshake key size is 1024 bits.
4. This CipherSpec cannot be used to secure a connection from the WebSphere MQ Explorer to a queue manager unless the appropriate unrestricted policy files are applied to the JRE used by the Explorer.
5. This CipherSpec was FIPS 140-2 certified before 19 May 2007.
6. This CipherSpec was FIPS 140-2 certified before 19 May 2007. The name FIPS_WITH_DES_CBC_SHA is historical and reflects the fact that this CipherSpec was previously (but is no longer) FIPS-compliant. This CipherSpec is deprecated and its use is not recommended.
7. This CipherSpec can be used to transfer up to 32 GB of data before the connection is terminated with error AMQ9288. To avoid this error, either avoid using triple DES, or enable secret key reset when using this CipherSpec.

Platform support:

- a Available on all supported platforms.
- b Available only on UNIX, Linux, and Windows platforms.

When you request a personal certificate, you specify a key size for the public and private key pair. The key size that is used during the SSL handshake can depend on the size stored in the certificate and on the CipherSpec:

- On z/OS, Windows, UNIX and Linux systems, when a CipherSpec name includes _EXPORT, the maximum handshake key size is 512 bits. If either of the certificates exchanged during the SSL handshake has a key size greater than 512 bits, a temporary 512-bit key is generated for use during the handshake.
- On Windows, UNIX and Linux systems, when a CipherSpec name includes _EXPORT1024, the handshake key size is 1024 bits.
- Otherwise the handshake key size is the size stored in the certificate.

SSLKEYP(*string*)
The store for digital certificates and their associated private keys. If you do not specify a key file, SSL is not used.

SSLKEYR(*string*)
The password for the key repository. If no passphrase is entered, then unencrypted connections must be used.

SSLPEER*(string)*

Specifies the certificate filter used by the peer queue manager or client at the other end of the channel. The filter is used to compare with the distinguished name of the certificate. A "distinguished name" is the identifier of the SSL certificate. If the distinguished name in the certificate received from the peer does not match the SSLPEER filter, the channel does not start.

Note: An alternative way of restricting connections into channels by matching against the SSL or TLS Subject distinguished name, is to use channel authentication records. With channel authentication records, different SSL or TLS subject distinguished name patterns can be applied to the same channel. Both SSLPEER and a channel authentication record can be applied to the same channel. If so, the inbound certificate must match both patterns in order to connect. For more information, see Channel authentication records.

SSLPEER is optional. If it is not specified, the distinguished name of the peer is not checked at channel startup. The distinguished name from the certificate is still written into the SSLPEER definition held in memory, and passed to the security exit. If SSLCIPH is blank, the data is ignored and no error message is issued.

This parameter is valid for all channel types.

The SSLPEER value is specified in the standard form used to specify a distinguished name. For example:

```
SSLPEER('SERIALNUMBER=4C:D0:49:D5:02:5F:38,CN="H1_C_FR1",O=IBM,C=GB')
```

You can use a semi-colon as a separator instead of a comma.

The possible attribute types supported are:

Table 44. Attribute types supported by SSLPEER.

A two column table describing the attributes supported by the SSLPEER parameter

Attribute	Description
SERIALNUMBER	Certificate serial number
MAIL	Email address
E	Email address (Deprecated in preference to MAIL)

Table 44. Attribute types supported by SSLPEER.

A two column table describing the attributes supported by the SSLPEER parameter

(continued)

Attribute	Description
UID or USERID	User identifier
CN	Common Name
T	Title
OU	Organizational Unit name
DC	Domain component
O	Organization name
STREET	Street / First line of address
L	Locality name
ST (or SP or S)	State or Province name
PC	Postal code / zipcode
C	Country
UNSTRUCTUREDNAME	Host name
UNSTRUCTUREDADDRESS	IP address
DNQ	Distinguished name qualifier

IBM WebSphere MQ accepts only uppercase letters for the attribute types.

If any of the unsupported attribute types are specified in the SSLPEER string, an error is output either when the attribute is defined, or at run time. When the error is output depends on which platform you are running on. An error implies that the SSLPEER string does not match the distinguished name of the flowed certificate.

If the distinguished name of the flowed certificate contains multiple organizational unit (OU) attributes, and SSLPEER specifies that these attributes are to be compared, they must be defined in descending hierarchical order. For example, if the distinguished name of the flowed certificate contains the OUs `OU=Large Unit, OU=Medium Unit, OU=Small Unit`, specifying the following SSLPEER values works:

```
('OU=Large Unit,OU=Medium Unit')
('OU=*,OU=Medium Unit,OU=Small Unit')
('OU=*,OU=Medium Unit')
```

but specifying the following SSLPEER values fails:

```
('OU=Medium Unit,OU=Small Unit')
('OU=Large Unit,OU=Small Unit')
('OU=Medium Unit')
('OU=Small Unit, Medium Unit, Large Unit')
```

As indicated in these examples, attributes at the low end of the hierarchy can be omitted. For example, `('OU=Large Unit,OU=Medium Unit')` is equivalent to `('OU=Large Unit,OU=Medium Unit,OU=*')`

If two DNs are equal in all respects except for their domain component (DC)) values, almost the same matching rules apply as for OUs. The exception is that with DC values, the left-most DC is the lowest-level and most specific, and the comparison ordering differs accordingly.

Any or all the attribute values can be generic, either an asterisk * on its own, or a stem with initiating or trailing asterisks. Asterisks allow the SSLPEER to match any distinguished name value, or any value starting with the stem for that attribute. You can specify an asterisk at the beginning or end of any attribute value in the DN on the certificate. If you do so, you can still check for an exact match with SSLPEER. Specify * to check for an exact match. For example, if you have an attribute of CN='Test*' in the DN of the certificate, you use the following command to check for an exact match:

```
SSLPEER('CN=Test\*')
```

The maximum length of the parameter is 1024 bytes on AIX, HP-UX, IBM i, Linux, Solaris, and Windows platforms, and 256 bytes on z/OS.

STATCHL
Controls the collection of statistics data for channels:

QMGR
The value of the STATCHL parameter of the queue manager is inherited by the channel.

OFF
Statistics data collection is turned off for this channel.

LOW
If the value of the STATCHL parameter of the queue manager is not NONE, statistics data collection is turned on. Data is collected at a low rate for this channel.

MEDIUM
If the value of the STATCHL parameter of the queue manager is not NONE, statistics data collection is turned on. Data is collected at a medium rate for this channel.

HIGH
If the value of the STATCHL parameter of the queue manager is not NONE, statistics data collection is turned on. Data is collected at a high rate for this channel.

Changes to this parameter take effect only on channels started after the change occurs.

For cluster channels, the value of this parameter is not replicated in the repository and used in the auto-definition of CLUSSDR channels. For auto-defined CLUSSDR channels, the value of this parameter is taken from the attribute STATACLS of the queue manager. This value might then be overridden in the channel auto-definition exit.

This parameter is valid only on AIX, HP-UX, IBM i, Linux, Solaris, and Windows.

TPNAME(*string*)
LU 6.2 transaction program name (maximum length 64 characters).

This parameter is valid only for channels with a transport type (TRPTYPE) of LU62.

Set this parameter to the SNA transaction program name, unless the CONNAME contains a side-object name in which case set it to blanks. The actual name is taken instead from the CPI-C Communications Side Object, or the APPC side information data set.

On Windows SNA Server, and in the side object on z/OS, the TPNAME is wrapped to uppercase.

This parameter is not valid for channels with a channel type (CHLTYPE) of RCVR.

TRPTYPE
Transport type to be used.

On AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS, this parameter is optional because, if you do not enter a value, the value specified in the SYSTEM.DEF.*channel-type* definition is used. If the channel is initiated from the other end, no check is made that the correct transport type is specified. On z/OS, if the SYSTEM.DEF.*channel-type* definition does not exist, the default is LU62.

This parameter is required on all other platforms.

LU62
SNA LU 6.2

NETBIOS
NetBIOS (supported only on Windows, and DOS; it also applies to z/OS for defining CLNTCONN channels that connect to servers on the platforms supporting NetBIOS)

SPX
Sequenced packet exchange (supported only on Windows, and DOS; it also applies to z/OS for defining CLNTCONN channels that connect to servers on the platforms supporting SPX)

TCP
Transmission Control Protocol - part of the TCP/IP protocol suite

USECLTID
Decide whether you want to use the IBM WebSphere MQ Telemetry client ID for the new connection as the IBM WebSphere MQ user ID for that connection. If this property is specified, the user name supplied by the client is ignored.

USEDLQ
Determines whether the dead-letter queue is used when messages cannot be delivered by channels.

NO
Messages that cannot be delivered by a channel are treated as a failure. The channel either discards the message, or the channel ends, in accordance with the NPMSPEED setting.

YES
When the DEADQ queue manager attribute provides the name of a dead-letter queue, then it is used, else the behavior is as for NO. YES is the default value.

USERID(*string*)
Task user identifier. The maximum length is 12 characters.

This parameter is used by the message channel agent when attempting to initiate a secure LU 6.2 session with a remote message channel agent.

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, RQSTR, CLNTCONN, or CLUSSDR. On z/OS, it is supported only for CLNTCONN channels.

Although the maximum length of the parameter is 12 characters, only the first 10 characters are used.

On the receiving end, if passwords are encrypted and the LU 6.2 software is using a different encryption method, the channel fails to start. The error is diagnosed as invalid security details. You can avoid invalid security details by modifying the receiving SNA configuration to either:

- Turn off password substitution, or
- Define a security user ID and password.

XMITQ(*string*)
Transmission queue name.

The name of the queue from which messages are retrieved. See Rules for naming IBM WebSphere MQ objects .

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR or SVR. For these channel types, this parameter is required.

There is a separate syntax diagram for each type of channel:

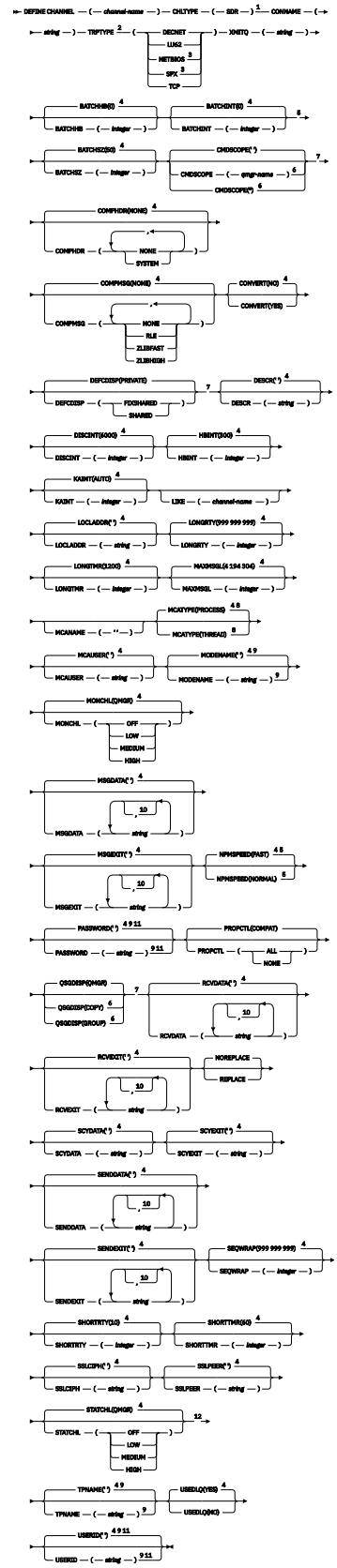
- “Sender channel” on page 361
- “Server channel” on page 363
- “Receiver channel” on page 365
- “Requester channel” on page 367
- “Client-connection channel” on page 369
- “Server-connection channel” on page 371
- “Cluster-sender channel” on page 373
- “Cluster-receiver channel” on page 375

- “DEFINE CHANNEL (MQTT)” on page 376

Sender channel

Syntax diagram for a sender channel when using the DEFINE CHANNEL command.

DEFINE CHANNEL



Notes:

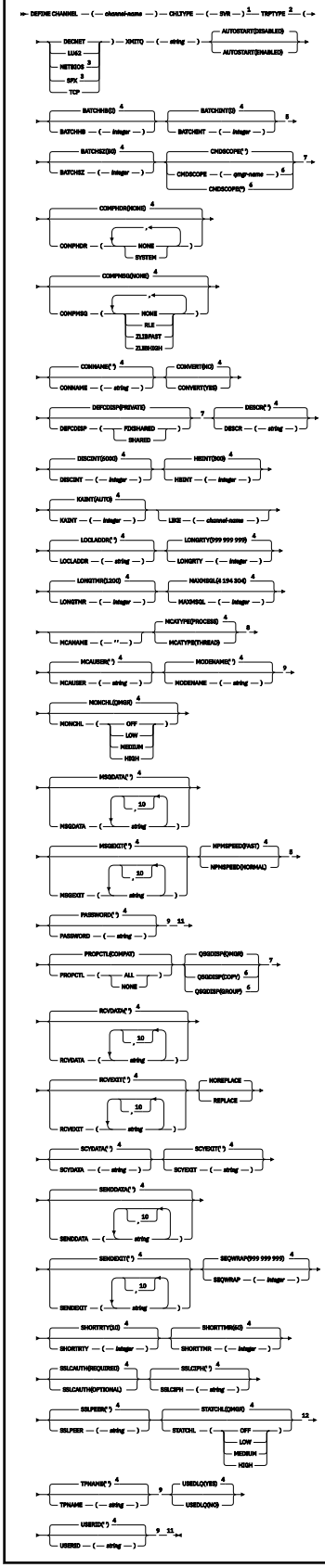
[1] This parameter must follow immediately after the channel name except on z/OS.
[2] This is not mandatory on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.
[3] Valid only on Windows.
[4] This is the default supplied with WebSphere MQ, but your installation might have changed it.
[5] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.
[6] Valid only on WebSphere MQ for z/OS when the queue manager is a member of a queue-sharing group.
[7] Valid only on z/OS.
[8] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.
[9] Valid only if TRPTYPE is LU62.
[10] You can specify more than one value only on AIX, HP-UX, Linux, IBM i, z/OS, Solaris, and Windows.
[11] Not valid on z/OS.
[12] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.

The parameters are described in "DEFINE CHANNEL" on page 325.

Server channel

Syntax diagram for a server channel when using the DEFINE CHANNEL command.

DEFINE CHANNEL



Notes:

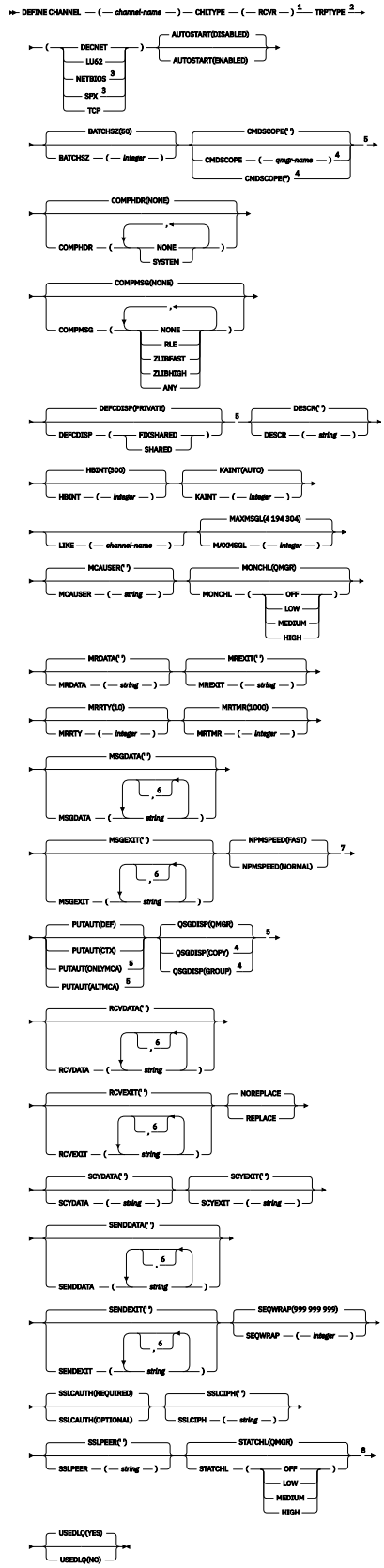
[1] This parameter must follow immediately after the channel name except on z/OS.
[2] This is not mandatory on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.
[3] Valid only on Windows.
[4] This is the default supplied with WebSphere MQ, but your installation might have changed it.
[5] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.
[6] Valid only on WebSphere MQ for z/OS when the queue manager is a member of a queue-sharing group.
[7] Valid only on z/OS.
[8] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.
[9] Valid only if TRPTYPE is LU62.
[10] You can specify more than one value only on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.
[11] Not valid on z/OS.
[12] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.

The parameters are described in "DEFINE CHANNEL" on page 325.

Receiver channel

Syntax diagram for a receiver channel when using the DEFINE CHANNEL command.

DEFINE CHANNEL



Notes:

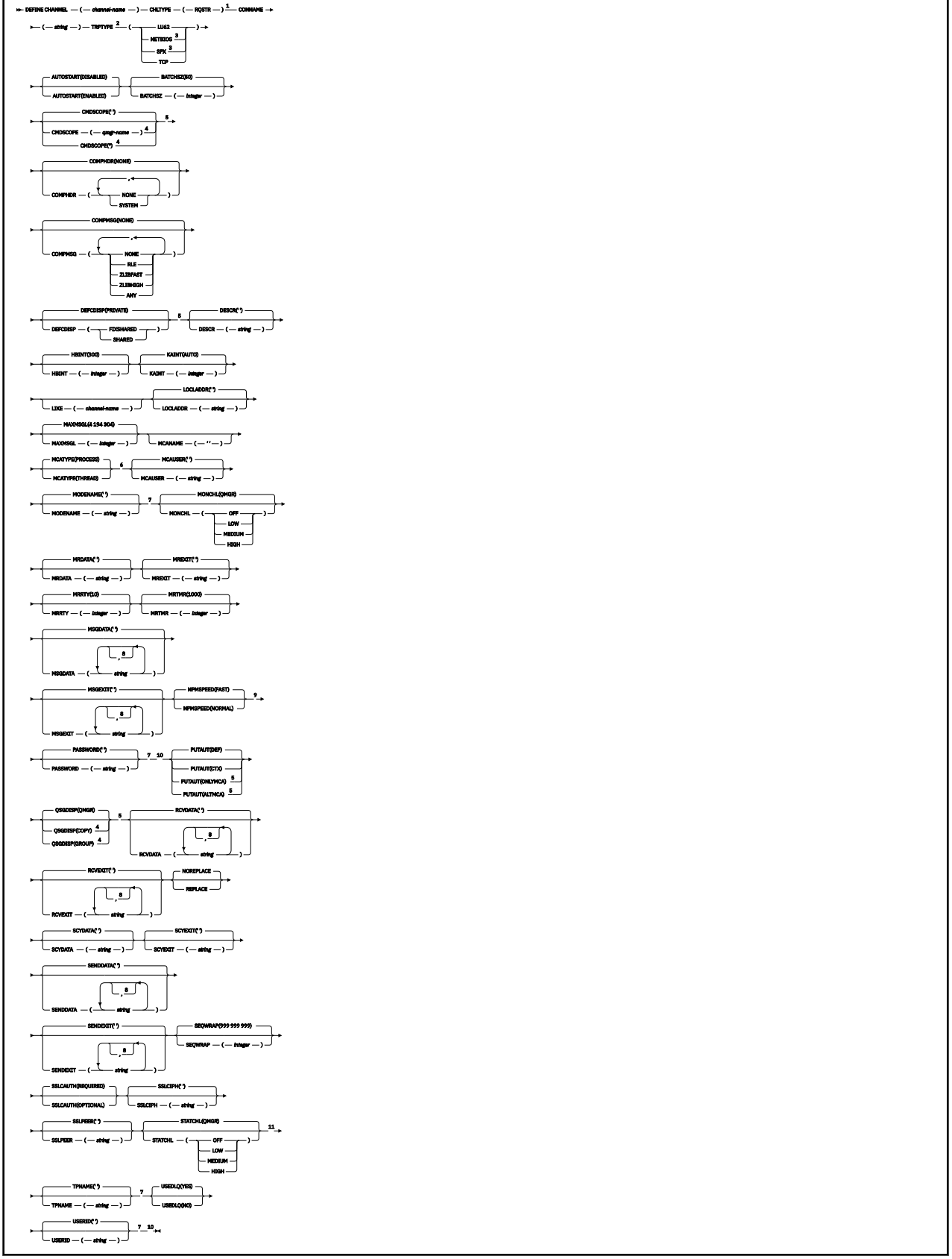
[1] This parameter must follow immediately after the channel name except on z/OS.
[2] This is not mandatory on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.
[3] Valid only on Windows.
[4] Valid only on WebSphere MQ for z/OS when the queue manager is a member of a queue-sharing group.
[5] Valid only on z/OS.
[6] You can specify more than one value only on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.
[7] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.
[8] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.

The parameters are described in "DEFINE CHANNEL" on page 325.

Requester channel

Syntax diagram for a requester channel when using the DEFINE CHANNEL command.

DEFINE CHANNEL



Notes:

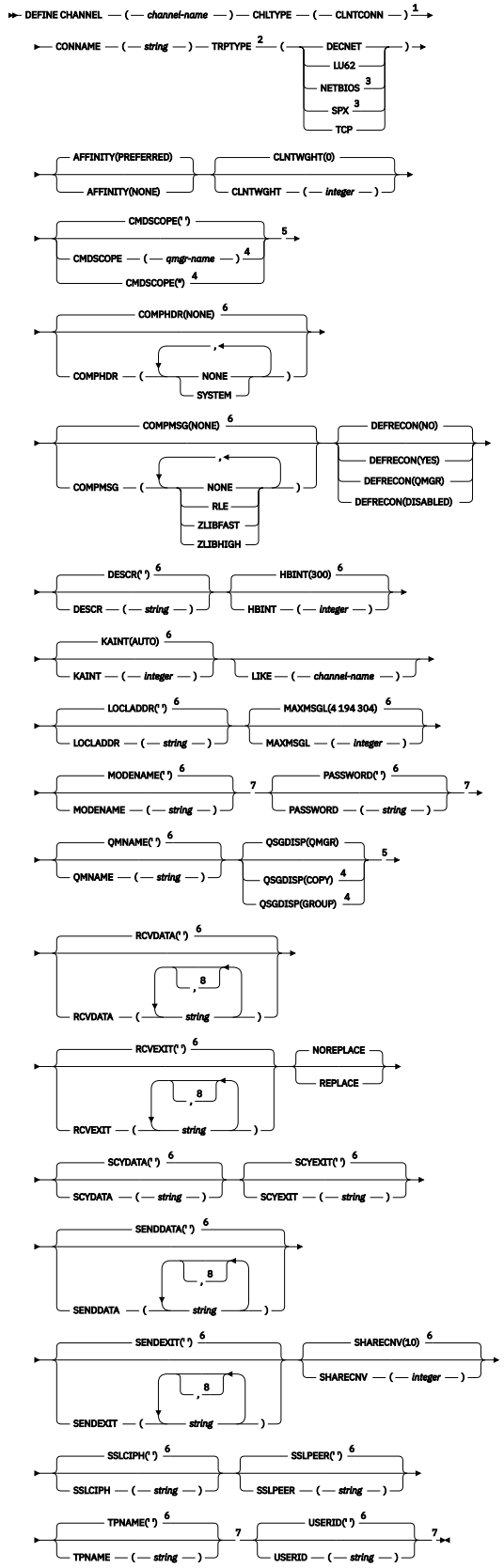
[1] This parameter must follow immediately after the channel name except on z/OS.
[2] This is not mandatory on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.
[3] Valid only on Windows.
[4] Valid only on WebSphere MQ for z/OS when the queue manager is a member of a queue-sharing group.
[5] Valid only on z/OS.
[6] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.
[7] Valid only if TRPTYPE is LU62.
[8] You can specify more than one value only on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.
[9] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.
[10] Not valid on z/OS.
[11] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.

The parameters are described in "DEFINE CHANNEL" on page 325.

Client-connection channel

Syntax diagram for a client-connection channel when using the DEFINE CHANNEL command.

DEFINE CHANNEL



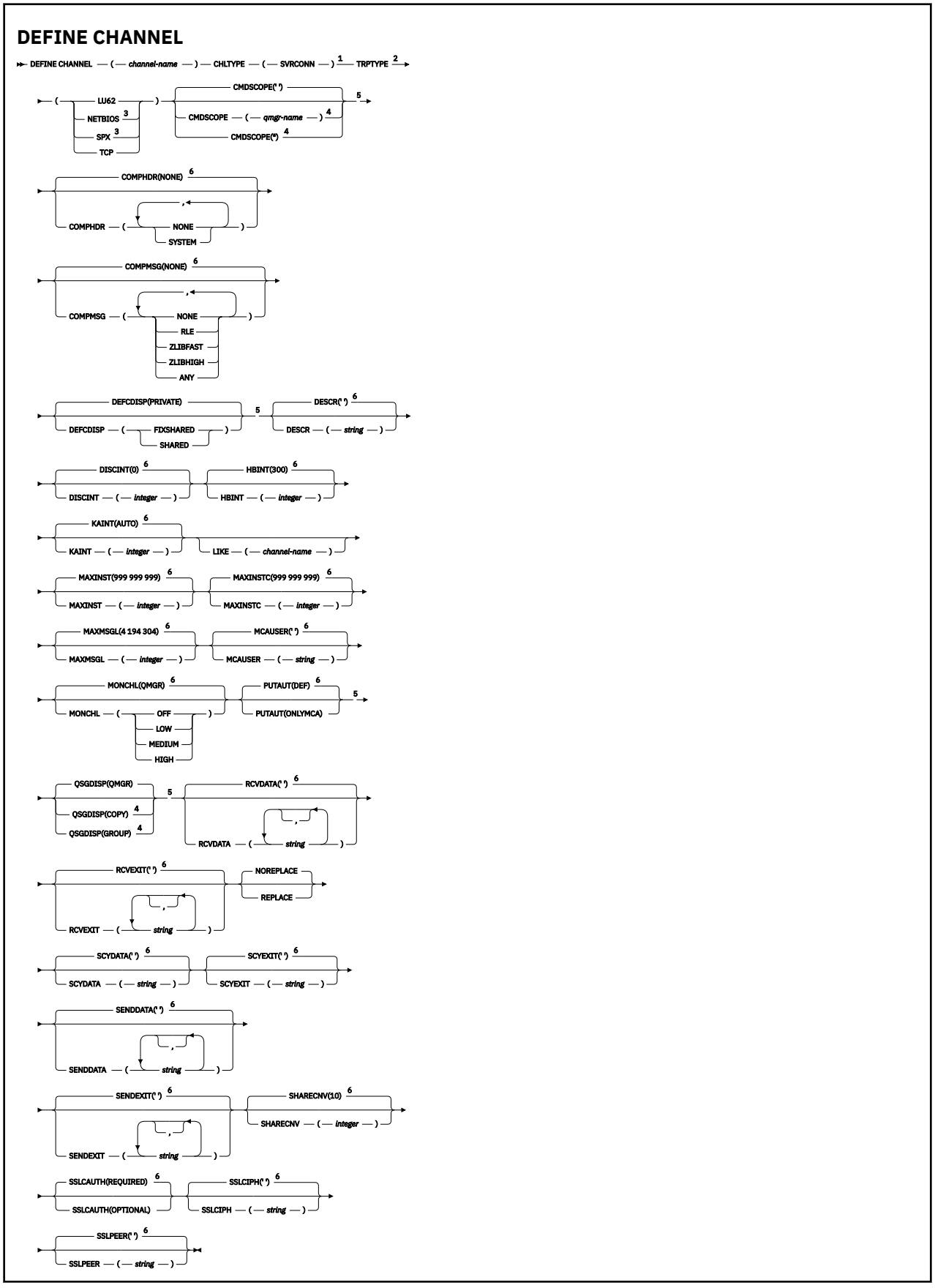
Notes:

[1] This parameter must follow immediately after the channel name except on z/OS.
[2] This is not mandatory on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.
[3] Valid only for clients to be run on DOS or Windows.
[4] Valid only on WebSphere MQ for z/OS when the queue manager is a member of a queue-sharing group.
[5] Valid only on z/OS.
[6] This is the default supplied with WebSphere MQ, but your installation might have changed it.
[7] Valid only if TRPTYPE is LU62.
[8] You can specify more than one value only on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.

The parameters are described in "DEFINE CHANNEL" on page 325.

Server-connection channel

Syntax diagram for a server-connection channel when using the DEFINE CHANNEL command.



Notes:

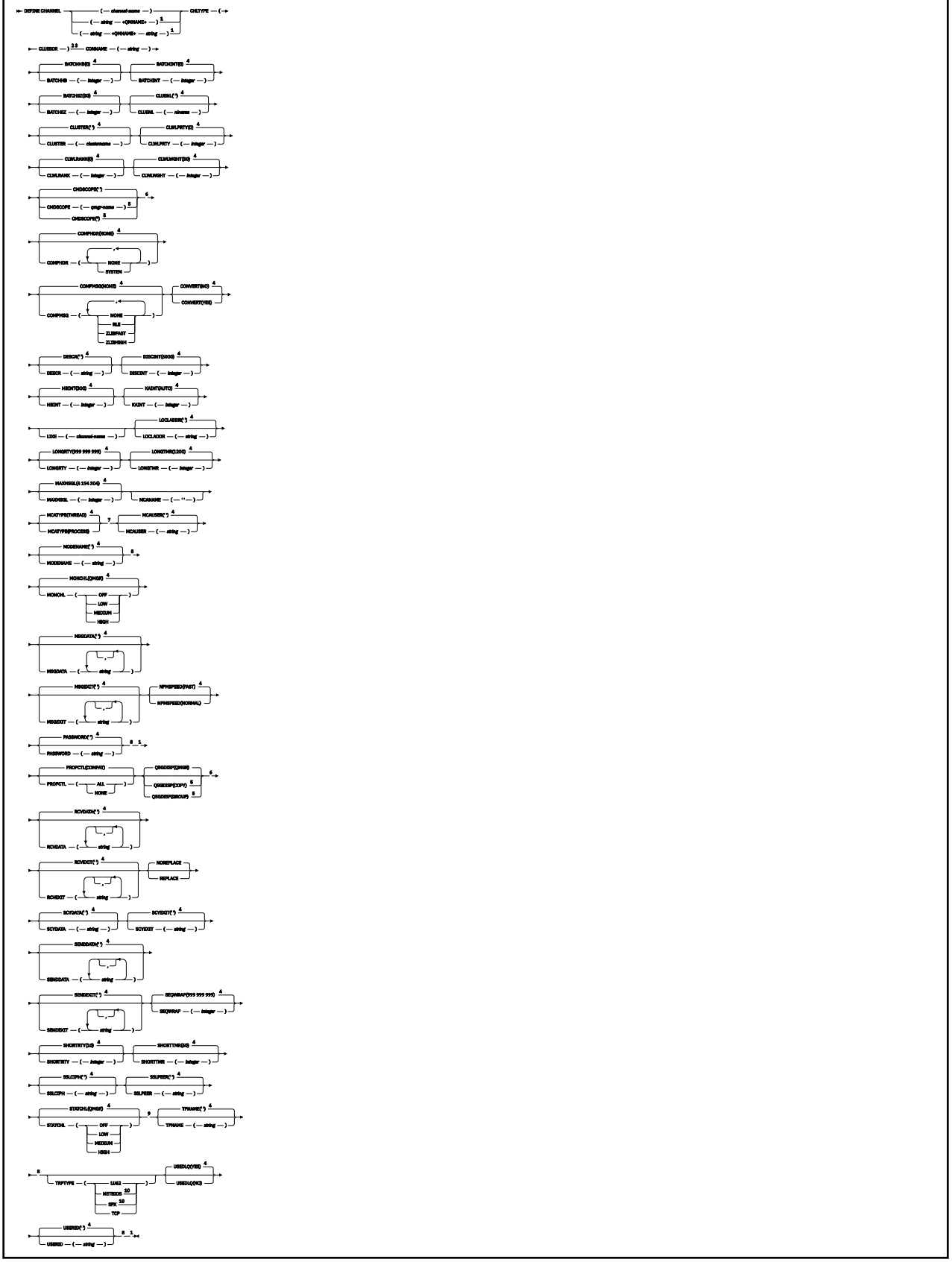
[1] This parameter must follow immediately after the channel name except on z/OS.
[2] This is not mandatory.
[3] Valid only for clients to be run on Windows.
[4] Valid only on WebSphere MQ for z/OS when the queue manager is a member of a queue-sharing group.
[5] Valid only on z/OS.
[6] This is the default supplied with WebSphere MQ, but your installation might have changed it.

The parameters are described in "DEFINE CHANNEL" on page 325.

Cluster-sender channel

Syntax diagram for a cluster-sender channel when using the DEFINE CHANNEL command.

DEFINE CHANNEL



Notes:

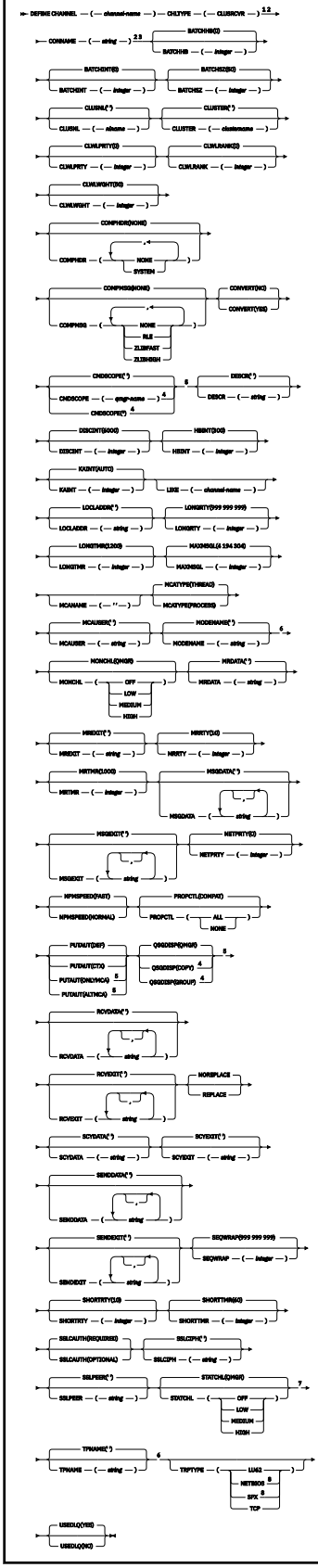
[1] Not valid on z/OS.
[2] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.
[3] This parameter must follow immediately after the channel name except on z/OS.
[4] This is the default supplied with WebSphere MQ, but your installation might have changed it.
[5] Valid only on WebSphere MQ for z/OS when the queue manager is a member of a queue-sharing group.
[6] Valid only on z/OS.
[7] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.
[8] Valid only if TRPTYPE is LU62.
[9] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.
[10] Valid only on Windows.

The parameters are described in "DEFINE CHANNEL" on page 325.

Cluster-receiver channel

Syntax diagram for a cluster-receiver channel when using the DEFINE CHANNEL command.

DEFINE CHANNEL



Notes:

[1] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.
[2] This parameter must follow immediately after the channel name except on z/OS.
[3] This parameter is optional if TRPTYPE is TCP.
[4] Valid only on WebSphere MQ for z/OS when the queue manager is a member of a queue-sharing group.
[5] Valid only on z/OS.
[6] Valid only if TRPTYPE is LU62.
[7] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.
[8] Valid only on Windows.

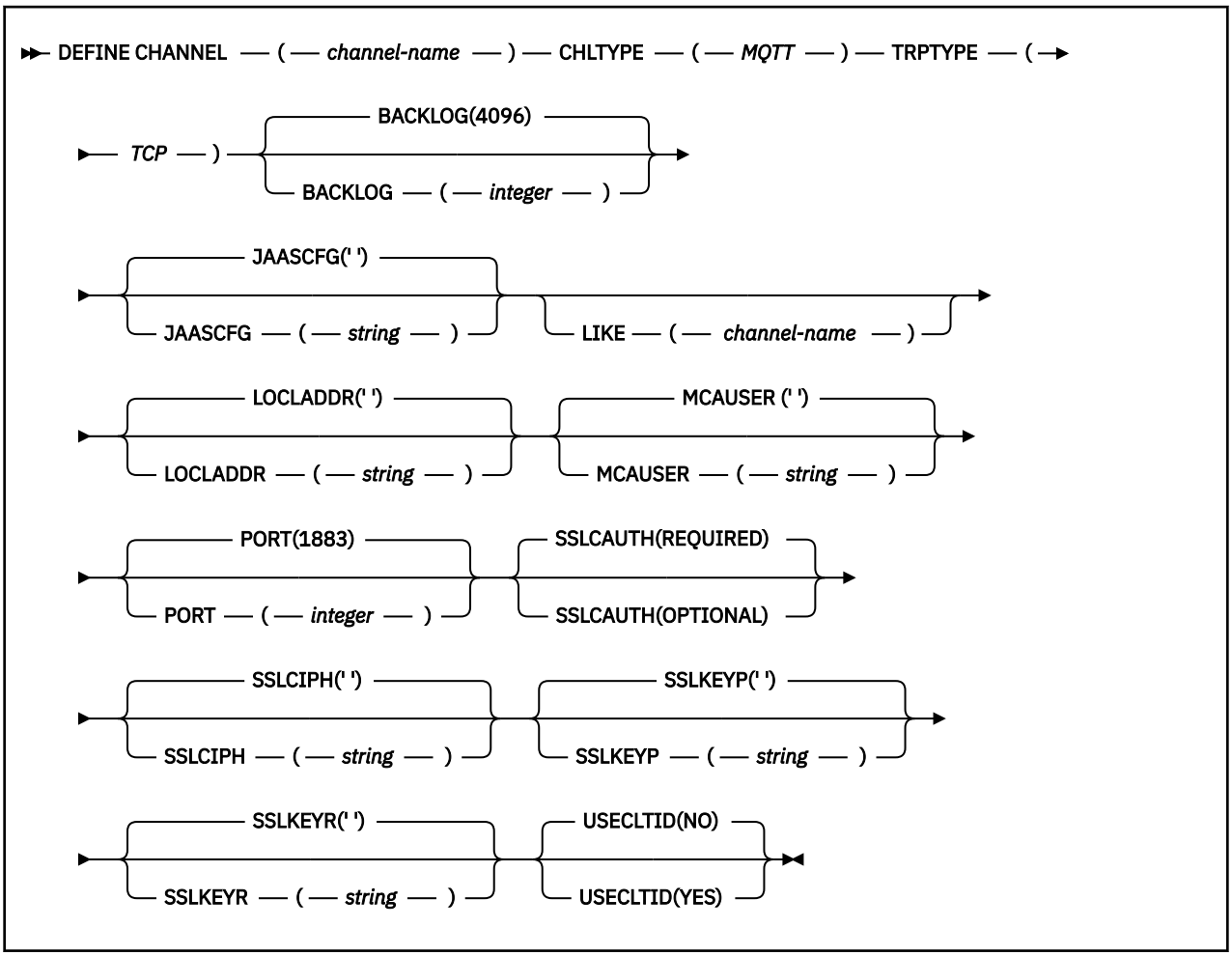
The parameters are described in "DEFINE CHANNEL" on page 325.

DEFINE CHANNEL (MQTT)

Syntax diagram for a telemetry channel when using the **DEFINE CHANNEL** command.

UNIX and Linux	Windows
✓	✓

Note: For the telemetry server, AIX is the only supported UNIX platform.



Usage notes

The telemetry (MQXR) service must be running when you issue this command. For instructions on how to start the telemetry (MQXR) service, see Configuring a queue manager for telemetry on Windows.

Parameter descriptions for DEFINE CHANNEL (MQTT)

(channel-name)
The name of the new channel definition.

The name must not be the same as any existing channel defined on this queue manager (unless REPLACE or ALTER is specified). On z/OS, client-connection channel names can duplicate others.

The maximum length of the string is 20 characters, and the string must contain only valid characters; see Rules for naming IBM WebSphere MQ objects.

BACKLOG(*integer*)
The number of outstanding connection requests that the telemetry channel can support at any one time. When the backlog limit is reached, any further clients trying to connect will be refused connection until the current backlog is processed.

The value is in the range 0 - 999999999.

The default value is 4096.

CHLTYPE
Channel type.

MQTT
Telemetry channel

JAASCFG(*string*)
The name of a stanza in the JAAS configuration file.

LOCLADDR(*string*)
LOCLADDR is the local communications address for the channel. Use this parameter if you want a channel to use a particular IP address, port, or port range for outbound communications. LOCLADDR might be useful in recovery scenarios where a channel is restarted on a different TCP/IP stack. LOCLADDR is also useful to force a channel to use an IPv4 or IPv6 stack on a dual-stack system. You can also use LOCLADDR to force a channel to use a dual-mode stack on a single-stack system.

This parameter is valid only for channels with a transport type (TRPTYPE) of TCP. If TRPTYPE is not TCP, the data is ignored and no error message is issued.

The value is the optional IP address, and optional port or port range used for outbound TCP/IP communications. The format for this information is as follows:

```
LOCLADDR([ip-addr][(low-port[,high-port])][,[ip-addr][(low-port[,high-port])]])
```

The maximum length of LOCLADDR, including multiple addresses, is MQ_LOCAL_ADDRESS_LENGTH.

If you omit LOCLADDR, a local address is automatically allocated.

Note, that you can set LOCLADDR for a C client using the Client Channel Definition Table (CCDT).

All the parameters are optional. Omitting the ip-addr part of the address is useful to enable the configuration of a fixed port number for an IP firewall. Omitting the port number is useful to select a particular network adapter without having the identify a unique local port number. The TCP/IP stack generates a unique port number.

Specify *[,[ip-addr][(low-port[,high-port])]]* multiple times for each additional local address. Use multiple local addresses if you want to specify a specific subset of local network adapters. You can also use *[,[ip-addr][(low-port[,high-port])]]* to represent a particular local network address on different servers that are part of a multi-instance queue manager configuration.

ip-addr
ip-addr is specified in one of three forms:

IPv4 dotted decimal
For example 192.0.2.1

IPv6 hexadecimal notation
For example 2001:DB8:0:0:0:0:0:0

Alphanumeric host name form
For example WWW.EXAMPLE.COM

low-port and high-port
low-port and high-port are port numbers enclosed in parentheses.

Table 41 on page 340 shows how the LOCLADDR parameter can be used:

Table 45. Examples of how the LOCLADDR parameter can be used

LOCLADDR	Meaning
9.20.4.98	Channel binds to this address locally
9.20.4.98, 9.20.4.99	Channel binds to either IP address. The address might be two network adapters on one server, or a different network adapter on two different servers in a multi-instance configuration.
9.20.4.98(1000)	Channel binds to this address and port 1000 locally
9.20.4.98(1000,2000)	Channel binds to this address and uses a port in the range 1000 - 2000 locally
(1000)	Channel binds to port 1000 locally
(1000,2000)	Channel binds to port in range 1000 - 2000 locally

This parameter is valid only for channels with a channel type (CHLTYPE) of SDR, SVR, RQSTR, CLNTCONN, CLUSSDR, CLUSRCVR, or MQTT.

On CLUSSDR channels, the IP address and port to which the outbound channel binds, is a combination of fields. It is a concatenation of the IP address, as defined in the LOCLADDR parameter, and the port range from the cluster cache. If there is no port range in the cache, the port range defined in the LOCLADDR parameter is used. This port range does not apply to z/OS.

Even though this parameter is similar in form to CONNAME, it must not be confused with it.
The LOCLADDR parameter specifies the characteristics of the local communications, whereas the CONNAME parameter specifies how to reach a remote queue manager.

When a channel is started, the values specified for CONNAME and LOCLADDR determine the IP stack to be used for communication; see Table 3 and Local Address (LOCLADDR) .

If the TCP/IP stack for the local address is not installed or configured, the channel does not start and an exception message is generated. The message indicates that the `connect()` request specifies an interface address that is not known on the default IP stack. To direct the connect() request to the alternative stack, specify the **LOCLADDR** parameter in the channel definition as either an interface on the alternative stack, or a DNS host name. The same specification also works for listeners that might not use the default stack. To find the value to code for **LOCLADDR**, run the **NETSTAT HOME** command on the IP stacks that you want to use as alternatives.

For channels with a channel type (CHLTYPE) of MQTT the usage of this parameter is slightly different. Specifically, a telemetry channel (MQTT) **LOCLADDR** parameter expects only an IPv4 or IPv6 IP address, or a valid host name as a string. This string must not contain a port number or port range. If an IP address is entered, only the address format is validated. The IP address itself is not validated.

Table 46. How the IP stack to be used for communication is determined

Protocols supported	CONNAME	LOCLADDR	Action of channel
IPv4 only	IPv4 address[1]		Channel binds to IPv4 stack
	IPv6 address[2]		Channel fails to resolve CONNAME
	IPv4 and 6 host name[3]		Channel binds to IPv4 stack
	IPv4 address	IPv4 address	Channel binds to IPv4 stack
	IPv6 address	IPv4 address	Channel fails to resolve CONNAME
	IPv4 and 6 host name	IPv4 address	Channel binds to IPv4 stack
	Any address[4]	IPv6 address	Channel fails to resolve LOCLADDR
	IPv4 address	IPv4 and 6 host name	Channel binds to IPv4 stack
	IPv6 address	IPv4 and 6 host name	Channel fails to resolve CONNAME
	IPv4 and 6 host name	IPv4 and 6 host name	Channel binds to IPv4 stack

Table 46. How the IP stack to be used for communication is determined (continued)

Protocols supported	CONNAME	LOCLADDR	Action of channel
IPv4 and IPv6	IPv4 address		Channel binds to IPv4 stack
	IPv6 address		Channel binds to IPv6 stack
	IPv4 and 6 host name		Channel binds to stack determined by IPADDRV
	IPv4 address	IPv4 address	Channel binds to IPv4 stack
	IPv6 address	IPv4 address	Channel fails to resolve CONNAME
	IPv4 and 6 host name	IPv4 address	Channel binds to IPv4 stack
	IPv4 address	IPv6 address	Channel maps CONNAME to IPv6[5]
	IPv6 address	IPv6 address	Channel binds IPv6 stack
	IPv4 and 6 host name	IPv6 address	Channel binds IPv6 stack
	IPv4 address	IPv4 and 6 host name	Channel binds to IPv4 stack
	IPv6 address	IPv4 and 6 host name	Channel binds to IPv6 stack
	IPv4 and 6 host name	IPv4 and 6 host name	Channel binds to stack determined by IPADDRV
IPv6 only	IPv4 address		Channel maps CONNAME to IPv6[5]
	IPv6 address		Channel binds to IPv6 stack
	IPv4 and 6 host name		Channel binds to IPv6 stack
	Any address	IPv4 address	Channel fails to resolve LOCLADDR
	IPv4 address	IPv6 address	Channel maps CONNAME to IPv6[5]
	IPv6 address	IPv6 address	Channel binds to IPv6 stack
	IPv4 and 6 host name	IPv6 address	Channel binds to IPv6 stack
	IPv4 address	IPv4 and 6 host name	Channel maps CONNAME to IPv6[5]
	IPv6 address	IPv4 and 6 host name	Channel binds to IPv6 stack
	IPv4 and 6 host name	IPv4 and 6 host name	Channel binds to IPv6 stack

Table 46. How the IP stack to be used for communication is determined (continued)

Protocols supported	CONNAME	LOCLADDR	Action of channel

Notes:

1. IPv4 address. An IPv4 host name that resolves only to an IPv4 network address or a specific dotted notation IPv4 address, for example `1.2.3.4`. This note applies to all occurrences of 'IPv4 address' in this table.
2. IPv6 address. An IPv6 host name that resolves only to an IPv6 network address or a specific hexadecimal notation IPv6 address, for example `4321:54bc`. This note applies to all occurrences of 'IPv6 address' in this table.
3. IPv4 and 6 host name. A host name that resolves to both IPv4 and IPv6 network addresses. This note applies to all occurrences of 'IPv4 and 6 host name' in this table.
4. Any address. IPv4 address, IPv6 address, or IPv4 and 6 host name. This note applies to all occurrences of 'Any address' in this table.
5. Maps IPv4 `CONNAME` to IPv4 mapped IPv6 address. IPv6 stack implementations that do not support IPv4 mapped IPv6 addressing fail to resolve the `CONNAME`. Mapped addresses might require protocol translators in order to be used. The use of mapped addresses is not recommended.

MCAUSER(*string*)

Message channel agent user identifier.

This parameter interacts with PUTAUT , see the definition of that parameter for more information.

If it is nonblank, it is the user identifier that is to be used by the message channel agent for authorization to access WebSphere MQ resources, including (if PUTAUT is DEF) authorization to put the message to the destination queue for receiver or requester channels.

If it is blank, the message channel agent uses its default user identifier.

The default user identifier is derived from the user ID that started the receiving channel. The possible values are:

- On z/OS, the user ID assigned to the channel-initiator started task by the z/OS started-procedures table.
- For TCP/IP, other than z/OS , the user ID from the `inetd.conf` entry, or the user that started the listener.
- For SNA, other than z/OS , the user ID from the SNA server entry or, in the absence of this user ID the incoming attach request, or the user that started the listener.
- For NetBIOS or SPX, the user ID that started the listener.

The maximum length of the string is 64 characters on Windows and 12 characters on other platforms. On Windows, you can optionally qualify a user identifier with the domain name in the format `user@domain`.

This parameter is not valid for channels with a channel type (`CHLTYPE`) of SDR, SVR, `CLNTCONN`, `CLUSSDR`.

PORT(*integer*)

The port number that the telemetry (MQXR) service accepts client connections on. The default port number for a telemetry channel is 1883; and the default port number for a telemetry channel secured using SSL is 8883. Specifying a port value of 0 causes MQTT to dynamically allocate an available port number.

SSLCAUTH
Defines whether WebSphere MQ requires a certificate from the SSL client. The initiating end of the channel acts as the SSL client, so this parameter applies to the end of the channel that receives the initiation flow, which acts as the SSL server.

This parameter is valid only for channels with a channel type (CHLTYPE) of RCVR, SVRCONN, CLUSRCVR, SVR, RQSTR, or MQTT.

The parameter is used only for channels with SSLCIPH specified. If SSLCIPH is blank, the data is ignored and no error message is issued.

REQUIRED
IBM WebSphere MQ requires and validates a certificate from the SSL client.

OPTIONAL
The peer SSL client system might still send a certificate. If it does, the contents of this certificate are validated as normal.

SSLCIPH*(string)*

When SSLCIPH is used with a telemetry channel, it means "SSL Cipher Suite". The SSL cipher suite is the one supported by the JVM that is running the telemetry (MQXR) service. If the SSLCIPH parameter is blank, no attempt is made to use SSL on the channel.

Here is an alphabetic list of the SSL cipher suites that are currently supported:

- SSL_DH_anon_EXPORT_WITH_DES40_CBC_SHA
- SSL_DH_anon_EXPORT_WITH_RC4_40_MD5
- SSL_DH_anon_WITH_3DES_EDE_CBC_SHA
- SSL_DH_anon_WITH_AES_128_CBC_SHA
- SSL_DH_anon_WITH_DES_CBC_SHA
- SSL_DH_anon_WITH_RC4_128_MD5
- SSL_DHE_DSS_EXPORT_WITH_DES40_CBC_SHA
- SSL_DHE_DSS_WITH_3DES_EDE_CBC_SHA
- SSL_DHE_DSS_WITH_AES_128_CBC_SHA
- SSL_DHE_DSS_WITH_DES_CBC_SHA
- SSL_DHE_DSS_WITH_RC4_128_SHA
- SSL_DHE_RSA_EXPORT_WITH_DES40_CBC_SHA
- SSL_DHE_RSA_WITH_3DES_EDE_CBC_SHA
- SSL_DHE_RSA_WITH_AES_128_CBC_SHA
- SSL_DHE_RSA_WITH_DES_CBC_SHA
- SSL_KRB5_EXPORT_WITH_DES_CBC_40_MD5
- SSL_KRB5_EXPORT_WITH_DES_CBC_40_SHA
- SSL_KRB5_EXPORT_WITH_RC4_40_MD5
- SSL_KRB5_EXPORT_WITH_RC4_40_SHA
- SSL_KRB5_WITH_3DES_EDE_CBC_MD5
- SSL_KRB5_WITH_3DES_EDE_CBC_SHA
- SSL_KRB5_WITH_DES_CBC_MD5
- SSL_KRB5_WITH_DES_CBC_SHA
- SSL_KRB5_WITH_RC4_128_MD5
- SSL_KRB5_WITH_RC4_128_SHA
- SSL_RSA_EXPORT_WITH_DES40_CBC_SHA
- SSL_RSA_EXPORT_WITH_RC4_40_MD5

- SSL_RSA_FIPS_WITH_3DES_EDE_CBC_SHA
- V 7.5.0.2 SSL_RSA_FIPS_WITH_AES_128_CBC_SHA256
- V 7.5.0.2 SSL_RSA_FIPS_WITH_AES_256_CBC_SHA256
- SSL_RSA_FIPS_WITH_DES_CBC_SHA
- SSL_RSA_WITH_3DES_EDE_CBC_SHA
- SSL_RSA_WITH_AES_128_CBC_SHA
- V 7.5.0.2 SSL_RSA_WITH_AES_128_CBC_SHA256
- V 7.5.0.2 SSL_RSA_WITH_AES_256_CBC_SHA256
- SSL_RSA_WITH_DES_CBC_SHA
- SSL_RSA_WITH_NULL_MD5
- SSL_RSA_WITH_NULL_SHA
- V 7.5.0.2 SSL_RSA_WITH_NULL_SHA256
- SSL_RSA_WITH_RC4_128_MD5
- SSL_RSA_WITH_RC4_128_SHA

V 7.5.0.2 If you plan to use SHA-2 cipher suites, see System requirements for using SHA-2 cipher suites with MQTT channels.

SSLKEYP(*string*)
The store for digital certificates and their associated private keys. If you do not specify a key file, SSL is not used.

SSLKEYR(*string*)
The password for the key repository. If no passphrase is entered, then unencrypted connections must be used.

USECLTID
Decide whether you want to use the MQTT client ID for the new connection as the IBM WebSphere MQ user ID for that connection. If this property is specified, the user name supplied by the client is ignored.

Related concepts
Telemetry channel configuration for MQTT client authentication using SSL
Telemetry channel configuration for channel authentication using SSL
CipherSpecs and CipherSuites
V 7.5.0.2 System requirements for using SHA-2 cipher suites with MQTT channels

Related reference
“ALTER CHANNEL (MQTT)” on page 223
Syntax diagram for a telemetry channel when using the ALTER CHANNEL command. This is separate from the regular ALTER CHANNEL syntax diagram and parameter descriptions.

DEFINE COMMINFO

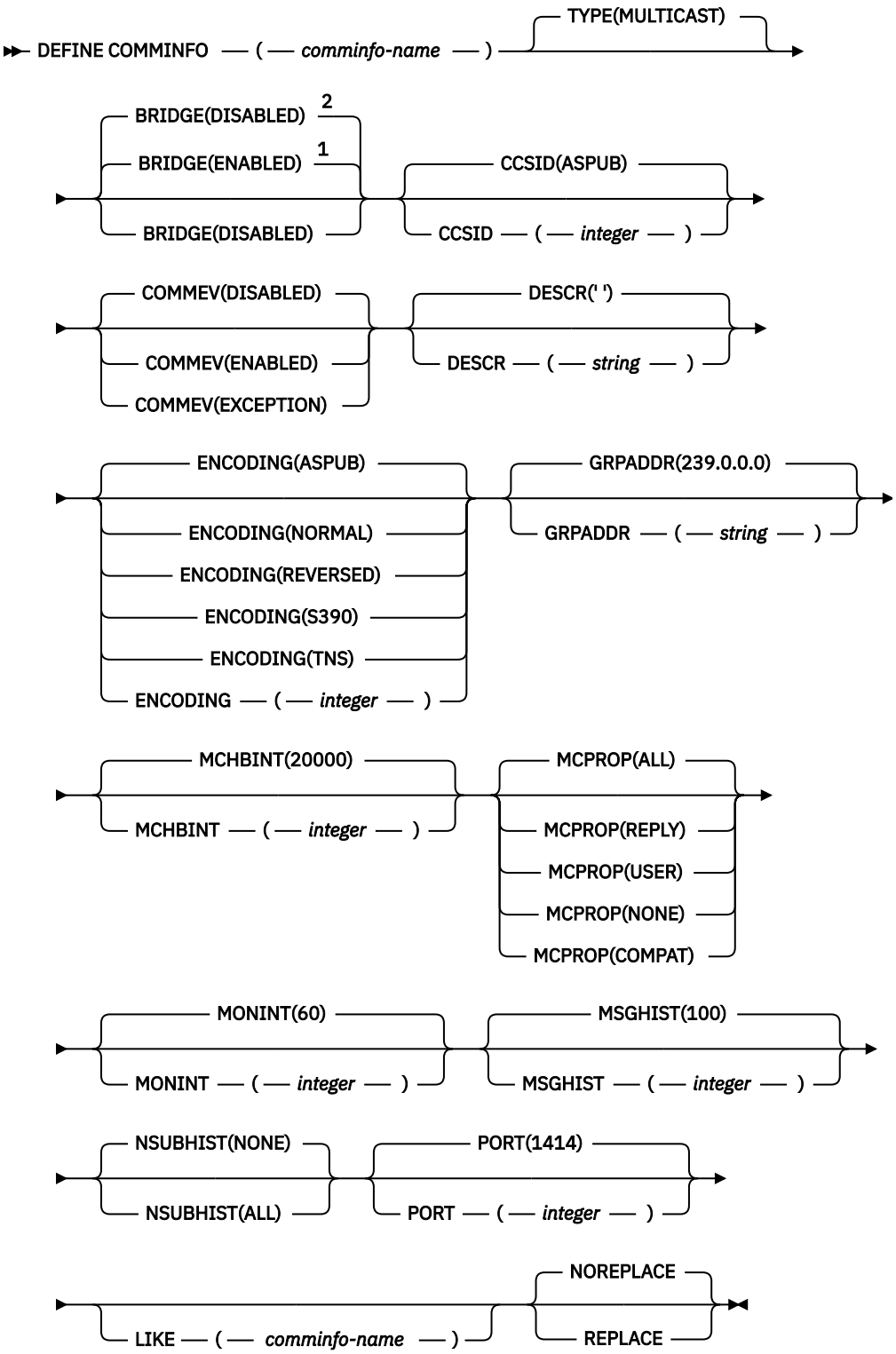
Use the MQSC command DEFINE COMMINFO to define a new communication information object. These objects contain the definitions required for Multicast messaging.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- “Parameter descriptions for DEFINE COMMINFO” on page 385

Synonym: DEF COMMINFO

DEFINE COMMINFO



Notes:

[1] Default for platforms other than IBM i.
[2] Default for IBM i.

Parameter descriptions for DEFINE COMMINFO

(comminfo name)
Name of the communications information object. This is required.

The name must not be the same as any other communications information object name currently defined on this queue manager. See Rules for naming IBM WebSphere MQ objects .

TYPE
The type of the communications information object. The only type supported is `MULTICAST`.

BRIDGE
Controls whether publications from applications not using Multicast are bridged to applications using Multicast. Bridging does not apply to topics that are marked as **`MCAST(ONLY)`** . As these topics can only be Multicast traffic, it is not applicable to bridge to the queue's publish/subscribe domain.

DISABLED
Publications from applications not using Multicast are not bridged to applications that do use Multicast. This is the default for IBM i.

ENABLED
Publications from applications not using Multicast are bridged to applications that do use Multicast. This is the default for platforms other than IBM i.

CCSID(*integer*)
The coded character set identifier that messages are transmitted on. Specify a value in the range 1 through 65535.

The CCSID must specify a value that is defined for use on your platform, and use a character set that is appropriate to the platform. If you use this parameter to change the CCSID, applications that are running when the change is applied continue to use the original CCSID. Because of this, you must stop and restart all running applications before you continue. This includes the command server and channel programs. To do this, stop and restart the queue manager after making the change.

The default value is ASPUB which means that the coded character set is taken from the one that is supplied in the published message.

COMMEV
Controls whether event messages are generated for Multicast handles that are created using this COMMINFO object. Events will only be generated if they are enabled using the **`MONINT`** parameter.

DISABLED
Event messages are not generated for Multicast handles that are created using the COMMINFO object. This is the default value.

ENABLED
Event messages are generated for Multicast handles that are created using the COMMINFO object.

EXCEPTION
Event messages are written if the message reliability is below the reliability threshold The reliability threshold is set to 90 by default.

DESCR(*string*)
Plain-text comment. It provides descriptive information about the communication information object when an operator issues the DISPLAY COMMINFO command (see “DISPLAY COMMINFO” on page 524).

It must contain only displayable characters. The maximum length is 64 characters. In a DBCS installation, it can contain DBCS characters (subject to a maximum length of 64 bytes).

Note: If characters are used that are not in the coded character set identifier (CCSID) for this queue manager, they might be translated incorrectly if the information is sent to another queue manager.

ENCODING
The encoding that the messages are transmitted in.

ASPUB
The encoding of the message is taken from the one that is supplied in the published message. This is the default value.

REVERSED

NORMAL

S390

TNS

encoding

GRPADDR
The group IP address or DNS name.

It is the administrator's responsibility to manage the group addresses. It is possible for all multicast clients to use the same group address for every topic; only the messages that match outstanding subscriptions on the client are delivered. Using the same group address can be inefficient because every client must examine and process every multicast packet in the network. It is more efficient to allocate different IP group addresses to different topics or sets of topics, but this requires careful management, especially if other non-MQ multicast applications are in use on the network. The default value is `239.0.0.0`.

MCHBINT
The heartbeat interval is measured in milliseconds, and specifies the frequency at which the transmitter notifies any receivers that there is no further data available. The value is in the range 0 to 999 999. The default value is `2000` milliseconds.

MCPROP
The multicast properties control how many of the MQMD properties and user properties flow with the message.

All
All user properties and all the fields of the MQMD are transported.

Reply
Only user properties, and MQMD fields that deal with replying to the messages, are transmitted. These properties are:

- MsgType
- MessageId
- CorrelId
- ReplyToQ
- ReplyToQmgr

User
Only the user properties are transmitted.

NONE
No user properties or MQMD fields are transmitted.

COMPAT
This value causes the transmission of the message to be done in a compatible mode to RMM. This allows some inter-operation with the current XMS applications and Broker RMM applications.

MONINT(*integer*)
How frequently, in seconds, that monitoring information is updated. If events messages are enabled, this parameter also controls how frequently event messages are generated about the status of the Multicast handles created using this COMMINFO object.

A value of 0 means that there is no monitoring.

The default value is 60.

MSGHIST
This value is the amount of message history in kilobytes that is kept by the system to handle retransmissions in the case of NACKs (negative acknowledgments).

The value is in the range 0 to 999 999 999. A value of 0 gives the least level of reliability. The default value is 100.

NSUBHIST
The new subscriber history controls whether a subscriber joining a publication stream receives as much data as is currently available, or receives only publications made from the time of the subscription.

NONE
A value of NONE causes the transmitter to transmit only publication made from the time of the subscription. This is the default value.

ALL
A value of ALL causes the transmitter to retransmit as much history of the topic as is known. In some circumstances this can give a similar behavior to retained publications.

Note: Using the value of ALL might have a detrimental effect on performance if there is a large topic history because all the topic history is retransmitted.

PORT(*integer*)
The port number to transmit on. The default port number is 1414.

LIKE(*authinfo-name*)
The name of a communication information object, with parameters that are used to model this definition.

If this field is not complete, and you do not complete the parameter fields related to the command, the values are taken from the default definition for an object of this type.

This default communication information object definition can be altered by the installation to the default values required.

REPLACE and NOREPLACE
Whether the existing definition is to be replaced with this one. This is optional. The default is NOREPLACE. Any object with a different disposition is not changed.

REPLACE
The definition replaces an existing definition of the same name. If a definition does not exist, one is created.

NOREPLACE
The definition does not replace an existing definition of the same name.

DEFINE LISTENER

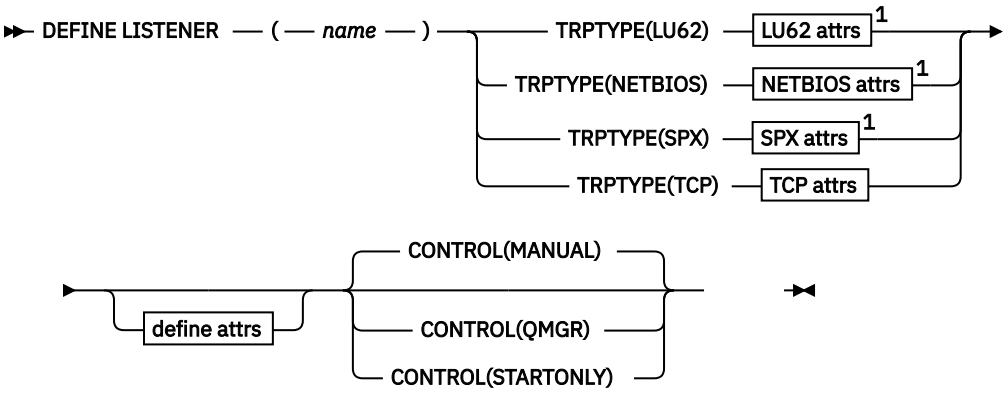
Use the MQSC command DEFINE LISTENER to define a new WebSphere MQ listener definition, and set its parameters.

UNIX and Linux	Windows
✓	✓

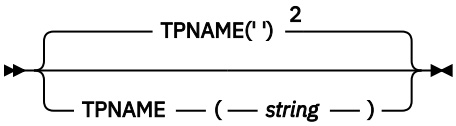
- Syntax diagram
- “Parameter descriptions for DEFINE LISTENER” on page 389

Synonym: DEF LSTR

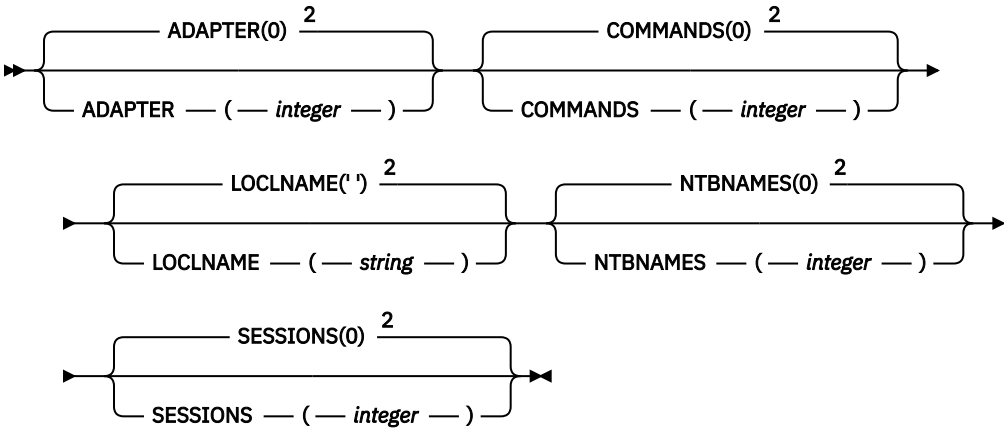
DEFINE LISTENER



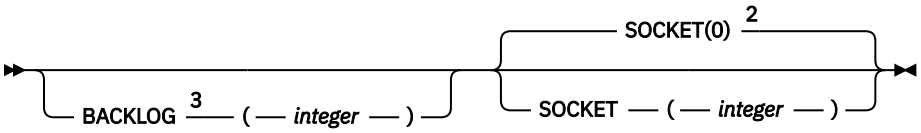
LU62 attrs



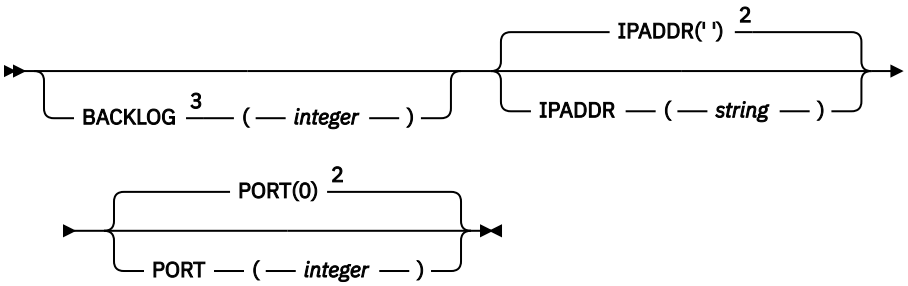
NETBIOS attrs



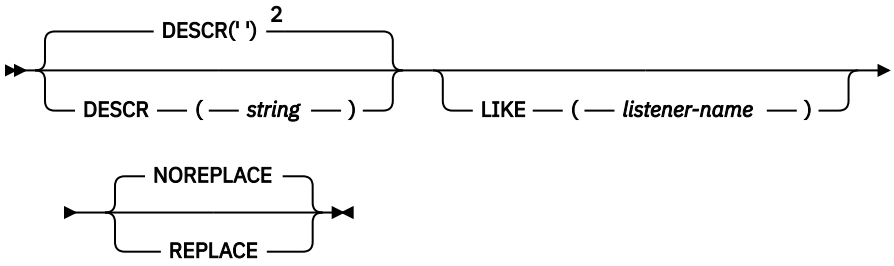
SPX attrs



TCP attrs



Define attrs



Notes:

[1] Valid only on Windows.

[2] This is the default supplied with WebSphere MQ, but your installation might have changed it.

[3] When the BACKLOG attribute is left unchanged or when it is explicitly set to zero, the attribute is stored as zero by default in the listener object created by the **DEFINE LISTENER** command. However, when the listener is started, the default backlog value takes effect. For information about the default value of the BACKLOG attribute, see Using the TCP listener backlog option.

Parameter descriptions for DEFINE LISTENER

(listener-name)
Name of the WebSphere MQ listener definition (see Rules for naming IBM WebSphere MQ objects). This is required.

The name must not be the same as any other listener definition currently defined on this queue manager (unless REPLACE is specified).

ADAPTER(*integer*)
The adapter number on which NetBIOS listens. This parameter is valid only on Windows when TRPTYPE is NETBIOS.

BACKLOG(*integer*)
The number of concurrent connection requests that the listener supports.

COMMANDS(*integer*)
The number of commands that the listener can use. This parameter is valid only on Windows when TRPTYPE is NETBIOS.

CONTROL(*string*)
Specifies how the listener is to be started and stopped.:

MANUAL
The listener is not to be started automatically or stopped automatically. It is to be controlled by use of the START LISTENER and STOP LISTENER commands.

QMGR
The listener being defined is to be started and stopped at the same time as the queue manager is started and stopped.

STARTONLY
The listener is to be started at the same time as the queue manager is started, but is not requested to stop when the queue manager is stopped.

DESCR(*string*)
Plain-text comment. It provides descriptive information about the listener when an operator issues the DISPLAY LISTENER command (see “DISPLAY LISTENER” on page 542).

It should contain only displayable characters. The maximum length is 64 characters. In a DBCS installation, it can contain DBCS characters (subject to a maximum length of 64 bytes).

Note: If characters are used that are not in the coded character set identifier (CCSID) for this queue manager, they might be translated incorrectly if the information is sent to another queue manager.

IPADDR(*string*)
IP address for the listener specified in IPv4 dotted decimal, IPv6 hexadecimal notation, or alphanumeric host name form. If you do not specify a value for this parameter, the listener listens on all configured IPv4 and IPv6 stacks.

LIKE(*listener-name*)
The name of a listener, with parameters that are used to model this definition.

This parameter applies only to the DEFINE LISTENER command.

If this field is not filled in, and you do not complete the parameter fields related to the command, the values are taken from the default definition for listeners on this queue manager. This is equivalent to specifying:

```
LIKE(SYSTEM.DEFAULT.LISTENER)
```

A default listener is provided but it can be altered by the installation of the default values required. See Rules for naming IBM WebSphere MQ objects .

LOCLNAME(*string*)
The NetBIOS local name that the listener uses. This parameter is valid only on Windows when TRPTYPE is NETBIOS.

NTBNAMES(*integer*)
The number of names that the listener can use. This parameter is valid only on Windows when TRPTYPE is NETBIOS.

PORT(*integer*)
The port number for TCP/IP. This is valid only when TRPTYPE is TCP. It must not exceed 65535.

SESSIONS(*integer*)
The number of sessions that the listener can use. This parameter is valid only on Windows when TRPTYPE is NETBIOS.

SOCKET(*integer*)
The SPX socket on which to listen. This is valid only if TRPTYPE is SPX.

TPNAME(*string*)
The LU 6.2 transaction program name (maximum length 64 characters). This parameter is valid only on Windows when TRPTYPE is LU62.

TRPTYPE(*string*)
The transmission protocol to be used:

LU62
SNA LU 6.2. This is valid only on Windows.

NETBIOS
NetBIOS. This is valid only on Windows.

SPX
Sequenced packet exchange. This is valid only on Windows.

TCP
TCP/IP.

DEFINE NAMELIST

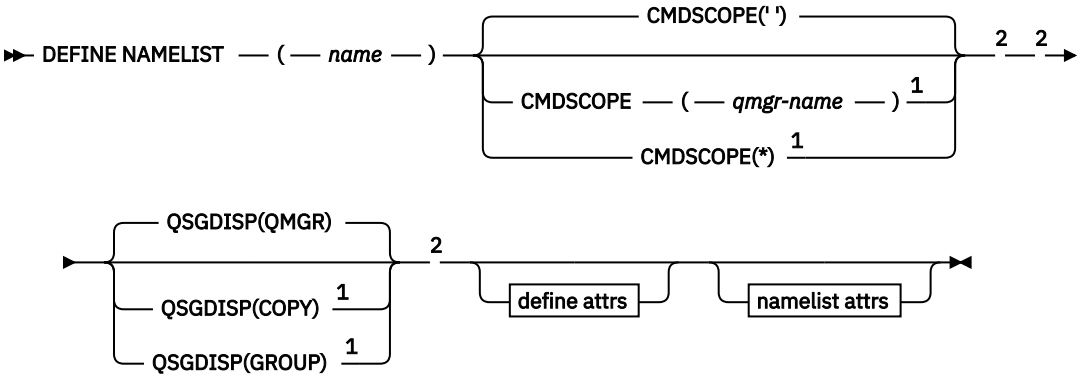
Use the MQSC command DEFINE NAMELIST to define a list of names. This is most commonly a list of cluster names or queue names.

UNIX and Linux	Windows
✓	✓

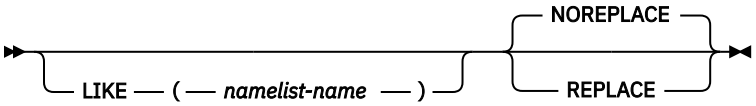
- Syntax diagram

Synonym: DEF NL

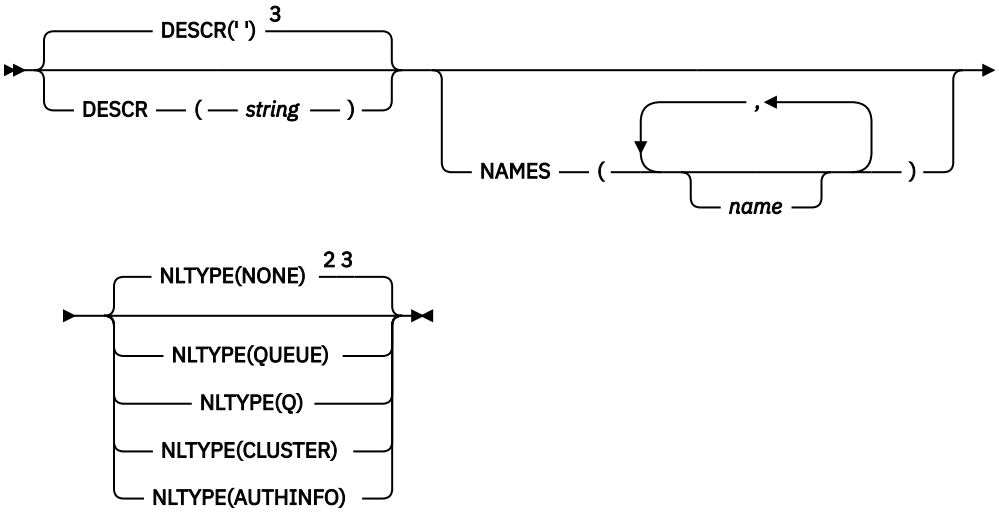
DEFINE NAMELIST



Define attrs



Namelist attrs



Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[2] Valid only on z/OS.
[3] This is the default supplied with WebSphere MQ, but your installation might have changed it.

Usage notes

On UNIX systems, the command is valid only on AIX, HP-UX, Linux and Solaris.

Parameter descriptions for DEFINE NAMELIST

(name)
Name of the list.

The name must not be the same as any other namelist name currently defined on this queue manager (unless REPLACE or ALTER is specified). See Rules for naming IBM WebSphere MQ objects.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if QSGDISP is set to GROUP.

' '
The command is executed on the queue manager on which it was entered.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name other than the queue manager on which it was entered, only if you are using a shared queue environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of specifying * is the same as entering the command on every queue manager in the queue-sharing group.

DESCR(*string*)
Plain-text comment. It provides descriptive information about the namelist when an operator issues the DISPLAY NAMELIST command (see “DISPLAY NAMELIST” on page 548).

It must contain only displayable characters. The maximum length is 64 characters. In a DBCS installation, it can contain DBCS characters (subject to a maximum length of 64 bytes).

Note: If characters are used that are not in the coded character set identifier (CCSID) for this queue manager, they might be translated incorrectly if the information is sent to another queue manager.

LIKE(*namelist-name*)
The name of a namelist, with parameters that are used to model this definition.

If this field is not completed and you do not complete the parameter fields related to the command, the values are taken from the default definition for namelists on this queue manager.

Not completing this parameter is equivalent to specifying:

```
LIKE(SYSTEM.DEFAULT.NAMELIST)
```

A default namelist definition is provided, but it can be altered by the installation to the default values required. See Rules for naming IBM WebSphere MQ objects.

On z/OS, the queue manager searches page set zero for an object with the name you specify and a disposition of QMGR or COPY. The disposition of the LIKE object is not copied to the object you are defining.

Note:

1. QSGDISP (GROUP) objects are not searched.
2. LIKE is ignored if QSGDISP(COPY) is specified.

NAMES(*name, ...*)
List of names.

The names can be of any type, but must conform to the rules for naming WebSphere MQ objects, with a maximum length of 48 characters.

An empty list is valid: specify NAMES(). The maximum number of names in the list is 256.

NLTYPE
Indicates the type of names in the namelist.

This parameter is valid only on z/OS.

NONE
The names are of no particular type.

QUEUE or Q
A namelist that holds a list of queue names.

CLUSTER
A namelist that is associated with clustering, containing a list of the cluster names.

AUTHINFO
This namelist is associated with SSL and contains a list of authentication information object names.

Namelists used for clustering must have NLTYPE(CLUSTER) or NLTYPE(NONE).

Namelists used for SSL must have NLTYPE(AUTHINFO).

QSGDISP
This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves).

QSGDISP	DEFINE
COPY	The object is defined on the page set of the queue manager that executes the command using the QSGDISP(GROUP) object of the same name as the 'LIKE' object.

GROUP	The object definition resides in the shared repository but only if the queue manager is in a queue-sharing group. If the definition is successful, the following command is generated and sent to all active queue managers in the queue-sharing group to attempt to make or refresh local copies on page set zero:
	`DEFINE NAMELIST(name)`
	`REPLACE QSGDISP(COPY)`
	The DEFINE for the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.

PRIVATE	Not permitted.
QMGR	The object is defined on the page set of the queue manager that executes the command.

REPLACE and NOREPLACE
Whether the existing definition (and on z/OS, with the same disposition) is to be replaced with this one. Any object with a different disposition is not changed.

REPLACE
The definition replaces any existing definition of the same name. If a definition does not exist, one is created.

NOREPLACE
The definition does not replace any existing definition of the same name.

DEFINE PROCESS

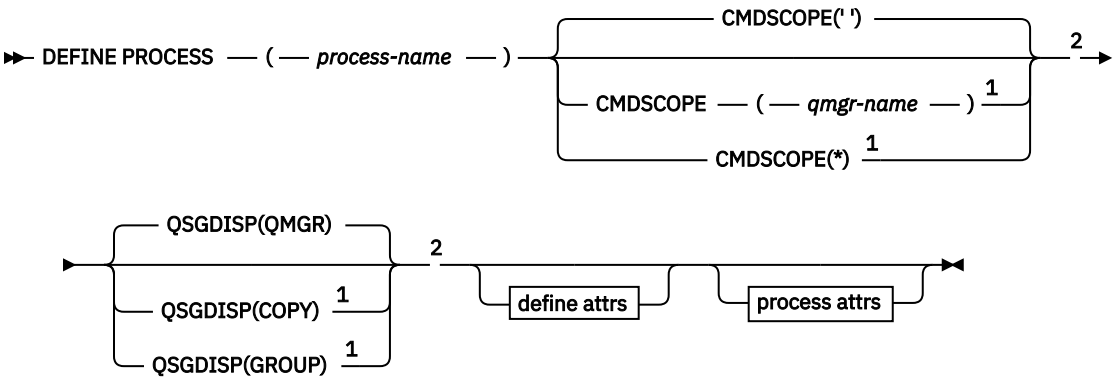
Use the MQSC command DEFINE PROCESS to define a new WebSphere MQ process definition, and set its parameters.

UNIX and Linux	Windows
✓	✓

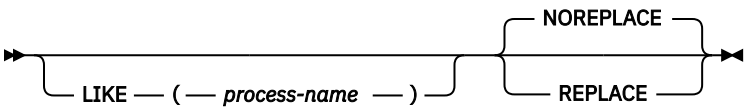
- Syntax diagram
- “Parameter descriptions for DEFINE PROCESS” on page 395

Synonym: DEF PRO

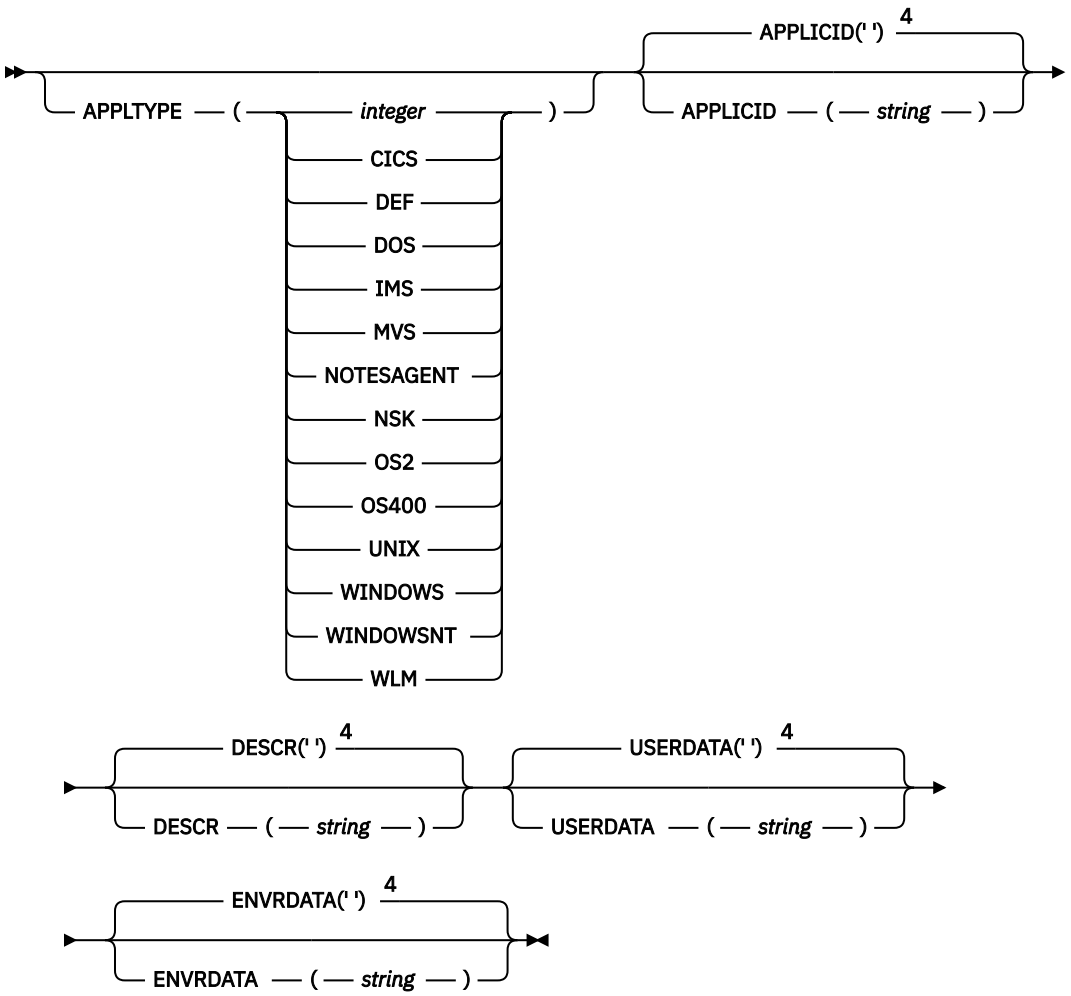
DEFINE PROCESS



Define attrs



Process attrs



Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[2] Valid only on z/OS.
[3] The default depends on the platform, and can be changed by your installation.
[4] This is the default supplied with WebSphere MQ, but your installation might have changed it.

Parameter descriptions for DEFINE PROCESS

(process-name)
Name of the WebSphere MQ process definition (see Rules for naming IBM WebSphere MQ objects). *process-name* is required.

The name must not be the same as any other process definition currently defined on this queue manager (unless REPLACE is specified).

APPLICID(*string*)
The name of the application to be started. The name might typically be a fully qualified file name of an executable object. Qualifying the file name is particularly important if you have multiple IBM WebSphere MQ installations, to ensure the correct version of the application is run. The maximum length is 256 characters.

For a CICS application the name is a CICS transaction ID, and for an IMS application it is an IMS transaction ID.

On z/OS, for distributed queuing, it must be **CSQX START**.

APPLTYPE(*string*)
The type of application to be started. Valid application types are:

integer
A system-defined application type in the range zero through 65 535 or a user-defined application type in the range 65 536 through 999 999 999.

For certain values in the system range, a parameter from the following list can be specified instead of a numeric value:

CICS
Represents a CICS transaction.

DOS
Represents a DOS application.

IMS
Represents an IMS transaction.

MVS
Represents a z/OS application (batch or TSO).

NOTESAGENT
Represents a Lotus Notes agent.

NSK
Represents an HP Integrity NonStop Server application.

OS400
Represents an IBM i application.

UNIX
Represents a UNIX application.

WINDOWS
Represents a Windows application.

WINDOWSNT
Represents a Windows NT, Windows 2000, or Windows XP application.

WLM
Represents a z/OS workload manager application.

DEF
Specifying DEF causes the default application type for the platform at which the command is interpreted to be stored in the process definition. This default cannot be changed by the installation. If the platform supports clients, the default is interpreted as the default application type of the server.

Only use application types (other than user-defined types) that are supported on the platform at which the command is executed:

- On z/OS, CICS, DOS, IMS, MVS, OS2, UNIX, WINDOWS, WINDOWSNT, WLM, and DEF are supported
- On IBM i, OS400, CICS, and DEF are supported
- On UNIX systems, UNIX, OS2, DOS, WINDOWS, CICS, and DEF are supported
- On Windows, WINDOWSNT, DOS, WINDOWS, OS2, UNIX, CICS, and DEF are supported

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if QSGDISP is set to GROUP.

' '
The command is executed on the queue manager on which it was entered.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

In a shared queue environment, you can provide a different queue manager name from the one you are using to enter the command. The command server must be enabled.

*****

The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect is the same as entering the command on every queue manager in the queue-sharing group.

DESCR(*string*)

Plain-text comment. It provides descriptive information about the object when an operator issues the DISPLAY PROCESS command.

It must contain only displayable characters. The maximum length is 64 characters. In a DBCS installation, it can contain DBCS characters (subject to a maximum length of 64 bytes).

Note: Use characters from the coded character set identifier (CCSID) for this queue manager. Other characters might be translated incorrectly if the information is sent to another queue manager.

ENVRDATA(*string*)

A character string that contains environment information pertaining to the application to be started. The maximum length is 128 characters.

The meaning of ENVRDATA is determined by the trigger-monitor application. The trigger monitor provided byIBM WebSphere MQ appends ENVRDATA to the parameter list passed to the started application. The parameter list consists of the MQTMC2 structure, followed by one blank, followed by ENVRDATA with trailing blanks removed.

Note:

1. On z/OS, ENVRDATA is not used by the trigger-monitor applications provided by IBM WebSphere MQ.
2. On z/OS, if APPLTYPE is WLM, the default values for the ServiceName and ServiceStep fields in the work information header (MQWIH) can be supplied in ENVRDATA. The format must be:

   ```
   SERVICENAME=servname,SERVICESTEP=stepname
   ```

   where:

   SERVICENAME=
   is the first 12 characters of ENVRDATA.

   servname
   is a 32-character service name. It can contain embedded blanks or any other data, and have trailing blanks. It is copied to the MQWIH as is.

   SERVICESTEP=
   is the next 13 characters of ENVRDATA.

   stepname
   is a 1 - 8 character service step name. It is copied as-is to the MQWIH, and padded to eight characters with blanks.

   If the format is incorrect, the fields in the MQWIH are set to blanks.
3. On UNIX systems, ENVRDATA can be set to the ampersand character to make the started application run in the background.

LIKE(*process-name*)

The name of an object of the same type, with parameters that are used to model this definition.

If this field is not provided, the values of fields you do not provide are taken from the default definition for this object.

Using LIKE is equivalent to specifying:

```
LIKE(SYSTEM.DEFAULT.PROCESS)
```

A default definition for each object type is provided. You can alter the provided defaults to the default values required. See Rules for naming IBM WebSphere MQ objects.

On z/OS, the queue manager searches page set zero for an object with the name you specify and a disposition of QMGR or COPY. The disposition of the LIKE object is not copied to the object you are defining.

Note:

1. QSGDISP (GROUP) objects are not searched.
2. LIKE is ignored if QSGDISP(COPY) is specified.

QSGDISP

This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves).

QSGDISP	DEFINE
COPY	The object is defined on the page set of the queue manager that executes the command. It uses the QSGDISP(GROUP) object of the same name as the 'LIKE' object.

GROUP	The object definition resides in the shared repository. GROUP is allowed only if the queue manager is in a queue-sharing group. If the definition is successful, the following command is generated.
	`DEFINE PROCESS(process-name)`
	`REPLACE QSGDISP(COPY)`
	The command is sent to all active queue managers in the queue-sharing group to attempt to make or refresh local copies on page set zero.
	The DEFINE for the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.

PRIVATE	Not permitted.
QMGR	The object is defined on the page set of the queue manager that executes the command.

REPLACE and NOREPLACE

Whether the existing definition (and on z/OS, with the same disposition) is to be replaced with this one. REPLACE is optional. Any object with a different disposition is not changed.

REPLACE

The definition replaces any existing definition of the same name. If a definition does not exist, one is created.

NOREPLACE

The definition does not replace any existing definition of the same name.

USERDATA(*string*)

A character string that contains user information pertaining to the application defined in the APPLICID that is to be started. The maximum length is 128 characters.

The meaning of USERDATA is determined by the trigger-monitor application. The trigger monitor provided by WebSphere MQ simply passes USERDATA to the started application as part of the parameter list. The parameter list consists of the MQTMC2 structure (containing USERDATA), followed by one blank, followed by ENVRDATA with trailing blanks removed.

For WebSphere MQ message channel agents, the format of this field is a channel name of up to 20 characters. See Managing objects for triggering for information about what APPLICID to provide to message channel agents.

For Microsoft Windows, the character string must not contain double quotation marks if the process definition is going to be passed to **runmqtrm**.

DEFINE queues

Use the MQSC **DEFINE** command to define a local, model, or remote queue, or a queue alias, reply-to queue alias, or a queue-manager alias.

This section contains the following commands:

- "DEFINE QALIAS" on page 422
- "DEFINE QLOCAL" on page 424
- "DEFINE QMODEL" on page 427
- "DEFINE QREMOTE" on page 430

Define a reply-to queue or queue-manager alias with the "DEFINE QREMOTE" on page 430 command.

These commands are supported on the following platforms:

UNIX and Linux	Windows
✓	✓

Usage notes for DEFINE queues

1. For local queues

   a. You can define a local queue with QSGDISP(SHARED) even though another queue manager in the queue-sharing group already has a local version of the queue. However, when you try to access the locally defined queue, it fails with reason code MQRC_OBJECT_NOT_UNIQUE (2343). A local version of the queue with the same name can be of type QLOCAL, QREMOTE, or QALIAS and has the disposition, QSGDISP(QMGR).

   To resolve the conflict, you must delete one of the queues using the **DELETE** command. If the queue you want to delete contains messages, use the PURGE option or remove the messages first using the **MOVE** command.

   For example, to delete the QSGDISP(LOCAL) version, which contains messages, and copy those messages to the QSGDISP(SHARED) version, then issue the following commands:

   ```
   MOVE QLOCAL(QUEUE.1) QSGDISP(PRIVATE) TOQLOCAL(QUEUE.1) TYPE(ADD)
   DELETE QLOCAL(QUEUE.1) QSGDISP(QMGR)
   ```

2. For alias queues:

   a. DEFINE QALIAS(*aliasqueue*) TARGET(*otherqname*) CLUSTER(*c*) advertises the queue *otherqname* by the name *aliasqueue*.

   b. DEFINE QALIAS(*aliasqueue*) TARGET(*otherqname*) allows a queue advertised by the name *otherqname* to be used on this queue manager by the name *aliasqueue*.

   c. TARGTYPE and TARGET are not cluster attributes, that is, they are not shared in a cluster environment.

3. For remote queues:

   a. DEFINE QREMOTE(*rqueue*) RNAME(*otherq*) RQMNAME(*otherqm*) CLUSTER(*cl*) advertises this queue manager as a store and forward gateway to which messages for queue *rqueue* can be sent. It has no effect as a reply-to queue alias, except on the local queue manager.

   DEFINE QREMOTE(*otherqm*) RNAME() RQMNAME(*anotherqm*) XMITQ(*xq*) CLUSTER advertises this queue manager as a store and forward gateway to which messages for *anotherqm* can be sent.

b. RQMNAME can itself be the name of a cluster queue manager within the cluster. You can map the advertised queue manager name to another name locally. The pattern is the same as with QALIAS definitions.

c. It is possible for the values of RQMNAME and QREMOTE to be the same if RQMNAME is itself a cluster queue manager. If this definition is also advertised using a CLUSTER attribute, do not choose the local queue manager in the cluster workload exit. If you do so, a cyclic definition results.

d. Remote queues do not have to be defined locally. The advantage of doing so is that applications can refer to the queue by a simple, locally defined name. If you do then the queue name is qualified by the name of the queue manager on which the queue resides. Using a local definition means that applications do not need to be aware of the real location of the queue.

e. A remote queue definition can also be used as a mechanism for holding a queue manager alias definition, or a reply-to queue alias definition. The name of the definition in these cases is:

- The queue manager name being used as the alias for another queue manager name (queue manager alias), or
- The queue name being used as the alias for the reply-to queue (reply-to queue alias).

Parameter descriptions for DEFINE QUEUE and ALTER QUEUE

Table 47 on page 400 shows the parameters that are relevant for each type of queue. There is a description of each parameter after the table.

Table 47. DEFINE and ALTER QUEUE parameters.

Cross-tabulation of queue parameters and queue types. If the parameter applies to the queue type, the cell contains a check mark.

Parameter	Local queue	Model queue	Alias queue	Remote queue
ACCTQ	✓	✓		
BOQNAME	✓	✓		
BOTHRESH	✓	✓		
CFSTRUCT	✓	✓		
CLCHNAME	✓	✓		
CLUSNL	✓		✓	✓
CLUSTER	✓		✓	✓
CLWLPRTY	✓		✓	✓
CLWLRANK	✓		✓	✓
CLWLUSEQ	✓			
CMDSCOPE	✓	✓	✓	✓
CUSTOM	✓	✓	✓	✓
DEFBIND	✓		✓	✓
DEFPRESP	✓	✓	✓	✓
DEFPRTY	✓	✓	✓	✓

Table 47. DEFINE and ALTER QUEUE parameters.

Cross-tabulation of queue parameters and queue types. If the parameter applies to the queue type, the cell contains a check mark.

(continued)

Parameter	Local queue	Model queue	Alias queue	Remote queue
DEFPSIST	✓	✓	✓	✓
DEFREADA	✓	✓	✓	
DEFSOPT	✓	✓		
DEFTYPE		✓		
DESCR	✓	✓	✓	✓
DISTL	✓	✓		
FORCE	✓		✓	✓
GET	✓	✓	✓	
HARDENBO or NOHARDENBO	✓	✓		
INDXTYPE	✓	✓		
INITQ	✓	✓		
LIKE	✓	✓	✓	✓
MAXDEPTH	✓	✓		
MAXMSGL	✓	✓		
MONQ	✓	✓		
MSGDLVSQ	✓	✓		
NOREPLACE	✓	✓	✓	✓
NPMCLASS	✓	✓		
PROCESS	✓	✓		
PROPCTL	✓	✓	✓	
PUT	✓	✓	✓	✓
queue-name	✓	✓	✓	✓
QDEPTHHI	✓	✓		
QDEPTHLO	✓	✓		
QDPHIEV	✓	✓		

Table 47. DEFINE and ALTER QUEUE parameters.

Cross-tabulation of queue parameters and queue types. If the parameter applies to the queue type, the cell contains a check mark.

(continued)

Parameter	Local queue	Model queue	Alias queue	Remote queue
QDPLOEV	✓	✓		
QDPMAXEV	✓	✓		
QSGDISP	✓	✓	✓	✓
QSVCIEV	✓	✓		
QSVCINT	✓	✓		
REPLACE	✓	✓	✓	✓
RETINTVL	✓	✓		
RNAME				✓
RQMNAME				✓
SCOPE	✓		✓	✓
SHARE or NOSHARE	✓	✓		
STATQ	✓	✓		
STGCLASS	✓	✓		
TARGET			✓	
TARGQ			✓	
TARGTYPE			✓	
TRIGDATA	✓	✓		
TRIGDPTH	✓	✓		
TRIGGER or NOTRIGGER	✓	✓		
TRIGMPRI	✓	✓		
TRIGTYPE	✓	✓		
USAGE	✓	✓		
XMITQ				✓

queue-name

Local name of the queue, except the remote queue where it is the local definition of the remote queue.

See Rules for naming IBM WebSphere MQ objects.

ACCTQ
Specifies whether accounting data collection is to be enabled for the queue. On z/OS, the data collected is class 3 accounting data (thread-level and queue-level accounting). In order for accounting data to be collected for this queue, accounting data for this connection must also be enabled. Turn on accounting data collection by setting either the **ACCTQ** queue manager attribute, or the options field in the MQCNO structure on the MQCONNX call.

QMGR
The collection of accounting data is based on the setting of the **ACCTQ** parameter on the queue manager definition.

ON
Accounting data collection is enabled for the queue unless the **ACCTQ** queue manager parameter has a value of NONE. On z/OS systems, you must switch on class 3 accounting using the **START TRACE** command.

OFF
Accounting data collection is disabled for the queue.

BOQNAME(*queue-name*)
The excessive backout requeue name.

This parameter is supported only on local and model queues.

Use this parameter to set or change the back out queue name attribute of a local or model queue. Apart from allowing its value to be queried, the queue manager does nothing based on the value of this attribute. IBM WebSphere MQ classes for JMS transfers a message that is backed out the maximum number of times to this queue. The maximum is specified by the **BOTHRESH** attribute.

BOTHRESH(*integer*)
The backout threshold.

This parameter is supported only on local and model queues.

Use this parameter to set or change the value of the back out threshold attribute of a local or model queue. Apart from allowing its value to be queried, the queue manager does nothing based on the value of this attribute. IBM WebSphere MQ classes for JMS use the attribute to determine how many times to allows a message to be backed out. When the value is exceeded, the message is transferred to the queue named by the **BOQNAME** attribute.

Specify a value in the range 0 - 999,999,999.

CFSTRUCT(*structure-name*)
Specifies the name of the coupling facility structure where you want messages stored when you use shared queues.

This parameter is supported only on z/OS for local and model queues.

The name:

- Cannot have more than 12 characters
- Must start with an uppercase letter (A - Z)
- Can include only the characters A - Z and 0 - 9

The name of the queue-sharing group to which the queue manager is connected is prefixed to the name you supply. The name of the queue-sharing group is always four characters, padded with @ symbols if necessary. For example, if you use a queue-sharing group named NY03 and you supply the name PRODUCT7, the resultant coupling facility structure name is NY03PRODUCT7. The administrative structure for the queue-sharing group (in this case NY03CSQ_ADMIN) cannot be used for storing messages.

For ALTER QLOCAL, ALTER QMODEL, DEFINE QLOCAL with **REPLACE**, and DEFINE QMODEL with **REPLACE** the following rules apply:

- On a local queue with **QSGDISP**(SHARED), **CFSTRUCT** cannot change.

If you change either the **CFSTRUCT** or **QSGDISP** value you must delete and redefine the queue. To preserve any of the messages on the queue you must offload the messages before you delete the queue. Reload the messages after you redefine the queue, or move the messages to another queue.

- On a model queue with **DEFTYPE**(SHAREDYN), **CFSTRUCT** cannot be blank.
- On a local queue with a **QSGDISP** other than SHARED, or a model queue with a **DEFTYPE** other than SHAREDYN, the value of **CFSTRUCT** does not matter.

For DEFINE QLOCAL with **NOREPLACE** and DEFINE QMODEL with **NOREPLACE**, the coupling facility structure:

- On a local queue with **QSGDISP**(SHARED) or a model queue with a **DEFTYPE**(SHAREDYN), **CFSTRUCT** cannot be blank.
- On a local queue with a **QSGDISP** other than SHARED, or a model queue with a **DEFTYPE** other than SHAREDYN, the value of **CFSTRUCT** does not matter.

Note: Before you can use the queue, the structure must be defined in the coupling facility Resource Management (CFRM) policy data set.

CLCHNAME(*channel name*)

This parameter is supported only on transmission queues.

CLCHNAME is the generic name of the cluster-sender channels that use this queue as a transmission queue. The attribute specifies which cluster-sender channels send messages to a cluster-receiver channel from this cluster transmission queue. CLCHNAME is not supported on z/OS.

You can also set the transmission queue attribute CLCHNAME attribute to a cluster-sender channel manually. Messages that are destined for the queue manager connected by the cluster-sender channel are stored in the transmission queue that identifies the cluster-sender channel. They are not stored in the default cluster transmission queue. If you set the CLCHNAME attribute to blanks, the channel switches to the default cluster transmission queue when the channel restarts. The default queue is either SYSTEM.CLUSTER.TRANSMIT.*ChannelName* or SYSTEM.CLUSTER.TRANSMIT.QUEUE, depending on the value of the queue manager DEFCLXQ attribute.

By specifying asterisks, ""*"", in CLCHNAME, you can associate a transmission queue with a set of cluster-sender channels. The asterisks can be at the beginning, end, or any number of places in the middle of the channel name string. CLCHNAME is limited to a length of 48 characters, MQ_OBJECT_NAME_LENGTH. A channel name is limited to 20 characters: MQ_CHANNEL_NAME_LENGTH.

The default queue manager configuration is for all cluster-sender channels to send messages from a single transmission queue, SYSTEM.CLUSTER.TRANSMIT.QUEUE. The default configuration can be modified by changing the queue manager attribute, DEFCLXQ. The default value of the attribute is SCTQ. You can change the value to CHANNEL. If you set the DEFCLXQ attribute to CHANNEL, each cluster-sender channel defaults to using a specific cluster transmission queue, SYSTEM.CLUSTER.TRANSMIT.*ChannelName*.

CLUSNL(*namelist name*)

The name of the namelist that specifies a list of clusters to which the queue belongs.

This parameter is supported only on alias, local, and remote queues.

Changes to this parameter do not affect instances of the queue that are already open.

Only one of the resultant values of **CLUSNL** or **CLUSTER** can be nonblank; you cannot specify a value for both.

On local queues, this parameter cannot be set for transmission, SYSTEM.CHANNEL.*xx*, SYSTEM.CLUSTER.*xx*, or SYSTEM.COMMAND.*xx* queues, and on z/OS only, for SYSTEM.QSG.*xx* queues.

This parameter is valid only on AIX, HP-UX, Linux, Solaris, Windows, and z/OS.

CLUSTER(*cluster name*)
The name of the cluster to which the queue belongs.

This parameter is supported only on alias, local, and remote queues.

The maximum length is 48 characters conforming to the rules for naming IBM WebSphere MQ objects. Changes to this parameter do not affect instances of the queue that are already open.

Only one of the resultant values of **CLUSNL** or **CLUSTER** can be nonblank; you cannot specify a value for both.

On local queues, this parameter cannot be set for transmission, SYSTEM.CHANNEL.*xx*, SYSTEM.CLUSTER.*xx*, or SYSTEM.COMMAND.*xx* queues, and on z/OS only, for SYSTEM.QSG.*xx* queues.

This parameter is valid only on AIX, HP-UX, Linux, Solaris, Windows, and z/OS.

CLWLPRTY(*integer*)
Specifies the priority of the queue for the purposes of cluster workload distribution. This parameter is valid only for local, remote, and alias queues. The value must be in the range zero through 9 where zero is the lowest priority and 9 is the highest. For more information about this attribute, see CLWLPRTY queue attribute.

CLWLRANK(*integer*)
Specifies the rank of the queue for the purposes of cluster workload distribution. This parameter is valid only for local, remote, and alias queues. The value must be in the range zero through 9 where zero is the lowest rank and 9 is the highest. For more information about this attribute, see CLWLRANK queue attribute.

CLWLUSEQ
Specifies the behavior of an MQPUT operation when the target queue has a local instance and at least one remote cluster instance. The parameter has no effect when the MQPUT originates from a cluster channel. This parameter is valid only for local queues.

QMGR
The behavior is as specified by the **CLWLUSEQ** parameter of the queue manager definition.

ANY
The queue manager is to treat the local queue as another instance of the cluster queue for the purposes of workload distribution.

LOCAL
The local queue is the only target of the MQPUT operation.

CMDSCOPE
This parameter applies to z/OS only. It specifies where the command is run when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if **QSGDISP** is set to GROUP or SHARED.

' '
The command is run on the queue manager on which it was entered.

QmgrName
The command is run on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered. You can specify another name, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of * is the same as entering the command on every queue manager in the queue-sharing group.

CUSTOM(*string*)
The custom attribute for new features.

This attribute is reserved for the configuration of new features before separate attributes are introduced. It can contain the values of zero or more attributes as pairs of attribute name and value, separated by at least one space. The attribute name and value pairs have the form NAME(VALUE). Single quotation marks must be escaped with another single quotation mark.

This description is updated when features using this attribute are introduced. At the moment, there are no values for **CUSTOM**.

DEFBIND
Specifies the binding to be used when the application specifies MQOO_BIND_AS_Q_DEF on the MQOPEN call, and the queue is a cluster queue.

OPEN
The queue handle is bound to a specific instance of the cluster queue when the queue is opened.

NOTFIXED
The queue handle is not bound to any instance of the cluster queue. The queue manager selects a specific queue instance when the message is put using MQPUT. It changes that selection later, if the need arises.

GROUP
Allows an application to request that a group of messages is allocated to the same destination instance.

Multiple queues with the same name can be advertised in a queue manager cluster. An application can send all messages to a single instance, MQOO_BIND_ON_OPEN. It can allow a workload management algorithm to select the most suitable destination on a per message basis, MQOO_BIND_NOT_FIXED. It can allow an application to request that a "group" of messages be all allocated to the same destination instance. The workload balancing reselects a destination between groups of messages, without requiring an MQCLOSE and MQOPEN of the queue.

The MQPUT1 call always behaves as if NOTFIXED is specified.

This parameter is valid only on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.

DEFPRESP
Specifies the behavior to be used by applications when the put response type, within the MQPMO options, is set to MQPMO_RESPONSE_AS_Q_DEF.

SYNC
Put operations to the queue specifying MQPMO_RESPONSE_AS_Q_DEF are issued as if MQPMO_SYNC_RESPONSE is specified instead.

ASYNC
Put operations to the queue specifying MQPMO_RESPONSE_AS_Q_DEF are issued as if MQPMO_ASYNC_RESPONSE is specified instead; see MQPMO options (MQLONG).

DEFPRTY(*integer*)
The default priority of messages put on the queue. The value must be in the range 0 - 9. Zero is the lowest priority, through to the **MAXPRTY** queue manager parameter. The default value of **MAXPRTY** is 9.

DEFPSIST
Specifies the message persistence to be used when applications specify the MQPER_PERSISTENCE_AS_Q_DEF option.

NO
Messages on this queue are lost across a restart of the queue manager.

YES
Messages on this queue survive a restart of the queue manager.

On z/OS, N and Y are accepted as synonyms of NO and YES.

DEFREADA
Specifies the default read ahead behavior for non-persistent messages delivered to the client. Enabling read ahead can improve the performance of client applications consuming non-persistent messages.

NO
Non-persistent messages are not read ahead unless the client application is configured to request read ahead.

YES
Non-persistent messages are sent to the client before an application requests them. Non-persistent messages can be lost if the client ends abnormally or if the client does not delete all the messages it is sent.

DISABLED
Read ahead of non-persistent messages in not enabled for this queue. Messages are not sent ahead to the client regardless of whether read ahead is requested by the client application.

DEFSOPT
The default share option for applications opening this queue for input:

EXCL
The open request is for exclusive input from the queue

SHARED
The open request is for shared input from the queue

DEFTYPE
Queue definition type.

This parameter is supported only on model queues.

PERMDYN
A permanent dynamic queue is created when an application issues an MQOPEN MQI call with the name of this model queue specified in the object descriptor (MQOD).

On z/OS, the dynamic queue has a disposition of QMGR.

SHAREDYN
This option is available on z/OS only.

A permanent dynamic queue is created when an application issues an MQOPEN API call with the name of this model queue specified in the object descriptor (MQOD).

The dynamic queue has a disposition of SHARED.

TEMPDYN
A temporary dynamic queue is created when an application issues an MQOPEN API call with the name of this model queue specified in the object descriptor (MQOD).

On z/OS, the dynamic queue has a disposition of QMGR.

Do not specify this value for a model queue definition with a **DEFPSIST** parameter of YES.

If you specify this option, do not specify **INDXTYPE**(MSGTOKEN).

DESCR(*string*)
Plain-text comment. It provides descriptive information about the object when an operator issues the DISPLAY QUEUE command.

It must contain only displayable characters. The maximum length is 64 characters. In a DBCS installation, it can contain DBCS characters (subject to a maximum length of 64 bytes).

Note: Use characters that are in the coded character set identifier (CCSID) of this queue manager. If you do not do so and if the information is sent to another queue manager, they might be translated incorrectly.

DISTL
DISTL sets whether distribution lists are supported by the partner queue manager.

YES
Distribution lists are supported by the partner queue manager.

NO
Distribution lists are not supported by the partner queue manager.

Note: You do not normally change this parameter, because it is set by the MCA. However you can set this parameter when defining a transmission queue if the distribution list capability of the destination queue manager is known.

This parameter is valid only on AIX, HP-UX, Linux, Solaris, and Windows.

FORCE
This parameter applies only to the ALTER command on alias, local and remote queues.

Specify this parameter to force completion of the command in the following circumstances.

For an alias queue, if both of the following are true:

- The **TARGET** parameter specifies a queue
- An application has this alias queue open

For a local queue, if both of the following are true:

- The **NOSHARE** parameter is specified
- More than one application has the queue open for input

FORCE is also needed if both of the following are true:

- The **USAGE** parameter is changed
- Either one or more messages are on the queue, or one or more applications have the queue open

Do not change the **USAGE** parameter while there are messages on the queue; the format of messages changes when they are put on a transmission queue.

For a remote queue, if both of the following are true:

- The **XMITQ** parameter is changed
- One or more applications has this queue open as a remote queue

FORCE is also needed if both of the following are true:

- Any of the **RNAME**, **RQMNAME**, or **XMITQ** parameters are changed
- One or more applications has a queue open that resolved through this definition as a queue manager alias

Note: FORCE is not required if this definition is in use as a reply-to queue alias only.

If **FORCE** is not specified in the circumstances described, the command is unsuccessful.

GET
Specifies whether applications are to be permitted to get messages from this queue:

ENABLED
Messages can be retrieved from the queue, by suitably authorized applications.

DISABLED
Applications cannot retrieve messages from the queue.

This parameter can also be changed using the MQSET API call.

HARDENBO&NOHARDENBO
Specifies whether hardening is used to ensure that the count of the number of times that a message is backed out is accurate.

This parameter is supported only on local and model queues.

HARDENBO
The count is hardened.

NOHARDENBO
The count is not hardened.

Note: This parameter affects only IBM WebSphere MQ for z/OS. It can be set on other platforms but is ineffective.

INDXTYPE
The type of index maintained by the queue manager to expedite MQGET operations on the queue. For shared queues, the type of index determines the type of MQGET operations that can be used.

This parameter is supported only on local and model queues.

Messages can be retrieved using a selection criterion only if an appropriate index type is maintained, as the following table shows:

Retrieval selection criterion	**Index type required**	
	Shared queue	Other queue
None (sequential retrieval)	Any	Any
Message identifier	MSGID or NONE	Any
Correlation identifier	CORRELID	Any
Message and correlation identifiers	MSGID or CORRELID	Any
Group identifier	GROUPID	Any
Grouping	GROUPID	GROUPID
Message token	Not allowed	MSGTOKEN

where the value of **INDXTYPE** parameter has the following values:

NONE
No index is maintained. Use NONE when messages are typically retrieved sequentially or use both the message identifier and the correlation identifier as a selection criterion on the MQGET call.

MSGID
An index of message identifiers is maintained. Use MSGID when messages are typically retrieved using the message identifier as a selection criterion on the MQGET call with the correlation identifier set to NULL.

CORRELID
An index of correlation identifiers is maintained. Use CORRELID when messages are typically retrieved using the correlation identifier as a selection criterion on the MQGET call with the message identifier set to NULL.

GROUPID
An index of group identifiers is maintained. Use GROUPID when messages are retrieved using message grouping selection criteria.

Note:

1. You cannot set **INDXTYPE** to GROUPID if the queue is a transmission queue.
2. The queue must use a CF structure at CFLEVEL(3), to specify a shared queue with **INDXTYPE**(GROUPID).

MSGTOKEN
An index of message tokens is maintained. Use MSGTOKEN when the queue is a WLM-managed queue that you are using with the Workload Manager functions of z/OS.

Note: You cannot set **INDXTYPE** to MSGTOKEN if:

- The queue is a model queue with a definition type of SHAREDYN
- The queue is a temporary dynamic queue
- The queue is a transmission queue
- You specify **QSGDISP**(SHARED)

For queues that are not shared and do not use grouping or message tokens, the index type does not restrict the type of retrieval selection. However, the index is used to expedite **GET** operations on the queue, so choose the type that corresponds to the most common retrieval selection.

If you are altering or replacing an existing local queue, you can change the **INDXTYPE** parameter only in the cases indicated in the following table:

Queue type		**NON-SHARED**			**SHARED**	
Queue state		Uncommitted activity	No uncommitted activity, messages present	No uncommitted activity, and empty	Open or messages present	Not open, and empty
Change INDXTYPE from:	To:	Change allowed?				
NONE	MSGID	No	Yes	Yes	No	Yes
NONE	CORRELID	No	Yes	Yes	No	Yes
NONE	MSGTOKEN	No	No	Yes	-	-
NONE	GROUPID	No	No	Yes	No	Yes
MSGID	NONE	No	Yes	Yes	No	Yes
MSGID	CORRELID	No	Yes	Yes	No	Yes
MSGID	MSGTOKEN	No	No	Yes	-	-
MSGID	GROUPID	No	No	Yes	No	Yes
CORRELID	NONE	No	Yes	Yes	No	Yes
CORRELID	MSGID	No	Yes	Yes	No	Yes
CORRELID	MSGTOKEN	No	No	Yes	-	-
CORRELID	GROUPID	No	No	Yes	No	Yes
MSGTOKEN	NONE	No	Yes	Yes	-	-
MSGTOKEN	MSGID	No	Yes	Yes	-	-
MSGTOKEN	CORRELID	No	Yes	Yes	-	-
MSGTOKEN	GROUPID	No	No	Yes	-	-
GROUPID	NONE	No	No	Yes	No	Yes
GROUPID	MSGID	No	No	Yes	No	Yes
GROUPID	CORRELID	No	No	Yes	No	Yes
GROUPID	MSGTOKEN	No	No	Yes	-	-

This parameter is supported only on z/OS. On other platforms, all queues are automatically indexed.

INITQ(*string*)
The local name of the initiation queue on this queue manager, to which trigger messages relating to this queue are written; see Rules for naming IBM WebSphere MQ objects .

This parameter is supported only on local and model queues.

LIKE(*qtype-name*)
The name of a queue, with parameters that are used to model this definition.

If this field is not completed, the values of undefined parameter fields are taken from one of the following definitions. The choice depends on the queue type:

Queue type	Definition
Alias queue	SYSTEM.DEFAULT.ALIAS.QUEUE
Local queue	SYSTEM.DEFAULT.LOCAL.QUEUE
Model queue	SYSTEM.DEFAULT.MODEL.QUEUE
Remote queue	SYSTEM.DEFAULT.REMOTE.QUEUE

For example, not completing this parameter is equivalent to defining the following value of LIKE for an alias queue:

```
LIKE(SYSTEM.DEFAULT.ALIAS.QUEUE)
```

If you require different default definitions for all queues, alter the default queue definitions instead of using the **LIKE** parameter.

On z/OS, the queue manager searches for an object with the name and queue type you specify with a disposition of QMGR, COPY, or SHARED. The disposition of the **LIKE** object is not copied to the object you are defining.

Note:

1. **QSGDISP** (GROUP) objects are not searched.
2. **LIKE** is ignored if **QSGDISP**(COPY) is specified.

MAXDEPTH(*integer*)
The maximum number of messages allowed on the queue.

This parameter is supported only on local and model queues.

On AIX, HP-UX, Linux, Solaris, Windows, and z/OS, specify a value in the range zero through 999999999.

This parameter is valid only on AIX, HP-UX, Linux, Solaris, Windows, and z/OS.

On any other IBM WebSphere MQ platform, specify a value in the range zero through 640000.

Other factors can still cause the queue to be treated as full, for example, if there is no further hard disk space available.

If this value is reduced, any messages that are already on the queue that exceed the new maximum remain intact.

MAXMSGL(*integer*)
The maximum length (in bytes) of messages on this queue.

This parameter is supported only on local and model queues.

On AIX, HP-UX, Linux, Solaris, and Windows, specify a value in the range zero to the maximum message length for the queue manager. See the **MAXMSGL** parameter of the ALTER QMGR command, ALTER QMGR MAXMSGL.

On z/OS, specify a value in the range zero through 100 MB (104 857 600 bytes).

Message length includes the length of user data and the length of headers. For messages put on the transmission queue, there are additional transmission headers. Allow an additional 4000 bytes for all the message headers.

If this value is reduced, any messages that are already on the queue with length that exceeds the new maximum are not affected.

Applications can use this parameter to determine the size of buffer for retrieving messages from the queue. Therefore, the value can be reduced only if it is known that this reduction does not cause an application to operate incorrectly.

Note that by adding the digital signature and key to the message, IBM WebSphere MQ Advanced Message Security increases the length of the message.

MONQ
Controls the collection of online monitoring data for queues.

This parameter is supported only on local and model queues.

QMGR
Collect monitoring data according to the setting of the queue manager parameter **MONQ**.

OFF
Online monitoring data collection is turned off for this queue.

LOW
If the value of the **MONQ** parameter of the queue manager is not NONE, online monitoring data collection is turned on for this queue.

MEDIUM
If the value of the **MONQ** parameter of the queue manager is not NONE, online monitoring data collection is turned on for this queue.

HIGH
If the value of the **MONQ** parameter of the queue manager is not NONE, online monitoring data collection is turned on for this queue.

There is no distinction between the values LOW, MEDIUM, and HIGH. These values all turn data collection on, but do not affect the rate of collection.

When this parameter is used in an ALTER queue command, the change is effective only when the queue is next opened.

MSGDLVSQ
Message delivery sequence.

This parameter is supported only on local and model queues.

PRIORITY
Messages are delivered (in response to MQGET API calls) in first-in-first-out (FIFO) order within priority.

FIFO
Messages are delivered (in response to MQGET API calls) in FIFO order. Priority is ignored for messages on this queue.

The message delivery sequence parameter can be changed from PRIORITY to FIFO while there are messages on the queue. The order of the messages already on the queue is not changed. Messages added to the queue later take the default priority of the queue, and so might be processed before some of the existing messages.

If the message delivery sequence is changed from FIFO to PRIORITY, the messages put on the queue while the queue was set to FIFO take the default priority.

Note: If **INDXTYPE**(GROUPID) is specified with **MSGDLVSQ**(PRIORITY), the priority in which groups are retrieved is based on the priority of the first message within each group. The priorities 0 and 1 are used by the queue manager to optimize the retrieval of messages in logical order. The first message in each group must not use these priorities. If it does, the message is stored as if it was priority two.

NPMCLASS
The level of reliability to be assigned to non-persistent messages that are put to the queue:

NORMAL
Non-persistent messages are lost after a failure, or queue manager shutdown. These messages are discarded on a queue manager restart.

HIGH
The queue manager attempts to retain non-persistent messages on this queue over a queue manager restart or switch over.

You cannot set this parameter on z/OS.

PROCESS(*string*)
The local name of the IBM WebSphere MQ process.

This parameter is supported only on local and model queues.

This parameter is the name of a process instance that identifies the application started by the queue manager when a trigger event occurs; see Rules for naming IBM WebSphere MQ objects .

The process definition is not checked when the local queue is defined, but it must be available for a trigger event to occur.

If the queue is a transmission queue, the process definition contains the name of the channel to be started. This parameter is optional for transmission queues on AIX, HP-UX, IBM i, Linux, Solaris, Windows, and z/OS. If you do not specify it, the channel name is taken from the value specified for the **TRIGDATA** parameter.

PROPCTL
Property control attribute. The attribute is optional. It is applicable to local, alias, and model queues.

PROPCTL options are as follows. The options do not affect message properties in the MQMD or MQMD extension.

ALL

Set ALL so that an application can read all the properties of the message either in MQRFH2 headers, or as properties of the message handle.

The ALL option enables applications that cannot be changed to access all the message properties from MQRFH2 headers. Applications that can be changed, can access all the properties of the message as properties of the message handle.

In some cases, the format of data in MQRFH2 headers in the received message might be different to the format in the message when it was sent.

COMPAT

Set COMPAT so that unmodified applications that expect JMS-related properties to be in an MQRFH2 header in the message data continue to work as before. Applications that can be changed, can access all the properties of the message as properties of the message handle.

If the message contains a property with a prefix of `mcd.`, `jms.`, `usr.`, or `mqext.`, all message properties are delivered to the application. If no message handle is supplied, properties are returned in an MQRFH2 header. If a message handle is supplied, all properties are returned in the message handle.

If the message does not contain a property with one of those prefixes, and the application does not provide a message handle, no message properties are returned to the application. If a message handle is supplied, all properties are returned in the message handle.

In some cases, the format of data in MQRFH2 headers in the received message might be different to the format in the message when it was sent.

FORCE

Force all applications to read message properties from MQRFH2 headers.

Properties are always returned in the message data in an MQRFH2 header regardless of whether the application specifies a message handle.

A valid message handle supplied in the MsgHandle field of the MQGMO structure on the MQGET call is ignored. Properties of the message are not accessible using the message handle.

In some cases, the format of data in MQRFH2 headers in the received message might be different to the format in the message when it was sent.

NONE

If a message handle is supplied, all the properties are returned in the message handle.

All message properties are removed from the message body before it is delivered to the application.

V6COMPAT

Set V6COMPAT so that applications that expect to receive the same MQRFH2 created by a sending application, can receive it as it was sent. The data in the MQRFH2 header is subject to character set conversion and numeric encoding changes. If the application sets properties using MQSETMP, the properties are not added to the MQRFH2 header created by the application. The properties are accessible only by using the MQINQMP call. The properties are transmitted in an extra MQRFH2 that is visible to channel exits, but not to MQI programs. If properties are inserted in the MQRFH2 header by the sending application, they are only accessible to the receiving application in the MQRFH2 header. You cannot query properties set this way by calling MQINQMP. This behavior of properties and application created MQRFH2 headers occurs only when V6COMPAT is set.

The receiving application can override the setting of V6COMPAT, by setting an MQGMO_PROPERTIES option, such as MQGMO_PROPERTIES_IN_HANDLE. The default setting of MQGMO_PROPERTIES is MQGMO_PROPERTIES_AS_Q_DEF, which leaves the property setting as defined by the **PROPCTL** setting on the resolved receiving queue.

Note: If the **PSPROP** subscription attribute is set to RFH2, the queue manager might add publish/subscribe properties to the psc folder in the application-created MQRFH2 header. Otherwise, the queue manager does not modify the application-created MQRFH2 header.

Special rules apply to setting V6COMPAT:

1. You must set V6COMPAT on both of the queues accessed by MQPUT and MQGET.
   - You might find the effect of V6COMPAT does not require setting V6COMPAT on the queue that MQPUT writes to. The reason is that in many cases MQPUT does not reorganize the contents of an MQRFH2. Setting V6COMPAT has no apparent effect.
   - V6COMPAT appears to take effect only when it is set on the queue that is accessed by the application receiving the message.

   Despite these appearances, it is important you set V6COMPAT for both the sender and receiver of a message. In some circumstances, V6COMPAT works only if it is set at both ends of the transfer.
2. If you set V6COMPAT on either an alias queue or a local queue, the result is the same.

   For example, an alias queue, QA1, has a target queue Q1. An application opens QA1. Whichever of the pairs of definitions in Figure 1 on page 288 are set, the result is the same. A message is placed on Q1, with the MQRFH2 created by the application preserved exactly as it was when it was passed to the queue manager.

   ```
   DEFINE QLOCAL(Q1)  PROPCTL(V6COMPAT)
   DEFINE QALIAS(QA1) TARGET(Q1)
   ```

   ```
   DEFINE QLOCAL(Q1)
   DEFINE QALIAS(QA1) TARGET(Q1) PROPCTL(V6COMPAT)
   ```

   Figure 2. Equivalent definitions of V6COMPAT
3. You can set V6COMPAT on the transmission queue, or a queue that resolves to a transmission queue. The result is to transmit any MQRFH2 in a message exactly as it was created by an application. You cannot set V6COMPAT on a QREMOTE definition.

No other **PROPCTL** queue options behave this way. To control the way message properties are transmitted to a queue manager running IBM WebSphere MQ Version 6.0 or earlier, set the **PROPCTL** channel attribute.

4. For publish/subscribe, V6COMPAT must be set on a queue that resolves to the destination for a publication.
   - For unmanaged publish/subscribe, set V6COMPAT on a queue that is in the name resolution path for the queue passed to MQSUB. If a subscription is created administratively, set V6COMPAT on a queue that is in the name resolution path for the destination set for the subscription.
   - For managed publish/subscribe, set V6COMPAT on the model managed durable and managed non-durable queues for subscription topics. The default model managed queues are SYSTEM.MANAGED.DURABLE and SYSTEM.MANAGED.NDURABLE. By using different model queues for different topics, some publications are received with their original MQRFH2, and others with message property control set by other values of **PROPCTL**.
   - For queued publish/subscribe, you must identify the queues used by the publishing and subscribing applications. Set V6COMPAT on those queues, as if the publisher and subscriber are using point to point messaging.

The effect of setting V6COMPAT on a message sent to another queue manager is as follows:

To a Version 7.1 queue manager

If a message contains internally set message properties, or message properties set by MQSETMP, the local queue manager adds an MQRFH2. The additional MQRFH2 is placed before any application created MQRFH2 headers. The local queue manager passes the modified message to the channel.

The new MQRFH2 header is flagged MQRFH_INTERNAL (X'8000000') in the MQRFH2 Flags field; see Flags (MQLONG) .

The channel message, and send and receive exits, are passed the entire message including the additional MQRFH2.

The action of the remote channel depends on whether V6COMPAT is set for the target queue. If it is set, then the internally set properties in the initial MQRFH2 are available to an application in the message handle. The application created MQRFH2 is received unchanged, except for character conversion and numeric encoding transformations.

To a Version 7.0.1 queue manager
Internally set properties are discarded. The MQRFH2 header is transferred unmodified.

To a Version 6.0 or earlier queue manager
Internally set properties are discarded. The MQRFH2 header is transferred unmodified. **PROPCTL** channel options are applied after internally set properties are discarded.

PUT
Specifies whether messages can be put on the queue.

ENABLED
Messages can be added to the queue (by suitably authorized applications).

DISABLED
Messages cannot be added to the queue.

This parameter can also be changed using the MQSET API call.

QDEPTHHI(*integer*)
The threshold against which the queue depth is compared to generate a Queue Depth High event.

This parameter is supported only on local and model queues.

This event indicates that an application put a message on a queue resulting in the number of messages on the queue becoming greater than or equal to the queue depth high threshold. See the **QDPHIEV** parameter.

The value is expressed as a percentage of the maximum queue depth (**MAXDEPTH** parameter), and must be in the range zero through 100 and no less than **QDEPTHLO**.

QDEPTHLO(*integer*)
The threshold against which the queue depth is compared to generate a Queue Depth Low event.

This parameter is supported only on local and model queues.

This event indicates that an application retrieved a message from a queue resulting in the number of messages on the queue becoming less than or equal to the queue depth low threshold. See the **QDPLOEV** parameter.

The value is expressed as a percentage of the maximum queue depth (**MAXDEPTH** parameter), and must be in the range zero through 100 and no greater than **QDEPTHHI**.

QDPHIEV
Controls whether Queue Depth High events are generated.

This parameter is supported only on local and model queues.

A Queue Depth High event indicates that an application put a message on a queue resulting in the number of messages on the queue becoming greater than or equal to the queue depth high threshold. See the **QDEPTHHI** parameter.

Note: The value of this parameter can change implicitly, and shared queues on z/OS affect the event. See the description of the Queue Depth High event in Queue Depth High.

ENABLED
Queue Depth High events are generated

DISABLED
Queue Depth High events are not generated

QDPLOEV
Controls whether Queue Depth Low events are generated.

This parameter is supported only on local and model queues.

A Queue Depth Low event indicates that an application retrieved a message from a queue resulting in the number of messages on the queue becoming less than or equal to the queue depth low threshold. See the **QDEPTHLO** parameter.

Note: The value of this parameter can change implicitly. For more information about this event, and the effect that shared queues on z/OS have on this event, see Queue Depth Low .

ENABLED
Queue Depth Low events are generated

DISABLED
Queue Depth Low events are not generated

QDPMAXEV
Controls whether Queue Full events are generated.

This parameter is supported only on local and model queues.

A Queue Full event indicates that a put to a queue was rejected because the queue is full. The queue depth reached its maximum value.

Note: The value of this parameter can change implicitly. For more information about this event, and the effect that shared queues on z/OS have on this event, see Queue Full.

ENABLED
Queue Full events are generated

DISABLED
Queue Full events are not generated

QSGDISP

This parameter applies to z/OS only.

Specifies the disposition of the object within the group.

Table 48. QSGDISP parameters.

Definitions of the QSGDISP parameters when defining a queue.

QSGDISP	DEFINE
COPY	The object is defined on the page set of the queue manager that executes the command using the QSGDISP(GROUP) object of the same name as the LIKE object. For local queues, messages are stored on the page sets of each queue manager and are available only through that queue manager.

GROUP	The object definition resides in the shared repository but only if there is a shared queue manager environment. If the definition is successful, the following command is generated. The command is sent to all active queue managers to attempt to make or refresh local copies on page set zero:
	`DEFINE QUEUE(q-name)`
	`REPLACE QSGDISP(COPY)`
	The **DEFINE** command for the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.

PRIVATE	Not permitted.
QMGR	The object is defined on the page set of the queue manager that executes the command. For local queues, messages are stored on the page sets of each queue manager and are available only through that queue manager.
SHARED	This option applies only to local queues. The object is defined in the shared repository. Messages are stored in the coupling facility and are available to any queue manager in the queue-sharing group. You can specify SHARED only if: • CFSTRUCT is nonblank • INDXTYPE is not MSGTOKEN • The queue is not: – SYSTEM.CHANNEL.INITQ – SYSTEM.COMMAND.INPUT If the queue is clustered, a command is generated. The command is sent to all active queue managers in the queue-sharing group to notify them of this clustered, shared queue.

QSVCIEV

Controls whether Service Interval High or Service Interval OK events are generated.

This parameter is supported only on local and model queues and is ineffective if it is specified on a shared queue.

A Service Interval High event is generated when a check indicates that no messages were retrieved from the queue for at least the time indicated by the **QSVCINT** parameter.

A Service Interval OK event is generated when a check indicates that messages were retrieved from the queue within the time indicated by the **QSVCINT** parameter.

Note: The value of this parameter can change implicitly. For more information, see the description of the Service Interval High and Service Interval OK events in Queue Service Interval High and Queue Service Interval OK.

HIGH
Service Interval High events are generated

OK
Service Interval OK events are generated

NONE
No service interval events are generated

QSVCINT(*integer*)
The service interval used for comparison to generate Service Interval High and Service Interval OK events.

This parameter is supported only on local and model queues and is ineffective if it is specified on a shared queue.

See the **QSVCIEV** parameter.

The value is in units of milliseconds, and must be in the range zero through 999999999.

REPLACE & NOREPLACE
This option controls whether any existing definition is to be replaced with this one.

REPLACE
If the object does exist, the effect is like issuing the **ALTER** command without the **FORCE** parameter and with all the other parameters specified. In particular, note that any messages that are on the existing queue are retained.

There is a difference between the **ALTER** command without the **FORCE** parameter, and the **DEFINE** command with the **REPLACE** parameter. The difference is that **ALTER** does not change unspecified parameters, but **DEFINE** with **REPLACE** sets all the parameters. If you use **REPLACE**, unspecified parameters are taken either from the object named on the **LIKE** parameter, or from the default definition, and the parameters of the object being replaced, if one exists, are ignored.

The command fails if both of the following statements are true:

- The command sets parameters that would require the use of the **FORCE** parameter if you were using the ALTER command
- The object is open

The **ALTER** command with the **FORCE** parameter succeeds in this situation.

If **SCOPE(CELL)** is specified on UNIX and Linux systems, or Windows, and there is already a queue with the same name in the cell directory, the command fails, even if **REPLACE** is specified.

NOREPLACE
The definition must not replace any existing definition of the object.

RETINTVL(*integer*)
The number of hours from when the queue was defined, after which the queue is no longer needed. The value must be in the range 0 - 999,999,999.

This parameter is supported only on local and model queues.

The CRDATE and CRTIME can be displayed using the **DISPLAY QUEUE** command.

This information is available for use by an operator or a housekeeping application to delete queues that are no longer required.

Note: The queue manager does not delete queues based on this value, nor does it prevent queues from being deleted if their retention interval is not expired. It is the responsibility of the user to take any required action.

RNAME(*string*)
Name of remote queue. This parameter is the local name of the queue as defined on the queue manager specified by **RQMNAME**.

This parameter is supported only on remote queues.

- If this definition is used for a local definition of a remote queue, **RNAME** must not be blank when the open occurs.
- If this definition is used for a queue manager alias definition, **RNAME** must be blank when the open occurs.

  In a queue manager cluster, this definition applies only to the queue manager that made it. To advertise the alias to the whole cluster, add the **CLUSTER** attribute to the remote queue definition.
- If this definition is used for a reply-to queue alias, this name is the name of the queue that is to be the reply-to queue.

The name is not checked to ensure that it contains only those characters normally allowed for queue names; see Rules for naming IBM WebSphere MQ objects .

RQMNAME(*string*)
The name of the remote queue manager on which the queue **RNAME** is defined.

This parameter is supported only on remote queues.

- If an application opens the local definition of a remote queue, **RQMNAME** must not be blank or the name of the local queue manager. When the open occurs, if **XMITQ** is blank there must be a local queue of this name, which is to be used as the transmission queue.
- If this definition is used for a queue manager alias, **RQMNAME** is the name of the queue manager that is being aliased. It can be the name of the local queue manager. Otherwise, if **XMITQ** is blank, when the open occurs there must be a local queue of this name, which is to be used as the transmission queue.
- If **RQMNAME** is used for a reply-to queue alias, **RQMNAME** is the name of the queue manager that is to be the reply-to queue manager.

The name is not checked to ensure that it contains only those characters normally allowed for IBM WebSphere MQ object names; see Rules for naming IBM WebSphere MQ objects.

SCOPE
Specifies the scope of the queue definition.

This parameter is supported only on alias, local, and remote queues.

QMGR
The queue definition has queue manager scope. This means that the definition of the queue does not extend beyond the queue manager that owns it. You can open a queue for output that is owned by another queue manager in either of two ways:

1. Specify the name of the owning queue manager.
2. Open a local definition of the queue on the other queue manager.

CELL
The queue definition has cell scope. Cell scope means that the queue is known to all the queue managers in the cell. A queue with cell scope can be opened for output merely by specifying the name of the queue. The name of the queue manager that owns the queue need not be specified.

If there is already a queue with the same name in the cell directory, the command fails. The **REPLACE** option does not affect this situation.

This value is valid only if a name service supporting a cell directory is configured.

Restriction: The DCE name service is no longer supported.

This parameter is valid only on UNIX and Linux systems, and Windows.

SHARE and NOSHARE
Specifies whether multiple applications can get messages from this queue.

This parameter is supported only on local and model queues.

SHARE
More than one application instance can get messages from the queue.

NOSHARE
Only a single application instance can get messages from the queue.

STATQ
Specifies whether statistics data collection is enabled:

QMGR
Statistics data collection is based on the setting of the **STATQ** parameter of the queue manager.

ON
If the value of the **STATQ** parameter of the queue manager is not NONE, statistics data collection for the queue is enabled.

OFF
Statistics data collection for the queue is disabled.

If this parameter is used in an **ALTER** queue command, the change is effective only for connections to the queue manager made after the change to the parameter.

This parameter is valid only on IBM i, UNIX and Linux systems, and Windows.

STGCLASS(*string*)
The name of the storage class.

This parameter is supported only on local and model queues.

This parameter is an installation-defined name.

This parameter is valid on z/OS only.

The first character of the name must be uppercase A through Z, and subsequent characters either uppercase A through Z or numeric 0 through 9.

Note: You can change this parameter only if the queue is empty and closed.

If you specify **QSGDISP**(SHARED) or **DEFTYPE**(SHAREDYN), this parameter is ignored.

TARGET(*string*)
The name of the queue or topic object being aliased; See Rules for naming IBM WebSphere MQ objects . The object can be a queue or a topic as defined by **TARGTYPE**. The maximum length is 48 characters.

This parameter is supported only on alias queues.

This object needs to be defined only when an application process opens the alias queue.

The TARGQ parameter, defined in IBM WebSphere MQ Version 6.0, is renamed to TARGET from version 7.0 and generalized to allow you to specify the name of either a queue or a topic. The default value for TARGET is a queue, therefore TARGET(my_queue_name) is the same as TARGQ(my_queue_name). The TARGQ attribute is retained for compatibility with your existing programs. If you specify **TARGET**, you cannot also specify **TARGQ**.

TARGTYPE(*string*)
The type of object to which the alias resolves.

QUEUE
The alias resolves to a queue.

TOPIC
The alias resolves to a topic.

TRIGDATA(*string*)
The data that is inserted in the trigger message. The maximum length of the string is 64 bytes.

This parameter is supported only on local and model queues.

For a transmission queue on AIX, HP-UX, IBM i, Linux, Solaris, Windows, and z/OS, you can use this parameter to specify the name of the channel to be started.

This parameter can also be changed using the MQSET API call.

TRIGDPTH(*integer*)
The number of messages that have to be on the queue before a trigger message is written, if **TRIGTYPE** is DEPTH. The value must be in the range 1 - 999,999,999.

This parameter is supported only on local and model queues.

This parameter can also be changed using the MQSET API call.

TRIGGER &NOTRIGGER
Specifies whether trigger messages are written to the initiation queue, named by the **INITQ** parameter, to trigger the application, named by the **PROCESS** parameter:

TRIGGER
Triggering is active, and trigger messages are written to the initiation queue.

NOTRIGGER
Triggering is not active, and trigger messages are not written to the initiation queue.

This parameter is supported only on local and model queues.

This parameter can also be changed using the MQSET API call.

TRIGMPRI(*integer*)
The message priority number that triggers this queue. The value must be in the range zero through to the **MAXPRTY** queue manager parameter; see "DISPLAY QMGR" on page 561 for details.

This parameter can also be changed using the MQSET API call.

TRIGTYPE
Specifies whether and under what conditions a trigger message is written to the initiation queue. The initiation queue is (named by the **INITQ** parameter.

This parameter is supported only on local and model queues.

FIRST
Whenever the first message of priority equal to or greater than the priority specified by the **TRIGMPRI** parameter of the queue arrives on the queue.

EVERY
Every time a message arrives on the queue with priority equal to or greater than the priority specified by the **TRIGMPRI** parameter of the queue.

DEPTH
When the number of messages with priority equal to or greater than the priority specified by **TRIGMPRI** is equal to the number indicated by the **TRIGDPTH** parameter.

NONE
No trigger messages are written.

This parameter can also be changed using the MQSET API call.

USAGE
Queue usage.

This parameter is supported only on local and model queues.

NORMAL
The queue is not a transmission queue.

XMITQ
The queue is a transmission queue, which is used to hold messages that are destined for a remote queue manager. When an application puts a message to a remote queue, the message is stored on the appropriate transmission queue. It stays there, awaiting transmission to the remote queue manager.

If you specify this option, do not specify values for **CLUSTER** and **CLUSNL** and do not specify **INDXTYPE**(MSGTOKEN) or **INDXTYPE**(GROUPID).

XMITQ(*string*)
The name of the transmission queue to be used for forwarding messages to the remote queue. **XMITQ** is used with either remote queue or queue manager alias definitions.

This parameter is supported only on remote queues.

If **XMITQ** is blank, a queue with the same name as **RQMNAME** is used as the transmission queue.

This parameter is ignored if the definition is being used as a queue manager alias and **RQMNAME** is the name of the local queue manager.

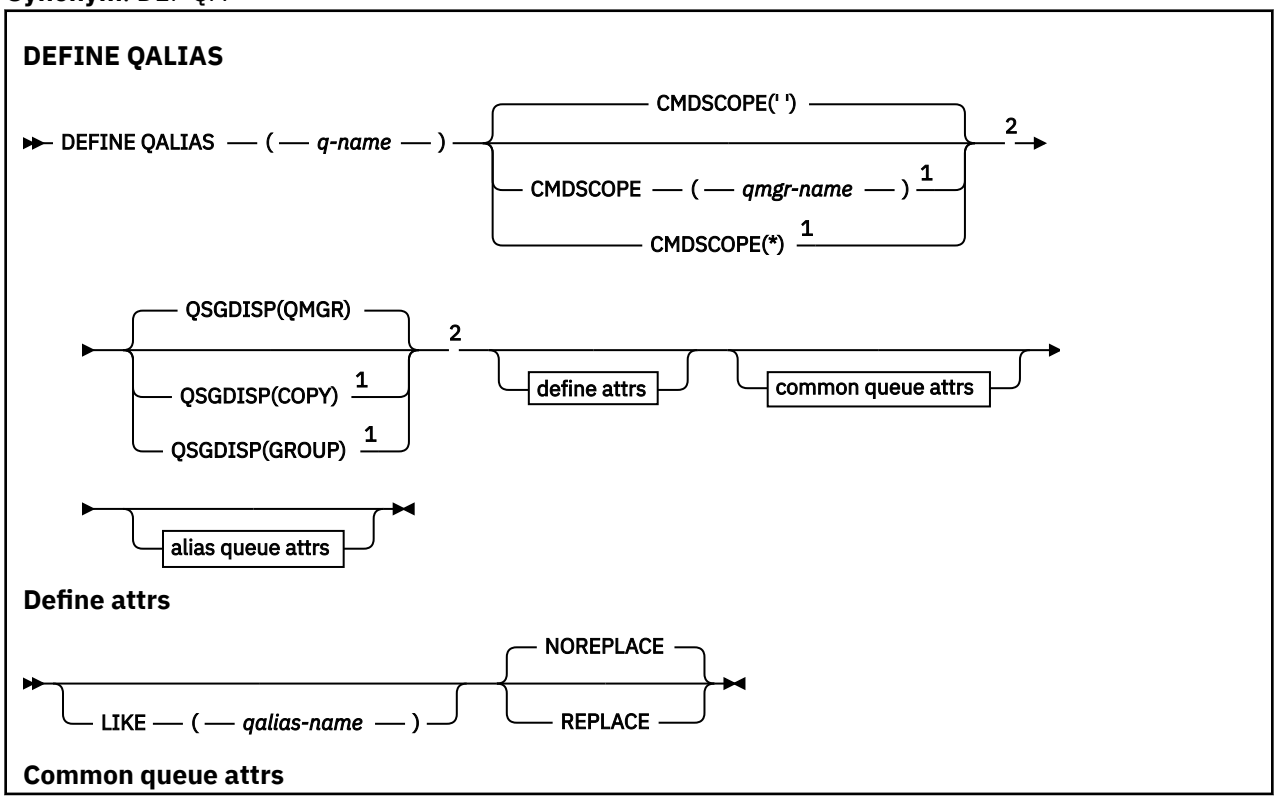
It is also ignored if the definition is used as a reply-to queue alias definition.

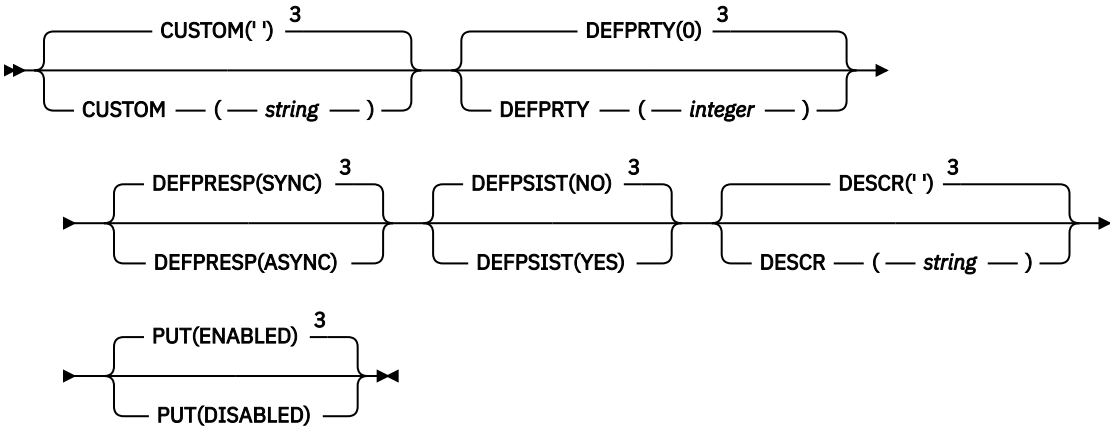
DEFINE QALIAS
Use DEFINE QALIAS to define a new alias queue, and set its parameters.

Note: An alias queue provides a level of indirection to another queue or a topic object. If the alias refers to a queue, it must be another local or remote queue, defined at this queue manager, or a clustered alias queue defined on another queue manager. It cannot be another alias queue on this queue manager. If the alias refers to a topic, it must be a topic object defined at this queue manager.

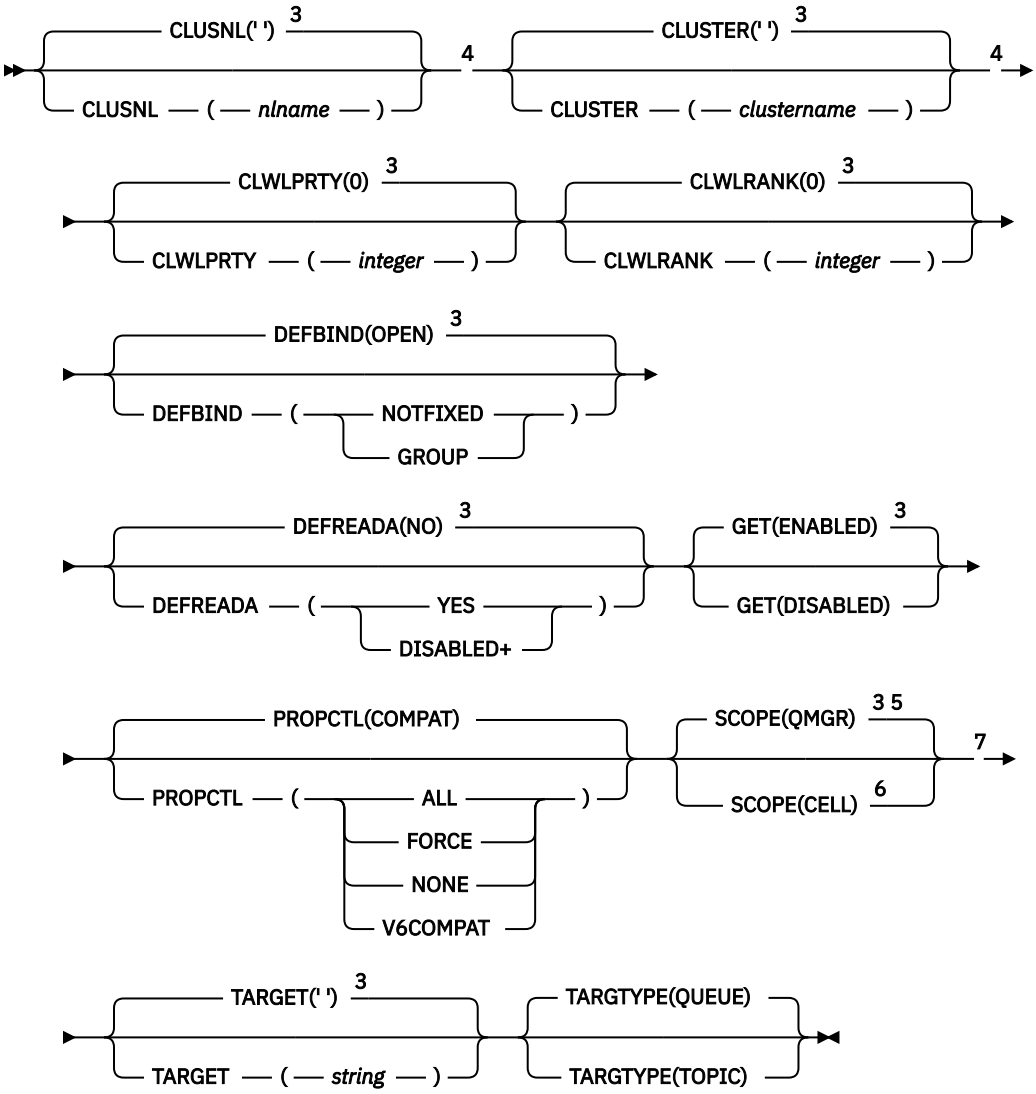
- Syntax diagram
- "Usage notes for DEFINE queues" on page 399
- "Parameter descriptions for DEFINE QUEUE and ALTER QUEUE" on page 400

Synonym: DEF QA





Alias queue attrs



Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.

[2] On z/OS, the QALIAS name can only be the same as the TARGET name if the target queue is a cluster queue.

[3] This is the default supplied with IBM WebSphere MQ, but your installation might have changed it.

[4] Valid only on AIX, HP-UX, IBM i, Linux, Solaris, Windows, and z/OS.

[5] Valid only on IBM i, UNIX and Linux systems, and Windows.

[6] Valid only on UNIX and Linux systems, and Windows.

[7] The TARGQ parameter, defined in IBM WebSphere MQ Version 6.0, is renamed to TARGET from version 7.0 and generalized to allow you to specify the name of either a queue or a topic. The default value for TARGET is a queue, therefore TARGET(my_queue_name) is the same as TARGQ(my_queue_name). The TARGQ attribute is retained for compatibility with your existing programs.

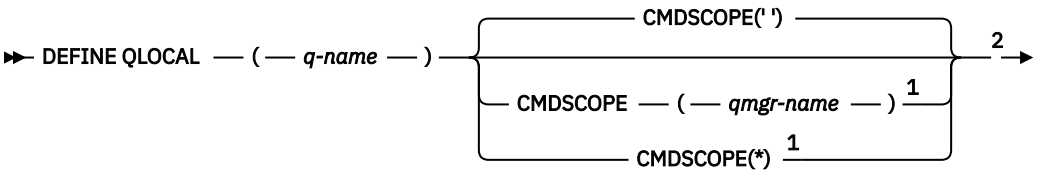
DEFINE QLOCAL

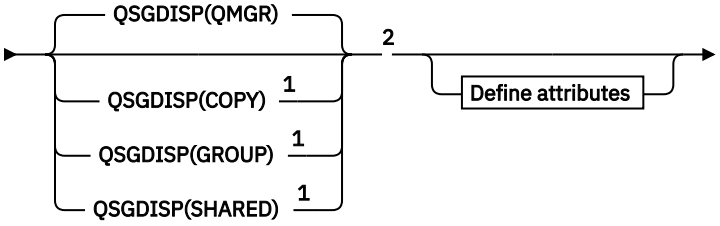
Use **DEFINE QLOCAL** to define a new local queue, and set its parameters.

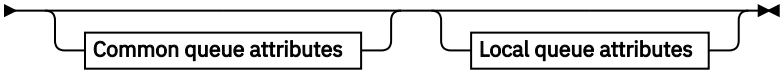
- Syntax diagram
- "Usage notes for DEFINE queues" on page 399
- "Parameter descriptions for DEFINE QUEUE and ALTER QUEUE" on page 400

Synonym: **DEF QL**

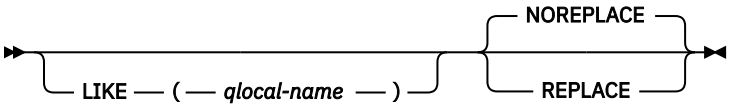
DEFINE QLOCAL



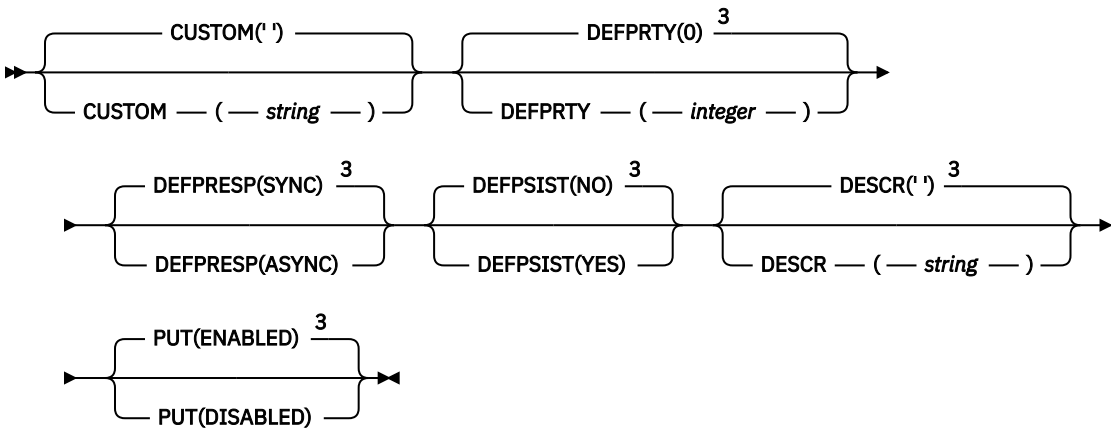




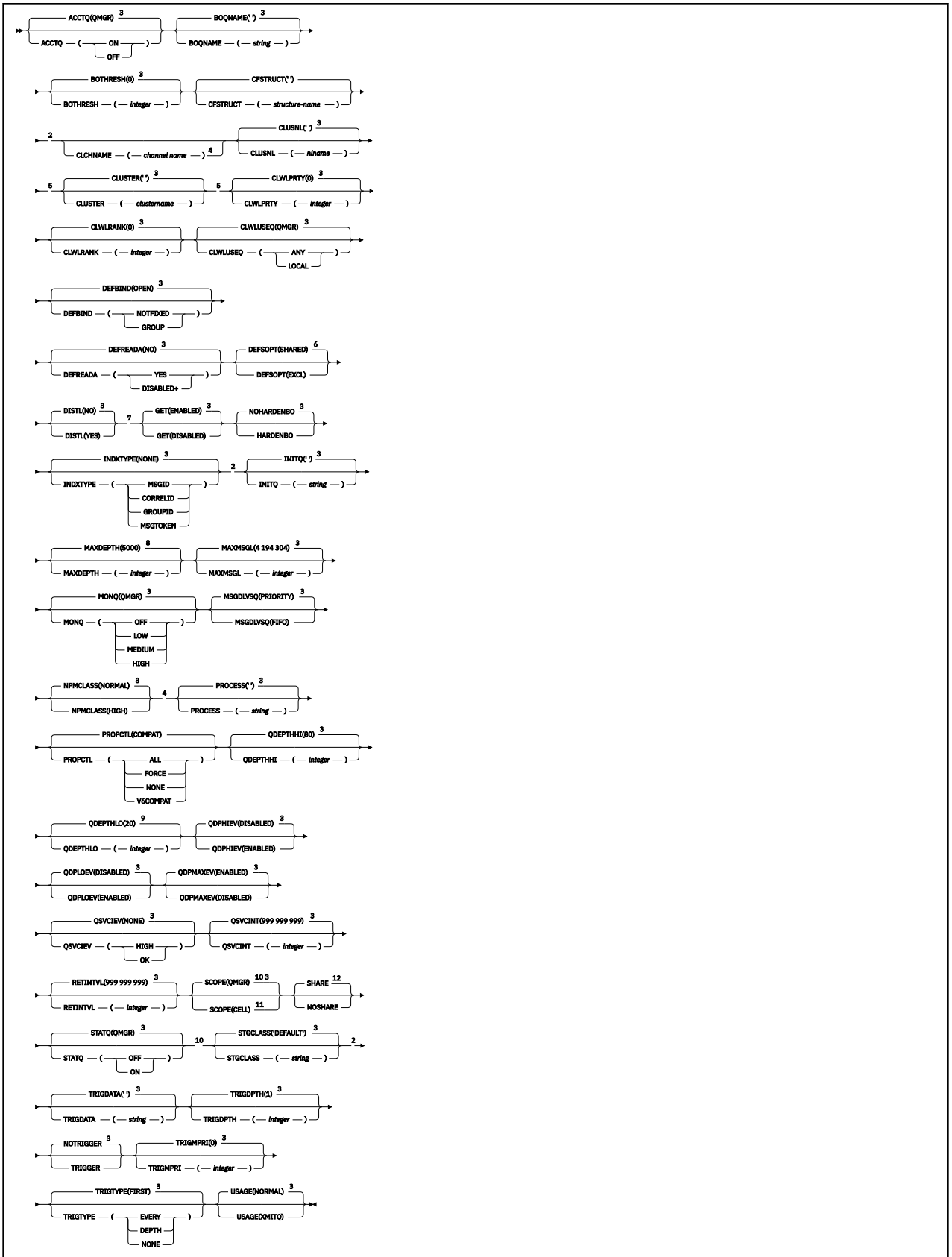
Define attributes



Common queue attributes



Local queue attributes



Notes:

1 Valid only on z/OS and when the queue manager is a member of a queue-sharing group.

2 Valid only on z/OS.

[3] This is the default supplied with IBM WebSphere MQ, but your installation might have changed it.
[4] Not valid on z/OS.
[5] Valid on UNIX, Linux, IBM i, Windows, and z/OS systems.
[6] This is the default supplied with IBM WebSphere MQ (except on z/OS, where it is EXCL), but your installation might have changed it.
[7] Valid on IBM i, UNIX, Linux, and Windows systems.
[8] This is the default supplied with IBM WebSphere MQ (except on z/OS, where it is 999 999 999), but your installation might have changed it.
[9] This is the default supplied with IBM WebSphere MQ (except on z/OS where it is 40), but your installation might have changed it.
[10] Valid on IBM i, UNIX, Linux, and Windows systems.
[11] Valid only on UNIX, Linux, and Windows systems.
[12] This is the default supplied with IBM WebSphere MQ (except on z/OS, where it is NOSHARE), but your installation might have changed it.

DEFINE QMODEL

Use **DEFINE QMODEL** to define a new model queue, and set its parameters.

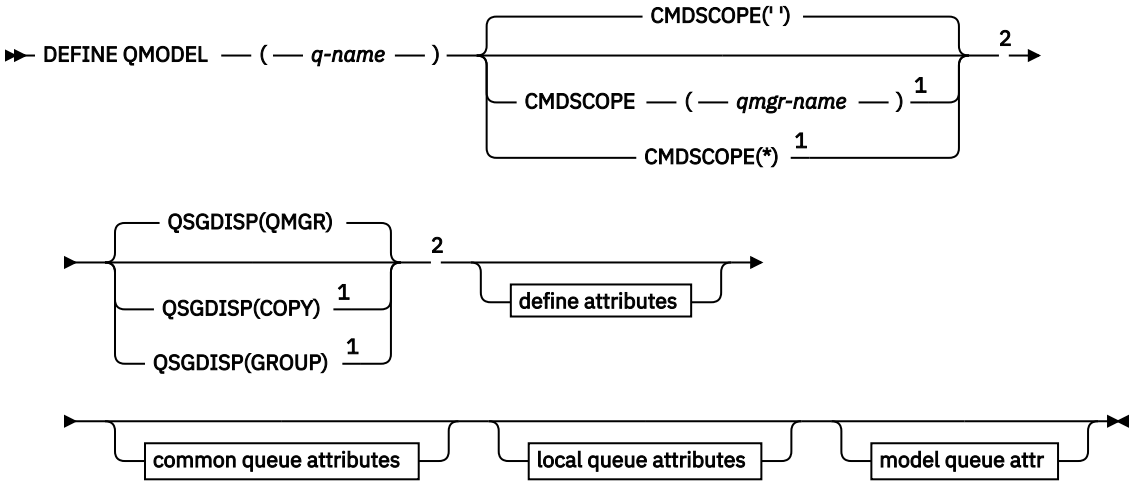
A model queue is not a real queue, but a collection of attributes that you can use when creating dynamic queues with the MQOPEN API call.

When it has been defined, a model queue (like any other queue) has a complete set of applicable attributes, even if some of these are defaults.

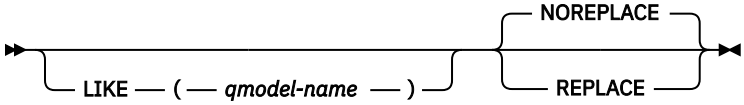
- Syntax diagram
- “Usage notes for DEFINE queues” on page 399
- “Parameter descriptions for DEFINE QUEUE and ALTER QUEUE” on page 400

Synonym: **DEF QM**

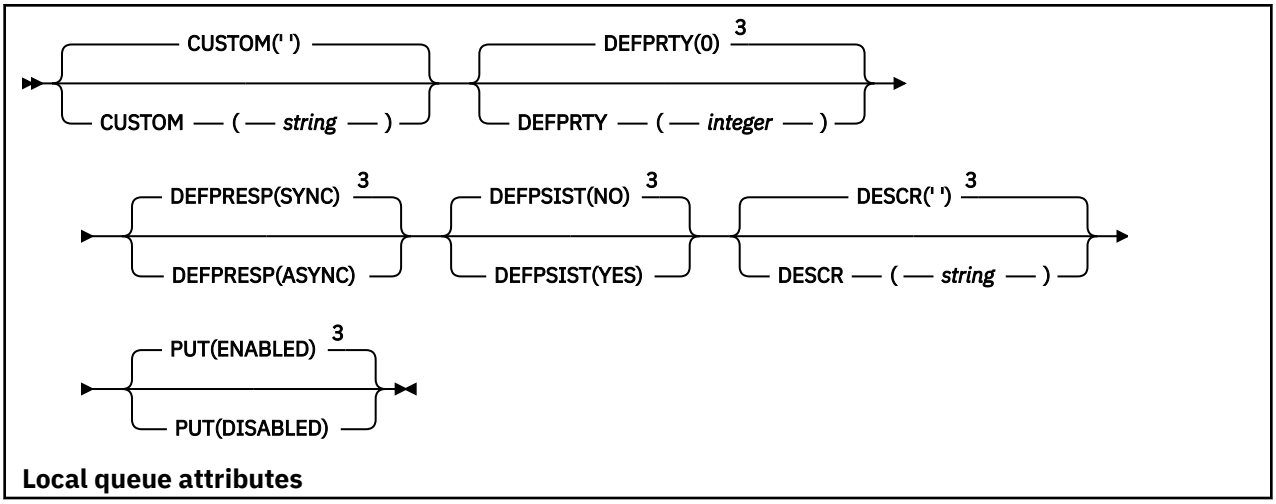
DEFINE QMODEL



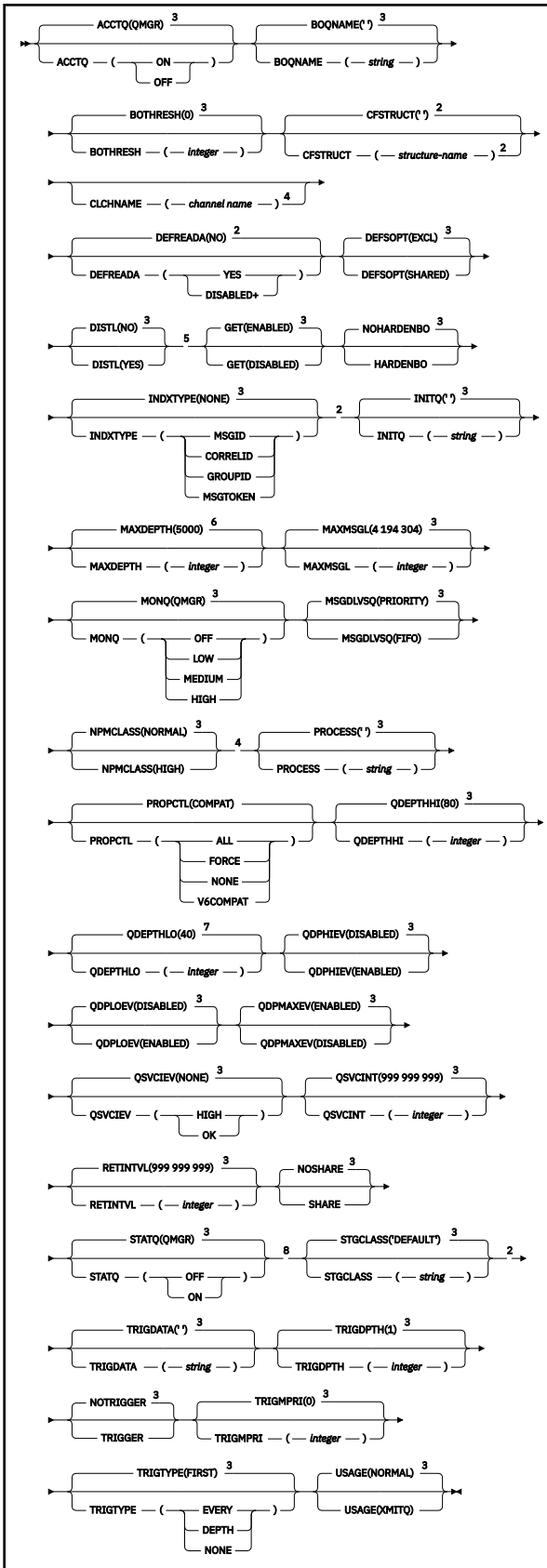
Define attributes



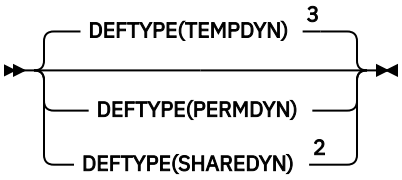
Common queue attributes



Local queue attributes



Model queue attr



Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[2] Used only on z/OS.
[3] This is the default supplied with WebSphere MQ, but your installation might have changed it.
[4] Not valid on z/OS.
[5] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.
[6] This is the default supplied with WebSphere MQ (except on z/OS, where it is 999 999 999), but your installation might have changed it.
[7] This is the default supplied with WebSphere MQ (except on platforms other than z/OS where it is 20), but your installation might have changed it.
[8] Valid only on IBM i, UNIX systems, and Windows.

DEFINE QREMOTE

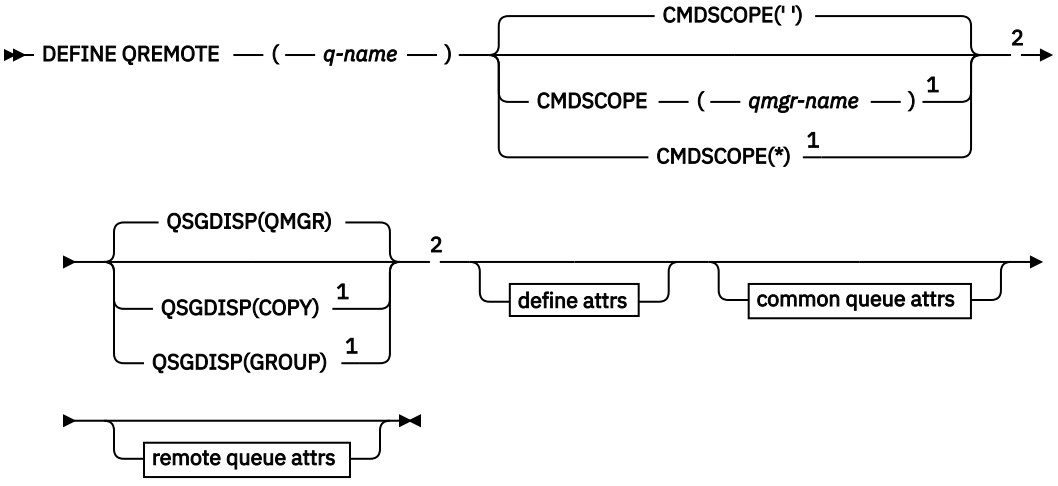
Use DEFINE QREMOTE to define a new local definition of a remote queue, a queue manager alias, or a reply-to queue alias, and to set its parameters.

A remote queue is one that is owned by another queue manager that application processes connected to this queue manager need to access.

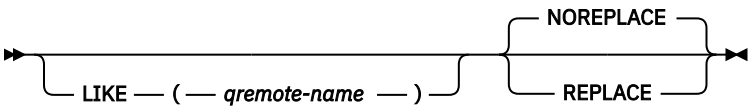
- Syntax diagram
- "Usage notes for DEFINE queues" on page 399
- "Parameter descriptions for DEFINE QUEUE and ALTER QUEUE" on page 400

Synonym: DEF QR

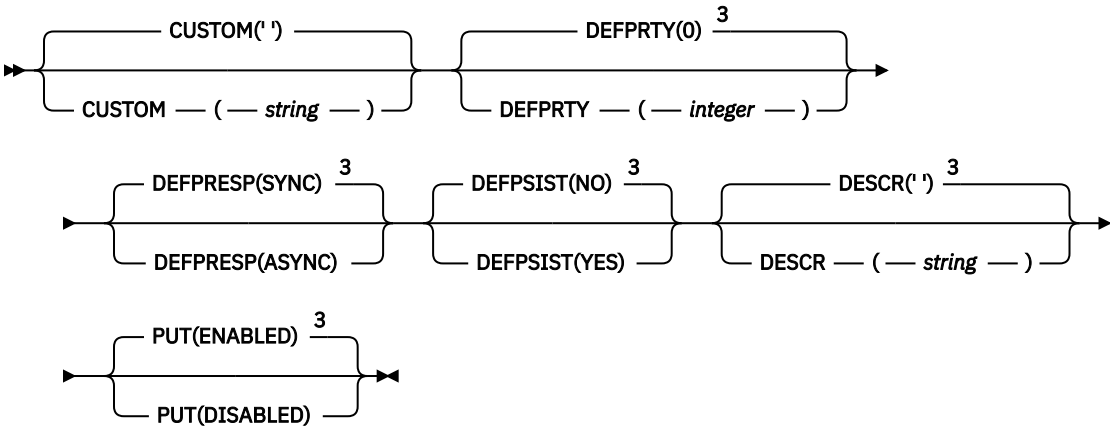
DEFINE QREMOTE



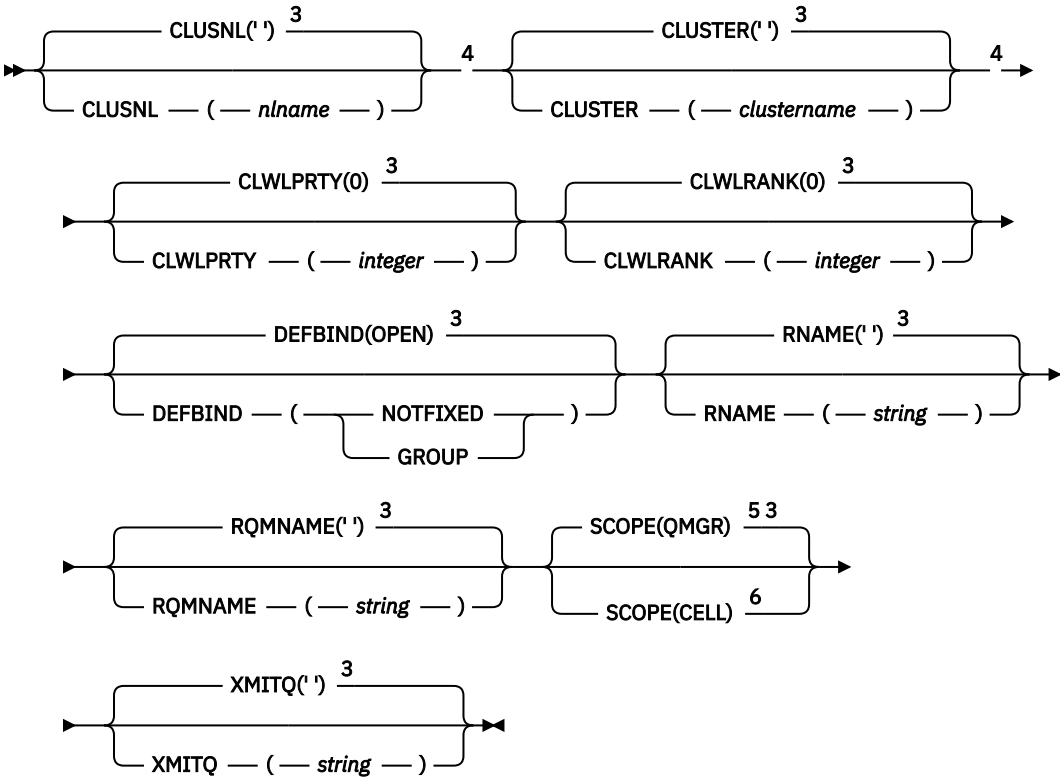
Define attrs



Common queue attrs



Remote queue attrs



Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[2] Valid only on z/OS.
[3] This is the default supplied with IBM WebSphere MQ, but your installation might have changed it.
[4] Valid only on AIX, HP-UX, IBM i, Linux, Solaris, Windows, and z/OS.
[5] Valid only on IBM i, UNIX and Linux systems, and Windows.
[6] Valid only on UNIX and Linux systems, and Windows.

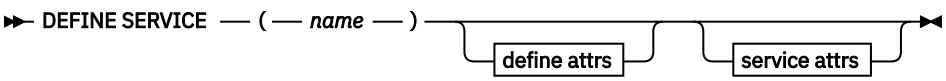
DEFINE SERVICE

Use the MQSC command DEFINE SERVICE to define a new WebSphere MQ service definition, and set its parameters.

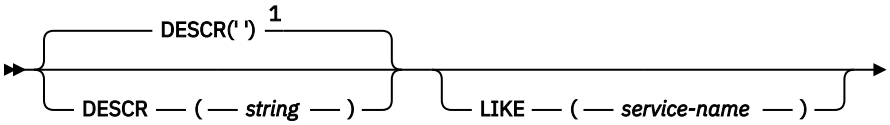
UNIX and Linux	Windows
✓	✓

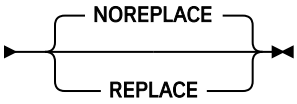
Synonym:

DEFINE SERVICE

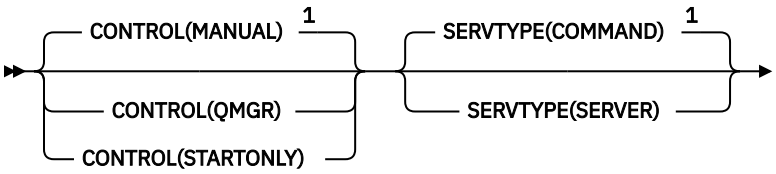


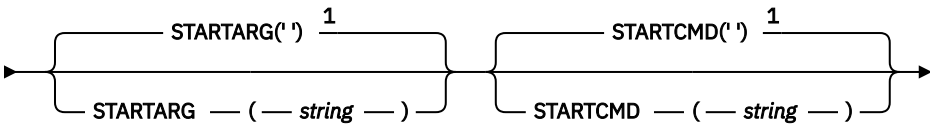
Define attrs

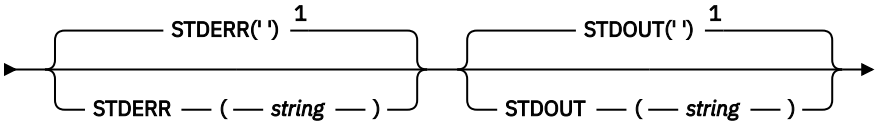


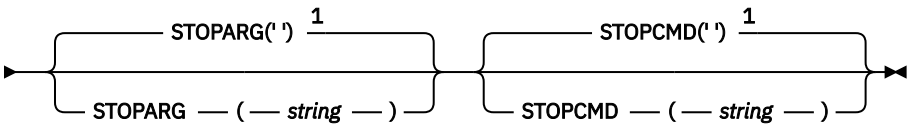


Service attrs









Notes:

[1] This is the default supplied with WebSphere MQ, but your installation might have changed it.

Usage notes

A service is used to define the user programs that are to be started and stopped when the queue manager is started and stopped. You can also start and stop these programs by issuing the START SERVICE and STOP SERVICE commands.

Attention: This command allows a user to run an arbitrary command with mqm authority. If granted rights to use this command, a malicious or careless user could define a service which damages your systems or data, for example, by deleting essential files.

For more information about services, see Services.

Parameter descriptions for DEFINE SERVICE

The parameter descriptions apply to the ALTER SERVICE and DEFINE SERVICE commands, with the following exceptions:

- The **LIKE** parameter applies only to the DEFINE SERVICE command.
- The **NOREPLACE** and **REPLACE** parameter applies only to the DEFINE SERVICE command.

(service-name)
Name of the WebSphere MQ service definition (see Rules for naming IBM WebSphere MQ objects).

The name must not be the same as any other service definition currently defined on this queue manager (unless REPLACE is specified).

CONTROL(*string*)
Specifies how the service is to be started and stopped:

MANUAL
The service is not to be started automatically or stopped automatically. It is to be controlled by use of the START SERVICE and STOP SERVICE commands.

QMGR
The service being defined is to be started and stopped at the same time as the queue manager is started and stopped.

STARTONLY
The service is to be started at the same time as the queue manager is started, but is not requested to stop when the queue manager is stopped.

DESCR(*string*)
Plain-text comment. It provides descriptive information about the service when an operator issues the DISPLAY SERVICE command (see “DISPLAY SERVICE” on page 606).

It must contain only displayable characters. The maximum length is 64 characters. In a DBCS installation, it can contain DBCS characters (subject to a maximum length of 64 bytes).

Note: If characters are used that are not in the coded character set identifier (CCSID) for this queue manager, they might be translated incorrectly if the information is sent to another queue manager.

LIKE(*service-name*)
The name of a service the parameters of which are used to model this definition.

This parameter applies only to the DEFINE SERVICE command.

If this field is not completed, and you do not complete the parameter fields related to the command, the values are taken from the default definition for services on this queue manager. Not completing this parameter is equivalent to specifying:

```
LIKE(SYSTEM.DEFAULT.SERVICE)
```

A default service is provided but it can be altered by the installation of the default values required. See Rules for naming IBM WebSphere MQ objects .

REPLACE and NOREPLACE
Whether the existing definition is to be replaced with this one.

This parameter applies only to the DEFINE SERVICE command.

REPLACE
The definition must replace any existing definition of the same name. If a definition does not exist, one is created.

NOREPLACE
The definition should not replace any existing definition of the same name.

SERVTYPE
Specifies the mode in which the service is to run:

COMMAND
A command service object. Multiple instances of a command service object can be executed concurrently. You cannot monitor the status of command service objects.

SERVER
A server service object. Only one instance of a server service object can be executed at a time. The status of server service objects can be monitored using the DISPLAY SVSTATUS command.

STARTARG(*string*)
Specifies the arguments to be passed to the user program at queue manager startup.

STARTCMD(*string*)
Specifies the name of the program which is to run. You must specify a fully qualified path name to the executable program.

STDERR(*string*)
Specifies the path to a file to which the standard error (stderr) of the service program is redirected. If the file does not exist when the service program is started, the file is created. If this value is blank then any data written to stderr by the service program is discarded.

STDOUT(*string*)
Specifies the path to a file to which the standard output (stdout) of the service program is redirected. If the file does not exist when the service program is started, the file is created. If this value is blank then any data written to stdout by the service program is discarded.

STOPARG(*string*)
Specifies the arguments to be passed to the stop program when instructed to stop the service.

STOPCMD(*string*)
Specifies the name of the executable program to run when the service is requested to stop. You must specify a fully qualified path name to the executable program.

Replaceable inserts can be used for any of the STARTCMD, STARTARG, STOPCMD, STOPARG, STDOUT or STDERR strings, for more information, see Replaceable inserts on service definitions.

Related information
Working with services

DEFINE SUB

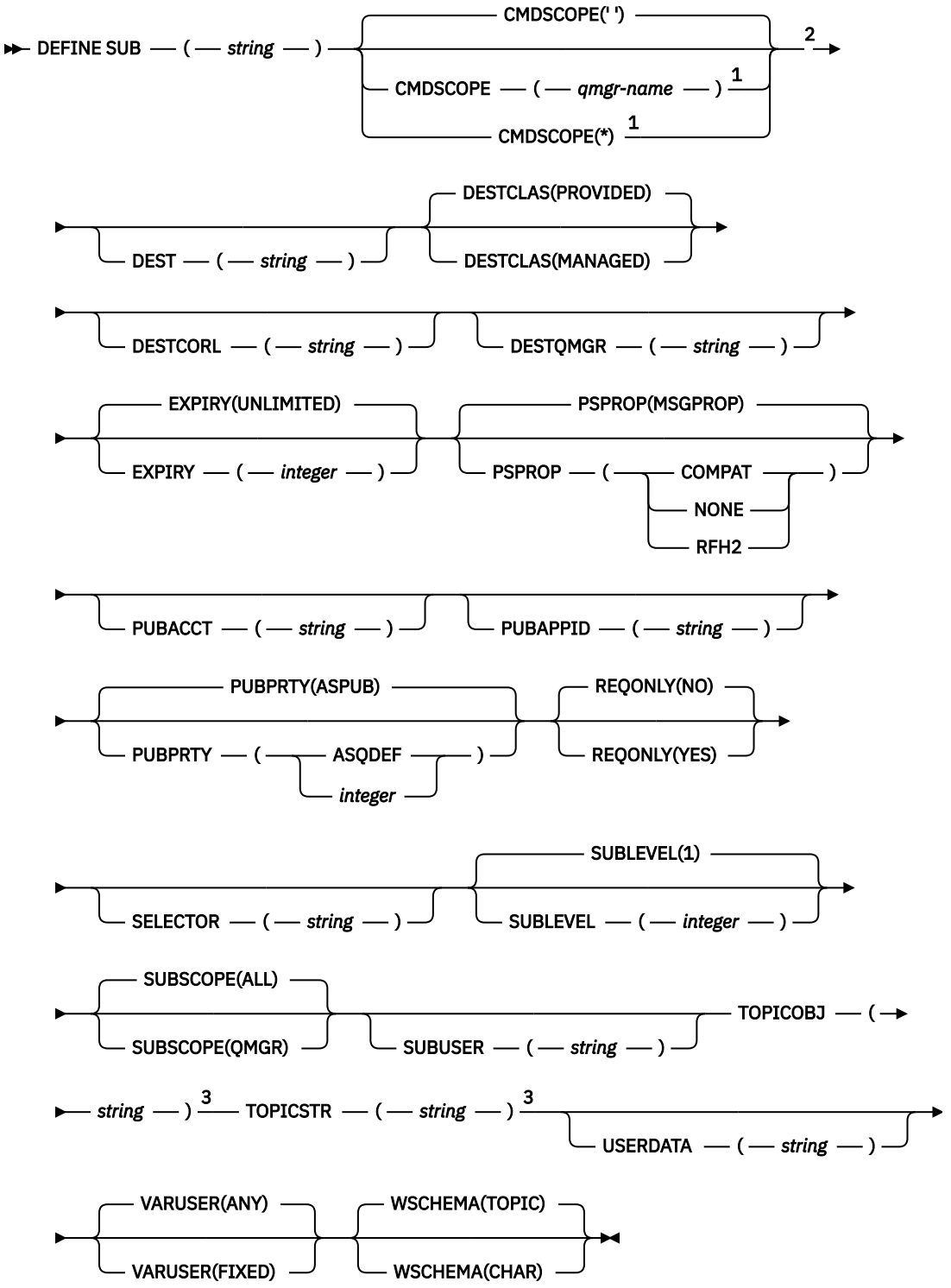
Use DEFINE SUB to allow an existing application to participate in a publish/subscribe application by allowing the administrative creation of a durable subscription.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- “Usage notes for DEFINE SUB” on page 436
- “Parameter descriptions for DEFINE SUB” on page 436

Synonym: DEF SUB

DEFINE SUB



Notes:

1 Valid only on z/OS when the queue manager is a member of a queue-sharing group.
2 Valid only on z/OS.
3 At least one of **TOPICSTR** and **TOPICOBJ** must be present on **DEFINE**.

Usage notes for DEFINE SUB

1. You must provide the following information when you define a subscription:
   - The SUBNAME
   - A destination for messages
   - The topic to which the subscription applies
2. You can provide the topic name in the following ways:

   TOPICSTR
   The topic is fully specified as the TOPICSTR attribute.

   TOPICOBJ
   The topic is obtained from the TOPICSTR attribute of the named topic object. The named topic object is retained as the TOPICOBJ attribute of the new subscription. This method is provided to help you enter long topic strings through an object definition.

   TOPICSTR and TOPICOBJ
   The topic is obtained by the concatenation of the TOPICSTR attribute of the named topic object and the value of TOPICSTR (see the MQSUB API specification for concatenation rules). The named topic object is retained as the TOPICOBJ attribute of the new subscription.
3. If you specify TOPICOBJ, the parameter must name a WebSphere MQ topic object. The existence of the named topic object is checked at the time the command processes.
4. You can explicitly specify the destination for messages through the use of the DEST and DESTQMGR keywords.

   You must provide the DEST keyword for the default option of DESTCLAS(PROVIDED); if you specify DESTCLAS(MANAGED), a managed destination is created on the local queue manager, so you cannot specify either the DEST or DESTQMGR attribute.
5. On z/OS only, at the time the DEF SUB command processes, no check is performed that the named DEST or DESTQMGR exists.

   These names are used at publishing time as the *ObjectName* and *ObjectQMgrName* for an MQOPEN call. These names are resolved according to the WebSphere MQ name resolution rules.
6. When a subscription is defined administratively using MQSC or PCF commands, the selector is not validated for invalid syntax. The DEFINE SUB command has no equivalent to the MQRC_SELECTION_NOT_AVAILABLE reason code that can be returned by the MQSUB API call.
7. TOPICOBJ, TOPICSTR, WSCHEMA, SELECTOR, SUBSCOPE, and DESTCLAS cannot be changed with DEFINE REPLACE.
8. When a publication has been retained, it is no longer available to subscribers at higher levels because it is republished at PubLevel 1.

Parameter descriptions for DEFINE SUB

(string)
A mandatory parameter. Specifies the unique name for this subscription, see **SUBNAME** property.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is processed when the queue manager is a member of a queue-sharing group.

' '
The command is processed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is processed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****

The command is processed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of setting this value is the same as entering the command on every queue manager in the queue-sharing group.

You cannot use CMDSCOPE as a filter keyword.

DEST(*string*)

The destination for messages published to this subscription; this parameter is the name of a queue.

DESTCLAS

System managed destination.

PROVIDED

The destination is a queue.

MANAGED

The destination is managed.

DESTCORL(*string*)

The *CorrelId* used for messages published to this subscription.

DESTQMGR(*string*)

The destination queue manager for messages published to this subscription. You must define the channels to the remote queue manager, for example, the XMITQ, and a sender channel. If you do not, messages do not arrive at the destination.

EXPIRY

The time to expiry of the subscription object from the creation date and time.

(*integer*)

The time to expiry, in tenths of a second, from the creation date and time.

UNLIMITED

There is no expiry time. This is the default option supplied with the product.

LIKE(*subscription-name*)

The name of a subscription, the parameters of which are used as a model for this definition.

This parameter applies only to the DEFINE SUB command.

If this field is not supplied, and you do not complete the parameter fields related to the command, the values are taken from the default definition for subscriptions on this queue manager. Not completing this parameter is equivalent to specifying:

```
LIKE (SYSTEM.DEFAULT.SUB)
```

PSPROP

The manner in which publish subscribe related message properties are added to messages sent to this subscription.

NONE

Do not add publish subscribe properties to the message.

COMPAT

Publish subscribe properties are added within an MQRFH version 1 header unless the message was published in PCF format.

MSGPROP

Publish subscribe properties are added as message properties.

RFH2

Publish subscribe properties are added within an MQRFH version 2 header.

PUBACCT(*string*)
Accounting token passed by the subscriber, for propagation into messages published to this subscription in the *AccountingToken* field of the MQMD.

PUBAPPID(*string*)
Identity data passed by the subscriber, for propagation into messages published to this subscription in the *ApplIdentityData* field of the MQMD.

PUBPRTY
The priority of the message sent to this subscription.

ASPUB
Priority of the message sent to this subscription is taken from the priority supplied in the published message.

ASQDEF
Priority of the message sent to this subscription is taken from the default priority of the queue defined as a destination.

(integer)
An integer providing an explicit priority for messages published to this subscription.

REPLACE and NOREPLACE
This parameter controls whether any existing definition is to be replaced with this one.

REPLACE
The definition replaces any existing definition of the same name. If a definition does not exist, one is created.

You cannot change TOPICOBJ, TOPICSTR, WSCHEMA, SELECTOR, SUBSCOPE, or DESTCLAS with DEFINE REPLACE.

NOREPLACE
The definition does not replace any existing definition of the same name.

REQONLY
Indicates whether the subscriber polls for updates using the MQSUBRQ API call, or whether all publications are delivered to this subscription.

NO
All publications on the topic are delivered to this subscription.

YES
Publications are only delivered to this subscription in response to an MQSUBRQ API call.

This parameter is equivalent to the subscribe option MQSO_PUBLICATIONS_ON_REQUEST.

SELECTOR(*string*)
A selector that is applied to messages published to the topic.

SUBLEVEL(*integer*)
The level within the subscription hierarchy at which this subscription is made. The range is zero through 9.

SUBSCOPE
Determines whether this subscription is forwarded to other queue managers, so that the subscriber receives messages published at those other queue managers.

ALL
The subscription is forwarded to all queue managers directly connected through a publish/subscribe collective or hierarchy.

QMGR
The subscription forwards messages published on the topic only within this queue manager.

Note: Individual subscribers can only *restrict* **SUBSCOPE**. If the parameter is set to ALL at topic level, then an individual subscriber can restrict it to QMGR for this subscription. However, if the parameter is set to QMGR at topic level, then setting an individual subscriber to ALL has no effect.

SUBNAME
The application's unique subscription name that is associated with the handle. This parameter is relevant only for handles of subscriptions to topics. It is not returned for other handles. Not all subscriptions will have a subscription name.

SUBUSER(*string*)
Specifies the user ID that is used for security checks that are performed to ensure that publications can be put to the destination queue associated with the subscription. This ID is either the user ID associated with the creator of the subscription or, if subscription takeover is permitted, the user ID that last took over the subscription. The length of this parameter must not exceed 12 characters.

TOPICOBJ(*string*)
The name of a topic object used by this subscription.

TOPICSTR(*string*)
Specifies a fully qualified topic name, or a topic set using wildcard characters for the subscription.

USERDATA(*string*)
Specifies the user data associated with the subscription. The string is a variable length value that can be retrieved by the application on an MQSUB API call and passed in a message sent to this subscription as a message property.

V 7.5.0.8 From Version 7.5.0, Fix Pack 8, an IBM WebSphere MQ classes for JMS application can retrieve the subscription user data from the message by using the constant `JMS_IBM_SUBSCRIPTION_USER_DATA` in the JmsConstants interface with the method `javax.jms.Message.getStringProperty(java.lang.String)`. For more information, see Retrieval of user subscription data.

VARUSER
Specifies whether a user other than the subscription creator can connect to and take over ownership of the subscription.

ANY
Any user can connect to and takeover ownership of the subscription.

FIXED
Takeover by another **USERID** is not permitted.

WSCHEMA
The schema to be used when interpreting any wildcard characters in the topic string.

CHAR
Wildcard characters represent portions of strings.

TOPIC
Wildcard characters represent portions of the topic hierarchy.

DEFINE TOPIC

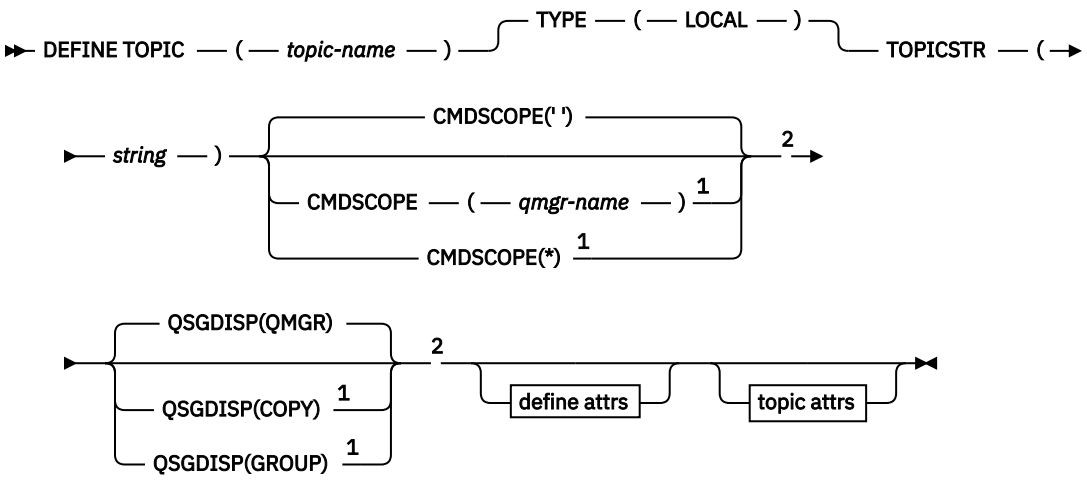
Use DEFINE TOPIC to define a new WebSphere MQ administrative topic in a topic tree, and set its parameters.

UNIX and Linux	Windows
✓	✓

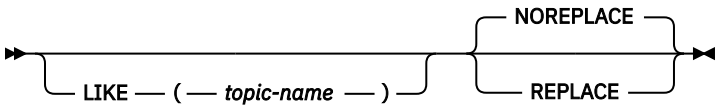
- Syntax diagram
- “Usage notes for DEFINE TOPIC” on page 442
- “Parameter descriptions for DEFINE TOPIC” on page 442

Synonym: DEF TOPIC

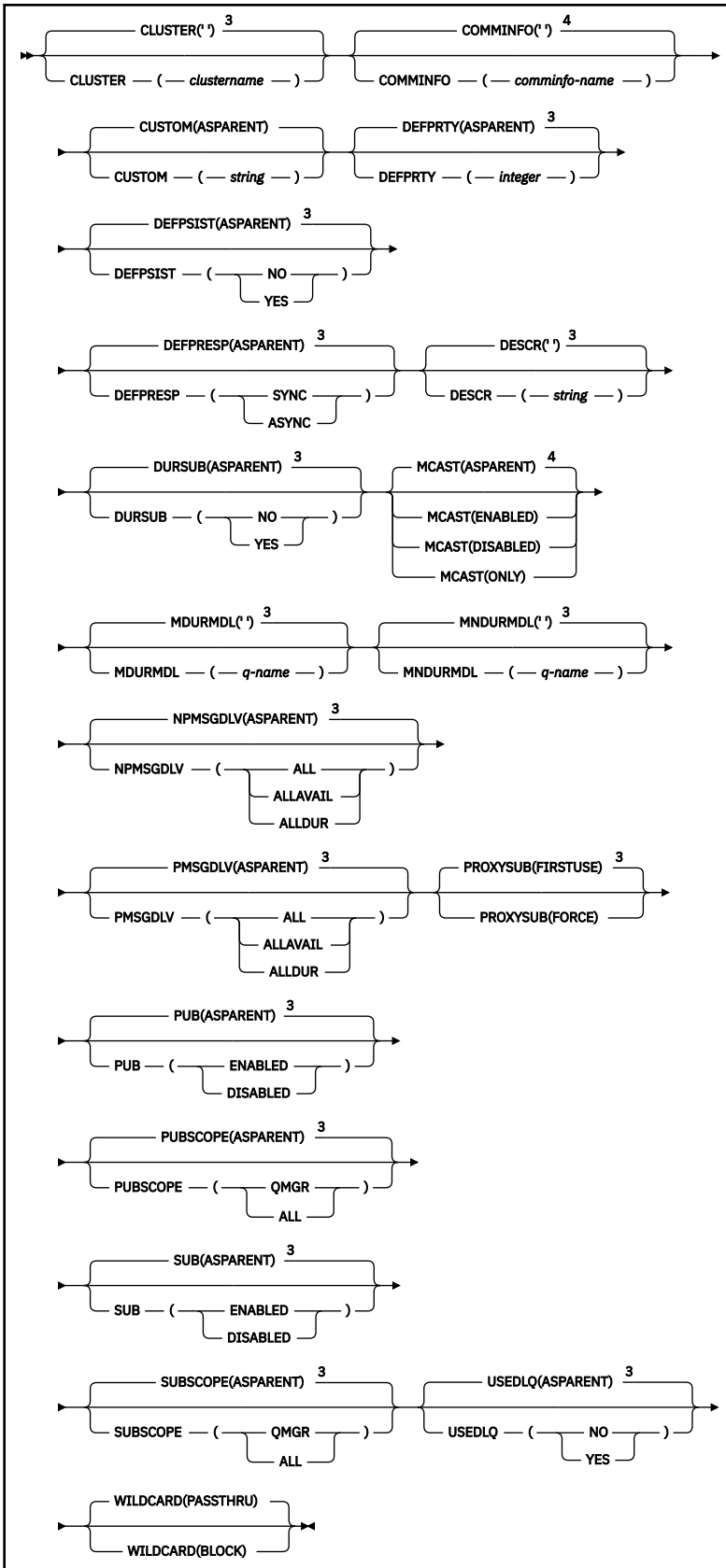
DEFINE TOPIC



Define attrs



Topic attrs



Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.

[2] Valid only on z/OS.

[3] This is the default supplied with WebSphere MQ, but your installation might have changed it.
[4] Not valid on z/OS.

Usage notes for DEFINE TOPIC

- When an attribute has the value ASPARENT, the value is taken from the setting of the first parent administrative node that is found in the topic tree. Administered nodes are based on either locally defined topic objects or remotely defined cluster topics when participating in a publish/subscribe cluster. If the first parent topic object also has the value ASPARENT, the next object is looked for. If every object that is found, when looking up the tree, uses ASPARENT, the values are taken from the SYSTEM.BASE.TOPIC, if it exists. If SYSTEM.BASE.TOPIC does not exist, the values are the same as the values supplied with IBM WebSphere MQ in the definition of the SYSTEM.BASE.TOPIC.
- The ASPARENT attribute is applied at each queue manager in the cluster collective by inspecting the set of local definitions and cluster definitions that is visible in the queue manager at the time.
- When a publication is sent to multiple subscribers, the attributes used from the topic object are used consistently for all subscribers that receive the publication. For example, inhibiting publication on a topic is applied for the next application MQPUT to the topic. A publication that is in progress to multiple subscribers completes to all subscribers. This publication does not take note of a change that has happened, part of the way through, to any attribute on the topic.

Parameter descriptions for DEFINE TOPIC

(topic-name)
Name of the IBM WebSphere MQ topic definition (see Rules for naming IBM WebSphere MQ objects). The maximum length is 48 characters.

The name must not be the same as any other topic definition currently defined on this queue manager (unless REPLACE is specified).

CLUSTER
The name of the cluster to which this topic belongs. Setting this parameter to a cluster that this queue manager is a member of makes all queue managers in the cluster aware of this topic. Any publication to this topic or a topic string below it put to any queue manager in the cluster is propagated to subscriptions on any other queue manager in the cluster. For more details, see Distributed publish/subscribe.

' '
If no topic object above this topic in the topic tree has set this parameter to a cluster name, then this topic does not belong to a cluster. Publications and subscriptions for this topic are not propagated to publish/subscribe cluster-connected queue managers. If a topic node higher in the topic tree has a cluster name set, publications and subscriptions to this topic are also propagated throughout the cluster.

string
The topic belongs to this cluster. It is not recommended that this is set to a different cluster from a topic object above this topic object in the topic tree. Other queue managers in the cluster will honour this object's definition unless a local definition of the same name exists on those queue managers.

To prevent all subscriptions and publications being propagated throughout a cluster, leave this parameter blank on the system topics SYSTEM.BASE.TOPIC and SYSTEM.DEFAULT.TOPIC, except in special circumstances, for example, to support migration, documented elsewhere.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if QSGDISP is set to GROUP.

' '
The command is executed on the queue manager on which it was entered.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name other than the queue manager on which it was entered, only if you are using a shared queue environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of * is the same as entering the command on every queue manager in the queue-sharing group.

COMMINFO(*comminfo-name*)
The name of the Multicast communication information object associated with this topic object.

CUSTOM(*string*)
The custom attribute for new features.

This attribute is reserved for the configuration of new features before separate attributes have been introduced. It can contain the values of zero or more attributes as pairs of attribute name and value, separated by at least one space. The attribute name and value pairs have the form `NAME(VALUE)`. Single quotes must be escaped with another single quote.

This description will be updated when features using this attribute are introduced. At the moment there are no possible values for *Custom*.

DEFPRTY(*integer*)
The default priority of messages published to the topic.

(*integer*)
The value must be in the range zero (the lowest priority), through to the MAXPRTY queue manager parameter (MAXPRTY is 9).

ASPARENT
The default priority is based on the setting of the closest parent administrative topic object in the topic tree.

DEFPSIST
Specifies the message persistence to be used when applications specify the MQPER_PERSISTENCE_AS_TOPIC_DEF option.

ASPARENT
The default persistence is based on the setting of the closest parent administrative topic object in the topic tree.

NO
Messages on this queue are lost during a restart of the queue manager.

YES
Messages on this queue survive a restart of the queue manager.

On z/OS, N and Y are accepted as synonyms of NO and YES.

DEFPRESP
Specifies the put response to be used when applications specify the MQPMO_RESPONSE_AS_DEF option.

ASPARENT
The default put response is based on the setting of the closest parent administrative topic object in the topic tree.

SYNC
Put operations to the queue that specify MQPMO_RESPONSE_AS_Q_DEF are issued as if MQPMO_SYNC_RESPONSE had been specified instead. Fields in the MQMD and MQPMO are returned by the queue manager to the application.

ASYNC
Put operations to the queue that specify MQPMO_RESPONSE_AS_Q_DEF are always issued as if MQPMO_ASYNC_RESPONSE had been specified instead. Some fields in the MQMD and MQPMO are not returned by the queue manager to the application; but an improvement in performance might be seen for messages put in a transaction and any non-persistent messages

DESCR(*string*)
Plain-text comment. It provides descriptive information about the object when an operator issues the DISPLAY TOPIC command.

It must contain only displayable characters. The maximum length is 64 characters. In a DBCS installation, it can contain DBCS characters (subject to a maximum length of 64 bytes).

Note: If characters are used that are not in the coded character set identifier (CCSID) for this queue manager, they might be translated incorrectly if the information is sent to another queue manager.

DURSUB
Specifies whether applications are permitted to make durable subscriptions on this topic.

ASPARENT
Whether durable subscriptions can be made on this topic is based on the setting of the closest parent administrative topic object in the topic tree.

NO
Durable subscriptions cannot be made on this topic.

YES
Durable subscriptions can be made on this topic.

LIKE(*topic-name*)
The name of a topic. The topic parameters are used to model this definition.

If this field is not completed, and you do not complete the parameter fields related to the command, the values are taken from the default definition for topics on this queue manager.

Not completing this field is equivalent to specifying:

```
LIKE(SYSTEM.DEFAULT.TOPIC)
```

A default topic definition is provided, but it can be altered by the installation to the default values required. See Rules for naming IBM WebSphere MQ objects.

On z/OS, the queue manager searches page set zero for an object with the name you specify and a disposition of QMGR or COPY. The disposition of the LIKE object is not copied to the object you are defining.

Note:

1. QSGDISP (GROUP) objects are not searched.
2. LIKE is ignored if QSGDISP(COPY) is specified.

MCAST
Specifies whether multicast is allowable in the topic tree. The values are:

ASPARENT
The multicast attribute of the topic is inherited from the parent.

DISABLED
No multicast traffic is allowed at this node.

ENABLED
Multicast traffic is allowed at this node.

ONLY
Only subscriptions from a multicast capable client are allowed.

MDURMDL(*string*)
The name of the model queue to be used for durable subscriptions that request that the queue manager manages the destination of its publications (see Rules for naming IBM WebSphere MQ objects). The maximum length is 48 characters.

If MDURMDL is blank, it operates in the same way as ASPARENT values on other attributes. The name of the model queue to be used is based on the closest parent administrative topic object in the topic tree with a value set for MDURMDL.

The dynamic queue created from this model has a prefix of SYSTEM.MANAGED.DURABLE

MNDURMDL(*string*)
The name of the model queue to be used for non-durable subscriptions that request that the queue manager manages the destination of its publications (see Rules for naming IBM WebSphere MQ objects). The maximum length is 48 characters.

If MNDURMDL is blank, it operates in the same way as ASPARENT values on other attributes. The name of the model queue to be used is based on the closest parent administrative topic object in the topic tree with a value set for MNDURMDL.

The dynamic queue created from this model has a prefix of SYSTEM.MANAGED.NDURABLE.

NPMSGDLV
The delivery mechanism for non-persistent messages published to this topic:

ASPARENT
The delivery mechanism used is based on the setting of the first parent administrative node found in the topic tree relating to this topic.

ALL
Non-persistent messages must be delivered to all subscribers, irrespective of durability for the MQPUT call to report success. If a delivery failure to any subscriber occurs, no other subscribers receive the message and the MQPUT call fails.

ALLAVAIL
Non-persistent messages are delivered to all subscribers that can accept the message. Failure to deliver the message to any subscriber does not prevent other subscribers from receiving the message.

ALLDUR
Non-persistent messages must be delivered to all durable subscribers. Failure to deliver a non-persistent message to any non-durable subscribers does not return an error to the MQPUT call. If a delivery failure to a durable subscriber occurs, no subscribers receive the message and the MQPUT calls fails.

PMSGDLV
The delivery mechanism for persistent messages published to this topic:

ASPARENT
The delivery mechanism used is based on the setting of the first parent administrative node found in the topic tree relating to this topic.

ALL
Persistent messages must be delivered to all subscribers, irrespective of durability for the MQPUT call to report success. If a delivery failure to any subscriber occurs, no other subscribers receive the message and the MQPUT call fails.

ALLAVAIL
Persistent messages are delivered to all subscribers that can accept the message. Failure to deliver the message to any subscriber does not prevent other subscribers from receiving the message.

ALLDUR
Persistent messages must be delivered to all durable subscribers. Failure to deliver a persistent message to any non-durable subscribers does not return an error to the MQPUT call. If a delivery

failure to a durable subscriber occurs, no subscribers receive the message and the MQPUT calls fails.

PROXYSUB
Controls when a proxy subscription is sent for this topic, or topic strings below this topic, to neighboring queue managers when in a publish/subscribe cluster or hierarchy. For more details, see More on routing mechanisms.

FIRSTUSE
For each unique topic string at or below this topic object, a proxy subscription is asynchronously sent to all neighboring queue managers in the following scenarios:

- When a local subscription is created.
- When a proxy subscription is received that must be propagated to further directly connected queue managers.

FORCE
A wildcard proxy subscription that matches all topic strings at and below this point in the topic tree is sent to neighboring queue managers even if no local subscriptions exist.

Note: The proxy subscription is sent when this value is set on DEFINE or ALTER. When set on a clustered topic, all queue managers in the cluster issue the wildcard proxy subscription to all other queue managers in the cluster.

PUB
Controls whether messages can be published to this topic.

ASPARENT
Whether messages can be published to the topic is based on the setting of the closest parent administrative topic object in the topic tree.

ENABLED
Messages can be published to the topic (by suitably authorized applications).

DISABLED
Messages cannot be published to the topic.

PUBSCOPE
Determines whether this queue manager propagates publications to queue managers as part of a hierarchy or as part of a publish/subscribe cluster.

Note: You can restrict the behavior on a publication-by-publication basis, using MQPMO_SCOPE_QMGR on the Put Message options.

ASPARENT
Determines whether this queue manager propagates publications to queue managers as part of a hierarchy or as part of a publish/subscribe cluster. This is based on the setting of the first parent administrative node found in the topic tree that relates to this topic.

QMGR
Publications for this topic are not propagated to connected queue managers.

ALL
Publications for this topic are propagated to hierarchically connected queue managers and to publish/subscribe cluster-connected queue managers.

QSGDISP
This parameter applies to z/OS only.

Specifies the disposition of the object within the group.

QSGDISP	DEFINE
COPY	The object is defined on the page set of the queue manager that executes the command using the QSGDISP(GROUP) object of the same name as the 'LIKE' object.

QSGDISP	DEFINE

GROUP	The object definition resides in the shared repository but only if the queue manager is in a queue-sharing group. If the definition is successful, the following command is generated and sent to all active queue managers in the queue-sharing group to attempt to make or refresh local copies on page set zero:
	`DEFINE TOPIC(name)`
	`REPLACE QSGDISP(COPY)`
	The DEFINE for the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.

PRIVATE	Not permitted.
QMGR	The object is defined on the page set of the queue manager that executes the command.

REPLACE and NOREPLACE
Determines whether the existing definition (and on z/OS, with the same disposition) is to be replaced with this one. Any object with a different disposition is not changed.

REPLACE
If the object does exist, the effect is like issuing the ALTER command without the FORCE option and with *all* the other parameters specified.

(The difference between the ALTER command without the FORCE option, and the DEFINE command with the REPLACE option, is that ALTER does not change unspecified parameters, but DEFINE with REPLACE sets *all* the parameters. When you use REPLACE, unspecified parameters are taken either from the object named on the LIKE option, or from the default definition, and the parameters of the object being replaced, if one exists, are ignored.)

The command fails if both of the following are true:

- The command sets parameters that would require the use of the FORCE option if you were using the ALTER command.
- The object is open.

The ALTER command with the FORCE option succeeds in this situation.

NOREPLACE
The definition must not replace any existing definition of the object.

SUB
Controls whether applications are to be permitted to subscribe to this topic.

ASPARENT
Whether applications can subscribe to the topic is based on the setting of the closest parent administrative topic object in the topic tree.

ENABLED
Subscriptions can be made to the topic (by suitably authorized applications).

DISABLED
Applications cannot subscribe to the topic.

SUBSCOPE
Determines whether this queue manager subscribes to publications in this queue manager or in the network of connected queue managers. If subscribing to all queue managers, the queue manager propagates subscriptions to them as part of a hierarchy or as part of a publish/subscribe cluster.

Note: You can restrict the behavior on a subscription-by-subscription basis, using **MQPMO_SCOPE_QMGR** on the Subscription Descriptor or **SUBSCOPE(QMGR)** on **DEFINE SUB**.

Individual subscribers can override the **SUBSCOPE** setting of ALL by specifying the **MQSO_SCOPE_QMGR** subscription option when creating a subscription.

ASPARENT
Whether this queue manager subscribes to publications in the same way as the setting of the first parent administrative node found in the topic tree relating to this topic.

QMGR
Only publications that are published on this queue manager reach the subscriber.

ALL
A publication made on this queue manager or on another queue manager reaches the subscriber. Subscriptions for this topic are propagated to hierarchically connected queue managers and to publish/subscribe cluster-connected queue managers.

TOPICSTR(*string*)
The topic string represented by this topic object definition. This parameter is required and cannot contain the empty string.

The topic string must not be the same as any other topic string already represented by a topic object definition.

The maximum length of the string is 10,240 characters.

TYPE (topic-type)
If this parameter is used it must follow immediately after the *topic-name* parameter on all platforms except z/OS.

LOCAL
A local topic object.

USEDLQ
Determines whether the dead-letter queue is used when publication messages cannot be delivered to their correct subscriber queue.

ASPARENT
Determines whether to use the dead-letter queue using the setting of the closest administrative topic object in the topic tree. This value is the default supplied with IBM WebSphere MQ, but your installation might have changed it.

NO
Publication messages that cannot be delivered to their correct subscriber queue are treated as a failure to put the message. The MQPUT of an application to a topic fails in accordance with the settings of NPMSGDLV and PMSGDLV.

YES
When the DEADQ queue manager attribute provides the name of a dead-letter queue, then it is used. If the queue manager does not provide the name of a dead-letter queue, then the behavior is as for NO.

WILDCARD
The behavior of wildcard subscriptions with respect to this topic.

PASSTHRU
Subscriptions made to a wildcarded topic less specific than the topic string at this topic object receive publications made to this topic and to topic strings more specific than this topic.

BLOCK
Subscriptions made to a wildcarded topic less specific than the topic string at this topic object do not receive publications made to this topic or to topic strings more specific than this topic.

The value of this attribute is used when subscriptions are defined. If you alter this attribute, the set of topics covered by existing subscriptions is not affected by the modification. This scenario applies also if the topology is changed when topic objects are created or deleted; the set of topics matching subscriptions created following the modification of the WILDCARD attribute is created using the modified topology. If you want to force the matching set of topics to be re-evaluated for existing subscriptions, you must restart the queue manager.

DELETE AUTHINFO

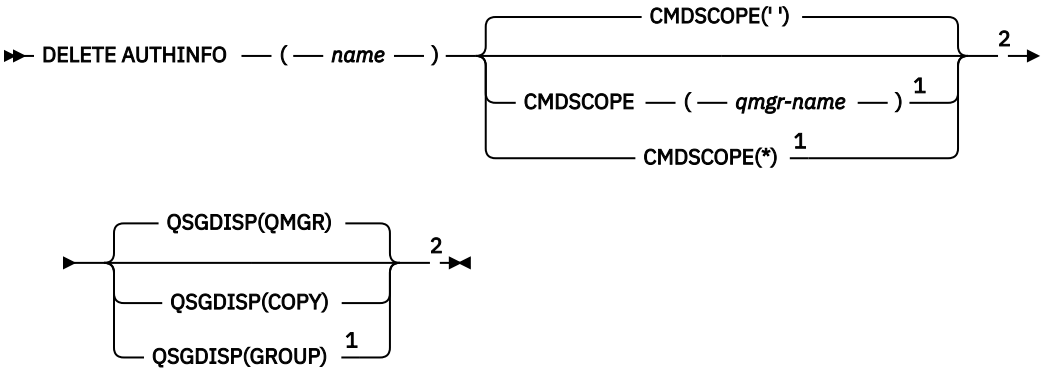
Use MQSC command DELETE AUTHINFO to delete an authentication information object.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- “Parameter descriptions for DELETE AUTHINFO” on page 449

Synonym: None

DELETE AUTHINFO



Notes:

[1] Valid only when the queue manager is a member of a queue-sharing group. You can use queue-sharing groups only on WebSphere MQ for z/OS.
[2] Valid only on z/OS.

Parameter descriptions for DELETE AUTHINFO

(name)
Name of the authentication information object. This is required.

The name must be that of an existing authentication information object.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if QSGDISP is set to GROUP.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of this is the same as entering the command on every queue manager in the queue-sharing group.

QSGDISP
This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves).

COPY
The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameters QSGDISP(COPY). Any object residing in the shared repository, or any object defined using a command that had the parameters QSGDISP(QMGR), is not affected by this command.

GROUP
The object definition resides in the shared repository. The object was defined using a command that had the parameters QSGDISP(GROUP). Any object residing on the page set of the queue manager that executes the command (except a local copy of the object) is not affected by this command.

If the command is successful, the following command is generated and sent to all active queue managers in the queue-sharing group to delete local copies on page set zero:

```
DELETE AUTHINFO(name) QSGDISP(COPY)
```

The deletion of the group object takes effect even if the generated command with QSGDISP(COPY) fails.

QMGR
The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameters QSGDISP(QMGR). Any object residing in the shared repository, or any local copy of such an object, is not affected by this command.

This is the default value.

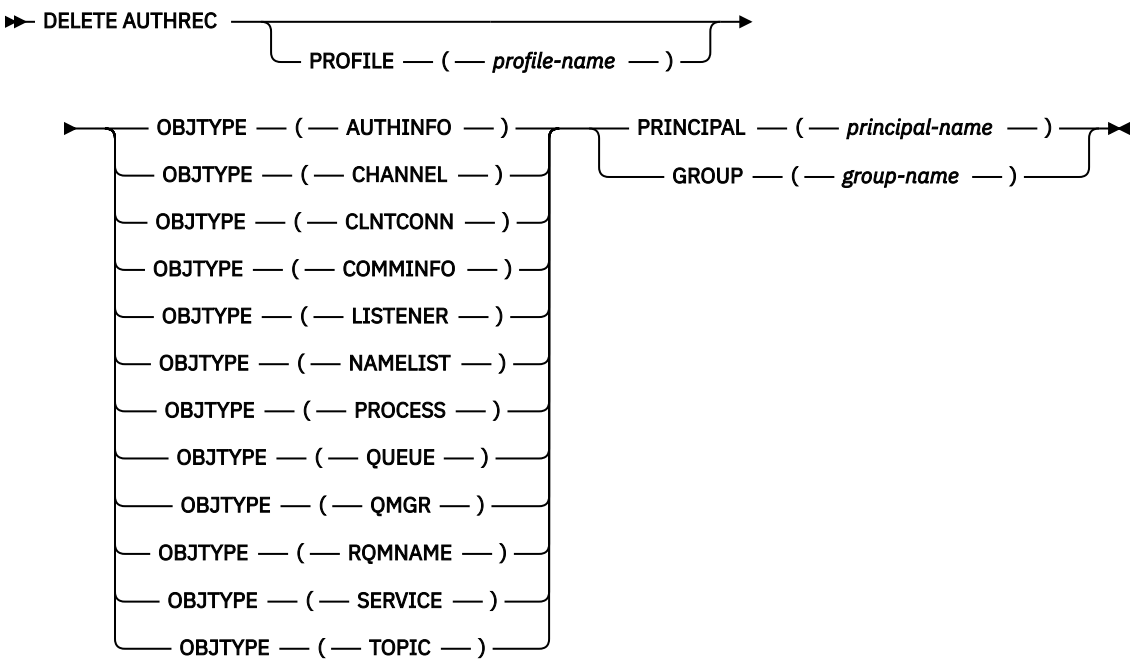
DELETE AUTHREC

Use the MQSC command DELETE AUTHREC to delete authority records associated with a profile name.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- “Parameter descriptions” on page 451

DELETE AUTHREC



Parameter descriptions

PROFILE(*profile-name*)
The name of the object or generic profile for which to remove the authority record. This parameter is required unless the **OBJTYPE** parameter is QMGR, in which case it can be omitted.

OBJTYPE
The type of object referred to by the profile. Specify one of the following values:

AUTHINFO
Authentication information record

CHANNEL
Channel

CLNTCONN
Client connection channel

COMMINFO
Communication information object

LISTENER
Listener

NAMELIST
Namelist

PROCESS
Process

QUEUE
Queue

QMGR
Queue manager

RQMNAME
Remote queue manager

SERVICE
Service

TOPIC
Topic

PRINCIPAL(*principal-name*)
A principal name. This is the name of a user for whom to remove authority records for the specified profile. On IBM WebSphere MQ for Windows, the name of the principal can optionally include a domain name, specified in this format: `user@domain`.

You must specify either PRINCIPAL or GROUP.

GROUP(*group-name*)
A group name. This is the name of the user group for which to remove authority records for the specified profile. You can specify one name only and it must be the name of an existing user group.

For IBM WebSphere MQ for Windows only, the group name can optionally include a domain name, specified in the following formats:

```
GroupName@domain
domain\GroupName
```

You must specify either PRINCIPAL or GROUP.

DELETE CHANNEL

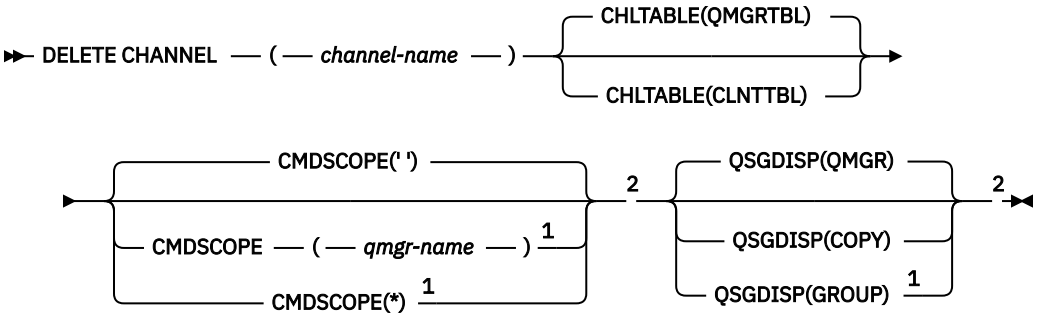
Use the MQSC command DELETE CHANNEL to delete a channel definition.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- "Usage notes" on page 452
- "Parameter descriptions" on page 453

Synonym: DELETE CHL

DELETE CHANNEL



Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[2] Valid only on z/OS.

Usage notes

Notes for z/OS users:

1. The command fails if the channel initiator and command server have not been started, or the channel status is RUNNING, except client-connection channels, which can be deleted without the channel initiator or command server running.
2. You can only delete cluster-sender channels that have been created manually.

Parameter descriptions

(channel-name)
The name of the channel definition to be deleted. This is required. The name must be that of an existing channel.

CHLTABLE
Specifies the channel definition table that contains the channel to be deleted. This is optional.

QMGRTBL
The channel table is that associated with the target queue manager. This table does not contain any channels of type CLNTCONN. This is the default.

CLNTTBL
The channel table for CLNTCONN channels. On z/OS, this is associated with the target queue manager, but separate from the main channel table. On all other platforms, this channel table is normally associated with a queue manager, but can be a system-wide, queue manager independent channel table if you set up a number of environment variables. For more information about setting up environment variables, see Using IBM WebSphere MQ environment variables.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if QSGDISP is set to GROUP.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of this is the same as entering the command on every queue manager in the queue-sharing group.

QSGDISP
This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves).

COPY
The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameters QSGDISP(COPY). Any object residing in the shared repository, or any object defined using a command that had the parameters QSGDISP(QMGR), is not affected by this command.

GROUP
The object definition resides in the shared repository. The object was defined using a command that had the parameters QSGDISP(GROUP). Any object residing on the page set of the queue

manager that executes the command (except a local copy of the object) is not affected by this command.

If the command is successful, the following command is generated and sent to all active queue managers in the queue-sharing group to delete local copies on page set zero:

```
DELETE CHANNEL(channel-name) QSGDISP(COPY)
```

The deletion of the group object takes effect even if the generated command with QSGDISP(COPY) fails.

QMGR
The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameters QSGDISP(QMGR). Any object residing in the shared repository, or any local copy of such an object, is not affected by this command.

This is the default value.

DELETE CHANNEL (MQTT)

Use the MQSC command DELETE CHANNEL to delete a IBM WebSphere MQ Telemetry channel definition.

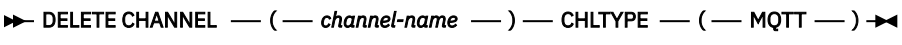
UNIX and Linux	Windows
✓	✓

Note: For the telemetry server, AIX is the only supported UNIX platform.

The DELETE CHANNEL (MQTT) command is only valid for IBM WebSphere MQ Telemetry channels.

Synonym: DELETE CHL

DELETE CHANNEL



Parameter descriptions

(channel-name)
The name of the channel definition to be deleted. This is required. The name must be that of an existing channel.

CHLTYPE
This parameter is required. There is only one possible value: MQTT.

DELETE COMMINFO

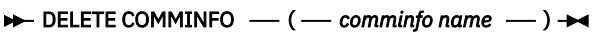
Use the MQSC command DELETE COMMINFO to delete a communication information object.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- “Parameter descriptions for DELETE COMMINFO” on page 455

Synonym: DEL COMMINFO

DELETE COMMINFO



Parameter descriptions for DELETE COMMINFO

(comminfo name)
The name of the communications information object to be deleted. This is required.

DELETE LISTENER

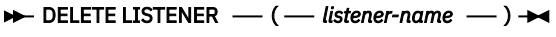
Use the MQSC command DELETE LISTENER to delete a listener definition.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- “Usage notes for DELETE LISTENER” on page 455
- “Keyword and parameter descriptions for DELETE LISTENER” on page 455

Synonym: DELETE LSTR

DELETE LISTENER



Usage notes for DELETE LISTENER

1. The command fails if an application has the specified listener object open, or if the listener is currently running.

Keyword and parameter descriptions for DELETE LISTENER

(listener-name)

The name of the listener definition to be deleted. This is required. The name must be that of an existing listener defined on the local queue manager.

DELETE NAMELIST

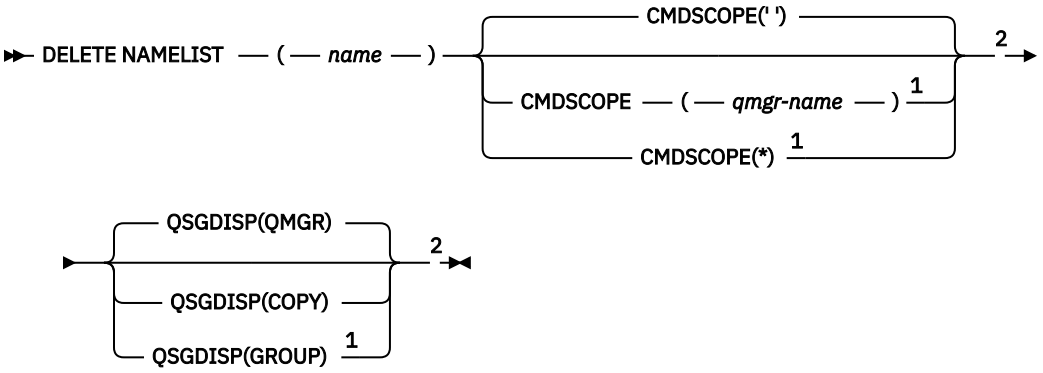
Use the MQSC command DELETE NAMELIST to delete a namelist definition.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- “Usage notes” on page 456
- “Parameter descriptions for DELETE NAMELIST” on page 456

Synonym: DELETE NL

DELETE NAMELIST



Notes:

1 Valid only on z/OS when the queue manager is a member of a queue-sharing group.
2 Valid only on z/OS.

Usage notes

On UNIX systems, the command is valid only on AIX, HP-UX, Linux, and Solaris.

Parameter descriptions for DELETE NAMELIST

You must specify which namelist definition you want to delete.

(name)
The name of the namelist definition to be deleted. The name must be defined to the local queue manager.

If an application has this namelist open, the command fails.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if QSGDISP is set to GROUP.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of this is the same as entering the command on every queue manager in the queue-sharing group.

QSGDISP
This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves).

COPY
The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameters QSGDISP(COPY). Any object residing in the shared repository, or any object defined using a command that had the parameters QSGDISP(QMGR), is not affected by this command.

GROUP
The object definition resides in the shared repository. The object was defined using a command that had the parameters QSGDISP(GROUP). Any object residing on the page set of the queue manager that executes the command (except a local copy of the object) is not affected by this command.

If the command is successful, the following command is generated and sent to all active queue managers in the queue-sharing group to delete local copies on page set zero:

```
DELETE NAMELIST(name) QSGDISP(COPY)
```

The deletion of the group object takes effect even if the generated command with QSGDISP(COPY) fails.

QMGR
The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameters QSGDISP(QMGR). Any object residing in the shared repository, or any local copy of such an object, is not affected by this command.

This is the default value.

DELETE PROCESS

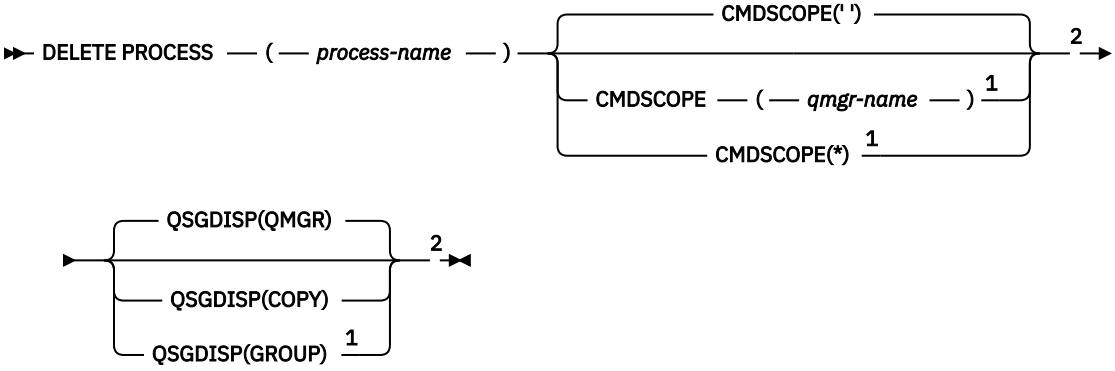
Use the MQSC command DELETE PROCESS to delete a process definition.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- “Parameter descriptions for DELETE PROCESS” on page 458

Synonym: DELETE PRO

DELETE PROCESS



Notes:

1 Valid only on z/OS when the queue manager is a member of a queue-sharing group.
2 Valid only on z/OS.

Parameter descriptions for DELETE PROCESS

You must specify which process definition you want to delete.

(process-name)
The name of the process definition to be deleted. The name must be defined to the local queue manager.

If an application has this process open, the command fails.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if QSGDISP is set to GROUP.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of this is the same as entering the command on every queue manager in the queue-sharing group.

QSGDISP
This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves).

COPY
The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameters QSGDISP(COPY). Any object residing in the shared repository, or any object defined using a command that had the parameters QSGDISP(QMGR), is not affected by this command.

GROUP
The object definition resides in the shared repository. The object was defined using a command that had the parameters QSGDISP(GROUP). Any object residing on the page set of the queue manager that executes the command (except a local copy of the object) is not affected by this command.

If the command is successful, the following command is generated and sent to all active queue managers in the queue-sharing group to delete local copies on page set zero:

```
DELETE PROCESS(process-name) QSGDISP(COPY)
```

The deletion of the group object takes effect even if the generated command with QSGDISP(COPY) fails.

QMGR
The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameters QSGDISP(QMGR). Any object residing in the shared repository, or any local copy of such an object, is not affected by this command.

This is the default value.

DELETE queues

This section contains the following commands:

- “DELETE QALIAS” on page 461
- “DELETE QLOCAL” on page 461
- “DELETE QMODEL” on page 462
- “DELETE QREMOTE” on page 462

These commands are supported on the following platforms:

UNIX and Linux	Windows
✓	✓

Parameter descriptions for DELETE queues

(q-name)
The name of the queue must be defined to the local queue manager for all the queue types.

For an alias queue this is the local name of the alias queue to be deleted.

For a model queue this is the local name of the model queue to be deleted.

For a remote queue this is the local name of the remote queue to be deleted.

For a local queue this is the name of the local queue to be deleted. You must specify which queue you want to delete.

Note: A queue cannot be deleted if it contains uncommitted messages.

If an application has this queue open, or has open a queue that eventually resolves to this queue, the command fails. The command also fails if this queue is a transmission queue, and any queue that is, or resolves to, a remote queue that references this transmission queue, is open.

If this queue has a SCOPE attribute of CELL, the entry for the queue is also deleted from the cell directory.

AUTHREC
This parameter does not apply to z/OS.

Specifies whether the associated authority record is also deleted:

YES
The authority record associated with the object is deleted. This is the default.

NO
The authority record associated with the object is not deleted.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if QSGDISP is set to GROUP or SHARED.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of this is the same as entering the command on every queue manager in the queue-sharing group.

PURGE and NOPURGE
Specifies whether any existing committed messages on the queue named by the DELETE command are to be purged for the delete command to work. The default is NOPURGE.

PURGE
The deletion is to go ahead even if there are committed messages on the named queue, and these messages are also to be purged.

NOPURGE
The deletion is not to go ahead if there are any committed messages on the named queue.

QSGDISP
Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves). If the object definition is shared, you do not need to delete it on every queue manager that is part of a queue-sharing group. (Queue-sharing groups are available only on WebSphere MQ for z/OS.)

COPY
The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameters QSGDISP(COPY). Any object residing in the shared repository, or any object defined using a command that had the parameters QSGDISP(QMGR), is not affected by this command.

GROUP
The object definition resides in the shared repository. The object was defined using a command that had the parameters QSGDISP(GROUP). Any object residing on the page set of the queue manager that executes the command, or any object defined using a command that had the parameters QSGDISP(SHARED), is not affected by this command.

If the deletion is successful, the following command is generated and sent to all active queue managers in the queue-sharing group to make, or delete, local copies on page set zero:

```
DELETE queue(q-name) QSGDISP(COPY)
```

or, for a local queue only:

```
DELETE QLOCAL(q-name) NOPURGE QSGDISP(COPY)
```

The deletion of the group object takes effect even if the generated command with QSGDISP(COPY) fails.

Note: You always get the NOPURGE option even if you specify PURGE. To delete messages on local copies of the queues, you must explicitly issue the command:

```
DELETE QLOCAL(q-name) QSGDISP(COPY) PURGE
```

for each copy.

QMGR
The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameters QSGDISP(QMGR). Any object residing in the shared repository, or any local copy of such an object, is not affected by this command.

This is the default value.

SHARED
This option applies only to local queues.

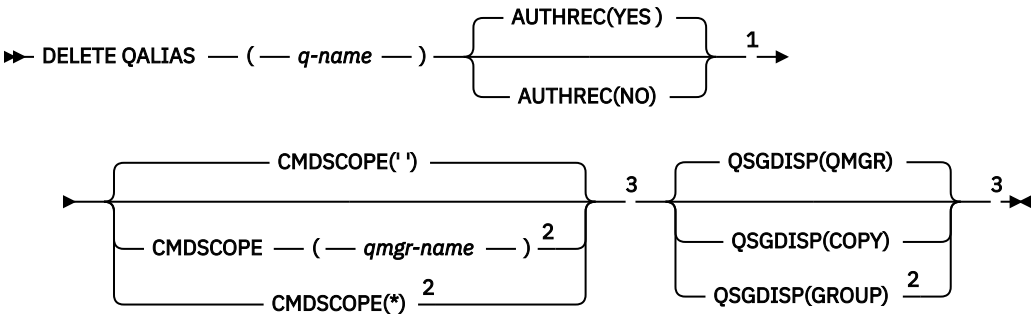
The object definition resides in the shared repository. The object was defined using a command that had the parameters QSGDISP(SHARED). Any object residing on the page set of the queue manager that executes the command, or any object defined using a command that had the parameters QSGDISP(GROUP), is not affected by this command.

DELETE QALIAS

Use DELETE QALIAS to delete an alias queue definition.

Synonym: DELETE QA

DELETE QALIAS



Notes:

1 Not valid on z/OS.
2 Valid only on z/OS when the queue manager is a member of a queue-sharing group.
3 Valid only on z/OS.

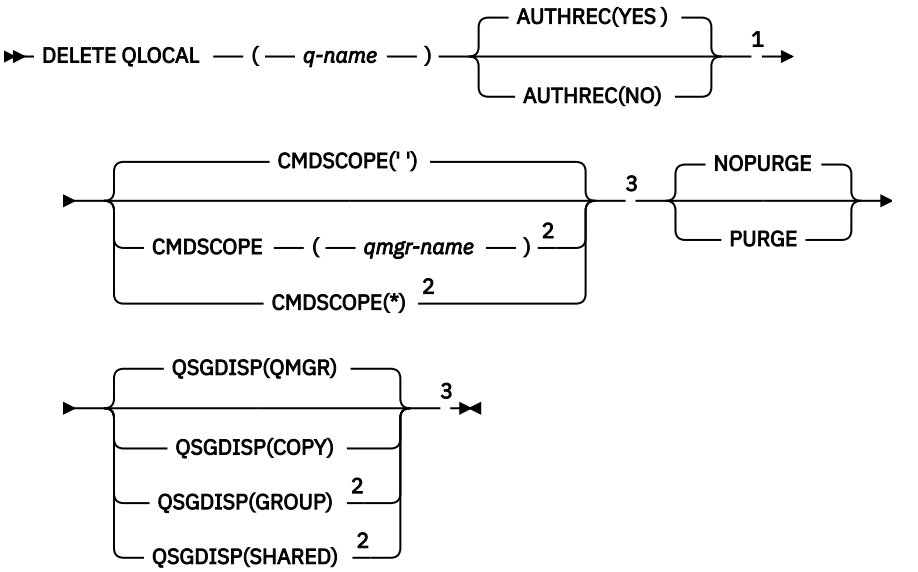
The parameters are described in "DELETE queues" on page 459.

DELETE QLOCAL

Use DELETE QLOCAL to delete a local queue definition. You can specify that the queue must not be deleted if it contains messages, or that it can be deleted even if it contains messages.

Synonym: DELETE QL

DELETE QLOCAL



Notes:

[1] Not valid on z/OS.
[2] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[3] Valid only on z/OS.

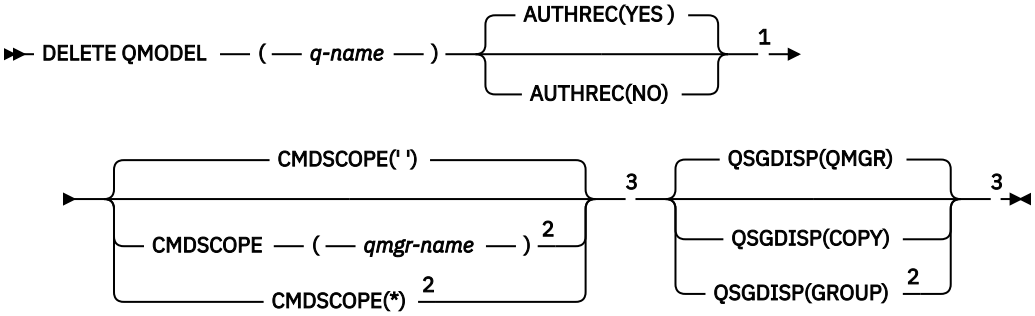
The parameters are described in "DELETE queues" on page 459.

DELETE QMODEL

Use DELETE QMODEL to delete a model queue definition.

Synonym: DELETE QM

DELETE QMODEL



Notes:

[1] Not valid on z/OS.
[2] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[3] Valid only on z/OS.

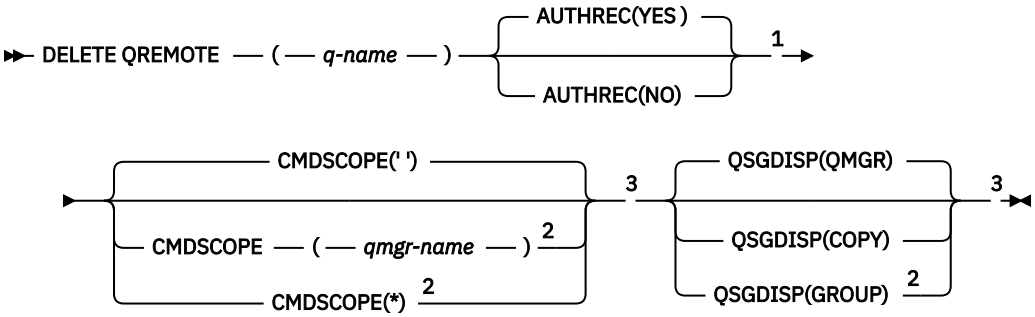
The parameters are described in "DELETE queues" on page 459.

DELETE QREMOTE

Use DELETE QREMOTE to delete a local definition of a remote queue. It does not affect the definition of that queue on the remote system.

Synonym: DELETE QR

DELETE QREMOTE



Notes:

[1] Not valid on z/OS.
[2] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[3] Valid only on z/OS.

The parameters are described in “DELETE queues” on page 459.

DELETE SERVICE

Use the MQSC command DELETE SERVICE to delete a service definition.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- “Usage notes for DELETE SERVICE” on page 463
- “Keyword and parameter descriptions for DELETE SERVICE” on page 463

Synonym:

DELETE SERVICE

Usage notes for DELETE SERVICE

1. The command fails if an application has the specified service object open, or if the service is currently running.

Keyword and parameter descriptions for DELETE SERVICE

(service-name)

The name of the service definition to be deleted. This is required. The name must be that of an existing service defined on the local queue manager.

DELETE SUB

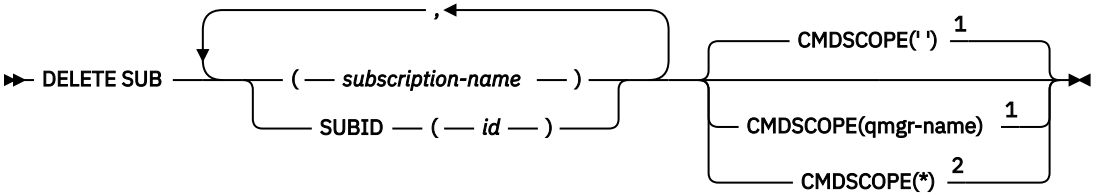
Use the MQSC command DELETE SUB to remove a durable subscription from the system. For a managed destination, any unprocessed messages left on the destination are removed.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- Usage Notes
- “Parameter descriptions for DELETE SUB” on page 464

Synonym: DEL SUB

DELETE SUB



Notes:

[1] Valid only on z/OS.
[2] Valid only on z/OS when the queue manager is a member of a queue-sharing group.

Usage notes for DELETE SUB

You can specify either the name, the identifier, or both, of the subscription you want to delete.

Examples of valid forms:

```
DELETE SUB(xyz)
DELETE SUB SUBID(123)
DELETE SUB(xyz) SUBID(123)
```

Parameter descriptions for DELETE SUB

subscription-name
The local name of the subscription definition to be deleted.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if QSGDISP is set to GROUP.

' '
The command is processed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is processed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is processed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of this is the same as entering the command on every queue manager in the queue-sharing group.

You cannot use CMDSCOPE as a filter keyword.

SUBID(*string*)
The internal, unique key identifying a subscription.

DELETE TOPIC

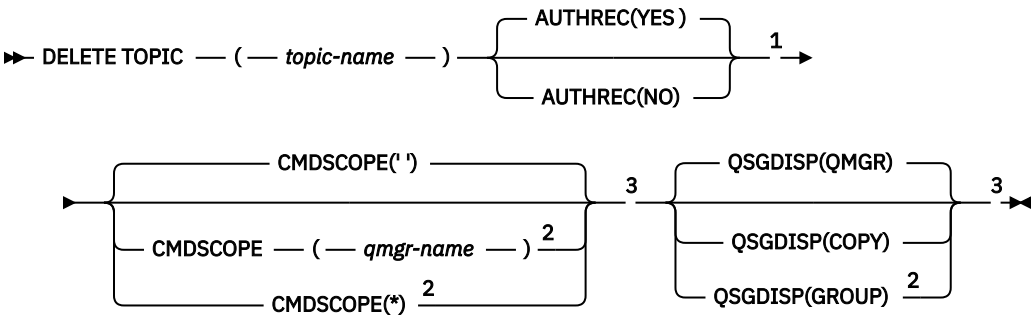
Use DELETE TOPIC to delete a WebSphere MQ administrative topic node.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- “Parameter descriptions for DELETE TOPIC” on page 465

Synonym: None

DELETE TOPIC



Notes:

1 Not valid on z/OS
2 Valid only on z/OS when the queue manager is a member of a queue-sharing group.
3 Valid only on z/OS.

Parameter descriptions for DELETE TOPIC

(topic-name)
The name of the administrative topic object to be deleted. This parameter is required.

The name must be that of an existing administrative topic object.

AUTHREC
This parameter does not apply to z/OS

Specifies whether the associated authority record is also deleted:

YES
The authority record associated with the object is deleted. This is the default.

NO
The authority record associated with the object is not deleted.

CMDSCOPE
This parameter applies to only z/OS and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if QSGDISP is set to GROUP.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of this is the same as entering the command on every queue manager in the queue-sharing group.

QSGDISP
This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves).

COPY
The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameters QSGDISP(COPY). Any object residing in the shared repository, or any object defined using a command that had the parameters QSGDISP(QMGR), is not affected by this command.

GROUP
The object definition resides in the shared repository. The object was defined using a command that had the parameters QSGDISP(GROUP). Any object residing on the page set of the queue manager that executes the command (except a local copy of the object) is not affected by this command.

If the command is successful, the following command is generated and sent to all active queue managers in the queue-sharing group to make, or delete, local copies on page set zero:

```
DELETE TOPIC(topic-name) QSGDISP(COPY)
```

The deletion of the group object takes effect even if the generated command with QSGDISP(COPY) fails.

QMGR
The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameters QSGDISP(QMGR). Any object residing in the shared repository, or any local copy of such an object, is not affected by this command.

This is the default value.

DISPLAY AUTHINFO

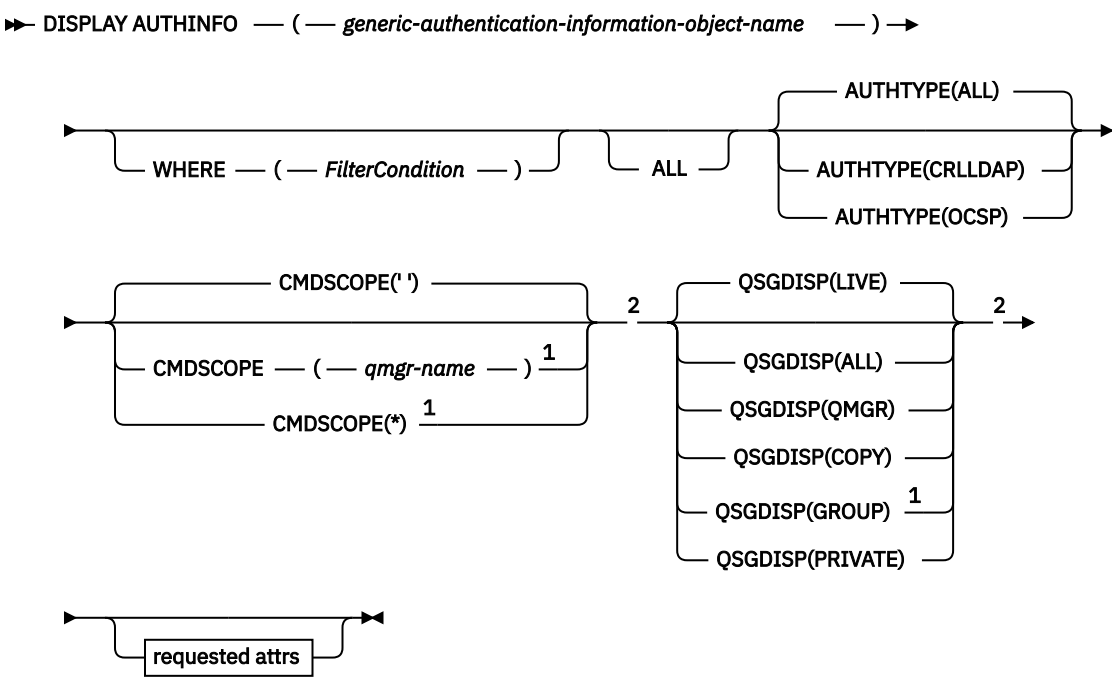
Use the MQSC command DISPLAY AUTHINFO to display the attributes of an authentication information object.

UNIX and Linux	Windows
✓	✓

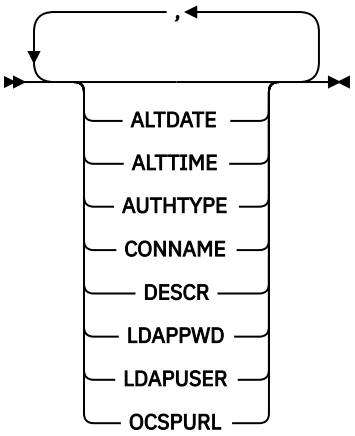
- Syntax diagram
- “Parameter descriptions for DISPLAY AUTHINFO” on page 467
- “Requested parameters” on page 470

Synonym: DIS AUTHINFO

DISPLAY AUTHINFO



Requested attrs



Notes:

[1] Valid only when the queue manager is a member of a queue-sharing group. You can use queue-sharing groups only on WebSphere MQ for z/OS.
[2] Valid only on z/OS.

Parameter descriptions for DISPLAY AUTHINFO

(generic-authentication-information-object-name)
The name of the authentication information object to be displayed (see Rules for naming IBM WebSphere MQ objects). A trailing asterisk (*) matches all authentication information objects with the specified stem followed by zero or more characters. An asterisk (*) on its own specifies all authentication information objects.

WHERE
Specify a filter condition to display only those authentication information objects that satisfy the selection criterion of the filter condition. The filter condition is in three parts: *filter-keyword*, *operator*, and *filter-value*:

filter-keyword
Almost any parameter that can be used to display attributes for this DISPLAY command. However, you cannot use the CMDSCOPE or QSGDISP parameters as filter keywords.

operator
This is used to determine whether an authentication information object satisfies the filter value on the given filter keyword. The operators are:

LT
Less than

GT
Greater than

EQ
Equal to

NE
Not equal to

LE
Less than or equal to

GE
Greater than or equal to

LK
Matches a generic string that you provide as a *filter-value*

NL
Does not match a generic string that you provide as a *filter-value*

filter-value
The value that the attribute value must be tested against using the operator. Depending on the filter-keyword, this can be:

- An explicit value, that is a valid value for the attribute being tested.

  You can use any of the operators except LK and NL.
- A generic value. This is a character string (such as the character string you supply for the DESCR parameter) with an asterisk at the end, for example ABC*. The characters must be valid for the attribute you are testing. If the operator is LK, all items where the attribute value begins with the string (ABC in the example) are listed. If the operator is NL, all items where the attribute value does not begin with the string are listed. You cannot use a generic filter-value with numeric values. Only a single trailing wildcard character (asterisk) is permitted.

  You can only use operators LK or NL for generic values on the DISPLAY AUTHINFO command.

ALL
Specify this to display all the parameters. If this parameter is specified, any parameters that are requested specifically have no effect; all parameters are still displayed.

This is the default if you do not specify a generic name and do not request any specific parameters.

On z/OS this is also the default if you specify a filter condition using the WHERE parameter, but on other platforms only requested attributes are displayed.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if QSGDISP is set to GROUP.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of this is the same as entering the command on every queue manager in the queue-sharing group.

You cannot use CMDSCOPE as a filter keyword.

AUTHTYPE
Specifies the authentication information type of the objects for which information is to be displayed. Values are:

ALL
This is the default value and displays information for objects defined with AUTHTYPE(CRLLDAP) and with AUTHTYPE(OCSP).

CRLLDAP
Displays information only for objects defined with AUTHTYPE(CRLLDAP).

OCSP
Displays information only for objects defined with AUTHTYPE(OCSP).

QSGDISP
Specifies the disposition of the objects for which information is to be displayed. Values are:

LIVE
This is the default value and displays information for objects defined with QSGDISP(QMGR) or QSGDISP(COPY).

ALL
Displays information for objects defined with QSGDISP(QMGR) or QSGDISP(COPY).

If there is a shared queue manager environment, and the command is being executed on the queue manager where it was issued, this option also displays information for objects defined with QSGDISP(GROUP).

If QSGDISP(LIVE) is specified or defaulted, or if QSGDISP(ALL) is specified in a shared queue manager environment, the command might give duplicated names (with different dispositions).

COPY
Displays information only for objects defined with QSGDISP(COPY).

GROUP
Displays information only for objects defined with QSGDISP(GROUP). This is allowed only if there is a shared queue manager environment.

PRIVATE
Displays information for objects defined with QSGDISP(QMGR) or QSGDISP(COPY). Note that QSGDISP(PRIVATE) displays the same information as QSGDISP(LIVE).

QMGR
Displays information only for objects defined with QSGDISP(QMGR).

QSGDISP displays one of the following values:

QMGR
The object was defined with QSGDISP(QMGR).

GROUP
The object was defined with QSGDISP(GROUP).

COPY
The object was defined with QSGDISP(COPY).

You cannot use QSGDISP as a filter keyword.

Requested parameters

Specify one or more parameters that define the data to be displayed. The parameters can be specified in any order, but do not specify the same parameter more than once.

The default, if no parameters are specified (and the ALL parameter is not specified) is that the object names and their AUTHTYPEs, and, on z/OS, their QSGDISPs, are displayed.

ALTDATE
The date on which the definition was last altered, in the form `yyyy-mm-dd`

ALTTIME
The time at which the definition was last altered, in the form `hh.mm.ss`

AUTHTYPE
The type of the authentication information

CONNAME
The host name, IPv4 dotted decimal address, or IPv6 hexadecimal notation of the host on which the LDAP server is running. Applies only to objects with AUTHTYPE(CRLLDAP).

DESCR
Description of the authentication information object

LDAPPWD
Password associated with the Distinguished Name of the user on the LDAP server. If nonblank, this is displayed as asterisks (on all platforms except z/OS). Applies only to objects with AUTHTYPE(CRLLDAP).

LDAPUSER
Distinguished Name of the user on the LDAP server. Applies only to objects with AUTHTYPE(CRLLDAP).

OCSPURL
The URL of the OCSP responder used to check for certificate revocation. Applies only to objects with AUTHTYPE(OCSP).

See "Usage Notes for DEFINE AUTHINFO" on page 322 for more information about individual parameters.

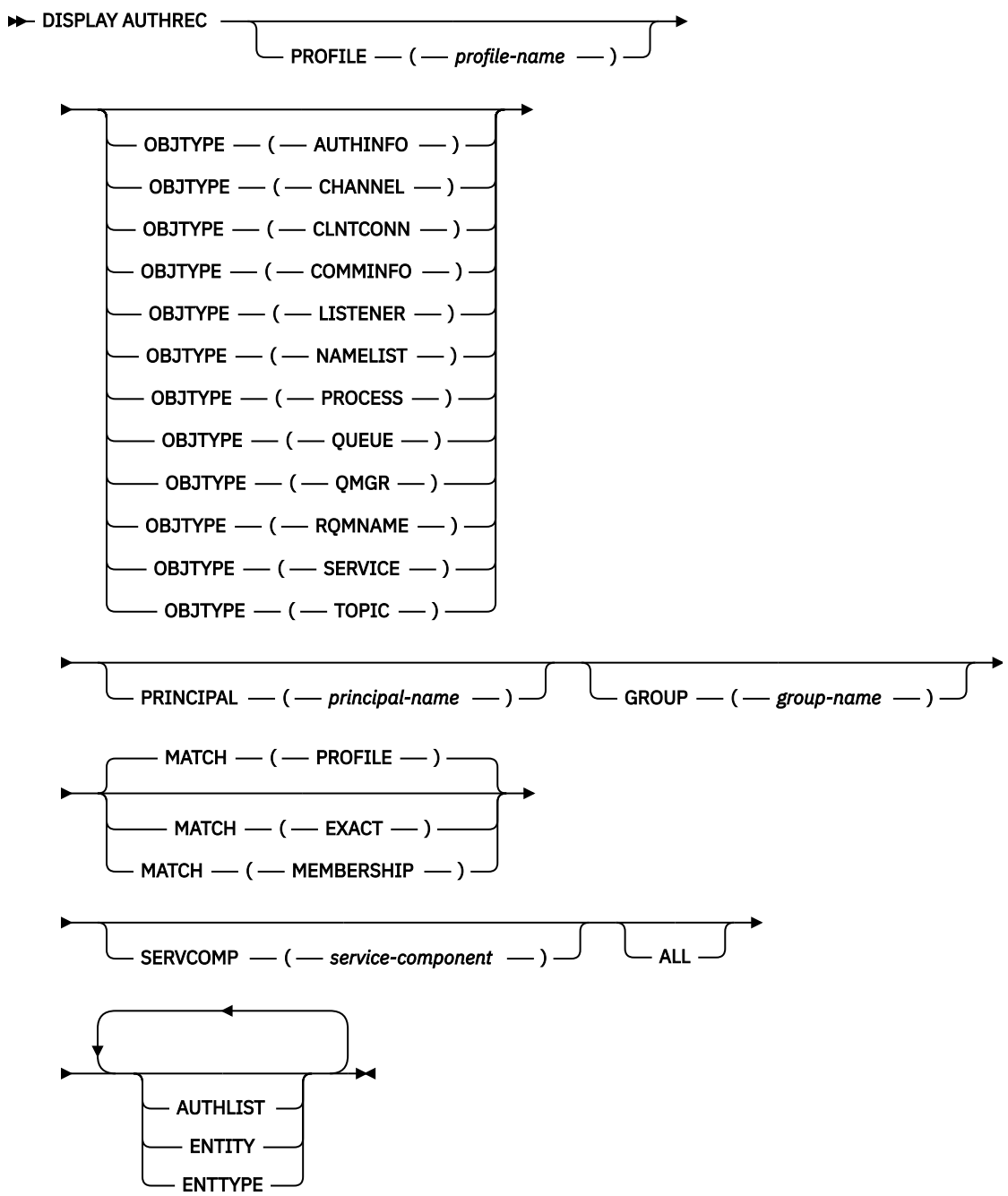
DISPLAY AUTHREC

Use the MQSC command DISPLAY AUTHREC to display the authority records associated with a profile name.

UNIX and Linux	Windows
✓	✓

Synonym: DIS AUTHREC

DISPLAY AUTHREC



Parameter descriptions

PROFILE(*profile-name*)
The name of the object or generic profile for which to display the authority records. If you omit this parameter, all authority records that satisfy the values of the other parameters are displayed.

OBJTYPE
The type of object referred to by the profile. Specify one of the following values:

AUTHINFO
Authentication information record

CHANNEL
Channel

CLNTCONN
Client connection channel

COMMINFO
Communication information object

LISTENER
Listener

NAMELIST
Namelist

PROCESS
Process

QUEUE
Queue

QMGR
Queue manager

RQMNAME
Remote queue manager

SERVICE
Service

TOPIC
Topic

If you omit this parameter, authority records for all object types are displayed.

PRINCIPAL(*principal-name*)
A principal name. This is the name of a user for whom to retrieve authorizations to the specified object. On IBM WebSphere MQ for Windows, the name of the principal can optionally include a domain name, specified in this format: `user@domain`.

This parameter cannot be specified with GROUP.

GROUP(*group-name*)
A group name. This is the name of the user group on which to make the inquiry. You can specify one name only and it must be the name of an existing user group.

For IBM WebSphere MQ for Windows only, the group name can optionally include a domain name, specified in the following formats:

```
GroupName@domain
domain\GroupName
```

This parameter cannot be specified with PRINCIPAL.

MATCH
Specify this parameter to control the set of authority records that is displayed. Specify one of the following values:

PROFILE
Return only those authority records which match the specified profile, principal, and group names. This means that a profile of ABCD results in the profiles ABCD, ABC*, and AB* being returned (if ABC* and AB* have been defined as profiles). If the profile name is a generic profile, only authority records which exactly match the specified profile name are returned. If a principal is specified, no profiles are returned for any group in which the principal is a member; only the profiles defined for the specified principal or group.

This is the default value.

MEMBERSHIP
Return only those authority records which match the specified profile, and the entity field of which matches the specified principal and the profiles pertaining to any groups in which the principal is a member that contribute to the cumulative authority for the specified entity.

If this option is specified, the PROFILE and OBJTYPE parameters must also be specified. In addition, either the PRINCIPAL or GROUP parameter must also be supplied. If OBJTYPE(QMGR) is specified, the profile name is optional.

EXACT
Return only those authority records which exactly match the specified profile name and EntityName. No matching generic profiles are returned unless the profile name is, itself, a generic profile. If a principal is specified, no profiles are returned for any group in which the principal is a member; only the profile defined for the specified principal or group.

SERVCOMP(*service-component*)
The name of the authorization service for which information is to be displayed.

If you specify this parameter, it specifies the name of the authorization service to which the authorizations apply. If you omit this parameter, the inquiry is made to the registered authorization services in turn in accordance with the rules for chaining authorization services.

ALL
Specify this parameter to display all of the authorization information available for the entity and the specified profile.

Requested parameters

You can request the following information about the authorizations:

AUTHLIST
Specify this parameter to display the list of authorizations.

ENTITY
Specify this parameter to display the entity name.

ENTTYPE
Specify this parameter to display the entity type.

DISPLAY AUTHSERV

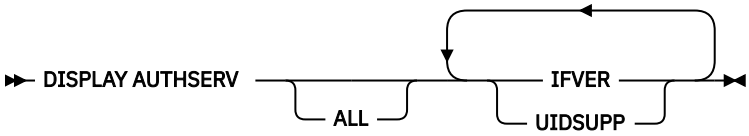
Use the MQSC command DISPLAY AUTHSERV to display information about the level of function supported by the installed authorization services.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- “Parameter descriptions” on page 474
- “Requested parameters” on page 474

Synonym: DIS AUTHSERV

DISPLAY AUTHSERV



Parameter descriptions

ALL
Specify this parameter to display all the information for each authorization service.

Requested parameters

You can request the following information for the authorization service:

IFVER
Specify this parameter to display the current interface version of the authorization service.

UIDSUPP
Specify this parameter to display whether the authorization service supports user IDs.

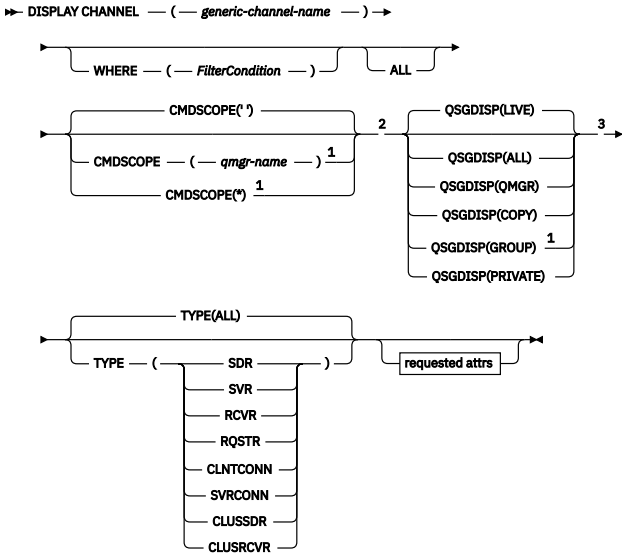
DISPLAY CHANNEL

Use the MQSC command DISPLAY CHANNEL to display a channel definition.

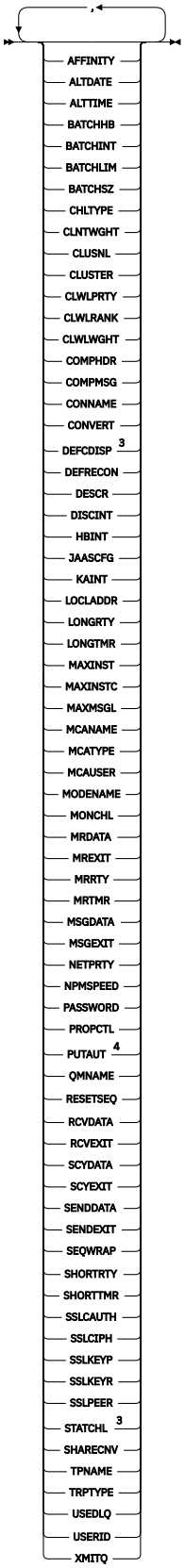
UNIX and Linux	Windows
✓	✓

Synonym: DIS CHL

DISPLAY CHANNEL



Requested attrs



Notes:

[1] Valid only on IBM WebSphere MQ for z/OS when the queue manager is a member of a queue-sharing group.

[2] Not valid for z/OS client-connection channels.

[3] Valid only on z/OS.
[4] Valid only for RCVR, RQSTR, CLUSRCVR and (for z/OS only) SVRCONN channel types.

Usage notes

You can only display cluster-sender channels if they were created manually.

The values shown describe the current definition of the channel. If the channel has been altered since it was started, any currently running instance of the channel object might not have the same values as the current definition.

Parameter descriptions for DISPLAY CHANNEL

You must specify the name of the channel definition you want to display. It can be a specific channel name or a generic channel name. By using a generic channel name, you can display either:

- All channel definitions
- One or more channel definitions that match the specified name

(generic-channel-name)
The name of the channel definition to be displayed (see Rules for naming IBM WebSphere MQ objects). A trailing asterisk (*) matches all channel definitions with the specified stem followed by zero or more characters. An asterisk (*) on its own specifies all channel definitions.

WHERE
Specify a filter condition to display only those channels that satisfy the selection criterion of the filter condition. The filter condition is in three parts: *filter-keyword*, *operator*, and *filter-value*:

filter-keyword
Almost any parameter that can be used to display attributes for this DISPLAY command. However, you cannot use the CMDSCOPE, QSGDISP, or MCANAME parameters as filter keywords. You cannot use TYPE (or CHLTYPE) if it is also used to select channels. Channels of a type for which the filter keyword is not a valid attribute are not displayed.

operator
This is used to determine whether a channel satisfies the filter value on the given filter keyword. The operators are:

LT
Less than

GT
Greater than

EQ
Equal to

NE
Not equal to

LE
Less than or equal to

GE
Greater than or equal to

LK
Matches a generic string that you provide as a *filter-value*

NL
Does not match a generic string that you provide as a *filter-value*

CT
Contains a specified item. If the *filter-keyword* is a list, you can use this to display objects the attributes of which contain the specified item.

EX
Does not contain a specified item. If the *filter-keyword* is a list, you can use this to display objects the attributes of which do not contain the specified item.

CTG
Contains an item which matches a generic string that you provide as a *filter-value*. If the *filter-keyword* is a list, you can use this to display objects the attributes of which match the generic string.

EXG
Does not contain any item which matches a generic string that you provide as a *filter-value*. If the*filter-keyword* is a list, you can use this to display objects the attributes of which do not match the generic string.

filter-value
The value that the attribute value must be tested against using the operator. Depending on the filter-keyword, this can be:

- An explicit value, that is a valid value for the attribute being tested.

  You can use operators LT, GT, EQ, NE, LE, or GE only. However, if the attribute value is one from a possible set of values on a parameter (for example, the value SDR on the TYPE parameter), you can only use EQ or NE.
- A generic value. This is a character string (such as the character string you supply for the DESCR parameter) with an asterisk at the end, for example ABC*. The characters must be valid for the attribute you are testing. If the operator is LK, all items where the attribute value begins with the string (ABC in the example) are listed. If the operator is NL, all items where the attribute value does not begin with the string are listed. Only a single trailing wildcard character (asterisk) is permitted.

  You cannot use a generic filter-value for parameters with numeric values or with one of a set of values.
- An item in a list of values. The value can be explicit or, if it is a character value, it can be explicit or generic. If it is explicit, use CT or EX as the operator. For example, if the value DEF is specified with the operator CT, all items where one of the attribute values is DEF are listed. If it is generic, use CTG or EXG as the operator. If ABC* is specified with the operator CTG, all items where one of the attribute values begins with ABC are listed.

ALL
Specify ALL to display the results of querying all the parameters. If ALL is specified, any request for a specific parameter is ignored. The result of querying with ALL is to return the results for all of the possible parameters.

This is the default, if you do not specify a generic name and do not request any specific parameters.

On z/OS this is also the default if you specify a filter condition using the WHERE parameter, but on other platforms, only requested attributes are displayed.

If no parameters are specified (and the ALL parameter is not specified or defaulted), the default is that the channel names only are displayed. On z/OS, the CHLTYPE and QSGDISP values are also displayed.

CMDSCOPE
This parameter specifies how the command is executed when the queue manager is a member of a queue-sharing group.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of this is the same as entering the command on every queue manager in the queue-sharing group.

QSGDISP
Specifies the disposition of the objects for which information is to be displayed. Values are:

LIVE
This is the default value and displays information for objects defined with QSGDISP(QMGR) or QSGDISP(COPY).

ALL
Displays information for objects defined with QSGDISP(QMGR) or QSGDISP(COPY).

If there is a shared queue manager environment, and the command is being executed on the queue manager where it was issued, this option also displays information for objects defined with QSGDISP(GROUP).

If QSGDISP(ALL) is specified in a shared queue manager environment, the command might give duplicated names (with different dispositions).

Note: In the QSGDISP(LIVE) case, this occurs only where a shared and a non-shared queue have the same name; such a situation should not occur in a well-managed system.

In a shared queue manager environment, use

```
DISPLAY CHANNEL(name) CMDSCOPE(*) QSGDISP(ALL)
```

to list ALL objects matching

```
name
```

in the queue-sharing group without duplicating those in the shared repository.

COPY
Display information only for objects defined with QSGDISP(COPY).

GROUP
Display information only for objects defined with QSGDISP(GROUP). This is allowed only if there is a shared queue manager environment.

PRIVATE
Display information only for objects defined with QSGDISP(QMGR) or QSGDISP(COPY). Note that QSGDISP(PRIVATE) displays the same information as QSGDISP(LIVE).

QMGR
Display information only for objects defined with QSGDISP(QMGR).

QSGDISP displays one of the following values:

QMGR
The object was defined with QSGDISP(QMGR).

GROUP
The object was defined with QSGDISP(GROUP).

COPY
The object was defined with QSGDISP(COPY).

You cannot use QSGDISP as a filter keyword.

TYPE
This is optional. It can be used to restrict the display to channels of one type.

The value is one of the following:

ALL
Channels of all types are displayed (this is the default).

SDR
Sender channels only are displayed.

SVR
Server channels only are displayed.

RCVR
Receiver channels only are displayed.

RQSTR
Requester channels only are displayed.

CLNTCONN
Client-connection channels only are displayed.

SVRCONN
Server-connection channels only are displayed.

CLUSSDR
Cluster-sender channels only are displayed.).

CLUSRCVR
Cluster-receiver channels only are displayed.).

On all platforms, CHLTYPE(*type*) can be used as a synonym for this parameter.

Requested parameters

Specify one or more DISPLAY CHANNEL parameters that define the data to be displayed. You can specify the parameters in any order, but do not specify the same parameter more than once.

Some parameters are relevant only for channels of a particular type or types. Attributes that are not relevant for a particular type of channel cause no output, nor is an error raised. The following table shows the parameters that are relevant for each type of channel. There is a description of each parameter after the table. Parameters are optional unless the description states that they are required.

Table 49. Parameters that result in data being returned from the DISPLAY CHANNEL command

Parameter	SDR	SVR	RCVR	RQSTR	CLNT-CONN	SVR-CONN	CLUS-SDR	CLUS-RCVR
AFFINITY					✓			
ALTDATE	✓	✓	✓	✓	✓	✓	✓	✓
ALTTIME	✓	✓	✓	✓	✓	✓	✓	✓
AUTOSTART		✓	✓	✓		✓		
BATCHHB	✓	✓					✓	✓
BATCHINT	✓	✓		✓			✓	✓
BATCHLIM	✓	✓					✓	✓
BATCHSZ	✓	✓	✓	✓			✓	✓
channel-name	✓	✓	✓	✓	✓	✓	✓	✓

Table 49. Parameters that result in data being returned from the DISPLAY CHANNEL command (continued)								
Parameter	**SDR**	**SVR**	**RCVR**	**RQSTR**	**CLNT-CONN**	**SVR-CONN**	**CLUS-SDR**	**CLUS-RCVR**
CHLTYPE	✓	✓	✓	✓	✓	✓	✓	✓
CLNTWGHT					✓			
CLUSNL							✓	✓
CLUSTER							✓	✓
CLWLPRTY							✓	✓
CLWLRANK							✓	✓
CLWLWGHT							✓	✓
COMPHDR	✓	✓	✓	✓	✓	✓	✓	✓
COMPMSG	✓	✓	✓	✓	✓	✓	✓	✓
CONNAME	✓	✓		✓	✓		✓	✓
CONVERT	✓	✓					✓	✓
DEFCDISP	✓	✓	✓	✓		✓		
DEFRECON					✓			
DESCR	✓	✓	✓	✓	✓	✓	✓	✓
DISCINT	✓	✓				✓	✓	✓
HBINT	✓	✓	✓	✓	✓	✓	✓	✓
KAINT	✓	✓	✓	✓	✓	✓	✓	✓
LOCLADDR	✓	✓		✓	✓		✓	✓
LONGRTY	✓	✓					✓	✓
LONGTMR	✓	✓					✓	✓
MAXINST						✓		
MAXINSTC						✓		
MAXMSGL	✓	✓	✓	✓	✓	✓	✓	✓
MCANAME	✓	✓		✓			✓	✓
MCATYPE	✓	✓		✓			✓	✓
MCAUSER	✓	✓	✓	✓		✓	✓	✓
MODENAME	✓	✓		✓	✓		✓	✓

Table 49. Parameters that result in data being returned from the DISPLAY CHANNEL command (continued)								
Parameter	**SDR**	**SVR**	**RCVR**	**RQSTR**	**CLNT-CONN**	**SVR-CONN**	**CLUS-SDR**	**CLUS-RCVR**
MONCHL	✓	✓	✓	✓		✓	✓	✓
MRDATA			✓	✓				✓
MREXIT			✓	✓				✓
MRRTY			✓	✓				✓
MRTMR			✓	✓				✓
MSGDATA	✓	✓	✓	✓			✓	✓
MSGEXIT	✓	✓	✓	✓			✓	✓
NETPRTY								✓
NPMSPEED	✓	✓	✓	✓			✓	✓
PASSWORD	✓	✓		✓	✓		✓	
PROPCTL	✓	✓					✓	
PUTAUT			✓	✓		✓ "1" on page 482		✓
QMNAME					✓			
RESETSEQ	✓	✓	✓	✓			✓	✓
RCVDATA	✓	✓	✓	✓	✓	✓	✓	✓
RCVEXIT	✓	✓	✓	✓	✓	✓	✓	✓
SCYDATA	✓	✓	✓	✓	✓	✓	✓	✓
SCYEXIT	✓	✓	✓	✓	✓	✓	✓	✓
SENDDATA	✓	✓	✓	✓	✓	✓	✓	✓
SENDEXIT	✓	✓	✓	✓	✓	✓	✓	✓
SEQWRAP	✓	✓	✓	✓			✓	✓
SHARECNV						✓		
SHORTRTY	✓	✓					✓	✓
SHORTTMR	✓	✓					✓	✓
SSLCAUTH		✓	✓	✓		✓		✓
SSLCIPH	✓	✓	✓	✓	✓	✓	✓	✓
SSLPEER	✓	✓	✓	✓	✓	✓	✓	✓

Table 49. Parameters that result in data being returned from the DISPLAY CHANNEL command (continued)

Parameter	SDR	SVR	RCVR	RQSTR	CLNT-CONN	SVR-CONN	CLUS-SDR	CLUS-RCVR
STATCHL	✓	✓	✓	✓			✓	✓
TPNAME	✓	✓		✓	✓	✓	✓	✓
TRPTYPE	✓	✓	✓	✓	✓	✓	✓	✓
USEDLQ	✓	✓	✓	✓			✓	✓
USERID	✓	✓		✓	✓		✓	
XMITQ	✓	✓						

Note:

1. PUTAUT is valid for a channel type of SVRCONN on z/OS only.

AFFINITY
The channel affinity attribute.

PREFERRED
Subsequent connections in a process attempt to use the same channel definition as the first connection.

NONE
All connections in a process select an applicable definition based on the weighting with any applicable CLNTWGHT(0) definitions selected first in alphabetical order.

ALTDATE
The date on which the definition was last altered, in the form `yyyy-mm-dd`.

ALTTIME
The time at which the definition was last altered, in the form `hh.mm.ss`.

AUTOSTART
Whether an LU 6.2 responder process should be started for the channel.

BATCHHB
The batch heartbeating value being used.

BATCHINT
Minimum batch duration.

BATCHLIM
Batch data limit.

The limit of the amount of data that can be sent through a channel.

BATCHSZ
Batch size.

CHLTYPE
Channel type.

The channel type is always displayed if you specify a generic channel name and do not request any other parameters. On z/OS, the channel type is always displayed.

On all platforms other than z/OS, TYPE can be used as a synonym for this parameter.

CLNTWGHT
The client channel weighting.

The special value 0 indicates that no random load balancing is performed and applicable definitions are selected in alphabetical order. If random load balancing is performed the value is in the range 1 - 99 where 1 is the lowest weighting and 99 is the highest.

CLUSTER
The name of the cluster to which the channel belongs.

CLUSNL
The name of the namelist that specifies the list of clusters to which the channel belongs.

CLWLPRTY
The priority of the channel for the purposes of cluster workload distribution.

CLWLRANK
The rank of the channel for the purposes of cluster workload distribution.

CLWLWGHT
The weighting of the channel for the purposes of cluster workload distribution.

COMPHDR
The list of header data compression techniques supported by the channel. For sender, server, cluster-sender, cluster-receiver, and client-connection channels, the values specified are in order of preference.

COMPMSG
The list of message data compression techniques supported by the channel. For sender, server, cluster-sender, cluster-receiver, and client-connection channels, the values specified are in order of preference.

CONNAME
Connection name.

CONVERT
Whether sender should convert application message data.

DEFCDISP
Specifies the default channel disposition of the channels for which information is to be returned. If this keyword is not present, channels of all default channel dispositions are eligible.

ALL
Channels of all default channel dispositions are displayed.

This is the default setting.

PRIVATE
Only channels where the default channel disposition is PRIVATE are displayed.

SHARED
Only channels where the default channel disposition is FIXSHARED or SHARED are displayed.

Note: This does not apply to client-connection channel types on z/OS.

DESCR
Default client reconnection option.

DESCR
Description.

DISCINT
Disconnection interval.

HBINT
Heartbeat interval.

KAINT
KeepAlive timing for the channel.

LOCLADDR
Local communications address for the channel.

LONGRTY
Long retry count.

LONGTMR
Long retry timer.

MAXINST(*integer*)
The maximum number of instances of a server-connection channel that are permitted to run simultaneously.

MAXINSTC(*integer*)
The maximum number of instances of a server-connection channel, started from a single client, that are permitted to run simultaneously.

Note: In this context, connections originating from the same remote network address are regarded as coming from the same client.

MAXMSGL
Maximum message length for channel.

MCANAME
Message channel agent name.

You cannot use MCANAME as a filter keyword.

MCATYPE
Whether message channel agent runs as a separate process or a separate thread.

MCAUSER
Message channel agent user identifier.

MODENAME
LU 6.2 mode name.

MONCHL
Online monitoring data collection.

MRDATA
Channel message-retry exit user data.

MREXIT
Channel message-retry exit name.

MRRTY
Channel message-retry count.

MRTMR
Channel message-retry time.

MSGDATA
Channel message exit user data.

MSGEXIT
Channel message exit names.

NETPRTY
The priority for the network connection.

NPMSPEED
Nonpersistent message speed.

PASSWORD
Password for initiating LU 6.2 session (if nonblank, this is displayed as asterisks on all platforms except z/OS).

PROPCTL
Message property control.

Specifies what happens to properties of messages when the message is about to be sent to a V6 or prior queue manager (a queue manager that does not understand the concept of a property descriptor).

This parameter is applicable to Sender, Server, Cluster Sender, and Cluster Receiver channels.

This parameter is optional.

Permitted values are:

COMPAT
This is the default value.

Message properties	Result
The message contains a property with a prefix of **mcd.**, **jms.**, **usr.** or **mqext.**	All optional message properties (where the **Support** value is MQPD_SUPPORT_OPTIONAL), except those in the message descriptor or extension, are placed in one or more MQRFH2 headers in the message data before the message it sent to the remote queue manager.
The message does not contain a property with a prefix of **mcd.**, **jms.**, **usr.** or **mqext.**	All message properties, except those in the message descriptor or extension, are removed from the message before the message is sent to the remote queue manager.
The message contains a property where the **Support** field of the property descriptor is not set to MQPD_SUPPORT_OPTIONAL	The message is rejected with reason MQRC_UNSUPPORTED_PROPERTY and treated in accordance with its report options.
The message contains one or more properties where the **Support** field of the property descriptor is set to MQPD_SUPPORT_OPTIONAL but other fields of the property descriptor are set to non-default values	The properties with non-default values are removed from the message before the message is sent to the remote queue manager.
The MQRFH2 folder that would contain the message property needs to be assigned with the *content='properties'* attribute	The properties are removed to prevent MQRFH2 headers with unsupported syntax flowing to a V6 or prior queue manager.

NONE
All properties of the message, except those in the message descriptor or extension, are removed from the message before the message is sent to the remote queue manager.

If the message contains a property where the **Support** field of the property descriptor is not set to MQPD_SUPPORT_OPTIONAL then the message is rejected with reason MQRC_UNSUPPORTED_PROPERTY and treated in accordance with its report options.

ALL
All properties of the message are included with the message when it is sent to the remote queue manager. The properties, except those in the message descriptor (or extension), are placed in one or more MQRFH2 headers in the message data.

PUTAUT
Put authority.

QMNAME
Queue manager name.

RESETSEQ
Pending reset sequence number.

This is the sequence number from an outstanding request and it indicates a user RESET CHANNEL command request is outstanding.

A value of zero indicates that there is no outstanding RESET CHANNEL. The value can be in the range 1 - 999999999.

This parameter is not applicable on z/OS.

RCVDATA
Channel receive exit user data.

RCVEXIT
Channel receive exit names.

SCYDATA
Channel security exit user data.

SCYEXIT
Channel security exit names.

SENDDATA
Channel send exit user data.

SENDEXIT
Channel send exit names.

SEQWRAP
Sequence number wrap value.

SHARECNV
Sharing conversations value.

SHORTRTY
Specifies the maximum number of times that the channel is to try allocating a session to its partner.

SHORTTMR
Short retry timer.

SSLCAUTH
Whether SSL client authentication is required.

SSLCIPH
Cipher specification for the SSL connection.

SSLPEER
Filter for the Distinguished Name from the certificate of the peer queue manager or client at the other end of the channel.

STATCHL
Statistics data collection.

TPNAME
LU 6.2 transaction program name.

TRPTYPE
Transport type.

USEDLQ
Determines whether the dead-letter queue is used when messages cannot be delivered by channels.

USERID
User identifier for initiating LU 6.2 session.

XMITQ
Transmission queue name.

For more details of these parameters, see "DEFINE CHANNEL" on page 325.

DISPLAY CHANNEL (MQTT)

Use the MQSC command DISPLAY CHANNEL to display a IBM WebSphere MQ Telemetry channel definition.

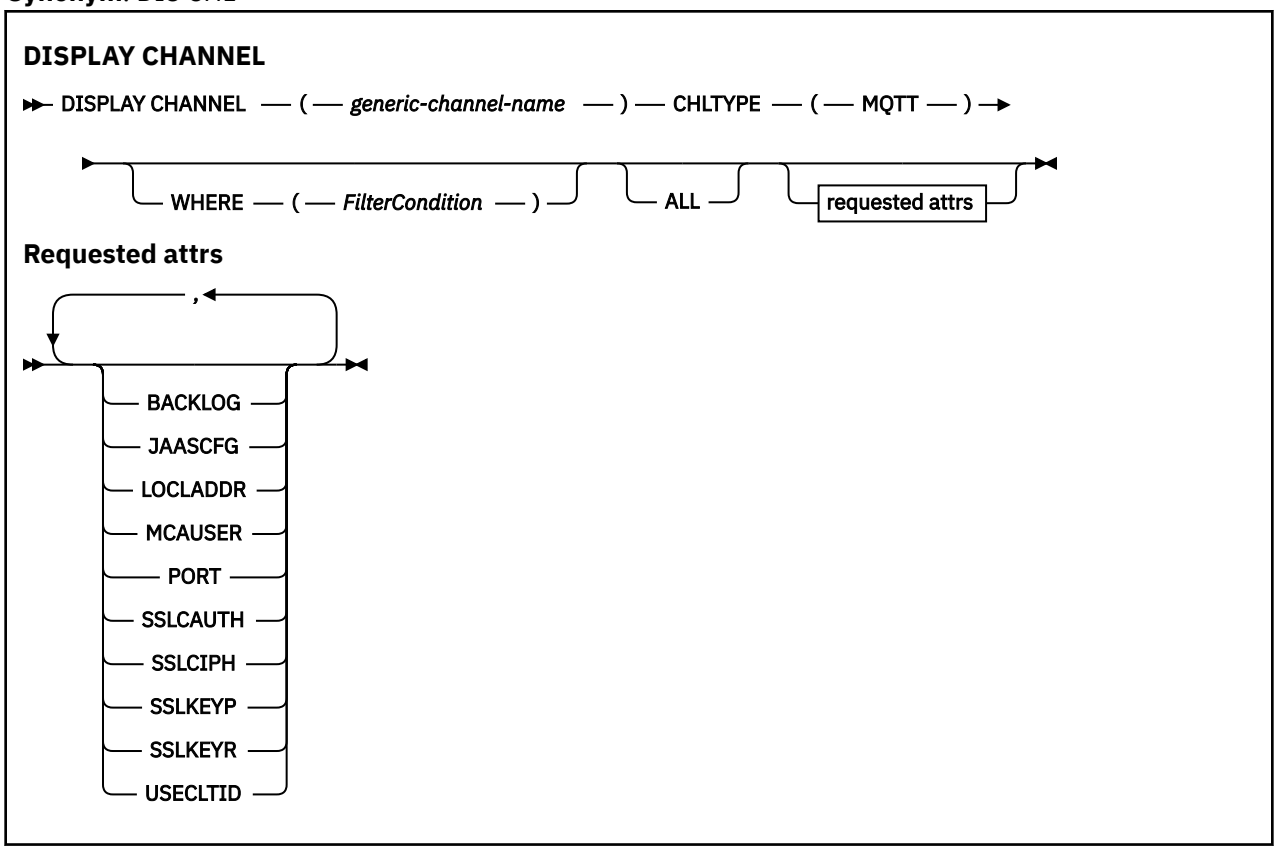
UNIX and Linux	Windows
✓	✓

Note: For the telemetry server, AIX is the only supported UNIX platform.

- Syntax diagram
- "Parameter descriptions for DISPLAY CHANNEL" on page 487

- "Requested parameters" on page 489

Synonym: DIS CHL



DISPLAY CHANNEL (MQTT) command is only valid for WebSphere MQ Telemetry channels.

Parameter descriptions for DISPLAY CHANNEL

You must specify the name of the channel definition you want to display. This can be a specific channel name or a generic channel name. By using a generic channel name, you can display either:

- All channel definitions
- One or more channel definitions that match the specified name

(generic-channel-name)
The name of the channel definition to be displayed (see Rules for naming IBM WebSphere MQ objects). A trailing asterisk (*) matches all channel definitions with the specified stem followed by zero or more characters. An asterisk (*) on its own specifies all channel definitions.

WHERE
Specify a filter condition to display only those channels that satisfy the selection criterion of the filter condition. The filter condition is in three parts: *filter-keyword*, *operator*, and *filter-value*:

filter-keyword
Almost any parameter that can be used to display attributes for this DISPLAY command. However, you cannot use the CMDSCOPE, QSGDISP, or MCANAME parameters as filter keywords. You cannot use TYPE (or CHLTYPE) if it is also used to select channels. Channels of a type for which the filter keyword is not a valid attribute are not displayed.

operator
This is used to determine whether a channel satisfies the filter value on the given filter keyword. The operators are:

LT
Less than

GT
Greater than

EQ
Equal to

NE
Not equal to

LE
Less than or equal to

GE
Greater than or equal to

LK
Matches a generic string that you provide as a *filter-value*

NL
Does not match a generic string that you provide as a *filter-value*

CT
Contains a specified item. If the *filter-keyword* is a list, you can use this to display objects the attributes of which contain the specified item.

EX
Does not contain a specified item. If the *filter-keyword* is a list, you can use this to display objects the attributes of which do not contain the specified item.

CTG
Contains an item which matches a generic string that you provide as a *filter-value*. If the *filter-keyword* is a list, you can use this to display objects the attributes of which match the generic string.

EXG
Does not contain any item which matches a generic string that you provide as a *filter-value*. If the*filter-keyword* is a list, you can use this to display objects the attributes of which do not match the generic string.

filter-value
The value that the attribute value must be tested against using the operator. Depending on the filter-keyword, this can be:

- An explicit value, that is a valid value for the attribute being tested.

  You can use operators LT, GT, EQ, NE, LE, or GE only. However, if the attribute value is one from a possible set of values on a parameter (for example, the value SDR on the TYPE parameter), you can only use EQ or NE.

- A generic value. This is a character string (such as the character string you supply for the DESCR parameter) with an asterisk at the end, for example ABC*. The characters must be valid for the attribute you are testing. If the operator is LK, all items where the attribute value begins with the string (ABC in the example) are listed. If the operator is NL, all items where the attribute value does not begin with the string are listed. Only a single trailing wildcard character (asterisk) is permitted.

  You cannot use a generic filter-value for parameters with numeric values or with one of a set of values.

- An item in a list of values. The value can be explicit or, if it is a character value, it can be explicit or generic. If it is explicit, use CT or EX as the operator. For example, if the value DEF is specified with the operator CT, all items where one of the attribute values is DEF are listed. If it is generic, use CTG or EXG as the operator. If ABC* is specified with the operator CTG, all items where one of the attribute values begins with ABC are listed.

ALL
Specify ALL to display the results of querying all the parameters. If ALL is specified, any request for a specific parameter is ignored. The result of querying with ALL is to return the results for all of the possible parameters.

This is the default, if you do not specify a generic name and do not request any specific parameters.

On z/OS this is also the default if you specify a filter condition using the WHERE parameter, but on other platforms, only requested attributes are displayed.

If no parameters are specified (and the ALL parameter is not specified or defaulted), the default is that the channel names only are displayed. On z/OS, the CHLTYPE and QSGDISP values are also displayed.

TYPE
This is optional. It can be used to restrict the display to channels of one type.

The value is one of the following:

MQTT
Telemetry channels only are displayed.

CHLTYPE(*type*) can be used as a synonym for this parameter.

Requested parameters

Specify one or more DISPLAY CHANNEL parameters that define the data to be displayed. You can specify the parameters in any order, but do not specify the same parameter more than once.

Some parameters are relevant only for channels of a particular type or types. Attributes that are not relevant for a particular type of channel cause no output, nor is an error raised. The following table shows the parameters that are relevant for each type of channel. There is a description of each parameter after the table. Parameters are optional unless the description states that they are required.

BACKLOG
The number of outstanding connection requests that the telemetry channel can support at any one time. When the backlog limit is reached, any further clients trying to connect will be refused connection until the current backlog is processed. The value is in the range 0 - 999999999. The default value is 4096.

CHLTYPE
Channel type.

There is only one valid value for this parameter: MQTT.

JAASCFG
The file path of the JAAS configuration.

LOCLADDR
Local communications address for the channel.

MCAUSER
Message channel agent user identifier.

PORT
The port number on which the telemetry (MQXR) service listens for TCP/IP connections to this channel.

SSLCAUTH
Whether SSL client authentication is required.

SSLCIPH
When SSLCIPH is used with a telemetry channel, it means "SSL Cipher Suite".

SSLKEYP
The store for digital certificates and their associated private keys. If you do not specify a key file, SSL is not used.

SSLKEYR
The password for the key repository. If no passphrase is entered, then unencrypted connections must be used.

USECLTID
Decide whether you want to use the MQTT client ID for the new connection as the IBM WebSphere MQ user ID for that connection. If this property is specified, the user name supplied by the client is ignored.

For more details of these parameters, see "DEFINE CHANNEL (MQTT)" on page 376.

DISPLAY CHLAUTH

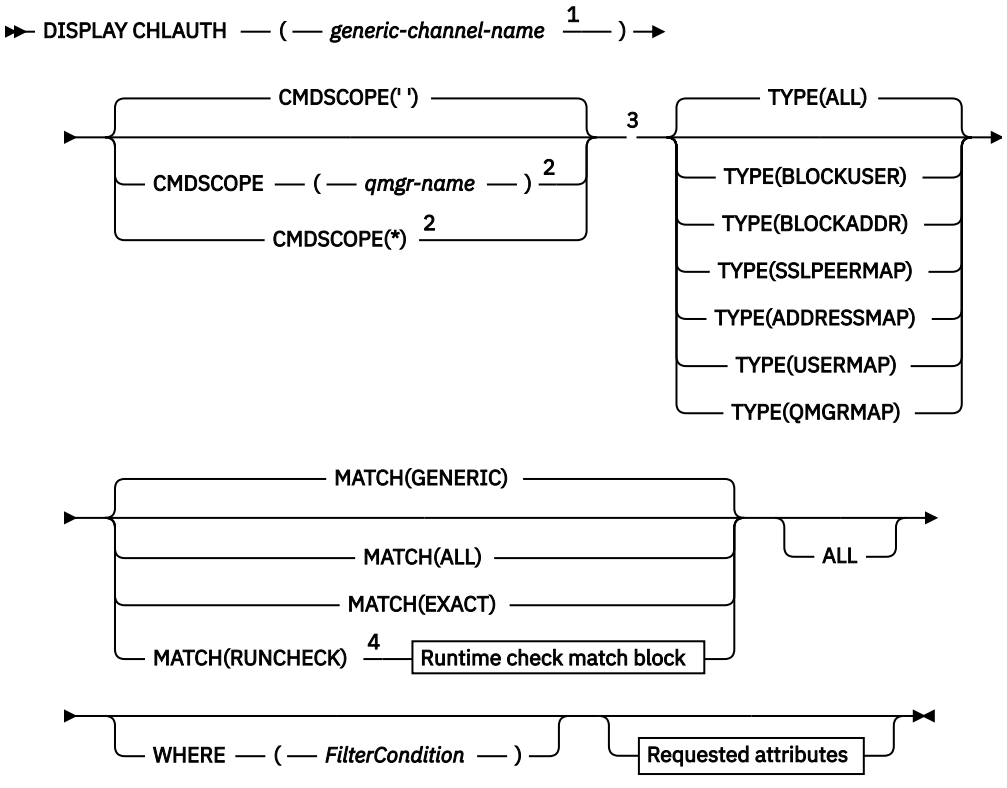
Use the MQSC command DISPLAY CHLAUTH to display the attributes of a channel authentication record.

UNIX and Linux	Windows
✓	✓

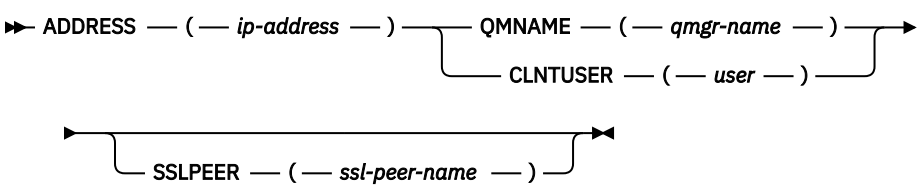
- Syntax diagram
- Parameters

Synonym: DIS CHLAUTH

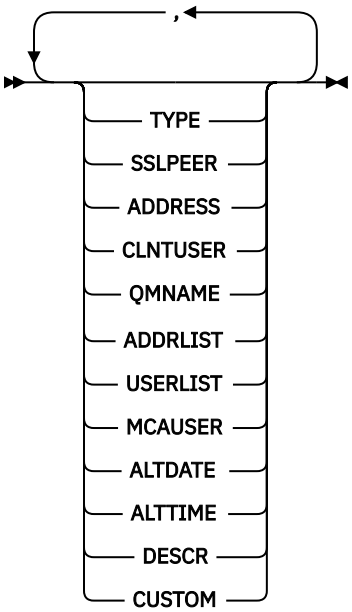
DISPLAY CHLAUTH



Runtime check match block



Requested attributes



Notes:

[1] Must be * with TYPE(BLOCKADDR) and cannot be generic with MATCH(RUNCHECK)
[2] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[3] Valid only on z/OS.
[4] Must be combined with TYPE(ALL)

Parameters

generic-channel-name
The name of the channel or set of channels to display. You can use the asterisk (*) as a wildcard to specify a set of channels. When **MATCH** is RUNCHECK this parameter must not be generic.

ADDRESS
The IP address to be matched.

This parameter is valid only when **MATCH** is RUNCHECK and must not be generic.

ALL
Specify this parameter to display all attributes. If this keyword is specified, any attributes that are requested specifically have no effect; all attributes are still displayed.

This is the default behavior if you do not specify a generic name and do not request any specific attributes.

CLNTUSER
The client user ID to be matched.

This parameter is valid only when **MATCH** is RUNCHECK and must not be generic.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is run when the queue manager is a member of a queue-sharing group.

' '
The command is run on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is run on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****

The command is run on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect is the same as entering the command on every queue manager in the queue-sharing group.

CUSTOM

Reserved for future use.

MATCH

Indicates the type of matching to be applied.

RUNCHECK

Returns the record that will be matched by a specific inbound channel at run time if it connects into this queue manager. The specific inbound channel is described by providing values that are not generic for:

- the channel name
- ADDRESS attribute
- SSLPEER attribute, only if the inbound channel will use SSL or TLS
- QMNAME or CLNTUSER attribute, depending on whether the inbound channel will be a client or queue manager channel

If the record discovered has WARN set to YES, a second record might also be displayed to show the actual record the channel will use at runtime. This parameter must be combined with TYPE(ALL).

EXACT

Return only those records which exactly match the channel profile name supplied. If there are no asterisks in the channel profile name, this option returns the same output as MATCH(GENERIC).

GENERIC

Any asterisks in the channel profile name are treated as wild cards. If there are no asterisks in the channel profile name, this returns the same output as MATCH(EXACT). For example, a profile of ABC* could result in records for ABC, ABC*, and ABCD being returned.

ALL

Return all possible records that match the channel profile name supplied. If the channel name is generic in this case, all records that match the channel name are returned even if more specific matches exist. For example, a profile of SYSTEM.*.SVRCONN could result in records for SYSTEM.*, SYSTEM.DEF.*, SYSTEM.DEF.SVRCONN, and SYSTEM.ADMIN.SVRCONN being returned.

QMNAME

The name of the remote partner queue manager to be matched

This parameter is valid only when **MATCH** is RUNCHECK and must not be generic.

SSLPEER

The Subject Distinguished Name of the certificate to be matched.

The **SSLPEER** value is specified in the standard form used to specify a Distinguished Name.

This parameter is valid only when **MATCH** is RUNCHECK and must not be generic.

TYPE

The type of Channel Authentication Record for which to display details. Possible values are:

- ALL
- BLOCKUSER
- BLOCKADDR
- SSLPEERMAP

- ADDRESSMAP
- USERMAP
- QMGRMAP

WHERE

Specify a filter condition to display only those channel authentication records that satisfy the selection criterion of the filter condition. The filter condition is in three parts: *filter-keyword*, *operator*, and *filter-value*:

filter-keyword

Any parameter that can be used to display attributes for this DISPLAY command.

operator

This is used to determine whether a channel authentication record satisfies the filter value on the given filter keyword. The operators are as follows:

LT

Less than

GT

Greater than

EQ

Equal to

NE

Not equal to

LE

Less than or equal to

GE

Greater than or equal to

LK

Matches a generic string that you provide as a *filter-value*

NL

Does not match a generic string that you provide as a *filter-value*

CT

Contains a specified item. If the *filter-keyword* is a list, you can use this to display objects the attributes of which contain the specified item.

EX

Does not contain a specified item. If the *filter-keyword* is a list, you can use this to display objects the attributes of which do not contain the specified item.

CTG

Contains an item which matches a generic string that you provide as a *filter-value*. If the *filter-keyword* is a list, you can use this to display objects the attributes of which match the generic string.

EXG

Does not contain any item which matches a generic string that you provide as a *filter-value*. If the *filter-keyword* is a list, you can use this to display objects the attributes of which do not match the generic string.

filter-value

The value that the attribute value must be tested against using the operator. Depending on the filter-keyword, the value can be either explicit or generic:

- An explicit value, that is a valid value for the attribute being tested.

  You can use any of the operators except LK and NL. However, if the value is one from a possible set of values returnable on a parameter (for example, the value ALL on the MATCH parameter), you can only use EQ or NE.

- A generic value. This is a character string with an asterisk at the end, for example ABC*. The characters must be valid for the attribute you are testing. If the operator is LK, all items where the attribute value begins with the string (ABC in the example) are listed. If the operator is NL, all items where the attribute value does not begin with the string are listed. You cannot use a generic filter-value for parameters with numeric values or with one of a set of values.

  You can only use operators LK or NL for generic values.
- An item in a list of values. The value can be explicit or, if it is a character value, it can be explicit or generic. If it is explicit, use CT or EX as the operator. For example, if the value DEF is specified with the operator CT, all items where one of the attribute values is DEF are listed. If it is generic, use CTG or EXG as the operator. If ABC* is specified with the operator CTG, all items where one of the attribute values begins with ABC are listed.

Requested parameters

Specify one or more parameters that define the data to be displayed. The parameters can be specified in any order, but do not specify the same parameter more than once.

TYPE
The type of channel authentication record

SSLPEER
The Distinguished Name of the certificate.

ADDRESS
The IP address

CLNTUSER
The client asserted user ID

QMNAME
The name of the remote partner queue manager

MCAUSER
The user identifier to be used when the inbound connection matches the SSL DN, IP address, client asserted user ID or remote queue manager name supplied.

ADDRLIST
A list of IP address patterns which are banned from connecting into this queue manager on any channel.

USERLIST
A list of user IDs which are banned from use of this channel or set of channels.

ALTDATE
The date on which the channel authentication record was last altered, in the format *yyyy-mm-dd*.

ALTTIME
The time on which the channel authentication record was last altered, in the form *hh.mm.ss*.

DESCR
Descriptive information about the channel authentication record.

CUSTOM
Reserved for future use.

Related information

Channel authentication records

Generic IP addresses

In the various commands that create and display channel authentication records, you can specify certain parameters as either a single IP address or a pattern to match a set of IP addresses.

When you create a channel authentication record, using the MQSC command SET CHLAUTH or the PCF command Set Channel Authentication Record , you can specify a generic IP address in various contexts.

You can also specify a generic IP address in the filter condition when you display a channel authentication record using the commands DISPLAY CHLAUTH or Inquire Channel Authentication Records .

You can specify the address in any of the following ways:

- a single IPv4 address, such as 192.0.2.0
- a pattern based on an IPv4 address, including an asterisk (*) as a wildcard. The wildcard represents one or more parts of the address, depending on context. For example, the following are all valid values:
  - 192.0.2.*
  - 192.0.*
  - 192.0.*.2
  - 192.*.2
  - *
- a pattern based on an IPv4 address, including a hyphen (-) to indicate a range, for example 192.0.2.1-8
- a pattern based on an IPv4 address, including both an asterisk and a hyphen, for example 192.0.*.1-8
- a single IPv6 address, such as 2001:DB8:0:0:0:0:0:0
- a pattern based on an IPv6 address including an asterisk (*) as a wildcard. The wildcard represents one or more parts of the address, depending on context. For example, the following are all valid values:
  - 2001:DB8:0:0:0:0:0:*
  - 2001:DB8:0:0:0:*
  - 2001:DB8:0:0:0:*:0:1
  - 2001:*:1
  - *
- a pattern based on an IPv6 address, including a hyphen (-) to indicate a range, for example 2001:DB8:0:0:0:0:0:0-8
- a pattern based on an IPv6 address, including both an asterisk and a hyphen, for example 2001:DB8:0:0:0:*:0:0-8

If your system supports both IPv4 and IPv6, you can use either address format. IBM WebSphere MQ recognizes IPv4 mapped addresses in IPv6.

Certain patterns are invalid:

- A pattern cannot have fewer than the required number of parts, unless the pattern ends with a single trailing asterisk. For example 192.0.2 is invalid, but 192.0.2.* is valid.
- A trailing asterisk must be separated from the rest of the address by the appropriate part separator (a dot (.) for IPv4, a colon (:) for IPv6). For example, 192.0* is not valid because the asterisk is not in a part of its own.
- A pattern may contain additional asterisks provided that no asterisk is adjacent to the trailing asterisk. For example, 192.*.2.* is valid, but 192.0.*.* is not valid.
- An IPv6 address pattern cannot contain a double colon and a trailing asterisk, because the resulting address would be ambiguous. For example, 2001::* could expand to 2001:0000:*, 2001:0000:0000:* and so on

Related information

Mapping an IP address to an MCAUSER user ID

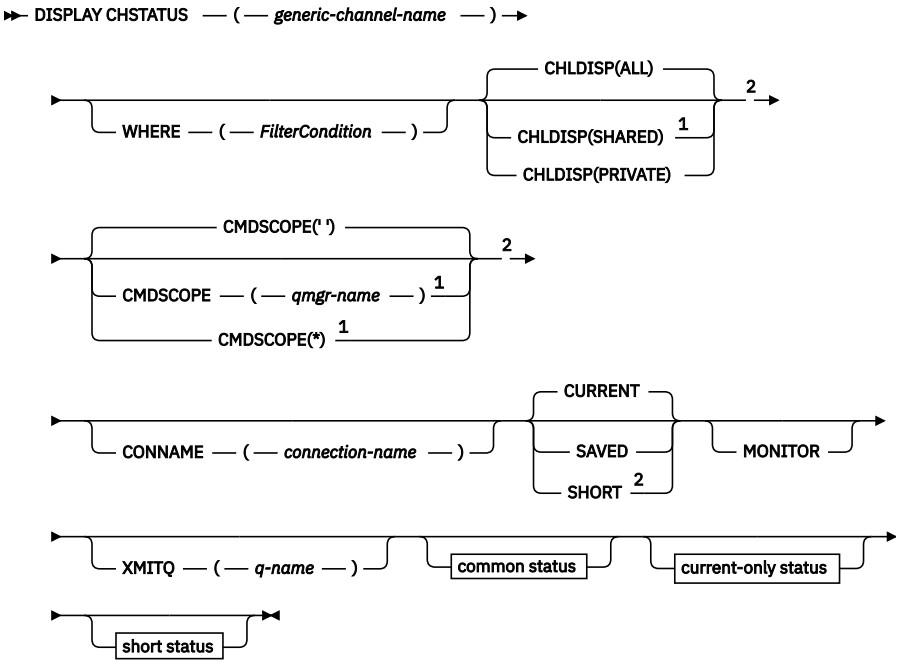
DISPLAY CHSTATUS

Use the MQSC command DISPLAY CHSTATUS to display the status of one or more channels.

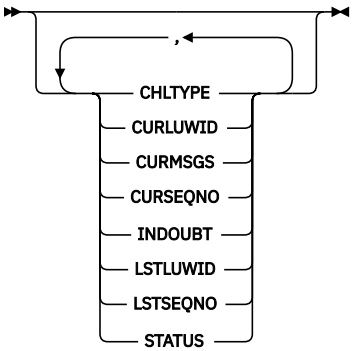
UNIX and Linux	Windows
✓	✓

Synonym: DIS CHS

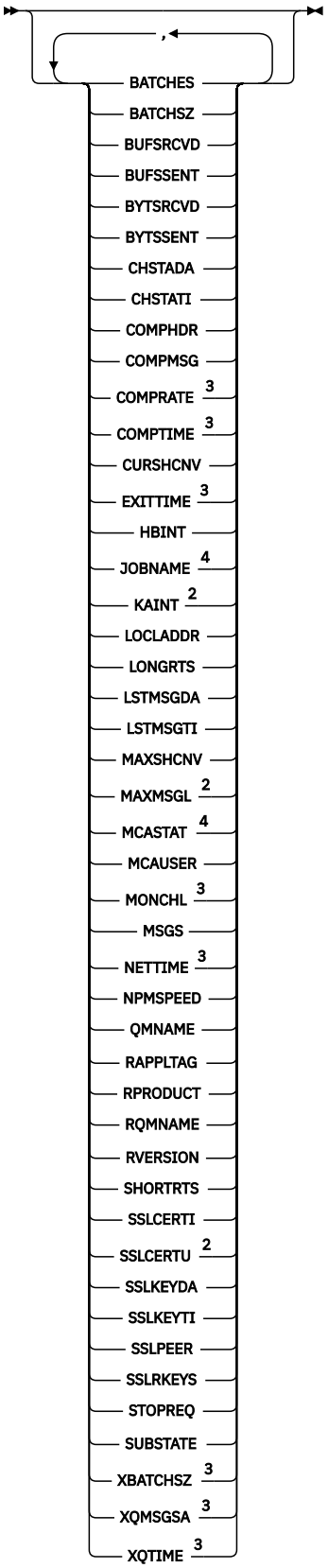
DISPLAY CHSTATUS



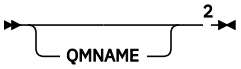
Common status



Current-only status



Short status



Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[2] Valid only on z/OS.
[3] Also displayed by selection of the MONITOR parameter.
[4] Ignored if specified on z/OS.

Usage notes for DISPLAY CHSTATUS

On z/OS:

1. The command fails if the channel initiator has not been started.
2. The command server must be running.
3. On z/OS, if any numeric parameter exceeds 999,999,999, it is displayed as 999999999.
4. The status information that is returned for various combinations of CHLDISP, CMDSCOPE, and status type are summarized in Table 50 on page 498, Table 51 on page 498, and Table 52 on page 499.

Table 50. CHLDISP and CMDSCOPE for DISPLAY CHSTATUS CURRENT

CHLDISP	CMDSCOPE( ) or CMDSCOPE (local-qmgr)	CMDSCOPE (qmgr-name)	CMDSCOPE(*)
PRIVATE	Common and current-only status for current private channels on the local queue manager	Common and current-only status for current private channels on the named queue manager	Common and current-only status for current private channels on all queue managers
SHARED	Common and current-only status for current shared channels on the local queue manager	Common and current-only status for current shared channels on the named queue manager	Common and current-only status for current shared channels on all queue managers
ALL	Common and current-only status for current private and shared channels on the local queue manager	Common and current-only status for current private and shared channels on the named queue manager	Common and current-only status for current private and shared channels on all active queue managers

Table 51. CHLDISP and CMDSCOPE for DISPLAY CHSTATUS SHORT

CHLDISP	CMDSCOPE( ) or CMDSCOPE (local-qmgr)	CMDSCOPE (qmgr-name)	CMDSCOPE(*)
PRIVATE	STATUS and short status for current private channels on the local queue manager	STATUS and short status for current private channels on the named queue manager	STATUS and short status for current private channels on all active queue managers
SHARED	STATUS and short status for current shared channels on all active queue managers in the queue-sharing group	Not permitted	Not permitted
ALL	STATUS and short status for current private channels on the local queue manager and current shared channels in the queue-sharing group (“4.a” on page 499)	STATUS and short status for current private channels on the named queue manager	STATUS and short status for current private, and shared, channels on all active queue managers in the queue-sharing group (“4.a” on page 499)

Table 51. CHLDISP and CMDSCOPE for DISPLAY CHSTATUS SHORT (continued)			
CHLDISP	**CMDSCOPE( ) or CMDSCOPE (local-qmgr)**	**CMDSCOPE (qmgr-name)**	**CMDSCOPE(*)**
Note: a. In this case you get two separate sets of responses to the command on the queue manager where it was entered; one for PRIVATE and one for SHARED.			

Table 52. CHLDISP and CMDSCOPE for DISPLAY CHSTATUS SAVED			
CHLDISP	**CMDSCOPE( ) or CMDSCOPE (local-qmgr)**	**CMDSCOPE (qmgr-name)**	**CMDSCOPE(*)**
PRIVATE	Common status for saved private channels on the local queue manager	Common status for saved private channels on the named queue manager	Common status for saved private channels on all active queue managers
SHARED	Common status for saved shared channels on all active queue managers in the queue-sharing group	Not permitted	Not permitted
ALL	Common status for saved private channels on the local queue manager and saved shared channels in the queue-sharing group	Common status for saved private channels on the named queue manager	Common status for saved private, and shared, channels on all active queue managers in the queue-sharing group

Parameter descriptions for DISPLAY CHSTATUS

You must specify the name of the channel for which you want to display status information. This can be a specific channel name or a generic channel name. By using a generic channel name, you can display either the status information for all channels, or status information for one or more channels that match the specified name.

You can also specify whether you want the current status data (of current channels only), or the saved status data of all channels.

Status for all channels that meet the selection criteria is displayed, whether the channels were defined manually or automatically.

There are three classes of data available for channel status. These are **saved**, **current**, and (on z/OS only) **short**.

The status fields available for saved data are a subset of the fields available for current data and are called **common** status fields. Note that although the common data *fields* are the same, the data *values* might be different for saved and current status. The rest of the fields available for current data are called **current-only** status fields.

- **Saved** data consists of the common status fields noted in the syntax diagram.
  - For a sending channel data is updated before requesting confirmation that a batch of messages has been received and when confirmation has been received
  - For a receiving channel data is reset just before confirming that a batch of messages has been received
  - For a server connection channel no data is saved.
  - Therefore, a channel that has never been current cannot have any saved status.

    Note: Status is not saved until a persistent message is transmitted across a channel, or a nonpersistent message is transmitted with a NPMSPEED of NORMAL. Because status is saved at

the end of each batch, a channel does not have any saved status until at least one batch has been transmitted.

- **Current** data consists of the common status fields and current-only status fields as noted in the syntax diagram. The data fields are continually updated as messages are sent/received.
- **Short** data consists of the STATUS current data item and the short status field as noted in the syntax diagram.

This method of operation has the following consequences:

- An inactive channel might not have any saved status - if it has never been current or has not yet reached a point where saved status is reset.
- The "common" data fields might have different values for saved and current status.
- A current channel always has current status and might have saved status.

Channels can either be current or inactive:

Current channels
These are channels that have been started, or on which a client has connected, and that have not finished or disconnected normally. They might not yet have reached the point of transferring messages, or data, or even of establishing contact with the partner. Current channels have **current** status and might also have **saved** status.

The term **Active** is used to describe the set of current channels that are not stopped.

Inactive channels
These are channels that either:

- Have not been started
- On which a client has not connected
- Have finished
- Have disconnected normally

(Note that if a channel is stopped, it is not yet considered to have finished normally - and is, therefore, still current.) Inactive channels have either **saved** status or no status at all.

There can be more than one instance of the same named receiver, requester, cluster-receiver, or server-connection channel current at the same time (the requester is acting as a receiver). This occurs if several senders, at different queue managers, each initiate a session with this receiver, using the same channel name. For channels of other types, there can only be one instance current at any time.

For all channel types, however, there can be more than one set of saved status information available for a channel name. At most one of these sets relates to a current instance of the channel, the rest relate to previously current instances. Multiple instances arise if different transmission queue names or connection names have been used with the same channel. This can happen in the following cases:

- At a sender or server:
  - If the same channel has been connected to by different requesters (servers only)
  - If the transmission queue name has been changed in the definition
  - If the connection name has been changed in the definition
- At a receiver or requester:
  - If the same channel has been connected to by different senders or servers
  - If the connection name has been changed in the definition (for requester channels initiating connection)

The number of sets that are displayed for a channel can be limited by using the XMITQ, CONNAME, and CURRENT parameters on the command.

(*generic-channel-name*)
The name of the channel definition for which status information is to be displayed. A trailing asterisk (*) matches all channel definitions with the specified stem followed by zero or more characters. An asterisk (*) on its own specifies all channel definitions. A value is required for all channel types.

WHERE
Specify a filter condition to display status information for those channels that satisfy the selection criterion of the filter condition.

The filter condition is in three parts: *filter-keyword*, *operator*, and *filter-value*:

filter-keyword
The parameter to be used to display attributes for this DISPLAY command. However, you cannot use the following parameters as filter keywords: CHLDISP, CMDSCOPE, COMPRATE, COMPTIME, CURRENT, EXITTIME, JOBNAME (on z/OS), MCASTAT (on z/OS), MONITOR, NETTIME, SAVED, SHORT, XBATCHSZ, or XQTIME as filter keywords.

You cannot use CONNAME or XMITQ as filter keywords if you also use them to select channel status.

Status information for channels of a type for which the filter keyword is not valid is not displayed.

operator
This is used to determine whether a channel satisfies the filter value on the filter keyword. The operators are:

LT
Less than

GT
Greater than

EQ
Equal to

NE
Not equal to

LE
Less than or equal to

GE
Greater than or equal to

LK
Matches a generic string that you provide as a *filter-value*

NL
Does not match a generic string that you provide as a *filter-value*

CT
Contains a specified item. If the *filter-keyword* is a list, you can use this to display objects the attributes of which contain the specified item.

EX
Does not contain a specified item. If the *filter-keyword* is a list, you can use this to display objects the attributes of which do not contain the specified item.

filter-value
The value that the attribute value must be tested against using the operator. Depending on the filter-keyword, this can be:

- An explicit value, that is a valid value for the attribute being tested.

  You can use operators LT, GT, EQ, NE, LE, or GE only. However, if the attribute value is one from a possible set of values on a parameter (for example, the value SDR on the CHLTYPE parameter), you can only use EQ or NE.
- A generic value. This is a character string with an asterisk at the end, for example ABC*. If the operator is LK, all items where the attribute value begins with the string (ABC in the example)

are listed. If the operator is NL, all items where the attribute value does not begin with the string are listed. Only a single trailing wildcard character (asterisk) is permitted.

You cannot use a generic filter-value for parameters with numeric values or with one of a set of values.

- An item in a list of values. Use CT or EX as the operator. For example, if the value DEF is specified with the operator CT, all items where one of the attribute values is DEF are listed.

ALL
Specify this to display all the status information for each relevant instance.

If SAVED is specified, this causes only common status information to be displayed, not current-only status information.

If this parameter is specified, any parameters requesting specific status information that are also specified have no effect; all the information is displayed.

CHLDISP
This parameter applies to z/OS only and specifies the disposition of the channels for which information is to be displayed, as used in the START and STOP CHANNEL commands, and **not** that set by QSGDISP for the channel definition. Values are:

ALL
This is the default value and displays requested status information for private channels.

If there is a shared queue manager environment and the command is being executed on the queue manager where it was issued, or if CURRENT is specified, this option also displays the requested status information for shared channels.

PRIVATE
Display requested status information for private channels.

SHARED
Display requested status information for shared channels. This is allowed only if there is a shared queue manager environment, and either:

- CMDSCOPE is blank or the local queue manager
- CURRENT is specified

CHLDISP displays the following values:

PRIVATE
The status is for a private channel.

SHARED
The status is for a shared channel.

FIXSHARED
The status is for a shared channel, tied to a specific queue manager.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which it was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****

The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of this is the same as entering the command on every queue manager in the queue-sharing group.

You cannot use CMDSCOPE as a filter keyword.

Note: See Table 1, Table 2, and Table 3 for the permitted combinations of CHLDISP and CMDSCOPE.

CONNAME(*connection-name*)

The connection name for which status information is to be displayed, for the specified channel or channels.

This parameter can be used to limit the number of sets of status information that is displayed. If it is not specified, the display is not limited in this way.

The value returned for CONNAME might not be the same as in the channel definition, and might differ between the current channel status and the saved channel status. (Using CONNAME for limiting the number of sets of status is therefore not recommended.)

For example, when using TCP, if CONNAME in the channel definition:

- Is blank or is in "host name" format, the channel status value has the resolved IP address.
- Includes the port number, the current channel status value includes the port number (except on z/OS), but the saved channel status value does not.

For SAVED or SHORT status, this value could also be the queue manager name, or queue-sharing group name, of the remote system.

CURRENT

This is the default, and indicates that current status information as held by the channel initiator for current channels only is to be displayed.

Both common and current-only status information can be requested for current channels.

Short status information is not displayed if this parameter is specified.

SAVED

Specify this to display saved status information for both current and inactive channels.

Only common status information can be displayed. Short and current-only status information is not displayed for current channels if this parameter is specified.

SHORT

This indicates that short status information and the STATUS item for current channels only is to be displayed.

Other common status and current-only status information is not displayed for current channels if this parameter is specified.

MONITOR

Specify this to return the set of online monitoring parameters. These are COMPRATE, COMPTIME, EXITTIME, MONCHL, NETTIME, XBATCHSZ, XQMSGSA, and XQTIME. If you specify this parameter, any of the monitoring parameters that you request specifically have no effect; all monitoring parameters are still displayed.

XMITQ(*q-name*)

The name of the transmission queue for which status information is to be displayed, for the specified channel or channels.

This parameter can be used to limit the number of sets of status information that is displayed. If it is not specified, the display is not limited in this way.

The following information is always returned, for each set of status information:

- The channel name
- The transmission queue name (for sender and server channels)

- The connection name
- The remote queue-manager, or queue-sharing group, name (only for current status, and for all channel types except server-connection channels)
- The remote partner application name (for server-connection channels)
- The type of status information returned (CURRENT, SAVED, or on z/OS only, SHORT)
- STATUS (except SAVED on z/OS)
- On z/OS, CHLDISP
- STOPREQ (only for current status)
- SUBSTATE

If no parameters requesting specific status information are specified (and the ALL parameter is not specified), no further information is returned.

If status information is requested that is not relevant for the particular channel type, this is not an error.

Summary attributes

When SUMMARY or TOTAL are added to the MQSC command DISPLAY CHSTATUS, the number of conversations is displayed as the CONVS attribute. The following attributes display a summary for either each channel when SUMMARY is specified, or for all the channels when TOTAL is specified.

ALL
Specify this to display all the status information for each relevant instance. This attribute is the default value if no attributes are requested.

If SAVED is specified, this causes only common status information to be displayed, not current-only status information.

If this parameter is specified, any parameters requesting specific status information that are also specified have no effect; all the information is displayed.

CURCNV
The number of current conversations.

Common status

The following information applies to all sets of channel status, whether or not the set is current. Some of this information does not apply to server-connection channels.

CHLTYPE
The channel type. This is one of the following:

SDR
A sender channel

SVR
A server channel

RCVR
A receiver channel

RQSTR
A requester channel

CLUSSDR
A cluster-sender channel

CLUSRCVR
A cluster-receiver channel

SVRCONN
A server-connection channel

CURLUWID
The logical unit of work identifier associated with the current batch, for a sending or a receiving channel.

For a sending channel, when the channel is in doubt it is the LUWID of the in-doubt batch.

For a saved channel instance, this parameter has meaningful information only if the channel instance is in doubt. However, the parameter value is still returned when requested, even if the channel instance is not in doubt.

It is updated with the LUWID of the next batch when this is known.

This parameter does not apply to server-connection channels.

CURMSGS
For a sending channel, this is the number of messages that have been sent in the current batch. It is incremented as each message is sent, and when the channel becomes in doubt it is the number of messages that are in doubt.

For a saved channel instance, this parameter has meaningful information only if the channel instance is in doubt. However, the parameter value is still returned when requested, even if the channel instance is not in doubt.

For a receiving channel, it is the number of messages that have been received in the current batch. It is incremented as each message is received.

The value is reset to zero, for both sending and receiving channels, when the batch is committed.

This parameter does not apply to server-connection channels.

CURSEQNO
For a sending channel, this is the message sequence number of the last message sent. It is updated as each message is sent, and when the channel becomes in doubt it is the message sequence number of the last message in the in-doubt batch.

For a saved channel instance, this parameter has meaningful information only if the channel instance is in doubt. However, the parameter value is still returned when requested, even if the channel instance is not in doubt.

For a receiving channel, it is the message sequence number of the last message that was received. It is updated as each message is received.

This parameter does not apply to server-connection channels.

INDOUBT
Whether the channel is currently in doubt.

This is only YES while the sending Message Channel Agent is waiting for an acknowledgment that a batch of messages that it has sent has been successfully received. It is NO at all other times, including the period during which messages are being sent, but before an acknowledgment has been requested.

For a receiving channel, the value is always NO.

This parameter does not apply to server-connection channels.

LSTLUWID
The logical unit of work identifier associated with the last committed batch of messages transferred.

This parameter does not apply to server-connection channels.

LSTSEQNO
Message sequence number of the last message in the last committed batch. This number is not incremented by nonpersistent messages using channels with a NPMSPEED of FAST.

This parameter does not apply to server-connection channels.

STATUS
Current status of the channel. This is one of the following:

BINDING
Channel is performing channel negotiation and is not yet ready to transfer messages.

INITIALIZING
The channel initiator is attempting to start a channel. On z/OS, this is displayed as INITIALIZI.

PAUSED
The channel is waiting for the message-retry interval to complete before retrying an MQPUT operation.

REQUESTING
A local requester channel is requesting services from a remote MCA.

RETRYING
A previous attempt to establish a connection has failed. The MCA will reattempt connection after the specified time interval.

RUNNING
The channel is either transferring messages at this moment, or is waiting for messages to arrive on the transmission queue so that they can be transferred.

STARTING
A request has been made to start the channel but the channel has not yet begun processing. A channel is in this state if it is waiting to become active.

STOPPED
This state can be caused by one of the following:

- Channel manually stopped

  A user has entered a stop channel command against this channel.

- Retry limit reached

  The MCA has reached the limit of retry attempts at establishing a connection. No further attempt will be made to establish a connection automatically.

A channel in this state can be restarted only by issuing the START CHANNEL command, or starting the MCA program in an operating-system dependent manner.

STOPPING
Channel is stopping or a close request has been received.

SWITCHING
The channel is switching transmission queues.

On z/OS, STATUS is not displayed if saved data is requested.

On distributed platforms, the value of the STATUS field returned in the saved data is the status of the channel at the time the saved status was written. Normally, the saved status value is RUNNING. To see the current status of the channel, the user can use the DISPLAY CHSTATUS CURRENT command.

Note: For an inactive channel, CURMSGS, CURSEQNO, and CURLUWID have meaningful information only if the channel is INDOUBT. However they are still displayed and returned if requested.

Current-only status

The following information applies only to current channel instances. The information applies to all channel types, except where stated.

BATCHES
Number of completed batches during this session (since the channel was started).

BATCHSZ
The batch size being used for this session.

This parameter does not apply to server-connection channels, and no values are returned; if specified on the command, this is ignored.

BUFSRCVD
Number of transmission buffers received. This includes transmissions to receive control information only.

BUFSSENT
Number of transmission buffers sent. This includes transmissions to send control information only.

BYTSRCVD
Number of bytes received during this session (since the channel was started). This includes control information received by the message channel agent.

BYTSSENT
Number of bytes sent during this session (since the channel was started). This includes control information sent by the message channel agent.

CHSTADA
Date when this channel was started (in the form yyyy-mm-dd).

CHSTATI
Time when this channel was started (in the form hh.mm.ss).

COMPHDR
The technique used to compress the header data sent by the channel. Two values are displayed:

- The default header data compression value negotiated for this channel.
- The header data compression value used for the last message sent. The header data compression value can be altered in a sending channels message exit. If no message has been sent, the second value is blank.

COMPMSG
The technique used to compress the message data sent by the channel. Two values are displayed:

- The default message data compression value negotiated for this channel.
- The message data compression value used for the last message sent. The message data compression value can be altered in a sending channels message exit. If no message has been sent, the second value is blank.

COMPRATE
The compression rate achieved displayed to the nearest percentage. Two values are displayed:

- A value based on recent activity over a short period.
- A value based on activity over a longer period.

These values are reset every time the channel is started and are displayed only when the STATUS of the channel is RUNNING. If monitoring data is not being collected, or if no messages have been sent by the channel, the values are shown as blank.

A value is only displayed for this parameter if MONCHL is set for this channel.

COMPTIME
The amount of time per message, displayed in microseconds, spent during compression or decompression. Two values are displayed:

- A value based on recent activity over a short period.
- A value based on activity over a longer period.

These values are reset every time the channel is started and are displayed only when the STATUS of the channel is RUNNING. If monitoring data is not being collected, or if no messages have been sent by the channel, the values are shown as blank.

A value is only displayed for this parameter if MONCHL is set for this channel.

CURSHCNV
The CURSHCNV value is blank for all channel types other than server-connection channels. For each instance of a server-connection channel, the CURSHCNV output gives a count of the number of conversations currently running over that channel instance.

A value of zero indicates that the channel is running as it did in versions of IBM WebSphere MQ earlier than Version 7.0, regarding:

- Administrator stop-quiesce
- Heartbeating
- Read ahead
- Sharing conversations
- Client Asynchronous consumption

EXITTIME
Amount of time, displayed in microseconds, spent processing user exits per message. Two values are displayed:

- A value based on recent activity over a short period.
- A value based on activity over a longer period.

These values depend on the configuration and behavior of your system, as well as the levels of activity within it, and serve as an indicator that your system is performing normally. A significant variation in these values may indicate a problem with your system. They are reset every time the channel is started and are displayed only when the STATUS of the channel is RUNNING.

This parameter is also displayed when you specify the MONITOR parameter.

A value is only displayed for this parameter if MONCHL is set for this channel.

HBINT
The heartbeat interval being used for this session.

JOBNAME
Name of job currently serving the channel.

- On IBM i, Windows, UNIX and Linux systems, this is the concatenation of the process identifier and the thread identifier of the MCA program, displayed in hexadecimal.

This information is not available on z/OS. The parameter is ignored if specified.

You cannot use JOBNAME as a filter keyword on z/OS.

KAINT
The keepalive interval being used for this session. This is valid only on z/OS.

LOCLADDR
Local communications address for the channel. The value returned depends on the TRPTYPE of the channel (currently only TCP/IP is supported).

LONGRTS
Number of long retry wait start attempts left. This applies only to sender or server channels.

LSTMSGDA
Date when the last message was sent or MQI call was handled, see LSTMSGTI.

LSTMSGTI
Time when the last message was sent or MQI call was handled.

For a sender or server, this is the time the last message (the last part of it if it was split) was sent. For a requester or receiver, it is the time the last message was put to its target queue. For a server-connection channel, it is the time when the last MQI call completed.

In the case of a server-connection channel instance on which conversations are being shared, this is the time when the last MQI call completed on any of the conversations running on the channel instance.

MAXMSGL
The maximum message length being used for this session (valid only on z/OS).

MAXSHCNV
The MAXSHCNV value is blank for all channel types other than server-connection channels. For each instance of a server-connection channel, the MAXSHCNV output gives the negotiated maximum of the number of conversations that can run over that channel instance.

A value of zero indicates that the channel is running as it did in versions of IBM WebSphere MQ earlier than Version 7.0, regarding:

- Administrator stop-quiesce
- Heartbeating
- Read ahead
- Sharing conversations
- Client asynchronous consumption

MCASTAT
Whether the Message Channel Agent is currently running. This is either "running" or "not running".

Note that it is possible for a channel to be in stopped state, but for the program still to be running.

This information is not available on z/OS. The parameter is ignored if specified.

You cannot use MCASTAT as a filter keyword on z/OS.

MCAUSER
The user ID used by the MCA. This can be the user ID set in the channel definition, the default user ID for message channels, a user ID transferred from a client if this is a server-connection channel, or a user ID specified by a security exit.

This parameter applies only to server-connection, receiver, requester, and cluster-receiver channels.

On server connection channels that share conversations, the MCAUSER field contains a user ID if all the conversations have the same MCA user ID value. If the MCA user ID in use varies across these conversations, the MCAUSER field contains a value of *.

The maximum length is 12 characters on z/OS; on other platforms, it is 64 characters.

MONCHL
Current level of monitoring data collection for the channel.

This parameter is also displayed when you specify the MONITOR parameter.

MSGS
Number of messages sent or received (or, for server-connection channels, the number of MQI calls handled) during this session (since the channel was started).

In the case of a server-connection channel instance on which conversations are being shared, this is the total number of MQI calls handled on all of the conversations running on the channel instance.

NETTIME
Amount of time, displayed in microseconds, to send a request to the remote end of the channel and receive a response. This time only measures the network time for such an operation. Two values are displayed:

- A value based on recent activity over a short period.
- A value based on activity over a longer period.

These values depend on the configuration and behavior of your system, as well as the levels of activity within it, and serve as an indicator that your system is performing normally. A significant variation in these values may indicate a problem with your system. They are reset every time the channel is started and are displayed only when the STATUS of the channel is RUNNING.

This parameter applies only to sender, server, and cluster-sender channels.

This parameter is also displayed when you specify the MONITOR parameter.

A value is only displayed for this parameter if MONCHL is set for this channel.

NPMSPEED
The nonpersistent message handling technique being used for this session.

RAPPLTAG
The remote partner application name. This is the name of the client application at the remote end of the channel. This parameter applies only to server-connection channels.

RPRODUCT
The remote partner product identifier. This is the product identifier of the IBM WebSphere MQ code running at the remote end of the channel. If the remote product identifier is blank, the remote partner is at version 6 or earlier. The possible values are shown in Table 53 on page 510.

Table 53. Product Identifier values

Product Identifier	Description
MQMM	Queue Manager (non z/OS Platform)
MQMV	Queue Manager on z/OS
MQCC	WebSphere MQ C client
MQNC	IBM WebSphere MQ client for HP Integrity NonStop Server
MQNM	WebSphere MQ .NET fully managed client
MQJB	WebSphere MQ Classes for JAVA
MQJM	WebSphere MQ Classes for JMS (normal mode)
MQJN	WebSphere MQ Classes for JMS (migration mode)
MQJU	Common Java interface to the MQI
MQXC	XMS client C/C++ (normal mode)
MQXD	XMS client C/C++ (migration mode)
MQXN	XMS client .NET (normal mode)
MQXM	XMS client .NET (migration mode)
MQXU	WebSphere MQ .NET XMS client (unmanaged/XA)
MQNU	WebSphere MQ .NET unmanaged client

RQMNAME
The queue manager name, or queue-sharing group name, of the remote system. This parameter does not apply to server-connection channels.

RVERSION
The remote partner version. This is the version of the IBM WebSphere MQ code running at the remote end of the channel. If the remote version is blank, the remote partner is at version 6 or earlier.

The remote version is displayed as **VVRRMMFF**, where

VV
Version

RR
Release

MM
Maintenance level

FF
Fix level

SHORTRTS
Number of short retry wait start attempts left. This applies only to sender or server channels.

SSLCERTI
The full Distinguished Name of the issuer of the remote certificate. The issuer is the Certificate Authority that issued the certificate.

The maximum length is 256 characters. This limit might mean that exceptionally long Distinguished Names are truncated.

SSLCERTU
The local user ID associated with the remote certificate. This is valid on z/OS only.

SSLKEYDA
Date on which the previous successful SSL secret key reset was issued.

SSLKEYTI
Time at which the previous successful SSL secret key reset was issued.

SSLPEER
Distinguished Name of the peer queue manager or client at the other end of the channel.

The maximum length is 256 characters. This limit might mean that exceptionally long Distinguished Names are truncated.

SSLRKEYS
Number of successful SSL key resets. The count of SSL secret key resets is reset when the channel instance ends.

STOPREQ
Whether a user stop request is outstanding. This is either YES or NO.

SUBSTATE
Action being performed by the channel when this command is issued. The following substates are listed in precedence order, starting with the substate of the highest precedence:

ENDBATCH
Channel is performing end-of-batch processing.

SEND
A request has been made to the underlying communication subsystem to send some data.

RECEIVE
A request has been made to the underlying communication subsystem to receive some data.

SERIALIZE
Channel is serializing its access to the queue manager. Valid on z/OS only.

RESYNCH
Channel is resynchronizing with the partner.

HEARTBEAT
Channel is heartbeating with the partner.

SCYEXIT
Channel is running the security exit.

RCVEXIT
Channel is running one of the receive exits.

SENDEXIT
Channel is running one of the send exits.

MSGEXIT
Channel is running one of the message exits.

MREXIT
Channel is running the message retry exit.

CHADEXIT
Channel is running through the channel auto-definition exit.

NETCONNECT
A request has been made to the underlying communication subsystem to connect a partner machine.

SSLHANDSHK
Channel is processing an SSL handshake.

NAMESERVER
A request has been made to the name server.

MQPUT
A request has been made to the queue manager to put a message on the destination queue.

MQGET
A request has been made to the queue manager to get a message from the transmission queue (if this is a message channel) or from an application queue (if this is an MQI channel).

MQICALL
A MQ API call, other than MQPUT and MQGET, is being executed.

COMPRESS
Channel is compressing or extracting data.

Not all substates are valid for all channel types or channel states. There are occasions when no substate is valid, at which times a blank value is returned.

For channels running on multiple threads, this parameter displays the substate of the highest precedence.

XBATCHSZ
Size of the batches transmitted over the channel. Two values are displayed:

- A value based on recent activity over a short period.
- A value based on activity over a longer period.

These values depend on the configuration and behavior of your system, as well as the levels of activity within it, and serve as an indicator that your system is performing normally. A significant variation in these values might indicate a problem with your system. They are reset every time the channel is started and are displayed only when the STATUS of the channel is RUNNING.

This parameter does not apply to server-connection channels.

This parameter is also displayed when you specify the MONITOR parameter.

A value is only displayed for this parameter if MONCHL is set for this channel.

XQMSGSA
Number of messages queued on the transmission queue available to the channel for MQGETs.

This parameter has a maximum displayable value of 999. If the number of messages available exceeds 999, a value of 999 is displayed.

On z/OS, if the transmission queue is not indexed by *CorrelId*, this value is shown as blank.

This parameter applies to cluster-sender channels only.

This parameter is also displayed when you specify the MONITOR parameter.

A value is only displayed for this parameter if MONCHL is set for this channel.

XQTIME
The time, in microseconds, that messages remained on the transmission queue before being retrieved. The time is measured from when the message is put onto the transmission queue until it is retrieved to be sent on the channel and, therefore, includes any interval caused by a delay in the putting application.

Two values are displayed:

- A value based on recent activity over a short period.

- A value based on activity over a longer period.

These values depend on the configuration and behavior of your system, as well as the levels of activity within it, and serve as an indicator that your system is performing normally. A significant variation in these values might indicate a problem with your system. They are reset every time the channel is started and are displayed only when the STATUS of the channel is RUNNING.

This parameter applies only to sender, server, and cluster-sender channels.

This parameter is also displayed when you specify the MONITOR parameter.

A value is only displayed for this parameter if MONCHL is set for this channel.

Short status

The following information applies only to current channel instances.

QMNAME
The name of the queue manager that owns the channel instance.

DISPLAY CHSTATUS (MQTT)

Use the MQSC command DISPLAY CHSTATUS (MQTT) to display the status of one or more IBM WebSphere MQ Telemetry channels.

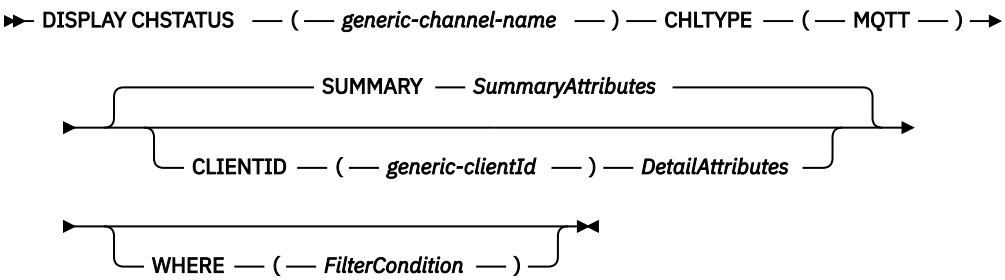
UNIX and Linux	Windows
✓	✓

Note: For the telemetry server, AIX is the only supported UNIX platform.

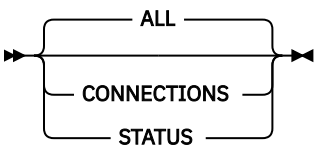
- Syntax diagram
- "Parameter descriptions for DISPLAY CHSTATUS" on page 514
- "Summary attributes" on page 515

Synonym: DIS CHS

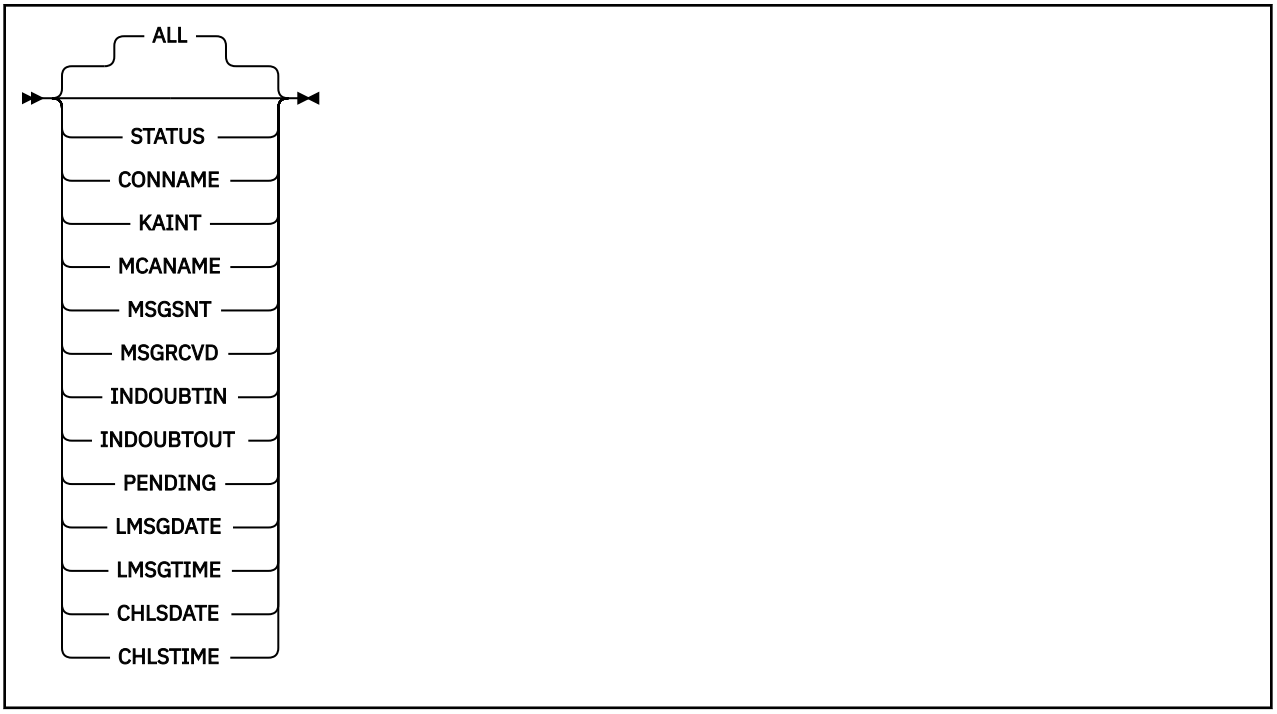
DISPLAY CHSTATUS (MQTT)



SummaryAttributes



DetailAttributes



Note:

- The default behavior is for **RUNMQSC** to return a summary of the connections to the channel. If **CLIENTID** is specified then **RUNMQSC** returns details of each client connected to the channel.
- Either **CLIENTID**, **SUMMARY**, or neither may be specified, but not both at the same time.
- The **DISPLAY CHSTATUS** command for IBM WebSphere MQ Telemetry has the potential to return a far larger number of responses than if the command was run for a IBM WebSphere MQ channel. For this reason, the IBM WebSphere MQ Telemetry server does not return more responses than fit on the reply-to queue. The number of responses is limited to the value of MAXDEPTH parameter of the SYSTEM.MQSC.REPLY.QUEUE queue. When RUNMQSC processes a IBM WebSphere MQ Telemetry command that is truncated by the IBM WebSphere MQ Telemetry server, the AMQ8492 message is displayed specifying how many responses are returned based on the size of MAXDEPTH.

Parameter descriptions for DISPLAY CHSTATUS

You must specify the name of the channel for which you want to display status information. This parameter can be a specific channel name or a generic channel name. By using a generic channel name, you can display either the status information for all channels, or status information for one or more channels that match the specified name.

(*generic-channel-name*)
The name of the channel definition for which status information is to be displayed. A trailing asterisk (*) matches all channel definitions with the specified stem followed by zero or more characters. An asterisk (*) on its own specifies all channel definitions. A value is required for all channel types.

WHERE
Specify a filter condition to display status information for those channels that satisfy the selection criterion of the filter condition.

The filter condition is in three parts: *filter-keyword*, *operator*, and *filter-value*:

filter-keyword
The parameter to be used to display attributes for this DISPLAY command.

Status information for channels of a type for which the filter keyword is not valid is not displayed.

operator
This is used to determine whether a channel satisfies the filter value on the filter keyword. The operators are:

LT
Less than

GT
Greater than

EQ
Equal to

NE
Not equal to

LE
Less than or equal to

GE
Greater than or equal to

LK
Matches a generic string that you provide as a *filter-value*

NL
Does not match a generic string that you provide as a *filter-value*

CT
Contains a specified item. If the *filter-keyword* is a list, you can use this operator to display objects the attributes of which contain the specified item.

EX
Does not contain a specified item. If the *filter-keyword* is a list, you can use this operator to display objects the attributes of which do not contain the specified item.

filter-value
The value that the attribute value must be tested against using the operator. Depending on the filter-keyword, this value can be:

- An explicit value, that is a valid value for the attribute that is being tested.

  You can use operators LT, GT, EQ, NE, LE, or GE only. However, if the attribute value is one from a possible set of values on a parameter (for example, the value SDR on the CHLTYPE parameter), you can use EQ or NE only.
- A generic value. This value is a character string with an asterisk at the end, for example ABC*. If the operator is LK, all items where the attribute value begins with the string (ABC in the example) are listed. If the operator is NL, all items where the attribute value does not begin with the string are listed. Only a single trailing wildcard character (asterisk) is permitted.

  You cannot use a generic filter-value for parameters with numeric values or with one of a set of values.
- An item in a list of values. Use CT or EX as the operator. For example, if the value DEF is specified with the operator CT, all items where one of the attribute values is DEF are listed.

ALL
Specify this parameter to display all the status information for each relevant instance.

If this parameter is specified, any parameters that request specific status information which are also specified have no effect; all the information is displayed.

Summary attributes

When SUMMARY or TOTAL are added to the MQSC command DISPLAY CHSTATUS, the number of conversations is displayed as the CONVS attribute. The following attributes display a summary for either each channel when SUMMARY is specified, or for all the channels when TOTAL is specified.

ALL
Specify this parameter to display all the status information for each relevant instance. This attribute is the default value if no attributes are requested.

This parameter is valid for MQTT channels.

If this parameter is specified, any specified parameters that are requesting specific status information have no effect; and all the information is displayed.

CURCNV
The number of current conversations.

Client details mode

STATUS
The status of the client.

CONNAME
The name of the remote connection (IP address)

KAINT
The client's keep alive interval.

MCAUSER
The user ID being used by the channel.

MSGSNT
Number of messages sent by the client since it connected last.

MSGRCVD
Number of messages received by the client since it connected last.

INDOUBTIN
Number of in doubt, inbound messages to the client.

INDOUBTOUT
Number of in doubt, outbound messages to the client.

PENDING
Number of outbound pending messages.

LMSGDATE
Date last message was received or sent.

LMSGTIME
Time last message was received or sent.

CHLSDATE
Date channel started.

CHLSTIME
Time channel was started.

DISPLAY CLUSQMGR

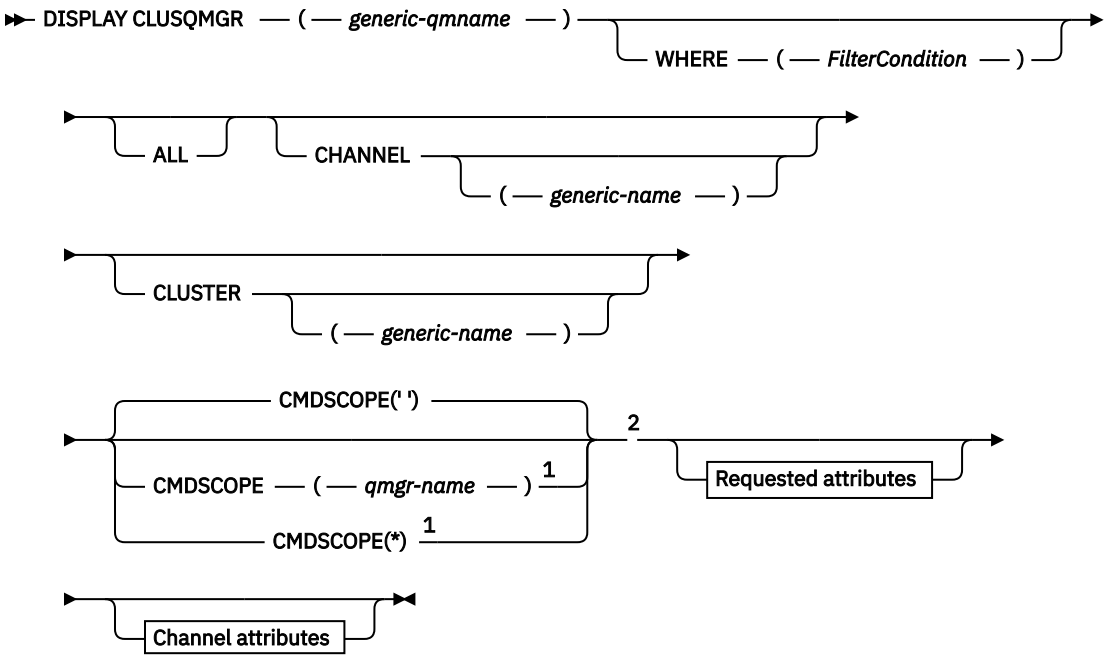
Use the MQSC command **DISPLAY CLUSQMGR** to display information about cluster channels for queue managers in a cluster.

UNIX and Linux	Windows
✓	✓

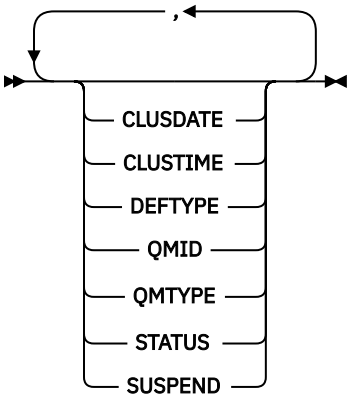
- "Channel parameters" on page 522

Synonym: DIS CLUSQMGR

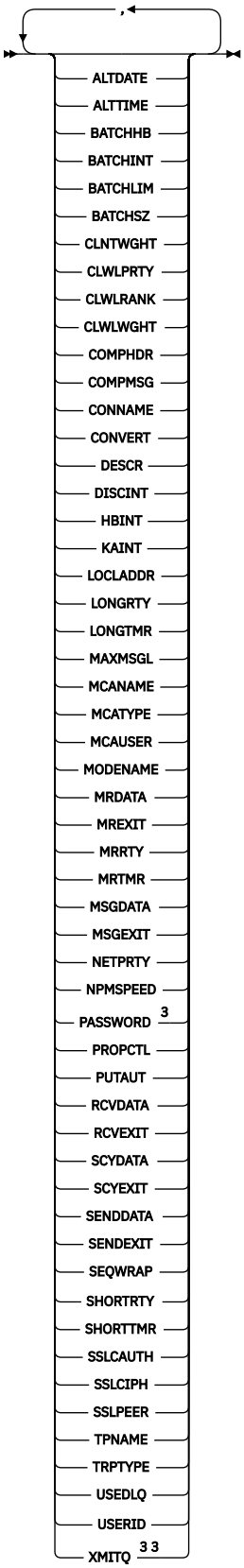
DISPLAY CLUSQMGR



Requested attributes



Channel attributes



Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[2] Valid only on z/OS.

[3] Not valid on z/OS.

Usage notes

Unlike the **DISPLAY CHANNEL** command, this command includes information about cluster channels that are auto-defined, and the status of cluster channels.

Note:

1. On UNIX systems, the command is valid only on AIX, HP-UX, Linux, and Solaris.
2. On z/OS, the command fails if the channel initiator is not started.

Parameter descriptions for DISPLAY CLUSQMGR

(*generic-qmgr-name*)
The name of the cluster queue manager for which information is to be displayed.

A trailing asterisk "*" matches all cluster queue managers with the specified stem followed by zero or more characters. An asterisk "*" on its own specifies all cluster queue managers.

WHERE
Specify a filter condition to display only those cluster channels that satisfy the selection criterion of the filter condition. The filter condition is in three parts: *filter-keyword*, *operator*, and *filter-value*:

filter-keyword
Almost any parameter that can be used to display attributes for this **DISPLAY** command. However, you cannot use the CMDSCOPE or MCANAME parameters as filter keywords. You cannot use CHANNEL or CLUSTER as filter keywords if you use them to select cluster queue managers.

operator
The operators are:

LT
Less than

GT
Greater than

EQ
Equal to

NE
Not equal to

LE
Less than or equal to

GE
Greater than or equal to

LK
Matches a generic string that you provide as a *filter-value*

NL
Does not match a generic string that you provide as a *filter-value*

CT
Contains a specified item. If the *filter-keyword* is a list, you can use CT to display objects the attributes of which contain the specified item.

EX
Does not contain a specified item. If the *filter-keyword* is a list, you can use EX to display objects the attributes of which do not contain the specified item.

CTG
Contains an item which matches a generic string that you provide as a *filter-value*. If the *filter-keyword* is a list, you can use CTG to display objects the attributes of which match the generic string.

EXG
Does not contain any item which matches a generic string that you provide as a *filter-value*. If the *filter-keyword* is a list, you can use EXG to display objects the attributes of which do not match the generic string.

filter-value
The value that the attribute value must be tested against using the operator. Depending on the filter-keyword, *filter-value* can be:

- An explicit value, that is a valid value for the attribute being tested.

  You can use operators LT, GT, EQ, NE, LE, , or GE only. If the attribute value is a value from a possible set of values, you can use only EQ or NE. For example, the value STARTING on the STATUS parameter.

- A generic value. *filter-value* is a character string. An example is ABC*. If the operator is LK, all items where the attribute value begins with the string, ABC in the example, are listed. If the operator is NL, all items where the attribute value does not begin with the string are listed. Only a single trailing wildcard character (asterisk) is permitted.

  You cannot use a generic filter-value for parameters with numeric values or with one of a set of values.

- An item in a list of values. The value can be explicit or, if it is a character value, it can be explicit or generic. If it is explicit, use CT or EX as the operator. For example, if the value DEF is specified with the operator CT, all items where one of the attribute values is DEF are listed. If it is generic, use CTG or EXG as the operator. If ABC* is specified with the operator CTG, all items where one of the attribute values begins with ABC are listed.

ALL
Specify ALL to display all the parameters. If this parameter is specified, any parameters that are also requested specifically have no effect; all parameters are still displayed.

ALL is the default if you do not specify a generic name and do not request any specific parameters.

On z/OS ALL is also the default if you specify a filter condition using the WHERE parameter, but on other platforms, only requested attributes are displayed.

CHANNEL(*generic-name*)
This is optional, and limits the information displayed to cluster channels with the specified channel name. The value can be a generic name.

CLUSTER(*generic-name*)
This is optional, and limits the information displayed to cluster queue managers with the specified cluster name. The value can be a generic name.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

' '
The command is executed on the queue manager on which it was entered. ' ' is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered. You can enter a different queue manager name, if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of * is the same as entering the command on every queue manager in the queue-sharing group.

You cannot use CMDSCOPE as a filter keyword.

Requested parameters

Specify one or more parameters that define the data to be displayed. The parameters can be specified in any order, but do not specify the same parameter more than once.

Some parameters are relevant only for cluster channels of a particular type or types. Attributes that are not relevant for a particular type of channel cause no output, and do not cause an error.

CLUSDATE
The date on which the definition became available to the local queue manager, in the form yyyy-mm-dd.

CLUSTIME
The time at which the definition became available to the local queue manager, in the form hh.mm.ss.

DEFTYPE
How the cluster channel was defined:

CLUSSDR
As a cluster-sender channel from an explicit definition.

CLUSSDRA
As a cluster-sender channel by auto-definition alone.

CLUSSDRB
As a cluster-sender channel by auto-definition and an explicit definition.

CLUSRCVR
As a cluster-receiver channel from an explicit definition.

QMID
The internally generated unique name of the cluster queue manager.

QMTYPE
The function of the cluster queue manager in the cluster:

REPOS
Provides a full repository service.

NORMAL
Does not provide a full repository service.

STATUS
The status of the channel for this cluster queue manager is one of the following values:

STARTING
The channel was started and is waiting to become active.

BINDING
The channel is performing channel negotiation and is not yet ready to transfer messages.

INACTIVE
The channel is not active.

INITIALIZING
The channel initiator is attempting to start a channel. On z/OS, INITIALIZING is displayed as INITIALIZI.

RUNNING
The channel is either transferring messages at this moment, or is waiting for messages to arrive on the transmission queue so that they can be transferred.

STOPPING
The channel is stopping, or received a close request.

RETRYING
A previous attempt to establish a connection failed. The MCA attempts to connect again after the specified time interval.

PAUSED
The channel is waiting for the message-retry interval to complete before trying an MQPUT operation again.

STOPPED
This state can be caused by one of the following events:

- Channel manually stopped.

  A user entered a stop channel command for this channel.

- The number of attempts to establish a connection reached the maximum number of attempts allowed for the channel.

  No further attempt is made to establish a connection automatically.

A channel in this state can be restarted only by issuing the **START CHANNEL** command, or starting the MCA program in an operating-system dependent manner.

REQUESTING
A local requester channel is requesting services from a remote MCA.

SUSPEND
Specifies whether this cluster queue manager is suspended from the cluster or not (as a result of the **SUSPEND QMGR** command). The value of SUSPEND is either YES or NO.

XMITQ
The cluster transmission queue. The property is only available on platforms other than z/OS(r).

Channel parameters

ALTDATE
The date on which the definition or information was last altered, in the form yyyy-mm-dd

ALTTIME
The time at which the definition or information was last altered, in the form hh.mm.ss

BATCHHB
The batch heartbeat value being used.

BATCHINT
Minimum batch duration.

BATCHLIM
Batch data limit.

The limit of the amount of data that can be sent through a channel.

BATCHSZ
Batch size.

CLNTWGHT
The client channel weighting.

CLWLPRTY
The priority of the channel for the purposes of cluster workload distribution.

CLWLRANK
The rank of the channel for the purposes of cluster workload distribution.

CLWLWGHT
The weighting of the channel for the purposes of cluster workload distribution.

COMPHDR
The list of header data compression techniques supported by the channel.

COMPMSG
The list of message data compression techniques supported by the channel.

CONNAME
Connection name.

CONVERT
Specifies whether the sender converts application message data.

DESCR
Description.

DISCINT
Disconnection interval.

HBINT
Heartbeat interval.

KAINT
KeepAlive timing for the channel.

LOCLADDR
Local communications address for the channel.

LONGRTY
Limit of number of attempts to connect using the long duration timer.

LONGTMR
Long duration timer.

MAXMSGL
Maximum message length for channel.

MCANAME
Message channel agent name.

You cannot use MCANAME as a filter keyword.

MCATYPE
Specifies whether the message channel agent runs as a separate process or a separate thread.

MCAUSER
Message channel agent user identifier.

MODENAME
LU 6.2 mode name.

MRDATA
Channel message-retry exit user data.

MREXIT
Channel message-retry exit name.

MRRTY
Channel message-retry count.

MRTMR
Channel message-retry time.

MSGDATA
Channel message exit user data.

MSGEXIT
Channel message exit names.

NETPRTY
The priority for the network connection.

NPMSPEED
Nonpersistent message speed.

PASSWORD
Password for initiating LU 6.2 session (if nonblank, PASSWORD is displayed as asterisks).

PROPCTL
Message property control.

PUTAUT
Put authority.

RCVDATA
Channel receive exit user data.

RCVEXIT
Channel receive exit names.

SCYDATA
Channel security exit user data.

SCYEXIT
Channel security exit name.

SENDDATA
Channel send exit user data.

SENDEXIT
Channel send exit names.

SEQWRAP
Sequence number wrap value.

SHORTRTY
Limit of number of attempts to connect using the short duration timer.

SHORTTMR
Short duration timer.

SSLCAUTH
Specifies whether SSL client authentication is required.

SSLCIPH
Cipher specification for the SSL connection.

SSLPEER
Filter for the Distinguished Name from the certificate of the peer queue manager or client at the other end of the channel.

TRPTYPE
Transport type.

TPNAME
LU 6.2 transaction program name.

USEDLQ
Determines whether the dead-letter queue is used when messages cannot be delivered by channels.

USERID
User identifier for initiating LU 6.2 session.

For more information about channel parameters, see "DEFINE CHANNEL" on page 325

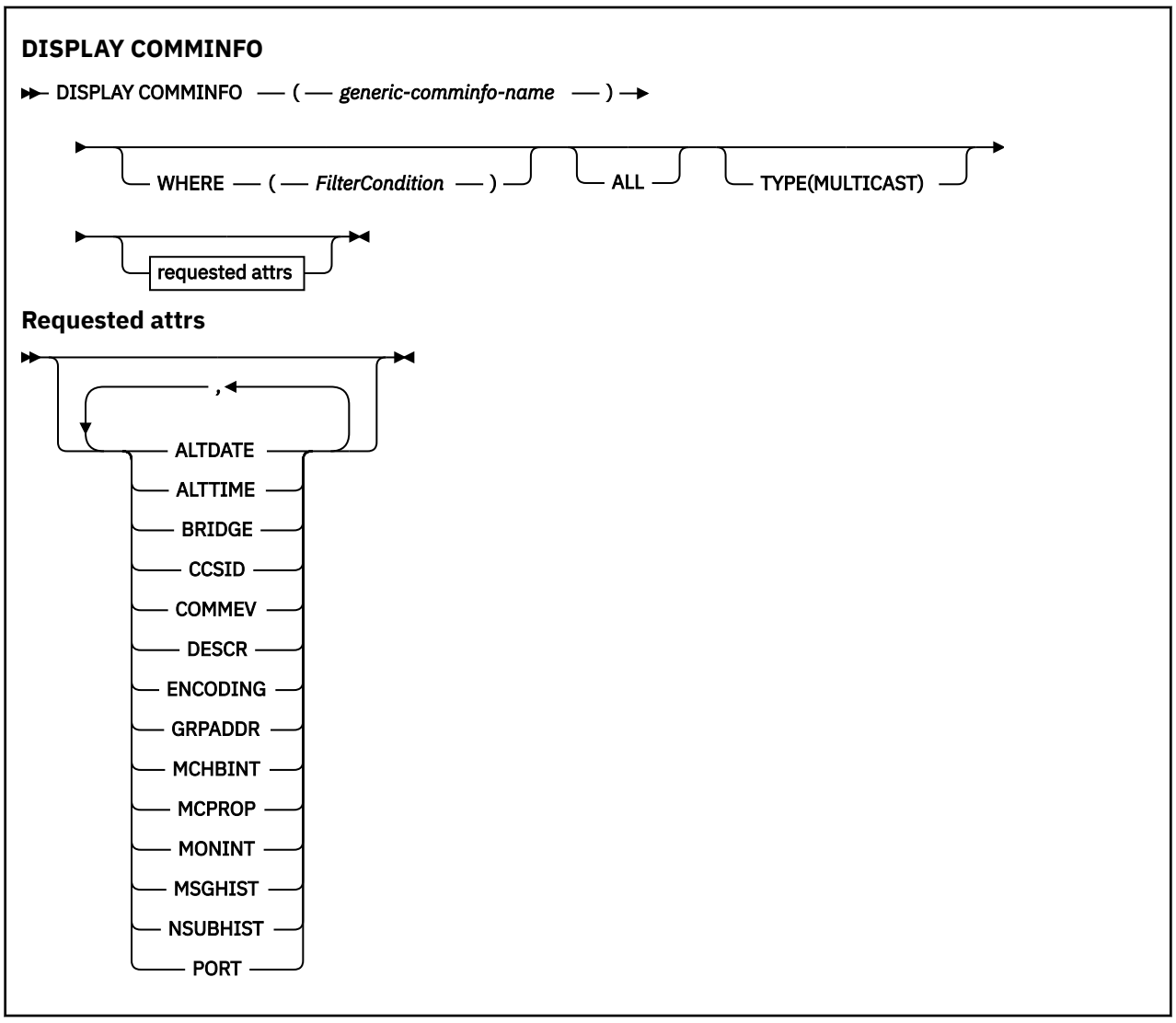
DISPLAY COMMINFO

Use the MQSC command DISPLAY COMMINFO to display the attributes of a communication information object.

UNIX and Linux	Windows
✓	✓

- Syntax diagram

Synonym: DIS COMMINFO



Parameter descriptions for DISPLAY COMMINFO

You must specify the name of the communication information object you want to display. This can be a specific communication information object name or a generic communication information object name. By using a generic communication information object name, you can display either:

- All communication information object definitions
- One or more communication information objects that match the specified name

(generic-comminfo-name)
The name of the communication information object definition to be displayed (see Rules for naming IBM WebSphere MQ objects). A trailing asterisk (*) matches all communication information objects with the specified stem followed by zero or more characters. An asterisk (*) on its own specifies all communication information objects. The names must all be defined to the local queue manager.

WHERE
Specify a filter condition to display only those communication information object definitions that satisfy the selection criterion of the filter condition. The filter condition is in three parts: *filter-keyword*, *operator*, and *filter-value*:

filter-keyword
Almost any parameter that can be used to display attributes for this DISPLAY command.

operator
This is used to determine whether a communication information object definition satisfies the filter value on the given filter keyword. The operators are:

LT
Less than

GT
Greater than

EQ
Equal to

NE
Not equal to

LE
Less than or equal to

GE
Greater than or equal to

LK
Matches a generic string that you provide as a *filter-value*

NL
Does not match a generic string that you provide as a *filter-value*

filter-value
The value that the attribute value must be tested against using the operator. Depending on the filter-keyword, this can be:

- An explicit value, that is a valid value for the attribute being tested.

  You can use operators LT, GT, EQ, NE, LE or GE only. However, if the attribute value is one from a possible set of values on a parameter (for example, the value DISABLED on the COMMEV parameter), you can only use EQ or NE.
- A generic value. This is a character string (such as the character string you supply for the DESCR parameter) with an asterisk at the end, for example ABC*. If the operator is LK, all items where the attribute value begins with the string (ABC in the example) are listed. If the operator is NL, all items where the attribute value does not begin with the string are listed. Only a single trailing wildcard character (asterisk) is permitted.

ALL
Specify this to display all the parameters. If this parameter is specified, any parameters that are requested specifically have no effect; all parameters are still displayed.

TYPE
Indicates the type of namelist to be displayed.

MULTICAST
Displays multicast communication information objects. This is the default.

Requested parameters

Specify one or more parameters that define the data to be displayed. The parameters can be specified in any order, but do not specify the same parameter more than once.

The default, if no parameters are specified (and the ALL parameter is not specified) is that the object names and TYPE parameters are displayed.

ALTDATE
The date on which the definition was last altered, in the form `yyyy-mm-dd`

ALTTIME
The time at which the definition was last altered, in the form hh.mm.ss

BRIDGE
Multicast bridging

CCSID
The coded character set identifier that messages are transmitted on.

COMMEV
Whether event messages are generated for Multicast.

DESCR(*string*)
Description

ENCODING
The encoding that the messages are transmitted in.

GRPADDR
The group IP address or DNS name.

MCHBINT
Multicast heartbeat interval.

MCPROP
Multicast property control

MONINT
Monitoring frequency.

MSGHIST
The amount of message history in kilobytes that is kept by the system to handle retransmissions in the case of NACKs (negative acknowledgments).

NSUBHIST
How much history a new subscriber joining a publication stream receives.

PORT
The port number to transmit on.

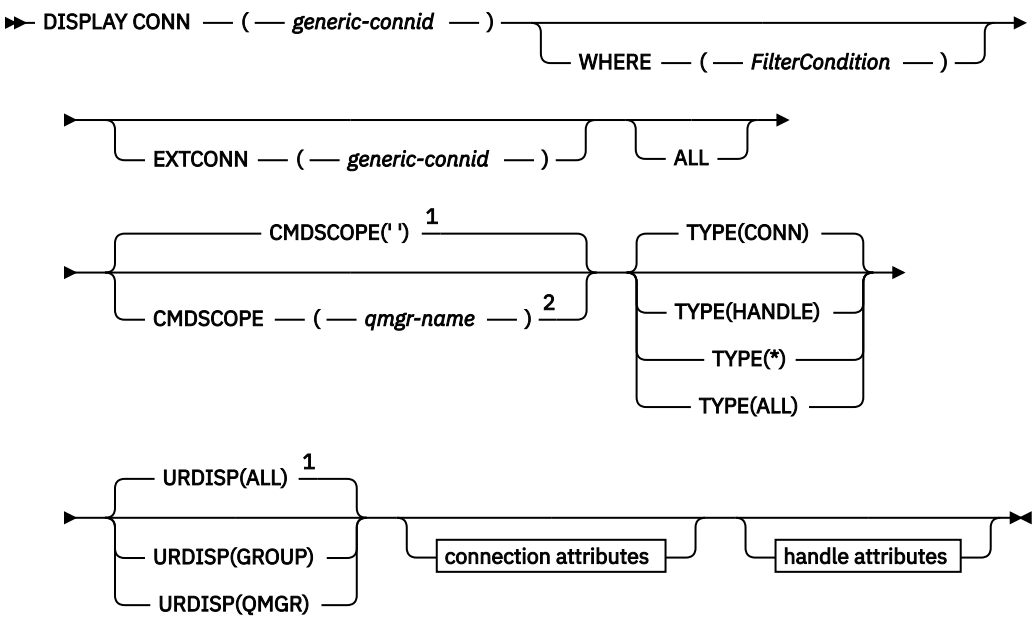
DISPLAY CONN

Use the MQSC command DISPLAY CONN to display connection information about the applications connected to the queue manager. This is a useful command because it enables you to identify applications with long-running units of work.

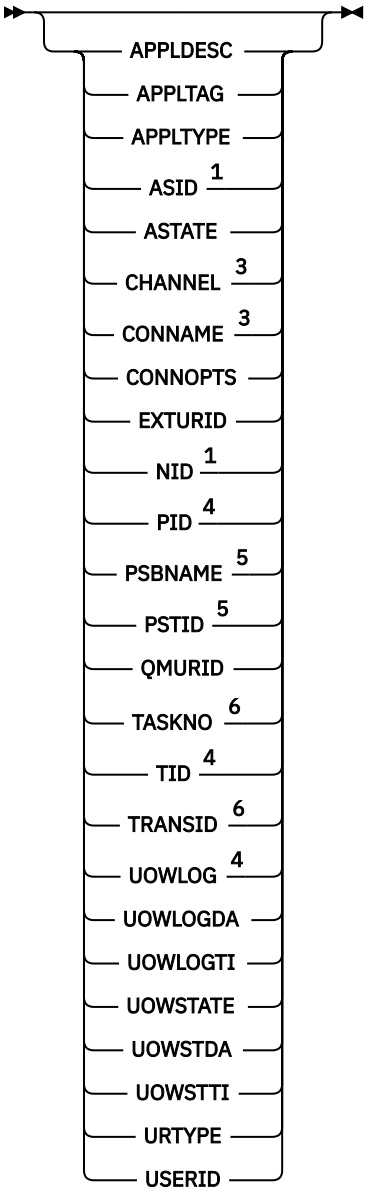
UNIX and Linux	Windows
✓	✓

Synonym: DIS CONN

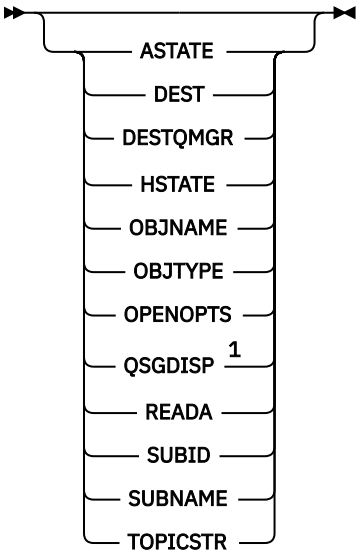
DISPLAY CONN



Connection attributes



Handle attributes



Notes:

[1] Valid only on z/OS.
[2] Valid only when the queue manager is a member of a queue-sharing group.
[3] Valid only when the connection is associated with a channel.
[4] Not valid on z/OS.
[5] IMS only.
[6] CICS for z/OS only.

Usage notes for DISPLAY CONN

1. This command is issued internally by WebSphere MQ on z/OS when taking a checkpoint, and when the queue manager is starting and stopping, so that a list of units of work that are in doubt at the time is written to the z/OS console log.
2. The TOPICSTR parameter might contain characters that cannot be translated into printable characters when the command output is displayed. On z/OS, these non-printable characters will be displayed as blanks. On distributed platforms using runmqsc, these non-printable characters will be displayed as dots.
3. The state of asynchronous consumers, ASTATE, reflects that of the server-connection proxy on behalf of the client application; it does not reflect the client application state.

Parameter descriptions for DISPLAY CONN

You must specify a connection for which you want to display information. This can be a specific connection identifier or a generic connection identifier. A single asterisk (*) can be used as a generic connection identifier to display information for all connections.

(*generic-connid*)
The identifier of the connection definition for which information is to be displayed. A single asterisk (*) specifies that information for all connection identifiers is to be displayed.

When an application connects to WebSphere MQ, it is given a unique 24-byte connection identifier (ConnectionId). The value for CONN is formed by converting the last eight bytes of the ConnectionId to its 16 -character hexadecimal equivalent.

WHERE
Specify a filter condition to display only those connections that satisfy the selection criterion of the filter condition. The filter condition is in three parts: *filter-keyword*, *operator*, and *filter-value*:

filter-keyword
Almost any parameter that can be used to display attributes for this DISPLAY command. However, you cannot use the CMDSCOPE, EXTCONN, QSGDISP, TYPE, and EXTURID parameters as filter keywords.

operator
This is used to determine whether a connection satisfies the filter value on the given filter keyword. The operators are:

LT
Less than

GT
Greater than

EQ
Equal to

NE
Not equal to

LE
Less than or equal to

GE
Greater than or equal to

LK
Matches a generic string that you provide as a *filter-value*

NL
Does not match a generic string that you provide as a *filter-value*

CT
Contains a specified item. If the *filter-keyword* is a list, you can use this to display objects the attributes of which contain the specified item. You cannot use the CONNOPTS value MQCNO_STANDARD_BINDING with this operator.

EX
Does not contain a specified item. If the *filter-keyword* is a list, you can use this to display objects the attributes of which do not contain the specified item. You cannot use the CONNOPTS value MQCNO_STANDARD_BINDING with this operator.

filter-value
The value that the attribute value must be tested against using the operator. Depending on the filter-keyword, this can be:

- An explicit value, that is a valid value for the attribute being tested.

  You can use operators LT, GT, EQ, NE, LE or GE only. However, if the attribute value is one from a possible set of values on a parameter (for example, the value NONE on the UOWSTATE parameter), you can only use EQ or NE.
- A generic value. This is a character string (such as the character string in the APPLTAG parameter) with an asterisk at the end, for example ABC*. If the operator is LK, all items where the attribute value begins with the string (ABC in the example) are listed. If the operator is NL, all items where the attribute value does not begin with the string are listed. Only a single trailing wildcard character (asterisk) is permitted.

  You cannot use a generic filter-value for parameters with numeric values or with one of a set of values.
- An item in a list of values. Use CT or EX as the operator. For example, if the value DEF is specified with the operator CT, all items where one of the attribute values is DEF are listed.

ALL
Specify this to display all the connection information of the requested type for each specified connection. This is the default if you do not specify a generic identifier, and do not request any specific parameters.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which it was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of this is the same as entering the command on every queue manager in the queue-sharing group.

You cannot use CMDSCOPE as a filter keyword.

EXTCONN
The value for EXTCONN is based on the first sixteen bytes of the ConnectionId converted to its 32 -character hexadecimal equivalent.

Connections are identified by a 24-byte connection identifier. The connection identifier comprises a prefix, which identifies the queue manager, and a suffix which identifies the connection to that queue manager. By default, the prefix is for the queue manager currently being administered, but you can specify a prefix explicitly by using the EXTCONN parameter. Use the CONN parameter to specify the suffix.

When connection identifiers are obtained from other sources, specify the fully qualified connection identifier (both EXTCONN and CONN) to avoid possible problems related to non-unique CONN values.

Do not specify both a generic value for CONN and a non-generic value for EXTCONN.

You cannot use EXTCONN as a filter keyword.

TYPE
Specifies the type of information to be displayed. Values are:

CONN
Connection information for the specified connection. On z/OS, this includes threads which may be logically or actually disassociated from a connection, together with those that are in-doubt and for which external intervention is needed to resolve them. These latter threads are those that DIS THREAD TYPE(INDOUBT) would show.

HANDLE
Information relating to any objects opened by the specified connection.

*****
Display all available information relating to the connection.

ALL
Display all available information relating to the connection.

URDISP
Specifies the unit of recovery disposition of connections to be displayed. Values are:

ALL
Display all connections. This is the default option.

GROUP
Display only those connections with a GROUP unit of recovery disposition.

QMGR
Display only those connections with a QMGR unit of recovery disposition.

Connection attributes

If TYPE is set to CONN, the following information is always returned for each connection that satisfies the selection criteria, except where indicated:

- Connection identifier (CONN parameter)
- Type of information returned (TYPE parameter)

The following parameters can be specified for TYPE(CONN) to request additional information for each connection. If a parameter is specified that is not relevant for the connection, operating environment, or type of information requested, that parameter is ignored.

APPLDESC
A string containing a description of the application connected to the queue manager, where it is known. If the application is not recognized by the queue manager the description returned is blank.

APPLTAG
A string containing the tag of the application connected to the queue manager. It is one of the following:

- z/OS batch job name

- TSO USERID
- CICS APPLID
- IMS region name
- Channel initiator job name
- UNIX process

  Notes:

  – HP-UX On HP-UX if the process name exceeds 14 characters, only the first 14 characters are shown.

  – Solaris Linux On Linux and Solaris, if the process name exceeds 15 characters, only the first 15 characters are shown.

  – AIX On AIX, if the process name exceeds 28 characters, only the first 28 characters are shown.
- Windows process

  Note: This consists of the full program path and executable file name. If it is more than 28 characters long, only the last 28 characters are shown.
- Internal queue manager process name

APPLTYPE
A string indicating the type of the application that is connected to the queue manager. It is one of the following:

BATCH
Application using a batch connection

RRSBATCH
RRS-coordinated application using a batch connection

CICS
CICS transaction

IMS
IMS transaction

CHINIT
Channel initiator

OS400
An IBM i application

SYSTEM
Queue manager

SYSTEMEXT
Application performing an extension of function that is provided by the queue manager

UNIX
A UNIX application

USER
A user application

WINDOWSNT
A Windows application

ASID
A 4-character address-space identifier of the application identified by APPLTAG. It distinguishes duplicate values of APPLTAG.

This parameter is returned only on z/OS when the APPLTYPE parameter does not have the value SYSTEM.

This parameter is valid only on z/OS.

ASTATE
The state of asynchronous consumption on this connection handle.

Possible values are:

SUSPENDED
An MQCTL call with the Operation parameter set to MQOP_SUSPEND has been issued against the connection handle so that so that asynchronous message consumption is temporarily suspended on this connection.

STARTED
An MQCTL call with the Operation parameter set to MQOP_START has been issued against the connection handle so that asynchronous message consumption can proceed on this connection.

STARTWAIT
An MQCTL call with the Operation parameter set to MQOP_START_WAIT has been issued against the connection handle so that asynchronous message consumption can proceed on this connection.

STOPPED
An MQCTL call with the Operation parameter set to MQOP_STOP has been issued against the connection handle so that asynchronous message consumption cannot currently proceed on this connection.

NONE
No MQCTL call has been issued against the connection handle. Asynchronous message consumption cannot currently proceed on this connection.

CHANNEL
The name of the channel that owns the connection. If there is no channel associated with the connection, this parameter is blank.

CONNAME
The connection name associated with the channel that owns the connection. If there is no channel associated with the connection, this parameter is blank.

CONNOPTS
The connect options currently in force for this application connection. Possible values are:

- MQCNO_ACCOUNTING_Q_DISABLED
- MQCNO_ACCOUNTING_Q_ENABLED
- MQCNO_ACCOUNTING_MQI_DISABLED
- MQCNO_ACCOUNTING_MQI_ENABLED
- MQCNO_FASTPATH_BINDING
- MQCNO_HANDLE_SHARE_BLOCK
- MQCNO_HANDLE_SHARE_NO_BLOCK
- MQCNO_HANDLE_SHARE_NONE
- MQCNO_ISOLATED_BINDING
- MQCNO_RECONNECT
- MQCNO_RECONNECT_Q_MGR
- MQCNO_RESTRICT_CONN_TAG_Q_MGR
- MQCNO_RESTRICT_CONN_TAG_QSG
- MQCNO_SERIALIZE_CONN_TAG_Q_MGR
- MQCNO_SERIALIZE_CONN_TAG_QSG
- MQCNO_SHARED_BINDING
- MQCNO_STANDARD_BINDING

The values displayed for MQCNO_RECONNECT and MQCNO_RECONNECT_Q_MGR are only displayed if the application specifies them explicitly. If the values are picked up from an `mqclient.ini` file setting or the CLNTCONN channel definition, then neither value is displayed.

You cannot use the value MQCNO_STANDARD_BINDING as a filter value with the CT and EX operators on the WHERE parameter.

EXTURID
The external unit of recovery identifier associated with this connection. Its format is determined by the value of URTYPE.

You cannot use EXTURID as a filter keyword.

NID
Origin identifier, set only if the value of UOWSTATE is UNRESOLVED. This is a unique token identifying the unit of work within the queue manager. It is of the form `origin-node.origin-urid` where

- `origin-node` identifies the originator of the thread, except in the case where APPLTYPE is set to RRSBATCH, when it is omitted.
- `origin-urid` is the hexadecimal number assigned to the unit of recovery by the originating system for the specific thread to be resolved.

This parameter is valid only on z/OS.

PID
Number specifying the process identifier of the application that is connected to the queue manager.

This parameter is not valid on z/OS.

PSBNAME
The 8-character name of the program specification block (PSB) associated with the running IMS transaction. You can use the PSBNAME and PSTID to purge the transaction using IMS commands. It is valid on z/OS only.

This parameter is returned only when the APPLTYPE parameter has the value IMS.

PSTID
The 4-character IMS program specification table (PST) region identifier for the connected IMS region. It is valid on z/OS only.

This parameter is returned only when the APPLTYPE parameter has the value IMS.

QMURID
The queue manager unit of recovery identifier. On z/OS, this is a 6 -byte log RBA, displayed as 12 hexadecimal characters. On platforms other than z/OS, this is an 8 -byte transaction identifier, displayed as `m.n` where `m` and `n` are the decimal representation of the first and last 4 bytes of the transaction identifier.

You can use QMURID as a filter keyword. On z/OS, you must specify the filter value as a hexadecimal string. On platforms other than z/OS, you must specify the filter value as a pair of decimal numbers separated by a period (.). You can only use the EQ, NE, GT, LT, GE, or LE filter operators. However, on z/OS, if log shunting has taken place, as indicated by message CSQR026I, instead of the RBA you have to use the URID from the message.

TASKNO
A 7-digit CICS task number. This number can be used in the CICS command "CEMT SET TASK(taskno) PURGE" to end the CICS task. This parameter is valid on z/OS only.

This parameter is returned only when the APPLTYPE parameter has the value CICS.

TID
Number specifying the thread identifier within the application process that has opened the specified queue.

This parameter is not valid on z/OS.

TRANSID
A 4-character CICS transaction identifier. This parameter is valid on z/OS only.

This parameter is returned only when the APPLTYPE parameter has the value CICS.

UOWLOG
The file name of the extent to which the transaction associated with this connection first wrote.

This parameter is valid only on platforms other than z/OS.

UOWLOGDA
The date that the transaction associated with the current connection first wrote to the log.

UOWLOGTI
The time that the transaction associated with the current connection first wrote to the log.

UOWSTATE
The state of the unit of work. It is one of the following:

NONE
There is no unit of work.

ACTIVE
The unit of work is active.

PREPARED
The unit of work is in the process of being committed.

UNRESOLVED
The unit of work is in the second phase of a two-phase commit operation. WebSphere MQ holds resources on its behalf and external intervention is required to resolve it. This might be as simple as starting the recovery coordinator (such as CICS, IMS, or RRS) or it might involve a more complex operation such as using the RESOLVE INDOUBT command. The UNRESOLVED value can occur only on z/OS.

UOWSTDA
The date that the transaction associated with the current connection was started.

UOWSTTI
The time that the transaction associated with the current connection was started.

URTYPE
The type of unit of recovery as seen by the queue manager. It is one of the following:

- CICS (valid only on z/OS)
- XA
- RRS (valid only on z/OS)
- IMS (valid only on z/OS)
- QMGR

URTYPE identifies the EXTURID type and not the type of the transaction coordinator. When URTYPE is QMGR, the associated identifier is in QMURID (and not EXTURID).

USERID
The user identifier associated with the connection.

This parameter is not returned when APPLTYPE has the value SYSTEM.

Handle attributes

If TYPE is set to HANDLE, the following information is always returned for each connection that satisfies the selection criteria, except where indicated:

- Connection identifier (CONN parameter)
- Read ahead status (DEFREADA parameter)
- Type of information returned (TYPE parameter)

- Handle status (HSTATE)
- Object name (OBJNAME parameter)
- Object type (OBJTYPE parameter)

The following parameters can be specified for TYPE(HANDLE) to request additional information for each queue. If a parameter is specified that is not relevant for the connection, operating environment, or type of status information requested, that parameter is ignored.

ASTATE
The state of the asynchronous consumer on this object handle.

Possible values are:

ACTIVE
An MQCB call has set up a function to call back to process messages asynchronously and the connection handle has been started so that asynchronous message consumption can proceed.

INACTIVE
An MQCB call has set up a function to call back to process messages asynchronously but the connection handle has not yet been started, or has been stopped or suspended, so that asynchronous message consumption cannot currently proceed.

SUSPENDED
The asynchronous consumption callback has been suspended so that asynchronous message consumption cannot currently proceed on this object handle. This can be either because an MQCB call with Operation MQOP_SUSPEND has been issued against this object handle by the application, or because it has been suspended by the system. If it has been suspended by the system, as part of the process of suspending asynchronous message consumption the callback function will be called with the reason code that describes the problem resulting in suspension. This will be reported in the Reason field in the MQCBC structure that is passed to the callback function.

For asynchronous message consumption to proceed, the application must issue an MQCB call with the Operation parameter set to MQOP_RESUME.

SUSPTEMP
The asynchronous consumption callback has been temporarily suspended by the system so that asynchronous message consumption cannot currently proceed on this object handle. As part of the process of suspending asynchronous message consumption, the callback function will be called with the reason code that describes the problem resulting in suspension. This will be reported in the Reason field in the MQCBC structure passed to the callback function.

The callback function will be called again when asynchronous message consumption is resumed by the system, when the temporary condition has been resolved.

NONE
An MQCB call has not been issued against this handle, so no asynchronous message consumption is configured on this handle.

DEST
The destination queue for messages that are published to this subscription. This parameter is only relevant for handles of subscriptions to topics. It is not returned for other handles.

DESTQMGR
The destination queue manager for messages that are published to this subscription. This parameter is relevant only for handles of subscriptions to topics. It is not returned for other handles. If DEST is a queue that is hosted on the local queue manager, this parameter will contain the local queue manager name. If DEST is a queue that is hosted on a remote queue manager, this parameter will contain the name of the remote queue manager.

HSTATE
The state of the handle.

Possible values are:

ACTIVE
An API call from this connection is currently in progress for this object. If the object is a queue, this condition can arise when an MQGET WAIT call is in progress.

If there is an MQGET SIGNAL outstanding, then this does not mean, by itself, that the handle is active.

INACTIVE
No API call from this connection is currently in progress for this object. If the object is a queue, this condition can arise when no MQGET WAIT call is in progress.

OBJNAME
The name of an object that the connection has open.

OBJTYPE
The type of the object that the connection has open. If this handle is that of a subscription to a topic, then the SUBID parameter identifies the subscription. You can then use the DISPLAY SUB command to find all the details about the subscription.

It is one of the following:

- QUEUE
- PROCESS
- QMGR
- STGCLASS (valid only on z/OS)
- NAMELIST
- CHANNEL
- AUTHINFO
- TOPIC

OPENOPTS
The open options currently in force for the connection for the object. This parameter is not returned for a subscription. Use the value in the SUBID parameter and the DISPLAY SUB command to find the details about the subscription.

Possible values are:

MQOO_INPUT_AS_Q_DEF
Open queue to get messages using queue-defined default.

MQOO_INPUT_SHARED
Open queue to get messages with shared access.

MQOO_INPUT_EXCLUSIVE
Open queue to get messages with exclusive access.

MQOO_BROWSE
Open queue to browse messages.

MQOO_OUTPUT
Open queue or topic to put messages.

MQOO_INQUIRE
Open queue to inquire attributes.

MQOO_SET
Open queue to set attributes.

MQOO_BIND_ON_OPEN
Bind handle to destination when queue is found.

MQOO_BIND_NOT_FIXED
Do not bind to a specific destination.

MQOO_SAVE_ALL_CONTEXT
Save context when message retrieved.

MQOO_PASS_IDENTITY_CONTEXT
Allow identity context to be passed.

MQOO_PASS_ALL_CONTEXT
Allow all context to be passed.

MQOO_SET_IDENTITY_CONTEXT
Allow identity context to be set.

MQOO_SET_ALL_CONTEXT
Allow all context to be set.

MQOO_ALTERNATE_USER_AUTHORITY
Validate with specified user identifier.

MQOO_FAIL_IF_QUIESCING
Fail if queue manager is quiescing.

QSGDISP
Indicates the disposition of the object. It is valid on z/OS only. The value is one of the following:

QMGR
The object was defined with QSGDISP(QMGR).

COPY
The object was defined with QSGDISP(COPY).

SHARED
The object was defined with QSGDISP(SHARED).

You cannot use QSGDISP as a filter keyword.

READA
The read ahead connection status.

Possible values are:

NO
Read ahead of non-persistent messages is not enabled for this object.

YES
Read ahead of non-persistent message is enabled for this object and is being used efficiently.

BACKLOG
Read ahead of non-persistent messages is enabled for this object. Read ahead is not being used efficiently because the client has been sent a large number of messages which are not being consumed.

INHIBITED
Read ahead was requested by the application but has been inhibited because of incompatible options specified on the first MQGET call.

SUBID
The internal, all-time unique identifier of the subscription. This parameter is relevant only for handles of subscriptions to topics. It is not returned for other handles.

Not all subscriptions show up in DISPLAY CONN; only those that have current handles open to the subscription show up. You can use the DISPLAY SUB command to see all subscriptions.

SUBNAME
The application's unique subscription name that is associated with the handle. This parameter is relevant only for handles of subscriptions to topics. It is not returned for other handles. Not all subscriptions will have a subscription name.

TOPICSTR
The resolved topic string. This parameter is relevant for handles with OBJTYPE(TOPIC). For any other object type, this parameter is not returned.

Full attributes

If TYPE is set to *, or ALL, both Connection attributes and Handle attributes are returned for each connection that satisfies the selection criteria.

DISPLAY ENTAUTH

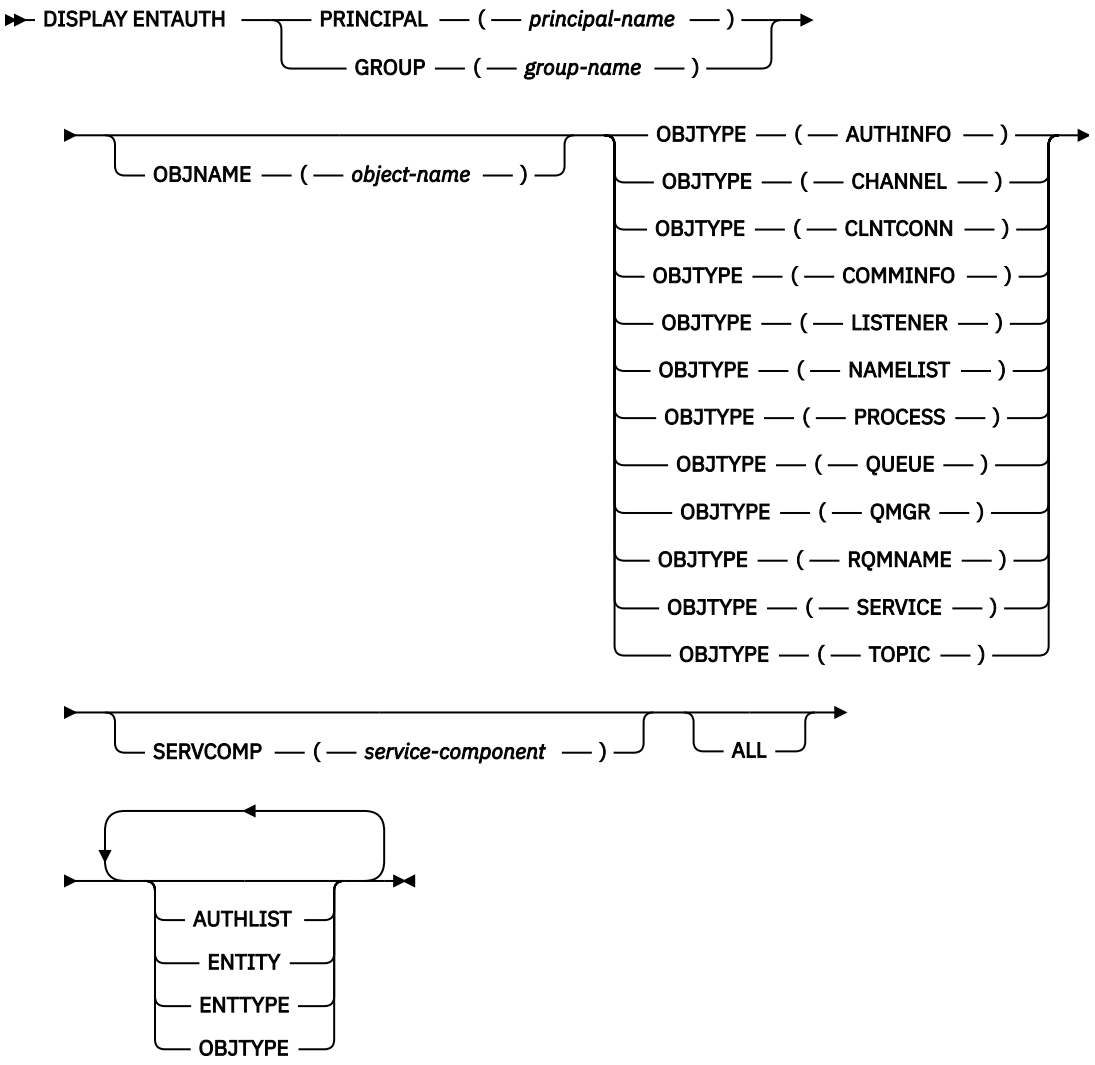
Use the MQSC command DISPLAY ENTAUTH to display the authorizations an entity has to a specified object.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- “Parameter descriptions” on page 541
- “Requested parameters” on page 542

Synonym: DIS ENTAUTH

DISPLAY ENTAUTH



Parameter descriptions

PRINCIPAL(*principal-name*)
A principal name. This is the name of a user for whom to retrieve authorizations to the specified object. On IBM WebSphere MQ for Windows, the name of the principal can optionally include a domain name, specified in this format: `user@domain`.

You must specify either PRINCIPAL or GROUP.

GROUP(*group-name*)
A group name. This is the name of the user group on which to make the inquiry. You can specify one name only and it must be the name of an existing user group.

For IBM WebSphere MQ for Windows only, the group name can optionally include a domain name, specified in the following formats:

```
GroupName@domain
domain\GroupName
```

You must specify either PRINCIPAL or GROUP.

OBJNAME(*object-name*)
The name of the object or generic profile for which to display the authorizations.

This parameter is required unless the OBJTYPE parameter is QMGR. This parameter can be omitted if the OBJTYPE parameter is QMGR.

OBJTYPE
The type of object referred to by the profile. Specify one of the following values:

AUTHINFO
Authentication information record

CHANNEL
Channel

CLNTCONN
Client connection channel

COMMINFO
Communication information object

LISTENER
Listener

NAMELIST
Namelist

PROCESS
Process

QUEUE
Queue

QMGR
Queue manager

RQMNAME
Remote queue manager

SERVICE
Service

TOPIC
Topic

SERVCOMP(*service-component*)
The name of the authorization service for which information is to be displayed.

If you specify this parameter, it specifies the name of the authorization service to which the authorizations apply. If you omit this parameter, the inquiry is made to the registered authorization services in turn in accordance with the rules for chaining authorization services.

ALL
Specify this value to display all of the authorization information available for the entity and the specified profile.

Requested parameters

You can request the following information about the authorizations:

AUTHLIST
Specify this parameter to display the list of authorizations.

ENTITY
Specify this parameter to display the entity name.

ENTTYPE
Specify this parameter to display the entity type.

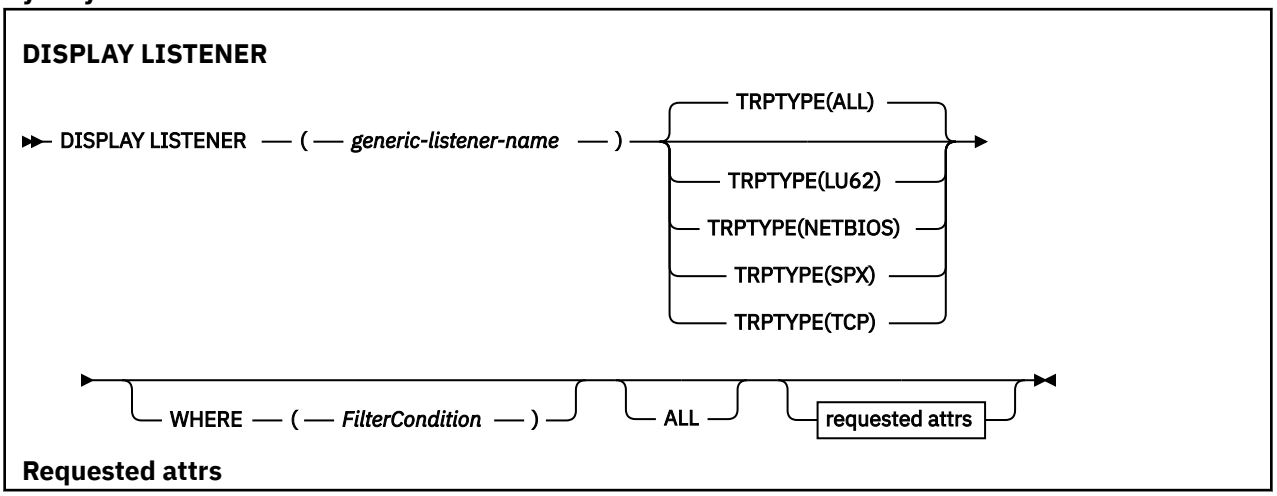
OBJTYPE
Specify this parameter to display the object type.

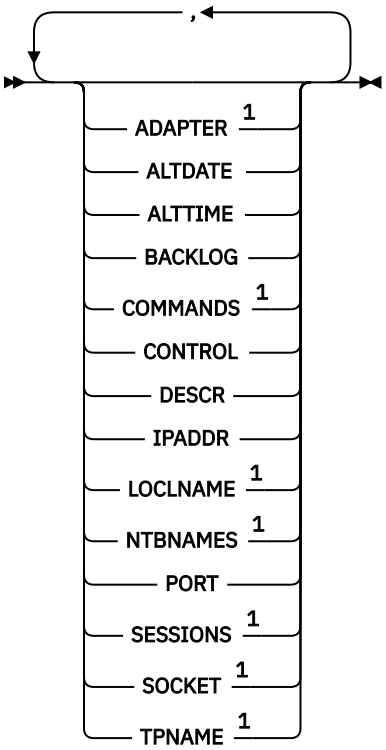
DISPLAY LISTENER

Use the MQSC command DISPLAY LISTENER to display information about a listener.

UNIX and Linux	Windows
✓	✓

Synonym: DIS LSTR





Notes:

[1] Valid only on Windows.

Usage notes

The values displayed describe the current definition of the listener. If the listener has been altered since it was started, the currently running instance of the listener object may not have the same values as the current definition.

Keyword and parameter descriptions for DISPLAY LISTENER

You must specify a listener for which you want to display information. You can specify a listener by using either a specific listener name or a generic listener name. By using a generic listener name, you can display either:

- Information about all listener definitions, by using a single asterisk (*), or
- Information about one or more listeners that match the specified name.

(*generic-listener-name*)
The name of the listener definition for which information is to be displayed. A single asterisk (*) specifies that information for all listener identifiers is to be displayed. A character string with an asterisk at the end matches all listeners with the string followed by zero or more characters.

TRPTYPE
Transmission protocol. If you specify this parameter, it must follow directly after the *generic-listener-name* parameter. If you do not specify this parameter, a default of ALL is assumed. Values are:

ALL
This is the default value and displays information for all listeners.

LU62
Displays information for all listeners defined with a value of LU62 in their TRPTYPE parameter.

NETBIOS
Displays information for all listeners defined with a value of NETBIOS in their TRPTYPE parameter.

SPX
Displays information for all listeners defined with a value of SPX in their TRPTYPE parameter.

TCP
Displays information for all listeners defined with a value of TCP in their TRPTYPE parameter.

WHERE
Specify a filter condition to display information for those listeners that satisfy the selection criterion of the filter condition. The filter condition is in three parts: *filter-keyword*, *operator*, and *filter-value*:

filter-keyword
Any parameter that can be used to display attributes for this DISPLAY command.

operator
This is used to determine whether a listener satisfies the filter value on the given filter keyword. The operators are:

LT
Less than

GT
Greater than

EQ
Equal to

NE
Not equal to

LE
Less than or equal to

GE
Greater than or equal to

LK
Matches a generic string that you provide as a *filter-value*

NL
Does not match a generic string that you provide as a *filter-value*

filter-value
The value that the attribute value must be tested against using the operator. Depending on the filter-keyword, this can be:

- An explicit value, that is a valid value for the attribute being tested.
- A generic value. This is a character string. with an asterisk at the end, for example ABC*. If the operator is LK, all items where the attribute value begins with the string (ABC in the example) are listed. If the operator is NL, all items where the attribute value does not begin with the string are listed.

  You cannot use a generic filter-value for parameters with numeric values or with one of a set of values.

ALL
Specify this to display all the listener information for each specified listener. If this parameter is specified, any parameters that are requested specifically have no effect; all parameters are still displayed.

This is the default if you do not specify a generic identifier, and do not request any specific parameters.

On z/OS this is also the default if you specify a filter condition using the WHERE parameter, but on other platforms only requested attributes are displayed.

Requested parameters

Specify one or more attributes that define the data to be displayed. The attributes can be specified in any order. Do not specify the same attribute more than once.

ADAPTER
The adapter number on which NetBIOS listens.

ALTDATE
The date on which the definition was last altered, in the form `yyyy-mm-dd`.

ALTTIME
The time at which the definition was last altered, in the form `hh.mm.ss`.

BACKLOG
The number of concurrent connection requests that the listener supports.

COMMANDS
The number of commands that the listener can use.

CONTROL
How the listener is to be started and stopped:

MANUAL
The listener is not to be started automatically or stopped automatically. It is to be controlled by use of the START LISTENER and STOP LISTENER commands.

QMGR
The listener being defined is to be started and stopped at the same time as the queue manager is started and stopped.

STARTONLY
The listener is to be started at the same time as the queue manager is started, but is not requested to stop when the queue manager is stopped.

DESCR
Descriptive comment.

IPADDR
The listener's IP address.

LOCLNAME
The NetBIOS local name that the listener uses.

NTBNAMES
The number of names that the listener can use.

PORT
The port number for TCP/IP.

SESSIONS
The number of sessions that the listener can use.

SOCKET
SPX socket.

TPNAME
The LU6.2 transaction program name.

For more information on these parameters, see "DEFINE LISTENER" on page 387.

DISPLAY LSSTATUS

Use the MQSC command DISPLAY LSSTATUS to display status information for one or more listeners.

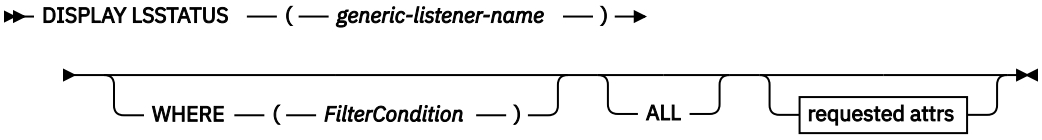
UNIX and Linux	Windows
✓	✓

- Syntax diagram

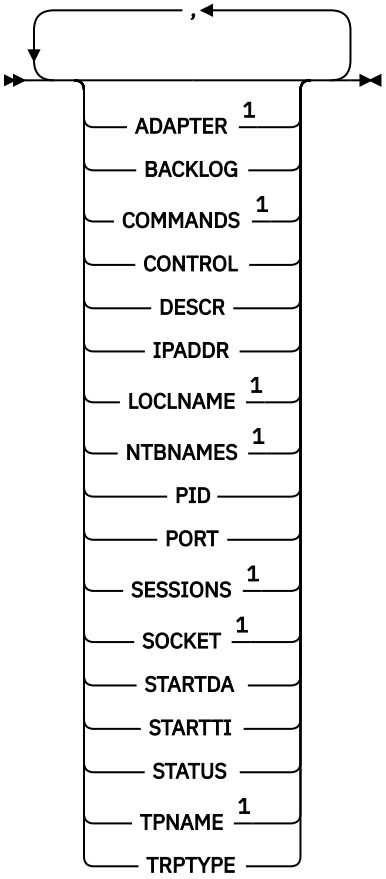
- "Keyword and parameter descriptions for DISPLAY LSSTATUS" on page 546
- "Requested parameters" on page 547

Synonym: DIS LSSTATUS

DISPLAY LSSTATUS



Requested attrs



Notes:

[1] Valid only on Windows.

Keyword and parameter descriptions for DISPLAY LSSTATUS

You must specify a listener for which you want to display status information. You can specify a listener by using either a specific listener name or a generic listener name. By using a generic listener name, you can display either:

- Status information for all listener definitions, by using a single asterisk (*), or
- Status information for one or more listeners that match the specified name.

(*generic-listener-name*)
The name of the listener definition for which status information is to be displayed. A single asterisk (*) specifies that information for all connection identifiers is to be displayed. A character string with an asterisk at the end matches all listeners with the string followed by zero or more characters.

WHERE
Specify a filter condition to display information for those listeners that satisfy the selection criterion of the filter condition. The filter condition is in three parts: *filter-keyword*, *operator*, and *filter-value*:

filter-keyword
Any parameter that can be used to display attributes for this DISPLAY command.

operator
This is used to determine whether a listener satisfies the filter value on the given filter keyword. The operators are:

LT
Less than

GT
Greater than

EQ
Equal to

NE
Not equal to

LE
Less than or equal to

GE
Greater than or equal to

LK
Matches a generic string that you provide as a *filter-value*

NL
Does not match a generic string that you provide as a *filter-value*

filter-value
The value that the attribute value must be tested against using the operator. Depending on the filter-keyword, this can be:

- An explicit value, that is a valid value for the attribute being tested.
- A generic value. This is a character string. with an asterisk at the end, for example ABC*. If the operator is LK, all items where the attribute value begins with the string (ABC in the example) are listed. If the operator is NL, all items where the attribute value does not begin with the string are listed.

  You cannot use a generic filter-value for parameters with numeric values or with one of a set of values.

ALL
Display all the status information for each specified listener. This is the default if you do not specify a generic name, and do not request any specific parameters.

On z/OS this is also the default if you specify a filter condition using the WHERE parameter, but on other platforms only requested attributes are displayed.

Requested parameters

Specify one or more attributes that define the data to be displayed. The attributes can be specified in any order. Do not specify the same attribute more than once.

ADAPTER
The adapter number on which NetBIOS listens.

BACKLOG
The number of concurrent connection requests that the listener supports.

CONTROL
How the listener is to be started and stopped:

MANUAL
The listener is not to be started automatically or stopped automatically. It is to be controlled by use of the START LISTENER and STOP LISTENER commands.

QMGR
The listener being defined is to be started and stopped at the same time as the queue manager is started and stopped.

STARTONLY
The listener is to be started at the same time as the queue manager is started, but is not requested to stop when the queue manager is stopped.

DESCR
Descriptive comment.

IPADDR
The listener's IP address.

LOCLNAME
The NetBIOS local name that the listener uses.

NTBNAMES
The number of names that the listener can use.

PID
The operating system process identifier associated with the listener.

PORT
The port number for TCP/IP.

SESSIONS
The number of sessions that the listener can use.

SOCKET
SPX socket.

STARTDA
The date on which the listener was started.

STARTTI
The time at which the listener was started.

STATUS
The current status of the listener. It can be one of:

RUNNING
The listener is running.

STARTING
The listener is in the process of initializing.

STOPPING
The listener is stopping.

TPNAME
The LU6.2 transaction program name.

TRPTYPE
Transport type.

For more information on these parameters, see “DEFINE LISTENER” on page 387.

DISPLAY NAMELIST

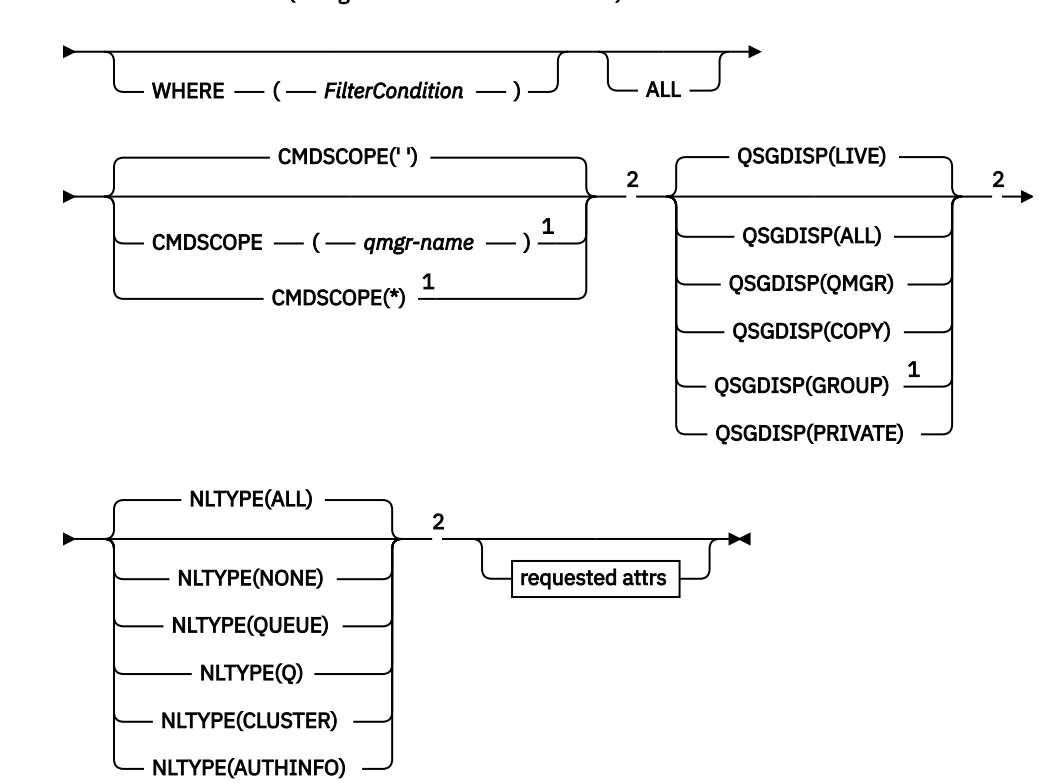
Use the MQSC command DISPLAY NAMELIST to display the names in a namelist.

UNIX and Linux	Windows
✓	✓

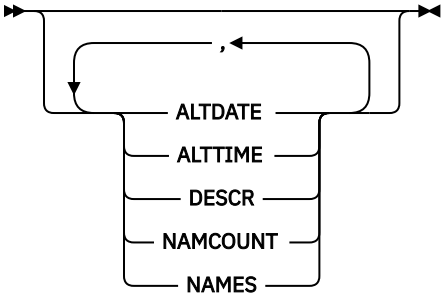
- Syntax diagram
- “Parameter descriptions for DISPLAY NAMELIST” on page 549
- “Requested parameters” on page 552

Synonym: DIS NL

DISPLAY NAMELIST



Requested attrs



Notes:

[1] Valid only on WebSphere MQ for z/OS when the queue manager is a member of a queue-sharing group.
[2] Valid only on z/OS.

Parameter descriptions for DISPLAY NAMELIST

You must specify the name of the namelist definition you want to display. This can be a specific namelist name or a generic namelist name. By using a generic namelist name, you can display either:

- All namelist definitions

- One or more namelists that match the specified name

(*generic-namelist-name*)
The name of the namelist definition to be displayed (see Rules for naming IBM WebSphere MQ objects). A trailing asterisk (*) matches all namelists with the specified stem followed by zero or more characters. An asterisk (*) on its own specifies all namelists.

WHERE
Specify a filter condition to display only those namelists that satisfy the selection criterion of the filter condition. The filter condition is in three parts: *filter-keyword*, *operator*, and *filter-value*:

filter-keyword
Almost any parameter that can be used to display attributes for this DISPLAY command. However, you cannot use the CMDSCOPE or QSGDISP parameters as filter keywords. You cannot use NLTYPE as a filter keyword if you also use it to select namelists.

operator
This is used to determine whether a namelist satisfies the filter value on the given filter keyword. The operators are:

LT
Less than

GT
Greater than

EQ
Equal to

NE
Not equal to

LE
Less than or equal to

GE
Greater than or equal to

LK
Matches a generic string that you provide as a *filter-value*

NL
Does not match a generic string that you provide as a *filter-value*

CT
Contains a specified item. If the *filter-keyword* is a list, you can use this to display objects the attributes of which contain the specified item.

EX
Does not contain a specified item. If the *filter-keyword* is a list, you can use this to display objects the attributes of which do not contain the specified item.

CTG
Contains an item which matches a generic string that you provide as a *filter-value*. If the *filter-keyword* is a list, you can use this to display objects the attributes of which match the generic string.

EXG
Does not contain any item which matches a generic string that you provide as a *filter-value*. If the *filter-keyword* is a list, you can use this to display objects the attributes of which do not match the generic string.

filter-value
The value that the attribute value must be tested against using the operator. Depending on the filter-keyword, this can be:

- An explicit value, that is a valid value for the attribute being tested.

You can use operators LT, GT, EQ, NE, LE or GE only. However, if the attribute value is one from a possible set of values on a parameter (for example, the value NONE on the NLTYPE parameter), you can only use EQ or NE.

- A generic value. This is a character string (such as the character string you supply for the DESCR parameter) with an asterisk at the end, for example ABC*. The characters must be valid for the attribute you are testing. If the operator is LK, all items where the attribute value begins with the string (ABC in the example) are listed. If the operator is NL, all items where the attribute value does not begin with the string are listed. Only a single trailing wildcard character (asterisk) is permitted.

  You cannot use a generic filter-value for parameters with numeric values or with one of a set of values.
- An item in a list of values. The value can be explicit or, if it is a character value, it can be explicit or generic. If it is explicit, use CT or EX as the operator. For example, if the value DEF is specified with the operator CT, all items where one of the attribute values is DEF are listed. If it is generic, use CTG or EXG as the operator. If ABC* is specified with the operator CTG, all items where one of the attribute values begins with ABC are listed.

ALL
Specify this to display all the parameters. If this parameter is specified, any parameters that are requested specifically have no effect; all the parameters are displayed.

This is the default if you do not specify a generic name, and do not request any specific parameters.

On z/OS this is also the default if you specify a filter condition using the WHERE parameter, but on other platforms only requested attributes are displayed.

CMDSCOPE
This parameter specifies how the command is executed when the queue manager is a member of a queue-sharing group.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of this is the same as entering the command on every queue manager in the queue-sharing group.

QSGDISP
Specifies the disposition of the objects for which information is to be displayed. Values are:

LIVE
This is the default value and displays information for objects defined with QSGDISP(QMGR) or QSGDISP(COPY).

ALL
Displays information for objects defined with QSGDISP(QMGR) or QSGDISP(COPY).

If there is a shared queue manager environment, and the command is being executed on the queue manager where it was issued, this option also displays information for objects defined with QSGDISP(GROUP).

If QSGDISP(ALL) is specified in a shared queue manager environment, the command might give duplicated names (with different dispositions).

In a shared queue manager environment, use

```
DISPLAY NAMELIST(name) CMDSCOPE(*) QSGDISP(ALL)
```

to list ALL objects matching

```
name
```

in the queue-sharing group without duplicating those in the shared repository.

COPY
Display information only for objects defined with QSGDISP(COPY).

GROUP
Display information only for objects defined with QSGDISP(GROUP). This is allowed only if there is a shared queue manager environment.

PRIVATE
Display information for objects defined with QSGDISP(QMGR) or QSGDISP(COPY). Note that QSGDISP(PRIVATE) displays the same information as QSGDISP(LIVE).

QMGR
Display information only for objects defined with QSGDISP(QMGR).

QSGDISP displays one of the following values:

QMGR
The object was defined with QSGDISP(QMGR).

GROUP
The object was defined with QSGDISP(GROUP).

COPY
The object was defined with QSGDISP(COPY).

You cannot use QSGDISP as a filter keyword.

NLTYPE
Indicates the type of namelist to be displayed.

This parameter is valid only on z/OS.

ALL
Displays namelists of all types. This is the default.

NONE
Displays namelists of type NONE.

QUEUE or Q
Displays namelists that hold lists of queue names.

CLUSTER
Displays namelists that are associated with clustering.

AUTHINFO
Displays namelists that contain lists of authentication information object names.

Requested parameters

Specify one or more parameters that define the data to be displayed. The parameters can be specified in any order, but do not specify the same parameter more than once.

The default, if no parameters are specified (and the ALL parameter is not specified) is that the object names, and, on z/OS, their NLTYPEs and QSGDISP are displayed.

ALTDATE
The date on which the definition was last altered, in the form `yyyy-mm-dd`

ALTTIME
The time at which the definition was last altered, in the form hh.mm.ss

DESCR
Description

NAMCOUNT
Number of names in the list

NAMES
List of names

See "DEFINE NAMELIST" on page 390 for more information about the individual parameters.

DISPLAY PROCESS

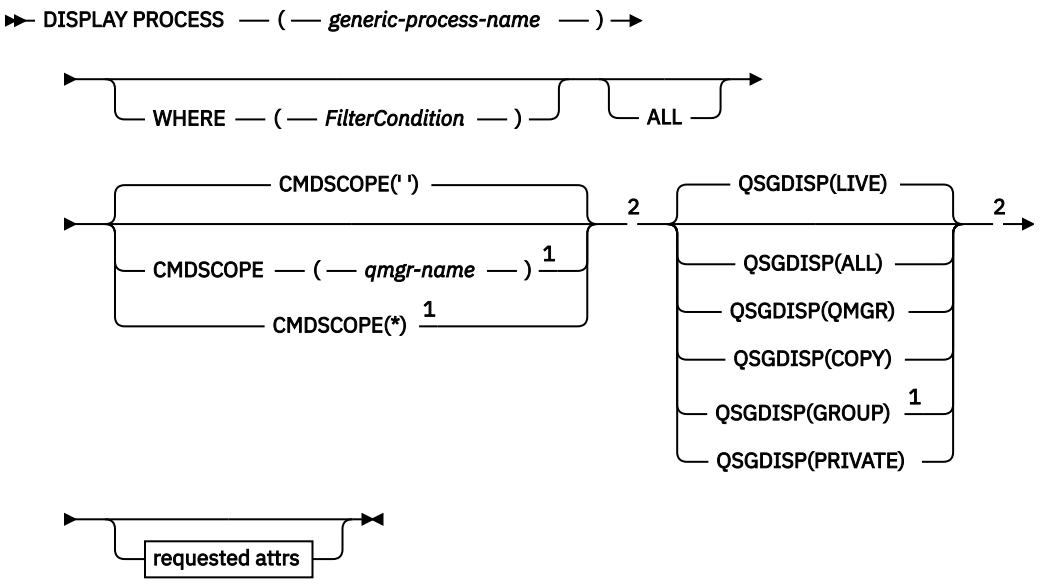
Use the MQSC command DISPLAY PROCESS to display the attributes of one or more WebSphere MQ processes.

UNIX and Linux	Windows
✓	✓

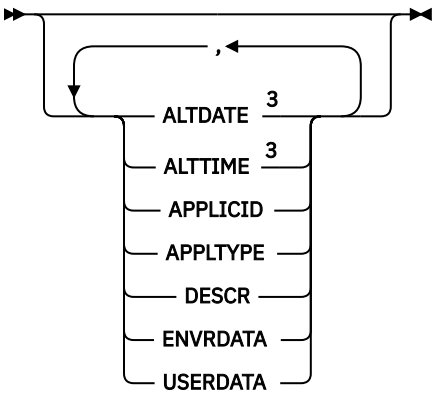
- Syntax diagram
- "Parameter descriptions for DISPLAY PROCESS" on page 554
- "Requested parameters" on page 556

Synonym: DIS PRO

DISPLAY PROCESS



Requested attrs



Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[2] Valid only on z/OS.
[3] Valid only on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.

Parameter descriptions for DISPLAY PROCESS

You must specify the name of the process you want to display. This can be a specific process name or a generic process name. By using a generic process name, you can display either:

- All process definitions
- One or more processes that match the specified name

(generic-process-name)
The name of the process definition to be displayed (see Rules for naming IBM WebSphere MQ objects). A trailing asterisk (*) matches all processes with the specified stem followed by zero or more characters. An asterisk (*) on its own specifies all processes. The names must all be defined to the local queue manager.

WHERE
Specify a filter condition to display only those process definitions that satisfy the selection criterion of the filter condition. The filter condition is in three parts: *filter-keyword*, *operator*, and *filter-value*:

filter-keyword
Almost any parameter that can be used to display attributes for this DISPLAY command. However, you cannot use the CMDSCOPE or QSGDISP parameters as filter keywords.

operator
This is used to determine whether a process definition satisfies the filter value on the given filter keyword. The operators are:

LT
Less than

GT
Greater than

EQ
Equal to

NE
Not equal to

LE
Less than or equal to

GE
Greater than or equal to

LK
Matches a generic string that you provide as a *filter-value*

NL
Does not match a generic string that you provide as a *filter-value*

filter-value
The value that the attribute value must be tested against using the operator. Depending on the filter-keyword, this can be:

- An explicit value, that is a valid value for the attribute being tested.

  You can use operators LT, GT, EQ, NE, LE or GE only. However, if the attribute value is one from a possible set of values on a parameter (for example, the value DEF on the APPLTYPE parameter), you can only use EQ or NE.
- A generic value. This is a character string (such as the character string you supply for the DESCR parameter) with an asterisk at the end, for example ABC*. If the operator is LK, all items where the attribute value begins with the string (ABC in the example) are listed. If the operator is NL, all items where the attribute value does not begin with the string are listed. Only a single trailing wildcard character (asterisk) is permitted.

ALL
Specify this to display all the parameters. If this parameter is specified, any parameters that are requested specifically have no effect; all parameters are still displayed.

On AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS, this is the default if you do not specify a generic name and do not request any specific parameters.

On z/OS this is also the default if you specify a filter condition using the WHERE parameter, but on other platforms only requested attributes are displayed.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if QSGDISP is set to GROUP.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of this is the same as entering the command on every queue manager in the queue-sharing group.

You cannot use CMDSCOPE as a filter keyword.

QSGDISP
Specifies the disposition of the objects for which information is to be displayed. Values are:

LIVE
This is the default value and displays information for objects defined with QSGDISP(QMGR) or QSGDISP(COPY).

ALL
Displays information for objects defined with QSGDISP(QMGR) or QSGDISP(COPY).

If there is a shared queue manager environment, and the command is being executed on the queue manager where it was issued, this option also displays information for objects defined with QSGDISP(GROUP).

If QSGDISP(LIVE) is specified or defaulted, or if QSGDISP(ALL) is specified in a shared queue manager environment, the command might give duplicated names (with different dispositions).

COPY
Display information only for objects defined with QSGDISP(COPY).

GROUP
Display information only for objects defined with QSGDISP(GROUP). This is allowed only if there is a shared queue manager environment.

PRIVATE
Display information for objects defined with QSGDISP(QMGR) or QSGDISP(COPY). Note that QSGDISP(PRIVATE) displays the same information as QSGDISP(LIVE).

QMGR
Display information only for objects defined with QSGDISP(QMGR).

QSGDISP displays one of the following values:

QMGR
The object was defined with QSGDISP(QMGR).

GROUP
The object was defined with QSGDISP(GROUP).

COPY
The object was defined with QSGDISP(COPY).

You cannot use QSGDISP as a filter keyword.

Requested parameters

Specify one or more parameters that define the data to be displayed. The parameters can be specified in any order, but do not specify the same parameter more than once.

The default, if no parameters are specified (and the ALL parameter is not specified) is that the object names and, on z/OS only, QSGDISP are displayed.

ALTDATE
The date on which the definition was last altered, in the form `yyyy-mm-dd`

ALTTIME
The time at which the definition was last altered, in the form `hh.mm.ss`

APPLICID
Application identifier

APPLTYPE
Application type. In addition to the values listed for this parameter in "Parameter descriptions for DEFINE PROCESS" on page 395, the value SYSTEM can be displayed. This indicates that the application type is a queue manager.

DESCR
Description

ENVRDATA
Environment data

USERDATA
User data

See "DEFINE PROCESS" on page 394 for more information about individual parameters.

DISPLAY PUBSUB

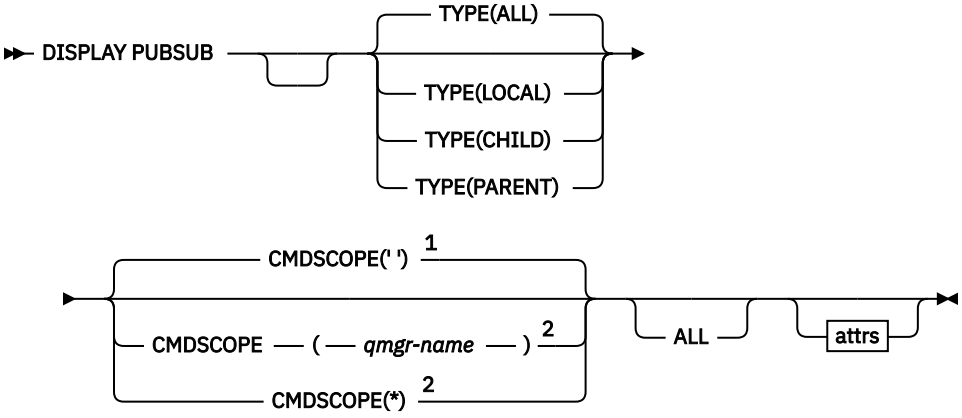
Use the MQSC command DISPLAY PUBSUB to display publish/subscribe status information for a queue manager.

UNIX and Linux	Windows
✓	✓

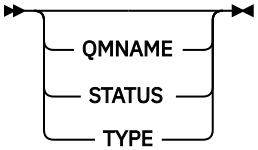
- Syntax diagram
- “Parameter descriptions for DISPLAY PUBSUB” on page 557
- “Returned parameters” on page 558

Synonym: None

DISPLAY PUBSUB



Attrs



Notes:

1 Valid only on z/OS.
2 Valid only on z/OS when the queue manager is a member of a queue-sharing group.

Parameter descriptions for DISPLAY PUBSUB

TYPE
The type of publish/subscribe connections.

ALL
Display the publish/subscribe status for this queue manager and for parent and child hierarchical connections.

CHILD
Display the publish/subscribe status for child connections.

LOCAL
Display the publish/subscribe status for this queue manager.

PARENT
Display the publish/subscribe status for the parent connection.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of this is the same as entering the command on every queue manager in the queue-sharing group.

You cannot use CMDSCOPE as a filter keyword.

Returned parameters

A group of parameters is returned, containing the attributes TYPE, QMNAME, and STATUS. This group is returned for the current queue manager if you set TYPE to LOCAL or ALL, for the parent queue manager if you set TYPE to PARENT or ALL, and for each child queue manager if you set TYPE to CHILD or ALL.

TYPE

CHILD
A child connection.

LOCAL
Information for this queue manager.

PARENT
The parent connection.

QMNAME
The name of the current queue manager or the remote queue manager connected as a parent or a child.

STATUS
The status of the publish/subscribe engine or the hierarchical connection. The publish/subscribe engine is initializing and is not yet operational. If the queue manager is a member of a cluster (has at least one CLUSRCVR defined), it remains in this state until the cluster cache is available. On WebSphere MQ for z/OS, this requires that the Channel Initiator is running.

When TYPE is LOCAL, the following values can be returned:

ACTIVE
The publish/subscribe engine and the queued publish/subscribe interface are running. It is therefore possible to publish or subscribe using the application programming interface and the queues that are monitored by the queued publish/subscribe interface.

COMPAT
The publish/subscribe engine is running. It is therefore possible to publish or subscribe by using the application programming interface. The queued publish/subscribe interface is not running. Therefore, any message that is put to the queues that are monitored by the queued publish/subscribe interface are not acted upon by IBM WebSphere MQ.

ERROR
The publish/subscribe engine has failed. Check your error logs to determine the reason for the failure.

INACTIVE
The publish/subscribe engine and the queued publish/subscribe interface are not running. It is therefore not possible to publish or subscribe using the application programming interface. Any publish/subscribe messages that are put to the queues that are monitored by the queued publish/subscribe interface are not acted upon by IBM WebSphere MQ.

If inactive and you want to start the publish/subscribe engine use the command **ALTER QMGR PSMODE(ENABLED)**.

STARTING
The publish/subscribe engine is initializing and is not yet operational. If the queue manager is a member of a cluster, that is, it has at least one CLUSRCVR defined, it remains in this state until the cluster cache is available. On WebSphere MQ for z/OS, this requires that the Channel Initiator is running.

STOPPING
The publish/subscribe engine is stopping.

When TYPE is PARENT, the following values can be returned:

ACTIVE
The connection with the parent queue manager is active.

ERROR
This queue manager is unable to initialize a connection with the parent queue manager because of a configuration error. A message is produced in the queue manager logs to indicate the specific error. If you receive error message AMQ5821 or on z/OS systems CSQT821E, possible causes include:

- Transmit queue is full.
- Transmit queue put is disabled.

If you receive error message AMQ5814 or on z/OS systems CSQT814E, take the following actions:

- Check that the parent queue manager is correctly specified.
- Ensure that broker is able to resolve the queue manager name of the parent broker.

To resolve the queue manager name, at least one of the following resources must be configured:

- A transmission queue with the same name as the parent queue manager name.
- A queue manager alias definition with the same name as the parent queue manager name.
- A cluster with the parent queue manager a member of the same cluster as this queue manager.
- A cluster queue manager alias definition with the same name as the parent queue manager name.
- A default transmission queue.

After you have set up the configuration correctly, modify the parent queue manager name to blank. Then set with the parent queue manager name.

REFUSED
The connection has been refused by the parent queue manager. This might be caused by the following:

- The parent queue manager already has a child queue manager with the same name as this queue manager.
- The parent queue manager has used the command RESET QMGR TYPE(PUBSUB) CHILD to remove this queue manager as one of its children.

STARTING
The queue manager is attempting to request that another queue manager become its parent.

If the parent status remains in STARTING without progressing to ACTIVE, take the following actions:

- Check that the sender channel to parent queue manager is running
- Check that the receiver channel from parent queue manager is running

STOPPING
The queue manager is disconnecting from its parent.

If the parent status remains in STOPPING, take the following actions:

- Check that the sender channel to parent queue manager is running
- Check that the receiver channel from parent queue manager is running

When TYPE is CHILD, the following values can be returned:

ACTIVE
The connection with the child queue manager is active.

ERROR
This queue manager is unable to initialize a connection with the child queue manager because of a configuration error. A message is produced in the queue manager logs to indicate the specific error. If you receive error message AMQ5821 or on z/OS systems CSQT821E, possible causes include:

- Transmit queue is full.
- Transmit queue put is disabled.

If you receive error message AMQ5814 or on z/OS systems CSQT814E, take the following actions:

- Check that the child queue manager is correctly specified.
- Ensure that broker is able to resolve the queue manager name of the child broker.

To resolve the queue manager name, at least one of the following resources must be configured:

- A transmission queue with the same name as the child queue manager name.
- A queue manager alias definition with the same name as the child queue manager name.
- A cluster with the child queue manager a member of the same cluster as this queue manager.
- A cluster queue manager alias definition with the same name as the child queue manager name.
- A default transmission queue.

After you have set up the configuration correctly, modify the child queue manager name to blank. Then set with the child queue manager name.

STARTING
Another queue manager is attempting to request that this queue manager become its parent.

If the child status remains in STARTING without progressing to ACTIVE, take the following actions:

- Check that the sender channel to child queue manager is running
- Check that the receiver channel from child queue manager is running

STOPPING
The queue manager is disconnecting.

If the child status remains in STOPPING, take the following actions:

- Check that the sender channel to child queue manager is running
- Check that the receiver channel from child queue manager is running

DISPLAY QMGR

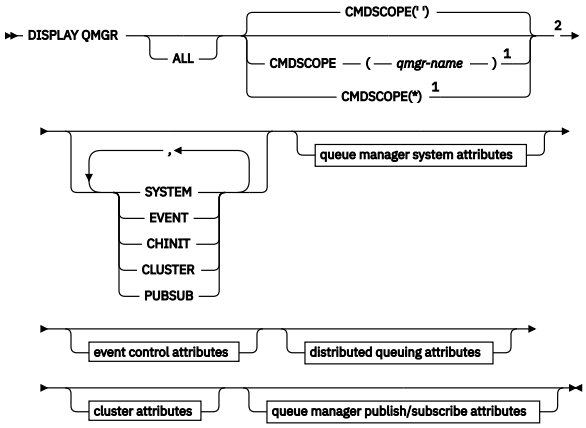
Use the MQSC command DISPLAY QMGR to display the queue manager parameters for this queue manager.

UNIX and Linux	Windows
✓	✓

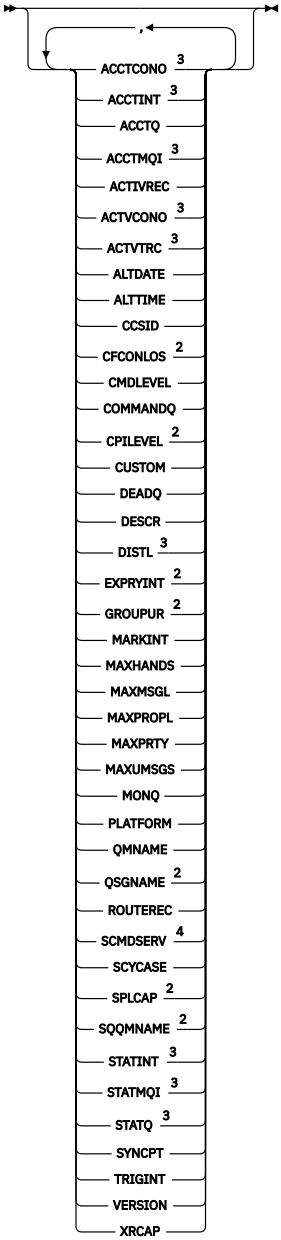
- Syntax diagram
- “Parameter descriptions for DISPLAY QMGR” on page 564
- “Requested parameters” on page 566

Synonym: DIS QMGR

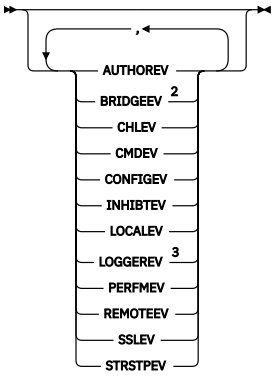
DISPLAY QMGR



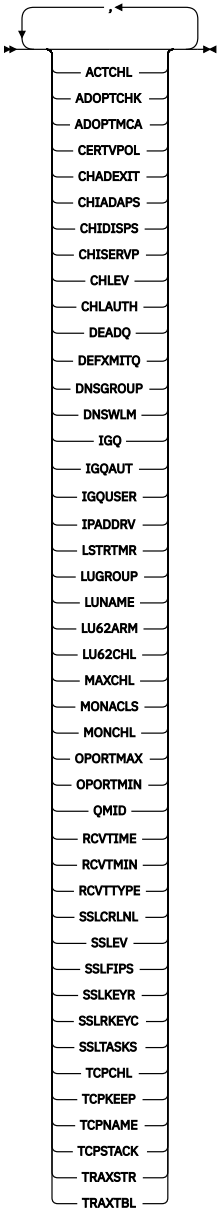
Queue manager system attributes



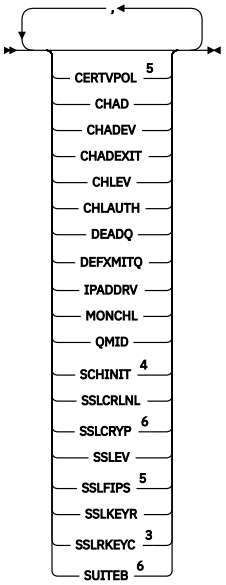
Event control attributes



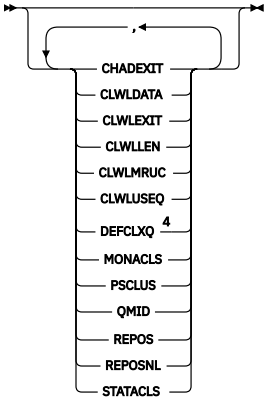
Distributed queuing attributes for z/OS



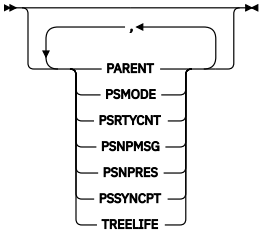
Distributed queuing attributes for platforms other than z/OS



Cluster attributes



Queue manager publish/subscribe attributes



Notes:

1 Valid only on z/OS when the queue manager is a member of a queue-sharing group.
2 Valid only on z/OS.
3 Valid only on IBM i, UNIX, Linux, and Windows systems.
4 Not valid on z/OS.
5 Not valid on IBM i.
6 Valid only on UNIX, Linux, and Windows systems.

Parameter descriptions for DISPLAY QMGR

ALL
Specify this parameter to display all the parameters. If this parameter is specified, any parameters that are requested specifically are ineffective; all parameters are still displayed.

On AIX, HP-UX, Linux, IBM i, Solaris, and Windows, this parameter is the default if you do not request any specific parameters.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is run when the queue manager is a member of a queue-sharing group.

' '
The command is run on the queue manager on which it was entered. This command is the default value.

qmgr-name
The command is run on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is run on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of running this command is the same as entering the command on every queue manager in the queue-sharing group.

SYSTEM
Specify this parameter to display the set of queue manager system attributes that are available in the Queue manager system attrs list. See "Requested parameters" on page 566 for information about these parameters.

If you specify this parameter, any request you make to display individual parameters within this set is ineffective.

EVENT
Specify this parameter to display the set of event control attributes that are available in the Event control attrs list. See "Requested parameters" on page 566 for information about these parameters.

If you specify this parameter, any request you make to display individual parameters within this set is ineffective.

CHINIT
Specify this parameter to display the set of attributes relating to distributed queuing that are available in the Distributed queuing attrs list. You can also specify DQM to display the same set of attributes. See "Requested parameters" on page 566 for information about these parameters.

If you specify this parameter, any request you make to display individual parameters within this set is ineffective.

CLUSTER
Specify this parameter to display the set of attributes relating to clustering that are available in the Cluster attrs list. See "Requested parameters" on page 566 for information about these parameters.

If you specify this parameter, any request you make to display individual parameters within this set is ineffective.

PUBSUB
Specify this parameter to display the set of attributes relating to publish/subscribe that are available in the Queue manager pub/sub attrs list. See "Requested parameters" on page 566 for information about these parameters.

If you specify this parameter, any request you make to display individual parameters within this set is ineffective.

Requested parameters

Note: If no parameters are specified (and the ALL parameter is not specified or defaulted), the queue manager name is returned.

You can request the following information for the queue manager:

ACCTCONO
Whether the settings of the ACCTQMQI and ACCTQ queue manager parameters can be overridden. This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

ACCTINT
The interval at which intermediate accounting records are written. This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

ACCTMQI
Whether accounting information is to be collected for MQI data. This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

ACCTQ
Whether accounting data collection is to be enabled for queues.

ACTCHL
The maximum number of channels that can be active at any time.

This parameter is valid only on z/OS.

ACTIVREC
Whether activity reports are to be generated if requested in the message.

ACTVCONO
Whether the settings of the ACTVTRC queue manager parameter can be overridden. This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

ACTVTRC
Whether WebSphere MQ MQI application activity tracing information is to be collected. See Setting ACTVTRC to control collection of activity trace information. This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

ADOPTCHK
Which elements are checked to determine whether an MCA is adopted when a new inbound channel is detected with the same name as an already active MCA.

This parameter is valid only on z/OS.

ADOPTMCA
Whether an orphaned MCA instance is to be restarted when a new inbound channel request matching the ADOPTCHK parameters is detected.

This parameter is valid only on z/OS.

ALTDATE
The date on which the definition was last altered, in the form `yyyy-mm-dd`.

ALTTIME
The time at which the definition was last altered, in the form `hh.mm.ss`.

AUTHOREV
Whether authorization events are generated.

BRIDGEEV
On z/OS only, whether IMS Bridge events are generated.

CCSID
Coded character set identifier. This parameter applies to all character string fields defined by the application programming interface (API), including the names of objects, and the creation date and time of each queue. It does not apply to application data carried as the text of messages.

CERTVPOL
Specifies which SSL/TLS certificate validation policy is used to validate digital certificates received from remote partner systems. This attribute can be used to control how strictly the certificate chain validation conforms to industry security standards. For more information about certificate validation policies, see Certificate validation policies in WebSphere MQ .

This parameter is valid on only UNIX, Linux, and Windows.

CFCONLOS
Specifies the action to be taken when the queue manager loses connectivity to the administration structure, or any CF structure with CFCONLOS set to ASQMGR.

This parameter is valid only on z/OS.

CHAD
Whether auto-definition of receiver and server-connection channels is enabled. This parameter is not valid on z/OS.

CHADEV
Whether auto-definition events are enabled. This parameter is not valid on z/OS.

CHADEXIT
The name of the channel auto-definition exit.

CHIADAPS
The number of adapter subtasks to use to process IBM WebSphere MQ calls.

This parameter is valid only on z/OS.

CHIDISPS
The number of dispatchers to use for the channel initiator.

This parameter is valid only on z/OS.

CHISERVP
This field is reserved for IBM use only.

CHLAUTH
Whether channel authentication records are checked.

CHLEV
Whether channel events are generated.

CLWLEXIT
The name of the cluster workload exit.

CLWLDATA
The data passed to the cluster workload exit.

CLWLLEN
The maximum number of bytes of message data that is passed to the cluster workload exit.

This parameter is not valid on Linux.

CLWLMRUC
The maximum number of outbound cluster channels.

CLWLUSEQ
The behavior of MQPUTs for queues where CLWLUSEQ has a value of QMGR.

CMDEV
Whether command events are generated.

CMDLEVEL
Command level. This indicates the level of system control commands supported by the queue manager.

COMMANDQ
The name of the system-command input queue. Suitably authorized applications can put commands on this queue.

CONFIGEV
Whether configuration events are generated.

CPILEVEL
Reserved, this value has no significance.

CUSTOM
This attribute is reserved for the configuration of new features before separate attributes have been introduced. It can contain the values of zero or more attributes as pairs of attribute name and value in the form NAME(VALUE).

DEADQ
The name of the queue to which messages are sent if they cannot be routed to their correct destination (the dead-letter queue or undelivered-message queue). The default is blanks.

For example, messages are put on this queue when:

- A message arrives at a queue manager, destined for a queue that is not yet defined on that queue manager
- A message arrives at a queue manager, but the queue for which it is destined cannot receive it because, possibly:
  - The queue is full
  - The queue is inhibited for puts
  - The sending node does not have authority to put the message on the queue
- An exception message must be generated, but the queue named is not known to that queue manager

Note: Messages that have passed their expiry time are not transferred to this queue when they are discarded.

If the dead-letter queue is not defined, or full, or unusable for some other reason, a message that would have been transferred to it by a message channel agent is retained instead on the transmission queue.

If a dead-letter queue or undelivered-message queue is not specified, all blanks are returned for this parameter.

DEFCLXQ
The DEFCLXQ attribute controls which transmission queue is selected by default by cluster-sender channels to get messages from, to send the messages to cluster-receiver channels.

SCTQ

All cluster-sender channels send messages from SYSTEM.CLUSTER.TRANSMIT.QUEUE. The correlID of messages placed on the transmission queue identifies which cluster-sender channel the message is destined for.

SCTQ is set when a queue manager is defined. This behavior is implicit in versions of IBM WebSphere MQ, earlier than Version 7.5. In earlier versions, the queue manager attribute DEFCLXQ was not present.

CHANNEL
Each cluster-sender channel sends messages from a different transmission queue. Each transmission queue is created as a permanent dynamic queue from the model queue SYSTEM.CLUSTER.TRANSMIT.MODEL.QUEUE.

If the queue manager attribute, DEFCLXQ, is set to CHANNEL, the default configuration is changed to cluster-sender channels being associated with individual cluster transmission queues. The transmission queues are permanent-dynamic queues created from the model queue SYSTEM.CLUSTER.TRANSMIT.MODEL.QUEUE. Each transmission queue is associated with one cluster-sender channel. As one cluster-sender channel services a cluster transmission queue, the transmission queue contains messages for only one queue manager in one cluster. You can configure clusters so that each queue manager in a cluster contains only one cluster queue. In this case, the

message traffic from a queue manager to each cluster queue is transferred separately from messages to other queues.

DEFXMITQ
Default transmission queue name. This parameter is the transmission queue on which messages, destined for a remote queue manager, are put if there is no other suitable transmission queue defined.

DESCR
Description.

DISTL
Whether distribution lists are supported by the queue manager. This parameter is not valid on z/OS.

DNSGROUP
The name of the group that the TCP listener handling inbound transmissions for the queue-sharing group joins when using Workload Manager for Dynamic Domain Name Services support (WLM/DNS).

This parameter is valid only on z/OS.

DNSWLM
Whether the TCP listener that handles inbound transmissions for the queue-sharing group registers with WLM/DNS.

This parameter is valid only on z/OS.

EXPRYINT
On z/OS only, the approximate interval between scans for expired messages.

GROUPUR
On z/OS only, whether XA client applications are allowed to connect to this queue manager with a GROUP unit of recovery disposition.

IGQ
On z/OS only, whether intra-group queuing is to be used.

IGQAUT
On z/OS only, displays the type of authority checking used by the intra-group queuing agent.

IGQUSER
On z/OS only, displays the user ID used by the intra-group queuing agent.

INHIBTEV
Whether inhibit events are generated.

IPADDRV
Whether to use an IPv4 or IPv6 IP address for a channel connection in ambiguous cases.

LOCALEV
Whether local error events are generated.

LOGGEREV
Whether recovery log events are generated. This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

LSTRTMR
The time interval, in seconds, between attempts by IBM WebSphere MQ to restart the listener after an APPC or TCP/IP failure.

This parameter is valid only on z/OS.

LUGROUP
The generic LU name to be used by the LU 6.2 listener that handles inbound transmissions for the queue-sharing group.

This parameter is valid only on z/OS.

LUNAME
The name of the LU to use for outbound LU 6.2 transmissions.

This parameter is valid only on z/OS.

LU62ARM
The suffix of the APPCPM member of SYS1.PARMLIB. This suffix nominates the LUADD for this channel initiator. When automatic restart manager (ARM) restarts the channel initiator, the z/OS command SET APPC=xx is issued.

This parameter is valid only on z/OS.

LU62CHL
The maximum number of channels that can be current, or clients that can be connected, that use the LU 6.2 transmission protocol. If the value of LU62CHL is zero, the LU 6.2 transmission protocol is not used.

This parameter is valid only on z/OS.

MARKINT
The mark browse interval in milliseconds.

Attention: This value should not be below the default of 5000.

MAXCHL
The maximum number of channels that can be current (including server-connection channels with connected clients).

This parameter is valid only on z/OS.

MAXHANDS
The maximum number of open handles that any one connection can have at any one time.

MAXMSGL
The maximum message length that can be handled by the queue manager. Individual queues or channels might have a smaller maximum than the value of this parameter.

MAXPROPL(*integer*)
The maximum length of property data in bytes that can be associated with a message.

This parameter is valid only on IBM i, z/OS, UNIX, Linux, and Windows systems.

MAXPRTY
The maximum priority. This value is 9.

MAXUMSGS
Maximum number of uncommitted messages within one sync point. The default value is 10000.

MAXUMSGS has no effect on IBM WebSphere MQ Telemetry. IBM WebSphere MQ Telemetry tries to batch requests to subscribe, unsubscribe, send, and receive messages from multiple clients into batches of work within a transaction.

MONACLS
Whether online monitoring data is to be collected for auto-defined cluster-sender channels, and, if so, the rate of data collection.

MONCHL
Whether online monitoring data is to be collected for channels, and, if so, the rate of data collection.

MONQ
Whether online monitoring data is to be collected for queues, and, if so, the rate of data collection.

OPORTMAX
The maximum value in the range of port numbers to be used when binding outgoing channels.

This parameter is valid only on z/OS.

OPORTMIN
The minimum value in the range of port numbers to be used when binding outgoing channels.

This parameter is valid only on z/OS.

PARENT
The name of the queue manager to which this queue manager is connected hierarchically as its child.

PERFMEV
Whether performance-related events are generated.

PLATFORM
The architecture of the platform on which the queue manager is running. The value of this parameter is MVS (for z/OS platforms), NSK, OS2, OS400, UNIX, or WINDOWSNT.

PSCLUS
Controls whether this queue manager participates in publish subscribe activity across any clusters in which it is a member. No clustered topic objects can exist in any cluster when modifying from ENABLED to DISABLED.

PSMODE
Controls whether the publish/subscribe engine and the queued publish/subscribe interface are running, and therefore controls whether applications can publish or subscribe by using the application programming interface and the queues that are monitored by the queued publish/subscribe interface.

PSNPMSG
If the queued publish/subscribe interface cannot process a non-persistent input message it might attempt to write the input message to the dead-letter queue (depending on the report options of the input message). If the attempt to write the input message to the dead-letter queue fails, and the MQRO_DISCARD_MSG report option was specified on the input message or PSNPMSG=DISCARD, the broker discards the input message. If PSNPMSG=KEEP is specified, the interface only discards the input message if the MQRO_DISCARD_MSG report option was set in the input message.

PSNPRES
If the queued publish/subscribe interface attempts to generate a response message in response to a non-persistent input message, and the response message cannot be delivered to the reply-to queue, this attribute indicates whether the interface tries to write the undeliverable message to the dead-letter queue or whether to discard the message.

PSRTYCNT
When the queued publish/subscribe interface fails to process a command message under sync point (for example a publish message that cannot be delivered to a subscriber because the subscriber queue is full and it is not possible to put the publication on the dead letter queue), the unit of work is backed out and the command tries this number of times again before the broker attempts to process the command message according to its report options instead.

PSSYNCPT
If this attribute is set to IFPER, when the queued publish/subscribe interface reads a publish or delete publication messages from a stream queue during normal operation then it specifies MQGMO_SYNCPOINT_IF_PERSISTENT. This value makes the queued pubsub daemon receive non-persistent messages outside sync point. If the daemon receives a publication outside sync point, the daemon forwards that publication to subscribers known to it outside sync point.

QMID
The internally generated unique name of the queue manager.

QMNAME
The name of the local queue manager. See Rules for naming IBM WebSphere MQ objects.

QSGNAME
The name of the queue-sharing group to which the queue manager belongs, or blank if the queue manager is not a member of a queue-sharing group. You can use queue-sharing groups only onIBM WebSphere MQ for z/OS.

RCVTIME
The approximate length of time that a TCP/IP channel waits to receive data, including heartbeats, from its partner before returning to an inactive state. The value of this parameter is the numeric value qualified by RCVTTYPE.

This parameter is valid only on z/OS.

RCVTMIN
The minimum length of time that a TCP/IP channel waits to receive data, including heartbeats, from its partner before returning to an inactive state.

This parameter is valid only on z/OS.

RCVTTYPE
The qualifier to apply to the value in RCVTIME.

This parameter is valid only on z/OS.

REMOTEEV
Whether remote error events are generated.

REPOS
The name of a cluster for which this queue manager is to provide a repository manager service.

REPOSNL
The name of a list of clusters for which this queue manager is to provide a repository manager service.

ROUTEREC
Whether trace-route information is to be recorded if requested in the message.

SCHINIT
Whether the channel initiator is to be started automatically when the queue manager starts.

This parameter is not valid on z/OS.

SCMDSERV
Whether the command server is to be started automatically when the queue manager starts.

This parameter is not valid on z/OS.

SCYCASE
Whether the security profiles are uppercase or mixed case.

This parameter is valid only on z/OS.

If this parameter has been altered but the REFRESH SECURITY command has not yet been issued, the queue manager might not be using the case of profiles you expect. Use DISPLAY SECURITY to verify which case of profiles is actually in use.

SPLCAP

Indicates if WebSphere MQ Advanced Message Security (WebSphere MQ AMS) capabilities are available to the queue manager. If the WebSphere MQ AMS component is installed for the version of WebSphere MQ that the queue manager is running under, the attribute has a value ENABLED (MQCAP_SUPPORTED). If the WebSphere MQ AMS component is not installed, the value is DISABLED (MQCAP_NOT_SUPPORTED).

SQQMNAME
When a queue manager makes an MQOPEN call for a shared queue and the queue manager that is specified in the *ObjectQmgrName* parameter of the MQOPEN call is in the same queue-sharing group as the processing queue manager, the SQQMNAME attribute specifies whether the *ObjectQmgrName* is used or whether the processing queue manager opens the shared queue directly.

This parameter is valid only on z/OS.

SSLCRLNL
Indicates the namelist of AUTHINFO objects being used for the queue manager for certificate revocation checking.

SSLCRYP
Indicates the name of the parameter string being used to configure the cryptographic hardware present on the system. The PKCS #11 password appears as xxxxxx. This is valid only on UNIX, Linux, and Windows systems.

SSLEV
Whether SSL events are generated.

SSLFIPS
Whether only FIPS-certified algorithms are to be used if cryptography is executed in IBM WebSphere MQ rather than in the cryptographic hardware itself.

SSLKEYR
Indicates the name of the Secure Sockets Layer key repository.

SSLRKEYC
Indicates the number of bytes to be sent and received within an SSL conversation before the secret key is renegotiated.

SSLTASKS
On z/OS only, indicates the number of server subtasks to use for processing SSL calls.

STATACLS
Whether statistics data is to be collected for auto-defined cluster-sender channels, and, if so, the rate of data collection. This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

STATCHL
Whether statistics data is to be collected for channels, and, if so, the rate of data collection. This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

STATINT
The interval at which statistics monitoring data is written to the monitoring queue. This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

STATMQI
Whether statistics monitoring data is to be collected for the queue manager. This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

STATQ
Whether statistics data is to be collected for queues. This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

STRSTPEV
Whether start and stop events are generated.

SUITEB
Whether Suite B compliant cryptography is used. For more information about Suite B configuration and its effect on SSL and TLS channels, see NSA Suite B Cryptography in IBM WebSphere MQ .

SYNCPT
Whether sync point support is available with the queue manager.

TCPCHL
The maximum number of channels that can be current, or clients that can be connected, that use the TCP/IP transmission protocol. If zero, the TCP/IP transmission protocol is not used.

This parameter is valid only on z/OS.

TCPKEEP
Whether the KEEPALIVE facility is to be used to check that the other end of the connection is still available. If it is unavailable, the channel is closed.

This parameter is valid only on z/OS.

TCPNAME
The name of the TCP/IP system that you are using.

This parameter is valid only on z/OS.

TCPSTACK
Whether the channel initiator uses only the TCP/IP address space specified in TCPNAME, or optionally binds to any selected TCP/IP address.

This parameter is valid only on z/OS.

TRAXSTR
Whether channel initiator trace starts automatically.

This parameter is valid only on z/OS.

TRAXTBL
The size, in megabytes, of the trace data space of the channel initiator.

This parameter is valid only on z/OS.

TREELIFE
The lifetime of non-administrative topics.

TRIGINT
The trigger interval.

VERSION
The version of the IBM WebSphere MQ installation, the queue manager is associated with. The version has the format VVRRMMFF:

VV: Version

RR: Release

MM: Maintenance level

FF: Fix level

XRCAP
Whether IBM WebSphere MQ Telemetry capability is supported by the queue manager.

For more details of these parameters, see “ALTER QMGR” on page 244.

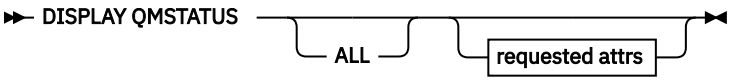
DISPLAY QMSTATUS

Use the MQSC command DISPLAY QMSTATUS to display status information associated with this queue manager.

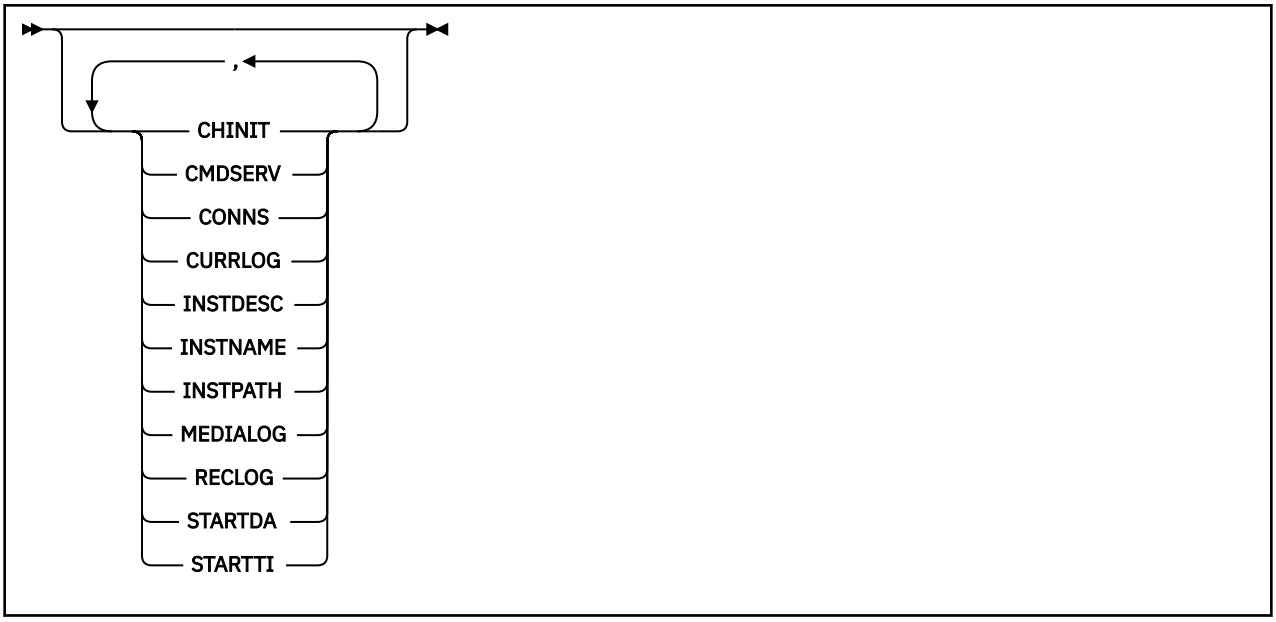
UNIX and Linux	Windows
✓	✓

Synonym: DIS QMSTATUS

DISPLAY QMSTATUS



Requested attrs



Parameter descriptions for DISPLAY QMSTATUS

ALL
Specify this parameter to display all the parameters. If this parameter is specified, any parameters that are requested specifically have no effect; all parameters are still displayed.

This parameter is the default if you do not request any specific parameters.

Requested parameters

Specify one or more parameters that define the data to be displayed. The parameters can be specified in any order, but do not specify the same parameter more than once.

CHINIT
The status of the channel initiator reading SYSTEM.CHANNEL.INITQ. It is one of the following:

STOPPED
The channel initiator is not running.

STARTING
The channel initiator is in the process of initializing and is not yet operational.

RUNNING
The channel initiator is fully initialized and is running.

STOPPING
The channel initiator is stopping.

CMDSERV
The status of the command server. It is one of the following:

STOPPED
The command server is not running.

STARTING
The command server is in the process of initializing and is not yet operational.

RUNNING
The command server is fully initialized and is running.

STOPPING
The command server is stopping.

CONNS
The current number of connections to the queue manager.

CURRLOG
The name of the log extent being written to at the time that the DISPLAY QMSTATUS command is processed. If the queue manager is using circular logging, and this parameter is explicitly requested, a blank string is displayed.

INSTDESC
Description of the installation associated with the queue manager. This parameter is not valid on IBM i.

INSTNAME
Name of the installation associated with the queue manager. This parameter is not valid on IBM i.

INSTPATH
Path of the installation associated with the queue manager. This parameter is not valid on IBM i.

MEDIALOG
The name of the oldest log extent required by the queue manager to perform media recovery. If the queue manager is using circular logging, and this parameter is explicitly requested, a blank string is displayed.

QMNAME
The name of the queue manager. This parameter is always returned.

RECLOG
The name of the oldest log extent required by the queue manager to perform restart recovery. If the queue manager is using circular logging, and this parameter is explicitly requested, a blank string is displayed.

STATUS
The status of the queue manager. It is one of the following:

STARTING
The queue manager is in the process of initializing.

RUNNING
The queue manager is fully initialized and is running.

QUIESCING
The queue manager is quiescing.

STARTDA
The date on which the queue manager was started (in the form yyyy-mm-dd).

STARTTI
The time at which the queue manager was started (in the form hh.mm.ss).

DISPLAY QSTATUS

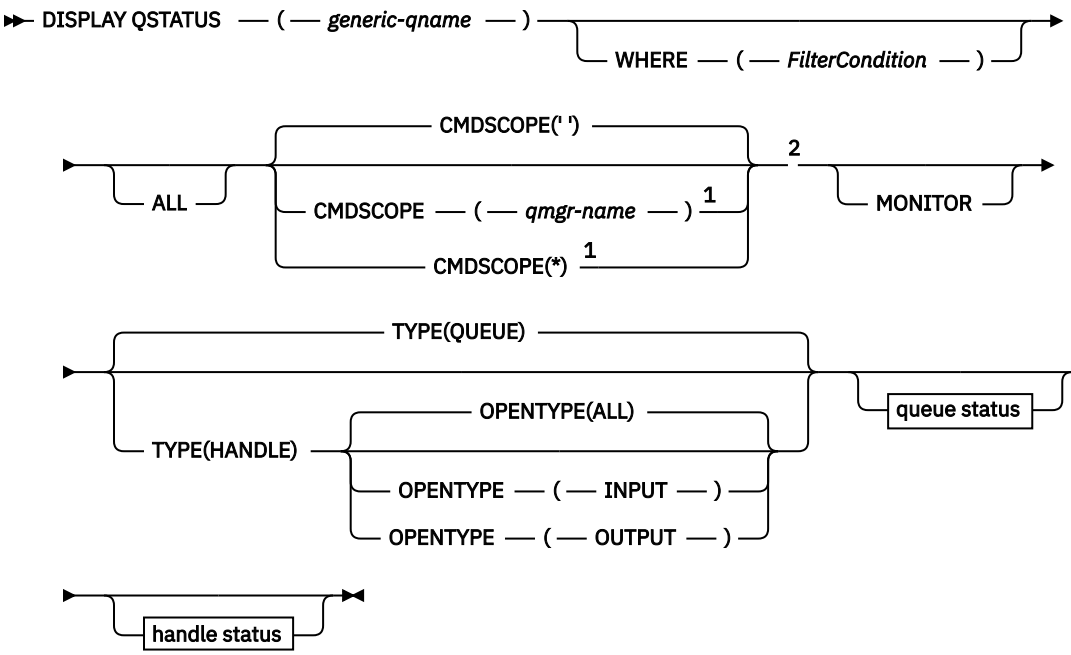
Use the MQSC command DISPLAY QSTATUS to display the status of one or more queues.

UNIX and Linux	Windows
✓	✓

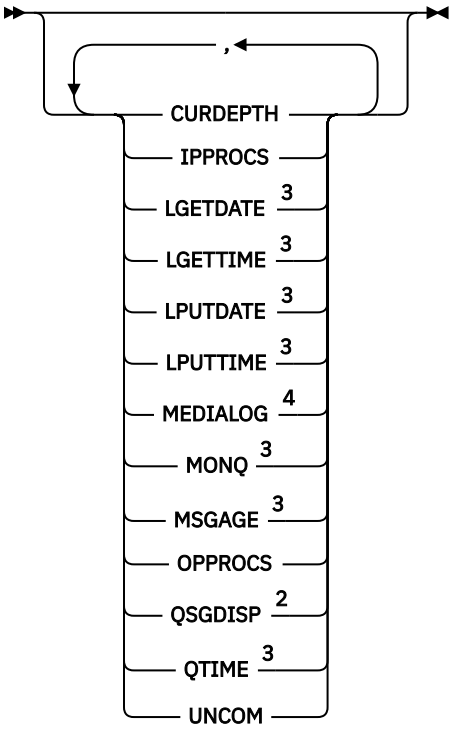
- Syntax diagram
- "Usage notes for DISPLAY QSTATUS" on page 578
- "Parameter descriptions for DISPLAY QSTATUS" on page 579
- "Queue status" on page 581
- "Handle status" on page 583

Synonym: DIS QS

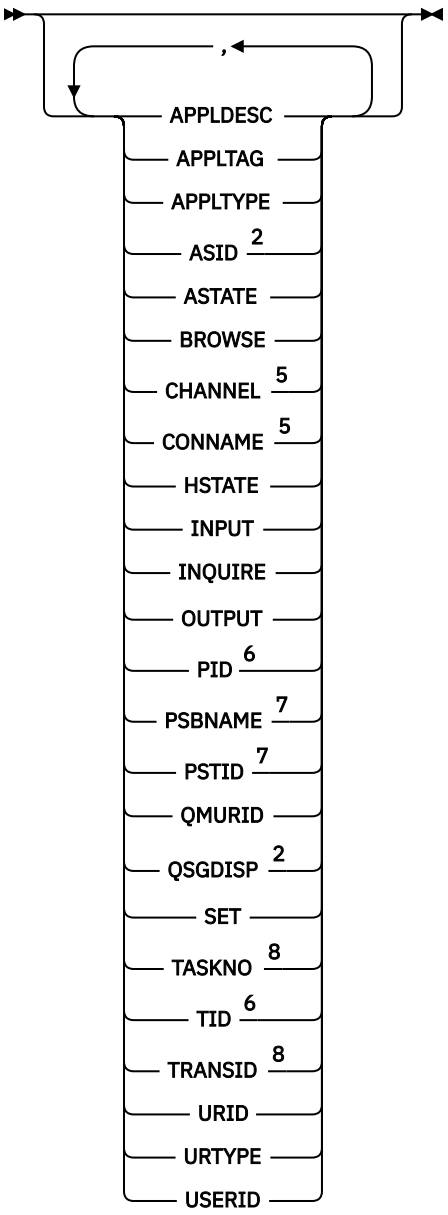
DISPLAY QSTATUS



Queue status



Handle status



Notes:

1 Valid only on WebSphere MQ for z/OS when the queue manager is a member of a queue-sharing group.
2 Valid on z/OS only.
3 Also displayed by selection of the MONITOR parameter.
4 Valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.
5 Channel initiator only
6 Not valid on z/OS.
7 IMS only
8 CICS only

Usage notes for DISPLAY QSTATUS

The state of asynchronous consumers, ASTATE, reflects that of the server-connection proxy on behalf of the client application; it does not reflect the client application state.

Parameter descriptions for DISPLAY QSTATUS

You must specify the name of the queue for which you want to display status information. This name can either be a specific queue name or a generic queue name. By using a generic queue name you can display either:

- Status information for all queues, or
- Status information for one or more queues that match the specified name and other selection criteria

You must also specify whether you want status information about:

- Queues
- Handles that are accessing the queues

Note: You cannot use the DISPLAY QSTATUS command to display the status of an alias queue or remote queue. If you specify the name of one of these types of queue, no data is returned. You can, however, specify the name of the local queue or transmission queue to which the alias queue or remote queue resolves.

(*generic-qname*)
The name of the queue for which status information is to be displayed. A trailing asterisk (*) matches all queues with the specified stem followed by zero or more characters. An asterisk (*) on its own matches all queues.

WHERE
Specify a filter condition to display status information for queues that satisfy the selection criterion of the filter condition. The filter condition is in three parts: *filter-keyword*, *operator*, and *filter-value*:

filter-keyword
Almost any parameter that can be used to display attributes for this DISPLAY command. However, you cannot use the CMDSCOPE, MONITOR, OPENTYPE, QSGDISP, QTIME, TYPE, or URID parameters as filter keywords.

operator
The operator is used to determine whether a queue satisfies the filter value on the given filter keyword. The operators are:

LT
Less than

GT
Greater than

EQ
Equal to

NE
Not equal to

LE
Less than or equal to

GE
Greater than or equal to

LK
Matches a generic string that you provide as a *filter-value*

NL
Does not match a generic string that you provide as a *filter-value*

CT
Contains a specified item. If the *filter-keyword* is a list, you can use this filter to display objects whose attributes contain the specified item.

EX
Does not contain a specified item. If the *filter-keyword* is a list, you can use this filter to display objects whose attributes do not contain the specified item.

filter-value
The value that the attribute value must be tested against using the operator. Depending on the filter-keyword, this value can be:

- An explicit value, that is a valid value for the attribute being tested.

  You can use operators LT, GT, EQ, NE, LE, or GE only. However, if the attribute value is one from a possible set of values on a parameter (for example, the value NO on the UNCOM parameter), you can only use EQ or NE.

- A generic value. This value is a character string (such as the character string in the APPLTAG parameter) with an asterisk at the end, for example ABC*. If the operator is LK, all items where the attribute value begins with the string (ABC in the example) are listed. If the operator is NL, all items where the attribute value does not begin with the string are listed. Only a single trailing wildcard character (asterisk) is permitted.

  You cannot use a generic filter-value for parameters with numeric values or with one of a set of values.

- An item in a list of values. The operator must be CT or EX. If it is a character value, it can be explicit or generic. For example, if the value DEF is specified with the operator CT, all items where one of the attribute values is DEF are listed. If ABC* is specified, all items where one of the attribute values begins with ABC are listed.

ALL
Display all the status information for each specified queue.

This value is the default if you do not specify a generic name, and do not request any specific parameters.

On z/OS, this value is also the default if you specify a filter condition using the WHERE parameter, but on other platforms only the requested attributes are displayed.

CMDSCOPE
This parameter specifies how the command is executed when the queue manager is a member of a queue-sharing group. It is valid on z/OS only.

' '
The command is executed on the queue manager on which it was entered. This value is the default.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of this value is the same as entering the command on every queue manager in the queue-sharing group.

You cannot use CMDSCOPE as a filter keyword.

MONITOR
Specify this value to return the set of online monitoring parameters. These are LGETDATE, LGETTIME, LPUTDATE, LPUTTIME, MONQ, MSGAGE, and QTIME. If you specify this parameter, any of the monitoring parameters that you request specifically have no effect; all monitoring parameters are still displayed.

OPENTYPE
Restricts the queues selected to queues which have handles with the specified type of access:

ALL
Selects queues that are open with any type of access. This value is the default if the OPENTYPE parameter is not specified.

INPUT
Selects queues that are open for input only. This option does not select queues that are open for browse.

OUTPUT
Selects queues that are open only for output.

The OPENTYPE parameter is valid only if TYPE(HANDLE) is also specified.

You cannot use OPENTYPE as a filter keyword.

TYPE
Specifies the type of status information required:

QUEUE
Status information relating to queues is displayed. This value is the default if the TYPE parameter is not specified.

HANDLE
Status information relating to the handles that are accessing the queues is displayed.

You cannot use TYPE as a filter keyword.

Queue status

For queue status, the following information is always returned for each queue that satisfies the selection criteria, except where indicated:

- Queue name
- Type of information returned (TYPE parameter)
- On platforms other than z/OS, current queue depth (CURDEPTH parameter)
- On z/OS only, the queue-sharing group disposition (QSGDISP parameter)

The following parameters can be specified for TYPE(QUEUE) to request additional information for each queue. If a parameter is specified that is not relevant for the queue, operating environment, or type of status information requested, that parameter is ignored.

CURDEPTH
The current depth of the queue, that is, the number of messages on the queue, including both committed messages and uncommitted messages.

IPPROCS
The number of handles that are currently open for input for the queue (either input-shared or input-exclusive). This number does not include handles that are open for browse.

For shared queues, the number returned applies only to the queue manager generating the reply. The number is not the total for all the queue managers in the queue-sharing group.

LGETDATE
The date on which the last message was retrieved from the queue since the queue manager started. A message being browsed does not count as a message being retrieved. When no get date is available, perhaps because no message has been retrieved from the queue since the queue manager was started, the value is shown as a blank. For queues with QSGDISP(SHARED), the value shown is for measurements collected on this queue manager only.

This parameter is also displayed when you specify the MONITOR parameter.

A value is only displayed for this parameter if MONQ is set to a value other than OFF for this queue.

LGETTIME
The time at which the last message was retrieved from the queue since the queue manager started. A message being browsed does not count as a message being retrieved. When no get time is available,

perhaps because no message has been retrieved from the queue since the queue manager was started, the value is shown as a blank. For queues with QSGDISP(SHARED), the value shown is for measurements collected on this queue manager only.

This parameter is also displayed when you specify the MONITOR parameter.

A value is only displayed for this parameter if MONQ is set to a value other than OFF for this queue.

LPUTDATE
The date on which the last message was put to the queue since the queue manager started. When no put date is available, perhaps because no message has been put to the queue since the queue manager was started, the value is shown as a blank. For queues with QSGDISP(SHARED), the value shown is for measurements collected on this queue manager only.

This parameter is also displayed when you specify the MONITOR parameter.

A value is only displayed for this parameter if MONQ is set to a value other than OFF for this queue.

LPUTTIME
The time at which the last message was put to the queue since the queue manager started. When no put time is available, perhaps because no message has been put to the queue since the queue manager was started, the value is shown as a blank. For queues with QSGDISP(SHARED), the value shown is for measurements collected on this queue manager only.

This parameter is also displayed when you specify the MONITOR parameter.

A value is only displayed for this parameter if MONQ is set to a value other than OFF for this queue.

Note: Moving the system clock backwards should be avoided in case the LPUTTIME is being used to monitor the messages. The LPUTTIME of a queue is only updated when a message that arrives on the queue has a PutTime greater than the existing value of LPUTTIME. Because the PutTime of the message is less than the existing LPUTTIME of the queue in this case, the time is left unchanged.

MEDIALOG
The log extent or journal receiver needed for media recovery of the queue. On queue managers on which circular logging is in place, MEDIALOG is returned as a null string.

This parameter is valid on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.

MONQ
Current level of monitoring data collection for the queue.

This parameter is also displayed when you specify the MONITOR parameter.

MSGAGE
Age, in seconds, of the oldest message on the queue. The maximum displayable value is 999999999; if the age exceeds this value, 999999999 is displayed.

This parameter is also displayed when you specify the MONITOR parameter.

A value is only displayed for this parameter if MONQ is set to a value other than OFF for this queue.

OPPROCS
This is the number of handles that are currently open for output for the queue.

For shared queues, the number returned applies only to the queue manager generating the reply. The number is not the total for all the queue managers in the queue-sharing group.

QSGDISP
Indicates the disposition of the queue. The value displayed is one of the following:

QMGR
The object was defined with QSGDISP(QMGR).

COPY
The object was defined with QSGDISP(COPY).

SHARED
The object was defined with QSGDISP(SHARED).

This parameter is valid on z/OS only.

For shared queues, if the CF structure used by the queue is unavailable or has failed, the status information might be unreliable.

You cannot use QSGDISP as a filter keyword.

QTIME
Interval, in microseconds, between messages being put on the queue and then being destructively read. The maximum displayable value is 999999999; if the interval exceeds this value, 999999999 is displayed.

The interval is measured from the time that the message is placed on the queue until it is retrieved by an application and, therefore, includes any interval caused by a delay in committing by the putting application.

Two values are displayed:

- A value based on recent activity over a short time period.
- A value based on activity over a longer time period.

These values depend on the configuration and behavior of your system, as well as the levels of activity within it, and serve as an indicator that your system is performing normally. A significant variation in these values might indicate a problem with your system. For queues with QSGDISP(SHARED), the values shown are for measurements collected on this queue manager only.

This parameter is also displayed when you specify the MONITOR parameter.

A value is only displayed for this parameter if MONQ is set to a value other than OFF for this queue.

UNCOM
Indicates whether there are any uncommitted changes (puts and gets) pending for the queue. The value displayed is one of the following:

YES

On z/OS, there are one or more uncommitted changes pending.

NO
There are no uncommitted changes pending.

n
On platforms other than z/OS, an integer value indicating how many uncommitted changes are pending.

For shared queues, the value returned applies only to the queue manager generating the reply. The value does not apply to all the queue managers in the queue-sharing group.

Handle status

For handle status, the following information is always returned for each queue that satisfies the selection criteria, except where indicated:

- Queue name
- Type of information returned (TYPE parameter)
- On platforms other than z/OS, user identifier (USERID parameter) - not returned for APPLTYPE(SYSTEM)
- On platforms other than z/OS, process ID (PID parameter)
- On platforms other than z/OS, thread ID (TID parameter)
- On platforms other than z/OS, application tag (APPLTAG parameter)
- Application type (APPLTYPE parameter)
- On platforms other than z/OS, whether the handle provides input access (INPUT parameter)
- On platforms other than z/OS, whether the handle provides output access (OUTPUT parameter)

- On platforms other than z/OS, whether the handle provides browse access (BROWSE parameter)
- On platforms other than z/OS, whether the handle provides inquire access (INQUIRE parameter)
- On platforms other than z/OS, whether the handle provides set access (SET parameter)

The following parameters can be specified for TYPE(HANDLE) to request additional information for each queue. If a parameter that is not relevant is specified for the queue, operating environment, or type of status information requested, that parameter is ignored.

APPLDESC
A string containing a description of the application connected to the queue manager, where it is known. If the application is not recognized by the queue manager the description returned is blank.

APPLTAG
A string containing the tag of the application connected to the queue manager. It is one of the following:

- z/OS batch job name
- TSO USERID
- CICS APPLID
- IMS region name
- Channel initiator job name
- IBM i job name
- UNIX process

  Note: On HP-UX if the process name exceeds 14 characters, only the first 14 characters are shown. On all other platforms if the process name exceeds 28 characters, only the first 28 characters are shown.
- Windows process

  Note: The returned value consists of the full program path and executable file name. If it is more than 28 characters long, only the first 28 characters are shown.
- Internal queue manager process name

Application name represents the name of the process or job that has connected to the queue manager. In the instance that this process or job is connected via a channel, the application name represents the remote process or job rather than the local channel process or job name.

APPLTYPE
A string indicating the type of the application that is connected to the queue manager. It is one of the following:

BATCH
Application using a batch connection

RRSBATCH
RRS-coordinated application using a batch connection

CICS
CICS transaction

IMS
IMS transaction

CHINIT
Channel initiator

SYSTEM
Queue manager

SYSTEMEXT
Application performing an extension of function that is provided by the queue manager

USER
A user application

ASID
A four-character address-space identifier of the application identified by APPLTAG. It distinguishes duplicate values of APPLTAG.

This parameter is returned only when the queue manager owning the queue is running on z/OS, and the APPLTYPE parameter does not have the value SYSTEM.

ASTATE
The state of the asynchronous consumer on this queue.

Possible values are:

ACTIVE
An MQCB call has set up a function to call back to process messages asynchronously and the connection handle has been started so that asynchronous message consumption can proceed.

INACTIVE
An MQCB call has set up a function to call back to process messages asynchronously but the connection handle has not yet been started, or has been stopped or suspended, so that asynchronous message consumption cannot currently proceed.

SUSPENDED
The asynchronous consumption call-back has been suspended so that asynchronous message consumption cannot currently proceed on this queue. This can be either because an MQCB call with Operation MQOP_SUSPEND has been issued against this object handle by the application, or because it has been suspended by the system. If it has been suspended by the system, as part of the process of suspending asynchronous message consumption the call-back function is initiated with the reason code that describes the problem resulting in suspension. This code is reported in the Reason field in the MQCBC structure that is passed to the call-back function.

For asynchronous message consumption to proceed, the application must issue an MQCB call with the Operation parameter set to MQOP_RESUME.

SUSPTEMP
The asynchronous consumption call-back has been temporarily suspended by the system so that asynchronous message consumption cannot currently proceed on this queue. As part of the process of suspending asynchronous message consumption, the call-back function is called with the reason code that describes the problem resulting in suspension. This code is reported in the Reason field in the MQCBC structure passed to the call-back function.

The call-back function is initiated again when asynchronous message consumption is resumed by the system, when the temporary condition has been resolved.

NONE
An MQCB call has not been issued against this handle, so no asynchronous message consumption is configured on this handle.

BROWSE
Indicates whether the handle is providing browse access to the queue. The value is one of the following:

YES
The handle is providing browse access.

NO
The handle is not providing browse access.

CHANNEL
The name of the channel that owns the handle. If there is no channel associated with the handle, this parameter is blank.

This parameter is returned only when the handle belongs to the channel initiator.

CONNAME
The connection name associated with the channel that owns the handle. If there is no channel associated with the handle, this parameter is blank.

This parameter is returned only when the handle belongs to the channel initiator.

HSTATE
Whether an API call is in progress.

Possible values are:

ACTIVE
An API call from a connection is currently in progress for this object. For a queue, this condition can arise when an MQGET WAIT call is in progress.

If there is an MQGET SIGNAL outstanding, then this value does not mean, by itself, that the handle is active.

INACTIVE
No API call from a connection is currently in progress for this object. For a queue, this condition can arise when no MQGET WAIT call is in progress.

INPUT
Indicates whether the handle is providing input access to the queue. The value is one of the following:

SHARED
The handle is providing shared-input access.

EXCL
The handle is providing exclusive-input access.

NO
The handle is not providing input access.

INQUIRE
Indicates whether the handle currently provides inquire access to the queue. The value is one of the following:

YES
The handle provides inquire access.

NO
The handle does not provide inquire access.

OUTPUT
Indicates whether the handle is providing output access to the queue. The value is one of the following:

YES
The handle is providing output access.

NO
The handle is not providing output access.

PID
Number specifying the process identifier of the application that has opened the specified queue.

This parameter is not valid on z/OS.

PSBNAME
The eight characters long name of the program specification block (PSB) associated with the running IMS transaction. You can use the PSBNAME and PSTID to purge the transaction using IMS commands. It is valid on z/OS only.

This parameter is returned only when the APPLTYPE parameter has the value IMS.

PSTID
The four character IMS program specification table (PST) region identifier for the connected IMS region. It is valid on z/OS only.

This parameter is returned only when the APPLTYPE parameter has the value IMS.

QMURID
The queue manager unit of recovery identifier. On z/OS, this value is a 6-byte log RBA, displayed as 12 hexadecimal characters. On platforms other than z/OS, this value is an 8-byte transaction identifier, displayed as `m.n` where `m` and `n` are the decimal representation of the first and last 4 bytes of the transaction identifier.

You can use QMURID as a filter keyword. On z/OS, you must specify the filter value as a hexadecimal string. On platforms other than z/OS, you must specify the filter value as a pair of decimal numbers separated by a period (.). You can only use the EQ, NE, GT, LT, GE, or LE filter operators.

QSGDISP
Indicates the disposition of the queue. It is valid on z/OS only. The value is one of the following:

QMGR
The object was defined with QSGDISP(QMGR).

COPY
The object was defined with QSGDISP(COPY).

SHARED
The object was defined with QSGDISP(SHARED).

You cannot use QSGDISP as a filter keyword.

SET
Indicates whether the handle is providing set access to the queue. The value is one of the following:

YES
The handle is providing set access.

NO
The handle is not providing set access.

TASKNO
A seven-digit CICS task number. This number can be used in the CICS command "CEMT SET TASK(taskno) PURGE" to end the CICS task. This parameter is valid on z/OS only.

This parameter is returned only when the APPLTYPE parameter has the value CICS.

TID
Number specifying the thread identifier within the application process that has opened the specified queue.

This parameter is not valid on z/OS.

An asterisk indicates that this queue was opened using a shared connection.

For further information about shared connections see Shared (thread independent) connections with MQCONNX.

TRANSID
A four-character CICS transaction identifier. This parameter is valid on z/OS only.

This parameter is returned only when the APPLTYPE parameter has the value CICS.

URID
The external unit of recovery identifier associated with the connection. It is the recovery identifier known in the external syncpoint coordinator. Its format is determined by the value of URTYPE.

You cannot use URID as a filter keyword.

URTYPE
The type of unit of recovery as seen by the queue manager. It is one of the following:

- CICS (valid only on z/OS)
- XA
- RRS (valid only on z/OS)
- IMS (valid only on z/OS)

- QMGR

  URTYPE identifies the EXTURID type and not the type of the transaction coordinator. When URTYPE is QMGR, the associated identifier is in QMURID (and not URID).

USERID
The user identifier associated with the handle.

This parameter is not returned when APPLTYPE has the value SYSTEM.

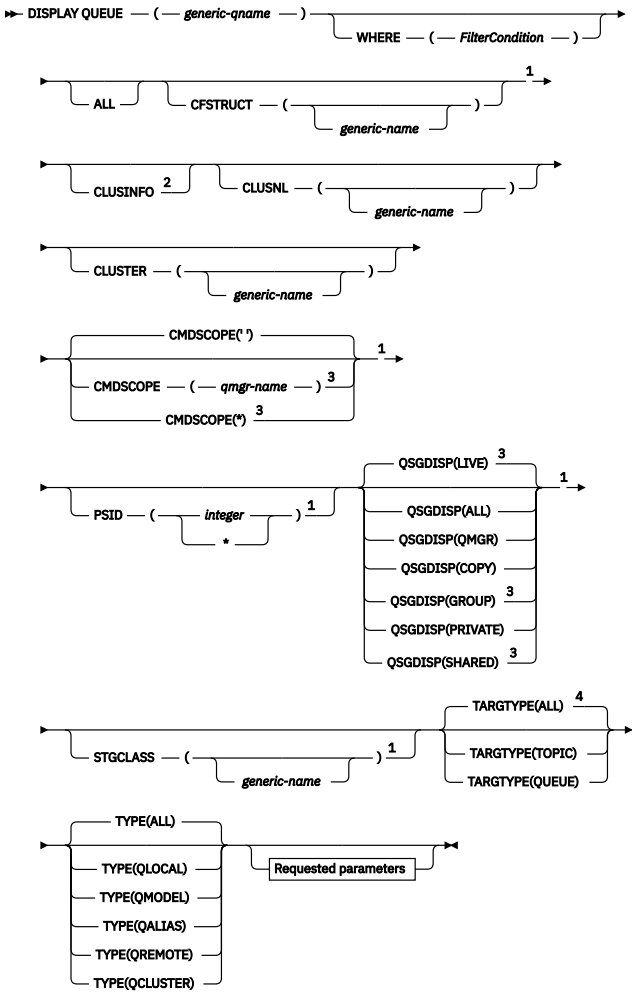
DISPLAY QUEUE

Use the MQSC command **DISPLAY QUEUE** to display the attributes of one or more queues of any type.

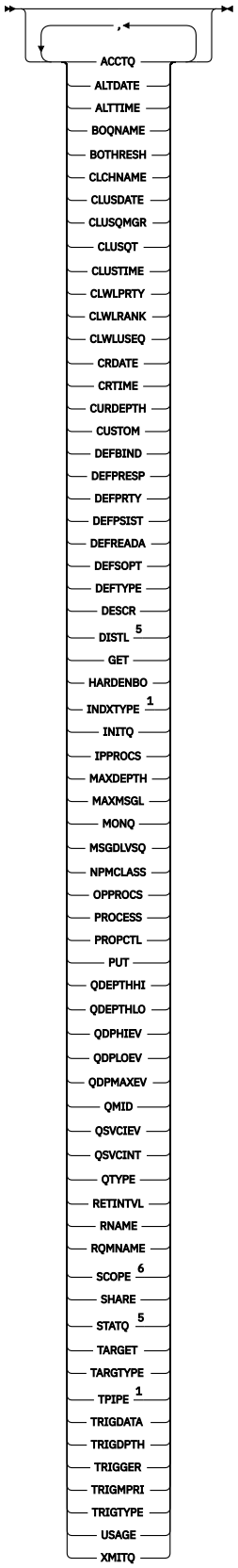
UNIX and Linux	Windows
✓	✓

Synonym: **DIS Q**

DISPLAY QUEUE



Requested parameters



Notes:

[1] Valid only on z/OS.

[2] On z/OS, you cannot issue this from CSQINP2.

[3] Valid only on WebSphere MQ for z/OS when the queue manager is a member of a queue-sharing group.
[4] Valid only on an alias queue.
[5] Not valid on z/OS.
[6] Not valid on z/OS or IBM i.

Usage notes

1. You can use the following commands (or their synonyms) as an alternative way to display these attributes.
   - **DISPLAY QALIAS**
   - **DISPLAY QCLUSTER**
   - **DISPLAY QLOCAL**
   - **DISPLAY QMODEL**
   - **DISPLAY QREMOTE**

   These commands produce the same output as the DISPLAY QUEUE TYPE(*queue-type*) command. If you enter the commands this way, do not use the TYPE parameter.
2. On z/OS, the channel initiator must be running before you can display information about cluster queues (using TYPE(QCLUSTER) or the CLUSINFO parameter).
3. The command might not show every clustered queue in the cluster when issued on a partial repository, because the partial repository only knows about a queue once it has tried to use it.

Parameter descriptions for DISPLAY QUEUE

You must specify the name of the queue definition you want to display. This can be a specific queue name or a generic queue name. By using a generic queue name, you can display either:

- All queue definitions
- One or more queues that match the specified name

queue-name
The local name of the queue definition to be displayed (see Rules for naming IBM WebSphere MQ objects). A trailing asterisk * matches all queues with the specified stem followed by zero or more characters. An asterisk (*) on its own specifies all queues.

WHERE
Specify a filter condition to display only those queues that satisfy the selection criterion of the filter condition. The filter condition is in three parts: *filter-keyword*, *operator*, and *filter-value*:

filter-keyword
Almost any parameter that can be used to display attributes for this **DISPLAY** command. However, you cannot use the CMDSCOPE, QDPHIEV, QDPLOEV, QDPMAXEV, QSGDISP, or QSVCIEV parameters as filter keywords. You cannot use CFSTRUCT, CLUSTER, CLUSNL, PSID, or STGCLASS if these are also used to select queues. Queues of a type for which the filter keyword is not a valid attribute are not displayed.

operator
This is used to determine whether a queue satisfies the filter value on the given filter keyword. The operators are:

LT
Less than

GT
Greater than

EQ
Equal to

NE
Not equal to

LE
Less than or equal to

GE
Greater than or equal to

LK
Matches a generic string that you provide as a *filter-value*

NL
Does not match a generic string that you provide as a *filter-value*

filter-value
The value that the attribute value must be tested against using the operator. Depending on the filter-keyword, this can be:

- An explicit value, that is a valid value for the attribute being tested.

  You can use operators LT, GT, EQ, NE, LE or GE only. However, if the attribute value is one from a possible set of values on a parameter (for example, the value QALIAS on the CLUSQT parameter), you can only use EQ or NE. For the parameters HARDENBO, SHARE, and TRIGGER, use either EQ YES or EQ NO.
- A generic value. This is a character string (such as the character string you supply for the DESCR parameter) with an asterisk at the end, for example ABC*. If the operator is LK, all items where the attribute value begins with the string (ABC in the example) are listed. If the operator is NL, all items where the attribute value does not begin with the string are listed. Only a single trailing wildcard character (asterisk) is permitted.

  You cannot use a generic filter-value for parameters with numeric values or with one of a set of values.

ALL
Specify this to display all the attributes. If this parameter is specified, any attributes that are also requested specifically have no effect; all attributes are still displayed.

On AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS, this is the default if you do not specify a generic name and do not request any specific attributes.

On z/OS this is also the default if you specify a filter condition using the WHERE parameter, but on other platforms only requested attributes are displayed.

CFSTRUCT(*generic-name)*
This parameter is optional and limits the information displayed to those queues where the value of the coupling facility structure is specified in brackets.

The value can be a generic name. If you do not enter a value for this parameter, **CFSTRUCT** is treated as a requested parameter.

CLUSINFO
This requests that, in addition to information about attributes of queues defined on this queue manager, information about these and other queues in the cluster that match the selection criteria is displayed. In this case, there might be multiple queues with the same name displayed. The cluster information is obtained from the repository on this queue manager.

This parameter is valid only on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS. Note that, on z/OS, you cannot issue DISPLAY QUEUE CLUSINFO commands from CSQINP2.

CLUSNL(*generic-name*)
This is optional, and limits the information displayed if entered with a value in brackets:

- For queues defined on the local queue manager, only those with the specified cluster list. The value can be a generic name. Only queue types for which **CLUSNL** is a valid parameter are restricted in this way; other queue types that meet the other selection criteria are displayed.
- For cluster queues, only those belonging to clusters in the specified cluster list if the value is not a generic name. If the value is a generic name, no restriction is applied to cluster queues.

If you do not enter a value to qualify this parameter, it is treated as a requested parameter, and cluster list information is returned about all the queues displayed.

This parameter is valid only on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.

Note: If the disposition requested is SHARED, CMDSCOPE must be blank or the local queue manager.

CLUSTER(*generic-name*)
This is optional, and limits the information displayed to queues with the specified cluster name if entered with a value in brackets. The value can be a generic name. Only queue types for which **CLUSTER** is a valid parameter are restricted in this way by this parameter; other queue types that meet the other selection criteria are displayed.

If you do not enter a value to qualify this parameter, it is treated as a requested parameter, and cluster name information is returned about all the queues displayed.

This parameter is valid only on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if QSGDISP is set to GROUP or SHARED.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of this is the same as entering the command on every queue manager in the queue-sharing group.

You cannot use **CMDSCOPE** as a filter keyword.

PSID(*integer*)
The identifier of the page set where a queue resides. This is optional. Specifying a value limits the information displayed to queues that have an active association to the specified page set. The value consists of two numeric characters, in the range 00 - 99. An asterisk * on its own specifies all page set identifiers. If you do not enter a value, page set information is returned about all the queues displayed.

The page set identifier is displayed only if there is an active association of the queue to a page set, that is, after the queue has been the target of an MQPUT request. The association of a queue to a page set is not active when:

- The queue is just defined
- The STGCLASS attribute of the queue is altered, and there is no subsequent MQPUT request to the queue
- The queue manager is restarted and there are no messages on the queue

This parameter is valid only on z/OS.

QSGDISP
Specifies the disposition of the objects for which information is to be displayed. Values are:

LIVE
This is the default value and displays information for objects defined with QSGDISP(QMGR) or QSGDISP(COPY). If there is a shared queue manager environment, and the command is being executed on the queue manager where it was issued, also display information for objects defined with QSGDISP(SHARED).

ALL
Display information for objects defined with QSGDISP(QMGR) or QSGDISP(COPY).

If there is a shared queue manager environment, and the command is being executed on the queue manager where it was issued, this option also displays information for objects defined with QSGDISP(GROUP) or QSGDISP(SHARED).

In a shared queue manager environment:

```
DISPLAY QUEUE(name) CMDSCOPE(*) QSGDISP(ALL)
```

The command lists objects matching name in the queue-sharing group, without duplicating those in the shared repository.

COPY
Display information only for objects defined with QSGDISP(COPY).

GROUP
Display information only for objects defined with QSGDISP(GROUP). This is allowed only if there is a shared queue manager environment.

PRIVATE
Display information only for objects defined with QSGDISP(QMGR) or QSGDISP(COPY).

QMGR
Display information only for objects defined with QSGDISP(QMGR).

SHARED
Display information only for objects defined with QSGDISP(SHARED). This is allowed only in a shared queue manager environment.

Note: For cluster queues, this is always treated as a requested parameter. The value returned is the disposition of the real queue that the cluster queue represents.

If QSGDISP(LIVE) is specified or defaulted, or if QSGDISP(ALL) is specified in a shared queue manager environment, the command might give duplicated names (with different dispositions) .

Note: In the QSGDISP(LIVE) case, this occurs only where a shared and a non-shared queue have the same name; such a situation should not occur in a well-managed system.

QSGDISP displays one of the following values:

QMGR
The object was defined with QSGDISP(QMGR).

GROUP
The object was defined with QSGDISP(GROUP).

COPY
The object was defined with QSGDISP(COPY).

SHARED
The object was defined with QSGDISP(SHARED).

You cannot use **QSGDISP** as a filter keyword.

STGCLASS(*generic-name*)
This is optional, and limits the information displayed to queues with the storage class specified if entered with a value in brackets. The value can be a generic name.

If you do not enter a value to qualify this parameter, it is treated as a requested parameter, and storage class information is returned about all the queues displayed.

This parameter is valid only on z/OS.

TARGTYPE(*target-type*)
This is optional and specifies the target type of the alias queue you want to be displayed.

TYPE(*queue-type*)
This is optional, and specifies the type of queues you want to be displayed. If you specify ALL, which is the default value, all queue types are displayed; this includes cluster queues if CLUSINFO is also specified.

As well as ALL, you can specify any of the queue types allowed for a **DEFINE** command: QALIAS, QLOCAL, QMODEL, QREMOTE, or their synonyms, as follows:

QALIAS
Alias queues

QLOCAL
Local queues

QMODEL
Model queues

QREMOTE
Remote queues

You can specify a queue type of QCLUSTER to display only cluster queue information. If QCLUSTER is specified, any selection criteria specified by the CFSTRUCT, STGCLASS, or PSID parameters are ignored. Note that you cannot issue **DISPLAY QUEUE TYPE(QCLUSTER)** commands from CSQINP2.

On platforms other than z/OS, QTYPE(*type*)can be used as a synonym for this parameter.

The queue name and queue type (and, on z/OS, the queue disposition) are always displayed.

Requested parameters

Specify one or more parameters that define the data to be displayed. The parameters can be specified in any order, but do not specify the same parameter more than once.

Most parameters are relevant only for queues of a particular type or types. Parameters that are not relevant for a particular type of queue cause no output, nor is an error raised.

The following table shows the parameters that are relevant for each type of queue. There is a brief description of each parameter after the table, but for more information, see the **DEFINE** command for each queue type.

*Table 54. Parameters that can be returned by the **DISPLAY QUEUE** command.*

Cross-tabulation of queue parameters and queue types. If the parameter applies to the queue type, the cell contains a check mark.

	Local queue	Model queue	Alias queue	Remote queue	Cluster queue
ACCTQ	✓	✓			
ALTDATE	✓	✓	✓	✓	✓
ALTTIME	✓	✓	✓	✓	✓
BOQNAME	✓	✓			

*Table 54. Parameters that can be returned by the **DISPLAY QUEUE** command.*

Cross-tabulation of queue parameters and queue types. If the parameter applies to the queue type, the cell contains a check mark.

(continued)

	Local queue	Model queue	Alias queue	Remote queue	Cluster queue
BOTHRESH	✓	✓			
CFSTRUCT	✓	✓			
CLCHNAME	✓	✓			
CLUSDATE					✓
CLUSNL	✓		✓	✓	
CLUSQMGR					✓
CLUSQT					✓
CLUSTER	✓		✓	✓	✓
CLUSTIME					✓
CLWLPRTY	✓		✓	✓	✓
CLWLRANK	✓		✓	✓	✓
CLWLUSEQ	✓				
CRDATE	✓	✓			
CRTIME	✓	✓			
CURDEPTH	✓				
CUSTOM	✓	✓	✓	✓	✓
DEFBIND	✓		✓	✓	✓
DEFPRESP	✓	✓	✓	✓	✓
DEFPRTY	✓	✓	✓	✓	✓
DEFPSIST	✓	✓	✓	✓	✓
DEFREADA	✓	✓	✓		
DEFSOPT	✓	✓			
DEFTYPE	✓	✓			
DESCR	✓	✓	✓	✓	✓
DISTL	✓	✓			
GET	✓	✓	✓		

*Table 54. Parameters that can be returned by the **DISPLAY QUEUE** command.*

Cross-tabulation of queue parameters and queue types. If the parameter applies to the queue type, the cell contains a check mark.

(continued)

	Local queue	Model queue	Alias queue	Remote queue	Cluster queue
HARDENBO	✓	✓			
INDXTYPE	✓	✓			
INITQ	✓	✓			
IPPROCS	✓				
MAXDEPTH	✓	✓			
MAXMSGL	✓	✓			
MONQ	✓	✓			
MSGDLVSQ	✓	✓			
NPMCLASS	✓	✓			
OPPROCS	✓				
PROCESS	✓	✓			
PROPCTL	✓	✓	✓		
PSID	✓				
PUT	✓	✓	✓	✓	✓
QDEPTHHI	✓	✓			
QDEPTHLO	✓	✓			
QDPHIEV	✓	✓			
QDPLOEV	✓	✓			
QDPMAXEV	✓	✓			
QMID					✓
QSGDISP	✓	✓	✓	✓	✓
QSVCIEV	✓	✓			
QSVCINT	✓	✓			
QTYPE	✓	✓	✓	✓	✓
RETINTVL	✓	✓			
RNAME				✓	

*Table 54. Parameters that can be returned by the **DISPLAY QUEUE** command.*

Cross-tabulation of queue parameters and queue types. If the parameter applies to the queue type, the cell contains a check mark.

(continued)

	Local queue	Model queue	Alias queue	Remote queue	Cluster queue
RQMNAME				✓	
SCOPE	✓		✓	✓	
SHARE	✓	✓			
STATQ	✓	✓			
STGCLASS	✓	✓			
TARGET			✓		
TARGTYPE			✓		
TPIPE	✓				
TRIGDATA	✓	✓			
TRIGDPTH	✓	✓			
TRIGGER	✓	✓			
TRIGMPRI	✓	✓			
TRIGTYPE	✓	✓			
USAGE	✓	✓			
XMITQ				✓	

ACCTQ
Whether accounting (on z/OS, thread-level and queue-level accounting) data collection is to be enabled for the queue.

ALTDATE
The date on which the definition or information was last altered, in the form `yyyy-mm-dd`.

ALTTIME
The time at which the definition or information was last altered, in the form `hh.mm.ss`.

BOQNAME
Backout requeue name.

BOTHRESH
Backout threshold.

CLCHNAME
`CLCHNAME` is the generic name of the cluster-sender channels that use this queue as a transmission queue. The attribute specifies which cluster-sender channels send messages to a cluster-receiver channel from this cluster transmission queue. `CLCHNAME` is not supported on z/OS.

CLUSDATE
The date on which the definition became available to the local queue manager, in the form `yyyy-mm-dd`.

CLUSNL
The namelist that defines the cluster that the queue is in.

CLUSQMGR
The name of the queue manager that hosts the queue.

CLUSQT
Cluster queue type. This can be:

QALIAS
The cluster queue represents an alias queue.

QLOCAL
The cluster queue represents a local queue.

QMGR
The cluster queue represents a queue manager alias.

QREMOTE
The cluster queue represents a remote queue.

CLUSTER
The name of the cluster that the queue is in.

CLUSTIME
The time at which the definition became available to the local queue manager, in the form `hh.mm.ss`.

CLWLPRTY
The priority of the queue for the purposes of cluster workload distribution.

CLWLRANK
The rank of the queue for the purposes of cluster workload distribution.

CLWLUSEQ
Whether puts are allowed to other queue definitions apart from local ones.

CRDATE
The date on which the queue was defined (in the form `yyyy-mm-dd`).

CRTIME
The time at which the queue was defined (in the form `hh.mm.ss`).

CURDEPTH
Current depth of queue.

On z/OS, CURDEPTH is returned as zero for queues defined with a disposition of GROUP. It is also returned as zero for queues defined with a disposition of SHARED if the CF structure that they use is unavailable or has failed.

Messages put on a queue count toward the current depth as they are put. Messages got from a queue do not count toward the current depth. This is true whether operations are done under syncpoint or not. Commit has no effect on current depth. Therefore:

- Messages put under syncpoint (but not yet committed) are included in the current depth.
- Messages got under syncpoint (but not yet committed) are not included in the current depth.

CUSTOM
This attribute is reserved for the configuration of new features before separate attributes have been introduced. It can contain the values of zero or more attributes as pairs of attribute name and value in the form `NAME(VALUE)`.

DEFBIND
Default message binding.

DEFPRESP
Default put response; defines the behavior that should be used by applications when the put response type in the MQPMO options has been set to MQPMO_RESPONSE_AS_Q_DEF.

DEFPRTY
Default priority of the messages put on the queue.

DEFPSIST
Whether the default persistence of messages put on this queue is set to NO or YES. NO means that messages are lost across a restart of the queue manager.

DEFREADA
This specifies the default read ahead behavior for non-persistent messages delivered to the client.

DEFSOPT
Default share option on a queue opened for input.

DEFTYPE
Queue definition type. This can be:

- PREDEFINED (Predefined)

  The queue was created with a DEFINE command, either by an operator or by a suitably authorized application sending a command message to the service queue.

- PERMDYN (Permanent dynamic)

  Either the queue was created by an application issuing MQOPEN with the name of a model queue specified in the object descriptor (MQOD), or (if this is a model queue) this determines the type of dynamic queue that can be created from it.

  On z/OS the queue was created with QSGDISP(QMGR).

- TEMPDYN (Temporary dynamic)

  Either the queue was created by an application issuing MQOPEN with the name of a model queue specified in the object descriptor (MQOD), or (if this is a model queue) this determines the type of dynamic queue that can be created from it.

  On z/OS the queue was created with QSGDISP(QMGR).

- SHAREDYN

  A permanent dynamic queue was created when an application issued an MQOPEN API call with the name of this model queue specified in the object descriptor (MQOD).

  On z/OS, in a queue-sharing group environment, the queue was created with QSGDISP(SHARED).

DESCR
Descriptive comment.

DISTL
Whether distribution lists are supported by the partner queue manager. (Supported only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.)

GET
Whether the queue is enabled for gets.

HARDENBO
Whether the back out count is hardened to ensure that the count of the number of times that a message has been backed out is accurate.

Note: This parameter affects only WebSphere MQ for z/OS. It can be set and displayed on other platforms but has no effect.

INDXTYPE
Index type (supported only on z/OS).

INITQ
Initiation queue name.

IPPROCS
Number of handles indicating that the queue is open for input.

On z/OS, IPPROCS is returned as zero for queues defined with a disposition of GROUP. With a disposition of SHARED, only the handles for the queue manager sending back the information are returned, not the information for the whole group.

MAXDEPTH
Maximum depth of queue.

MAXMSGL
Maximum message length.

MONQ
Online monitoring data collection.

MSGDLVSQ
Message delivery sequence.

NPMCLASS
Level of reliability assigned to non-persistent messages that are put to the queue.

OPPROCS
Number of handles indicating that the queue is open for output.

On z/OS, OPPROCS is returned as zero for queues defined with a disposition of GROUP. With a disposition of SHARED, only the handles for the queue manager sending back the information are returned, not the information for the whole group.

PROCESS
Process name.

PROPCTL
Property control attribute.

This parameter is applicable to Local, Alias and Model queues.

This parameter is optional.

Specifies how message properties are handled when messages are retrieved from queues using the MQGET call with the MQGMO_PROPERTIES_AS_Q_DEF option.

Permissible values are:

ALL
To contain all the properties of the message, except those contained in the message descriptor (or extension), select All. The All value enables applications that cannot be changed to access all the message properties from MQRFH2 headers.

COMPAT
If the message contains a property with a prefix of **mcd.**, **jms.**, **usr.**, or **mqext.**, all message properties are delivered to the application in an MQRFH2 header. Otherwise all properties of the message, except those contained in the message descriptor (or extension), are discarded and are no longer accessible to the application.

This is the default value; it allows applications which expect JMS related properties to be in an MQRFH2 header in the message data to continue to work unmodified.

FORCE
Properties are always returned in the message data in an MQRFH2 header regardless of whether the application specifies a message handle.

A valid message handle supplied in the MsgHandle field of the MQGMO structure on the MQGET call is ignored. Properties of the message are not accessible via the message handle.

NONE
All properties of the message, except those in the message descriptor (or extension), are removed from the message before the message is delivered to the application.

PUT
Whether the queue is enabled for puts.

QDEPTHHI
Queue Depth High event generation threshold.

QDEPTHLO
Queue Depth Low event generation threshold.

QDPHIEV
Whether Queue Depth High events are generated.

You cannot use QDPHIEV as a filter keyword.

QDPLOEV
Whether Queue Depth Low events are generated.

You cannot use QDPLOEV as a filter keyword.

QDPMAXEV
Whether Queue Full events are generated.

You cannot use QDPMAXEV as a filter keyword.

QMID
The internally generated unique name of the queue manager that hosts the queue.

QSVCIEV
Whether service interval events are generated.

You cannot use QSVCIEV as a filter keyword.

QSVCINT
Service interval event generation threshold.

QTYPE
Queue type.

On AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS, the queue type is always displayed.

On AIX, HP-UX, Linux, IBM i, Solaris, and Windows, TYPE(*type*) can be used as a synonym for this parameter.

RETINTVL
Retention interval.

RNAME
Name of the local queue, as known by the remote queue manager.

RQMNAME
Remote queue manager name.

SCOPE
Scope of queue definition (not supported on z/OS).

SHARE
Whether the queue can be shared.

STATQ
Whether statistics data information is to be collected.

STGCLASS
Storage class.

TARGET
This parameter requests that the base object name of an aliased queue is displayed.

TARGTYPE
This parameter requests that the target (base) type of an aliased queue is displayed.

TPIPE
The TPIPE names used for communication with OTMA via the WebSphere MQ IMS bridge if the bridge is active. This parameter is supported only on z/OS.

TRIGDATA
Trigger data.

TRIGDPTH
Trigger depth.

TRIGGER
Whether triggers are active.

TRIGMPRI
Threshold message priority for triggers.

TRIGTYPE
Trigger type.

USAGE
Whether the queue is a transmission queue.

XMITQ
Transmission queue name.

For more details of these parameters, see "DEFINE queues" on page 399.

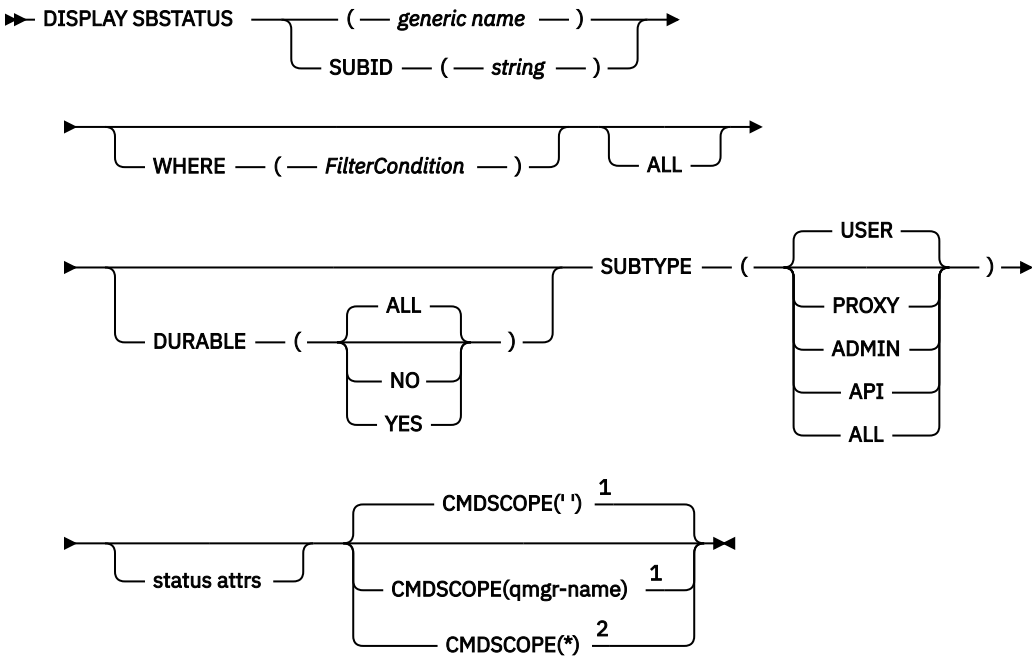
DISPLAY SBSTATUS

Use the MQSC command DISPLAY SBSTATUS to display the status of a subscription.

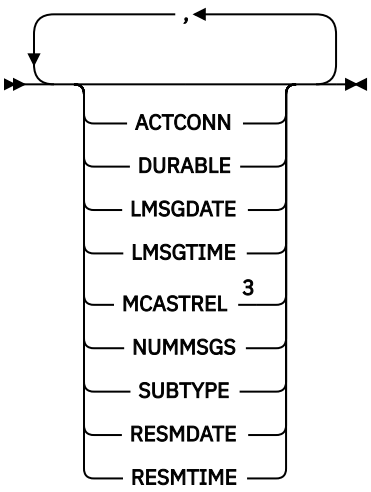
UNIX and Linux	Windows
✓	✓

Synonym: DIS SBSTATUS

DISPLAY SBSTATUS



Status attributes



Notes:

[1] Valid only on z/OS.
[2] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[3] Not valid on z/OS.

Parameter descriptions for DISPLAY SBSTATUS

You must specify the name of the subscription definition for which you want to display status information. This can be a specific subscription name or a generic subscription name. By using a generic subscription name, you can display either:

- All subscription definitions
- One or more subscriptions that match the specified name

(generic-name)
The local name of the subscription definition to be displayed. A trailing asterisk (*) matches all subscriptions with the specified stem followed by zero or more characters. An asterisk (*) on its own specifies all subscriptions.

WHERE
Specify a filter condition to display only those subscriptions that satisfy the selection criterion of the filter condition. The filter condition is in three parts: *filter-keyword*, *operator*, and *filter-value*:

filter-keyword
Almost any parameter that can be used to display attributes for this DISPLAY command. However, you cannot use the CMDSCOPE parameter as a filter keyword. Subscriptions of a type for which the filter keyword is not a valid attribute are not displayed.

operator
This is used to determine whether a subscription satisfies the filter value on the given filter keyword. The operators are:

LT
Less than

GT
Greater than

EQ
Equal to

NE
Not equal to

LE
Less than or equal to

GE
Greater than or equal to

LK
Matches a generic string that you provide as a *filter-value*

NL
Does not match a generic string that you provide as a *filter-value*

filter-value
The value that the attribute value must be tested against using the operator. Depending on the filter-keyword, this can be:

- An explicit value, that is a valid value for the attribute being tested.

  You can use operators LT, GT, EQ, NE, LE or GE only. However, if the attribute value is one from a possible set of values on a parameter (for example, the value USER on the SUBTYPE parameter), you can only use EQ or NE.
- A generic value. This is a character string (such as the character string you supply for the SUBUSER parameter) with an asterisk at the end, for example ABC*. If the operator is LK, all items where the attribute value begins with the string (ABC in the example) are listed. If the operator is NL, all items where the attribute value does not begin with the string are listed.

  You cannot use a generic filter-value for parameters with numeric values or with one of a set of values.

ALL
Display all the status information for each specified subscription definition. This is the default if you do not specify a generic name, and do not request any specific parameters.

On z/OS this is also the default if you specify a filter condition using the WHERE parameter, but on other platforms only, requested attributes are displayed.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if QSGDISP is set to GROUP.

' '
The command is processed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is processed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is processed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of this is the same as entering the command on every queue manager in the queue-sharing group.

You cannot use CMDSCOPE as a filter keyword.

DURABLE
Specify this attribute to restrict the type of subscriptions which are displayed.

ALL
Display all subscriptions.

NO
Only information about nondurable subscriptions is displayed.

YES
Only information about durable subscriptions is displayed.

SUBTYPE
Specify this attribute to restrict the type of subscriptions which are displayed.

USER
Displays only **API** and **ADMIN** subscriptions.

PROXY
Only system created subscriptions relating to inter-queue-manager subscriptions are selected.

ADMIN
Only subscriptions that have been created by an administration interface or modified by an administration interface are selected.

API
Only subscriptions created by applications using a WebSphere MQ API call are selected.

ALL
All subscription types are displayed (no restriction).

Requested parameters

Specify one or more parameters that define the data to be displayed. The parameters can be specified in any order, but do not specify the same parameter more than once.

ACTCONN
Returns the *ConnId* of the *HConn* that currently has this subscription open.

DURABLE
A durable subscription is not deleted when the creating application closes its subscription handle.

NO
The subscription is removed when the application that created it is closed or disconnected from the queue manager.

YES
The subscription persists even when the creating application is no longer running or has been disconnected. The subscription is reinstated when the queue manager restarts.

LMSGDATE
The date on which a message was last published to the destination specified by this subscription.

LMSGTIME
The time on which a message was last published to the destination specified by this subscription.

MCASTREL
Indicator of the reliability of the multicast messages.

The values are expressed as a percentage. A value of 100 indicates that all messages are being delivered without problems. A value less than 100 indicates that some of the messages are experiencing network issues. To determine the nature of these issues the user can switch on event message generation, using the **COMMEV** parameter of the COMMINFO objects, and examine the generated event messages.

The following two values are returned:

- The first value is based on recent activity over a short period.
- The second value is based on activity over a longer period.

If no measurement is available the values are shown as blanks.

NUMMSGS
The number of messages put to the destination specified by this subscription since it was created, or since the queue manager was restarted, whichever is more recent. This number might not reflect the total number of messages that are, or have been, available to the consuming application. This

is because it might also include publications that were partially processed but then undone by the queue manager due to a publication failure, or publications that were made within syncpoint that were rolled-back by the publishing application.

RESMDATE
The date of the most recent **MQSUB** API call that connected to the subscription.

RESMTIME
The time of the most recent **MQSUB** API call that connected to the subscription.

SUBID(*string*)
The internal, unique key identifying a subscription.

SUBTYPE
Indicates how the subscription was created.

PROXY
An internally created subscription used for routing publications through a queue manager.

ADMIN
Created using the **DEF SUB** MQSC or PCF command. This **SUBTYPE** also indicates that a subscription has been modified using an administrative command.

API
Created using an **MQSUB** API call.

For more details of these parameters, see "DEFINE SUB" on page 434

DISPLAY SERVICE

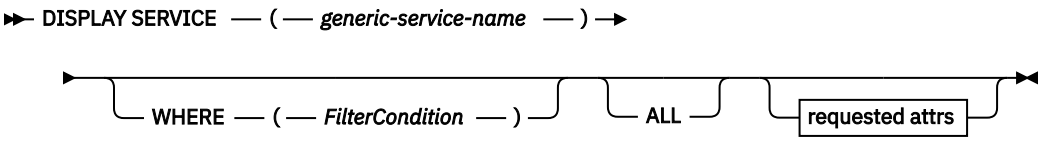
Use the MQSC command DISPLAY SERVICE to display information about a service.

UNIX and Linux	Windows
✓	✓

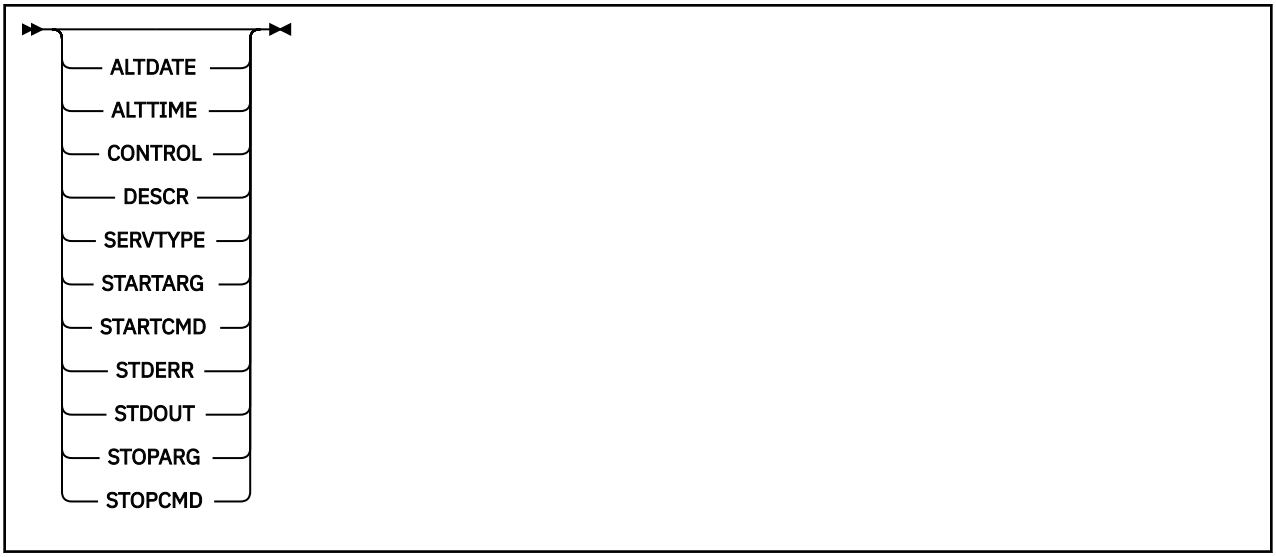
- Syntax diagram
- "Keyword and parameter descriptions for DISPLAY SERVICE" on page 607
- "Requested parameters" on page 608

Synonym:

DISPLAY SERVICE



Requested attrs



Keyword and parameter descriptions for DISPLAY SERVICE

You must specify a service for which you want to display information. You can specify a service by using either a specific service name or a generic service name. By using a generic service name, you can display either:

- Information about all service definitions, by using a single asterisk (*), or
- Information about one or more service that match the specified name.

(*generic-service-name*)
The name of the service definition for which information is to be displayed. A single asterisk (*) specifies that information for all service identifiers is to be displayed. A character string with an asterisk at the end matches all services with the string followed by zero or more characters.

WHERE
Specify a filter condition to display information for those listeners that satisfy the selection criterion of the filter condition. The filter condition is in three parts: *filter-keyword*, *operator*, and *filter-value*:

filter-keyword
Any parameter that can be used to display attributes for this DISPLAY command.

operator
This is used to determine whether a listener satisfies the filter value on the given filter keyword. The operators are:

LT
Less than

GT
Greater than

EQ
Equal to

NE
Not equal to

LE
Less than or equal to

GE
Greater than or equal to

LK
Matches a generic string that you provide as a *filter-value*

NL
Does not match a generic string that you provide as a *filter-value*

filter-value
The value that the attribute value must be tested against using the operator. Depending on the filter-keyword, this can be:

- An explicit value, that is a valid value for the attribute being tested.

  You can use operators LT, GT, EQ, NE, LE or GE only. However, if the attribute value is one from a possible set of values on a parameter (for example, the value MANUAL on the CONTROL parameter), you can only use EQ or NE.

  .

- A generic value. This is a character string. with an asterisk at the end, for example ABC*. If the operator is LK, all items where the attribute value begins with the string (ABC in the example) are listed. If the operator is NL, all items where the attribute value does not begin with the string are listed.

  You cannot use a generic filter-value for parameters with numeric values or with one of a set of values.

ALL
Specify this to display all the service information for each specified service. If this parameter is specified, any parameters that are requested specifically have no effect; all parameters are still displayed.

This is the default if you do not specify a generic identifier, and do not request any specific parameters.

On z/OS this is also the default if you specify a filter condition using the WHERE parameter, but on other platforms only requested attributes are displayed.

Requested parameters

Specify one or more attributes that define the data to be displayed. The attributes can be specified in any order. Do not specify the same attribute more than once.

ALTDATE
The date on which the definition was last altered, in the form `yyyy-mm-dd`.

ALTTIME
The time at which the definition was last altered, in the form `hh.mm.ss`.

CONTROL
How the service is to be started and stopped:

MANUAL
The service is not to be started automatically or stopped automatically. It is to be controlled by use of the START SERVICE and STOP SERVICE commands.

QMGR
The service is to be started and stopped at the same time as the queue manager is started and stopped.

STARTONLY
The service is to be started at the same time as the queue manager is started, but is not requested to stop when the queue manager is stopped.

DESCR
Descriptive comment.

SERVTYPE
Specifies the mode in which the service is to run:

COMMAND
A command service object. Multiple instances of a command service object can be executed concurrently. You cannot monitor the status of command service objects.

SERVER
A server service object. Only one instance of a server service object can be executed at a time. The status of server service objects can be monitored using the DISPLAY SVSTATUS command.

STARTARG
Specifies the arguments to be passed to the user program at queue manager startup.

STARTCMD
Specifies the name of the program which is to run.

STDERR
Specifies the path to the file to which the standard error (stderr) of the service program is to be redirected.

STDOUT
Specifies the path to the file to which the standard output (stdout) of the service program is to be redirected.

STOPARG
Specifies the arguments to be passed to the stop program when instructed to stop the service.

STOPCMD
Specifies the name of the executable program to run when the service is requested to stop.

For more details of these parameters, see "DEFINE SERVICE" on page 432.

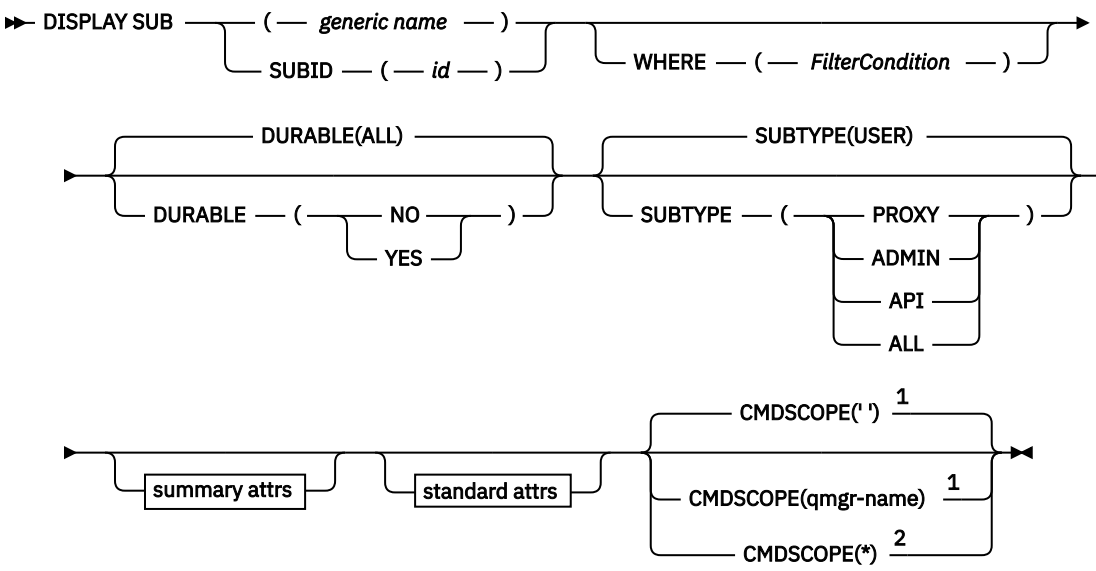
DISPLAY SUB

Use the MQSC command DISPLAY SUB to display the attributes associated with a subscription.

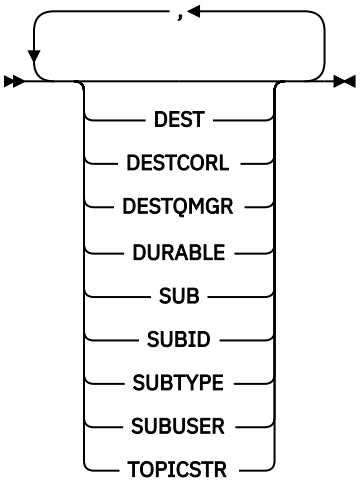
UNIX and Linux	Windows
✓	✓

Synonym: DIS SUB

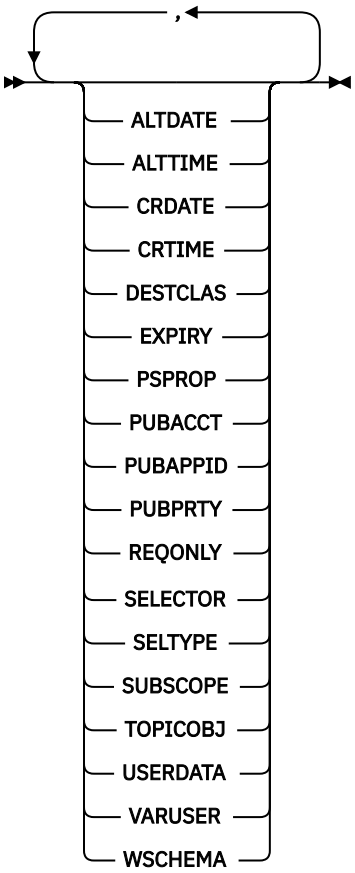
DISPLAY SUB



summary attributes



standard attributes



Notes:

[1] Valid only on z/OS.
[2] Valid only on z/OS when the queue manager is a member of a queue-sharing group.

Usage notes for DISPLAY SUB

1. The TOPICSTR parameter might contain characters that cannot be translated into printable characters when the command output is displayed. On z/OS, these non-printable characters will be displayed as blanks. On distributed platforms using runmqsc, these non-printable characters will be displayed as dots.

Parameter descriptions for DISPLAY SUB

You must specify either the name or the identifier of subscription you want to display. This can be a specific subscription name, or SUBID, or a generic subscription name. By using a generic subscription name, you can display either:

- All subscription definitions
- One or more subscriptions that match the specified name

The following are valid forms:

```
DIS SUB(xyz)
DIS SUB SUBID(123)
DIS SUB(xyz*)
```

(generic-name)
The local name of the subscription definition to be displayed. A trailing asterisk (*) matches all subscriptions with the specified stem followed by zero or more characters. An asterisk (*) on its own specifies all subscriptions.

WHERE
Specify a filter condition to display only those subscriptions that satisfy the selection criterion of the filter condition. The filter condition is in three parts: *filter-keyword* , *operator*, and *filter-value* :

filter-keyword
Almost any parameter that can be used to display attributes for this DISPLAY command. However, you cannot use the CMDSCOPE parameter as a filter keyword. Subscriptions of a type for which the filter keyword is not a valid attribute are not displayed.

operator
This is used to determine whether a subscription satisfies the filter value on the given filter keyword. The operators are:

LT
Less than

GT
Greater than

EQ
Equal to

NE
Not equal to

LE
Less than or equal to

GE
Greater than or equal to

LK
Matches a generic string that you provide as a *filter-value*

NL
Does not match a generic string that you provide as a *filter-value*

filter-value
The value that the attribute value must be tested against using the operator. Depending on the filter-keyword, this can be:

- An explicit value, that is a valid value for the attribute being tested.

  You can use operators LT, GT, EQ, NE, LE or GE only. However, if the attribute value is one from a possible set of values on a parameter (for example, the value QALIAS on the CLUSQT parameter), you can only use EQ or NE. For the parameters HARDENBO, SHARE, and TRIGGER, use either EQ YES or EQ NO.
- A generic value. This is a character string (such as the character string you supply for the DESCR parameter) with an asterisk at the end, for example ABC*. If the operator is LK, all items where the attribute value begins with the string (ABC in the example) are listed. If the operator is NL, all items where the attribute value does not begin with the string are listed. Only a single trailing wildcard character (asterisk) is permitted.

  You cannot use a generic filter-value for parameters with numeric values or with one of a set of values.

SUMMARY
Specify this to display the set of summary attributes; this is the default value.

On AIX, HP-UX, Linux, IBM i, Solaris, Windows , and z/OS, this is the default if you do not specify a generic name and do not request any specific attributes.

ALL
Specify this to display all the attributes.

If this parameter is specified, any attributes that are also requested specifically have no effect; all attributes are still displayed.

ALTDATE(*string*)
The date of the most recent **MQSUB** or **ALTER SUB** command that modified the properties of the subscription.

ALTTIME(*string*)
The time of the most recent **MQSUB** or **ALTER SUB** command that modified the properties of the subscription.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is processed when the queue manager is a member of a queue-sharing group.

' '
The command is processed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is processed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is processed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of setting this value is the same as entering the command on every queue manager in the queue-sharing group.

You cannot use CMDSCOPE as a filter keyword.

CRDATE(*string*)
The date of the first **MQSUB** or **DEF SUB** command that created this subscription.

CRTIME(*string*)
The time of the first **MQSUB** or **DEF SUB** command that created this subscription.

DEST(*string*)
The destination for messages published to this subscription; this parameter is the name of a queue.

DESTCLAS
System managed destination.

PROVIDED
The destination is a queue.

MANAGED
The destination is managed.

DESTCORL(*string*)
The *CorrelId* used for messages published to this subscription.

DESTQMGR(*string*)
The destination queue manager for messages published to this subscription.

DURABLE
A durable subscription is not deleted when the creating application closes its subscription handle.

ALL
Display all subscriptions.

NO
The subscription is removed when the application that created it, is closed or disconnected from the queue manager.

YES
The subscription persists even when the creating application is no longer running or has been disconnected. The subscription is reinstated when the queue manager restarts.

EXPIRY
The time to expiry of the subscription object from the creation date and time.

(*integer*)
The time to expiry, in tenths of a second, from the creation date and time.

UNLIMITED
There is no expiry time. This is the default option supplied with the product.

PSPROP
The manner in which publish subscribe related message properties are added to messages sent to this subscription.

NONE
Do not add publish subscribe properties to the message.

COMPAT
Publish subscribe properties are added within an MQRFH version 1 header unless the message was published in PCF format.

MSGPROP
Publish subscribe properties are added as message properties.

RFH2
Publish subscribe properties are added within an MQRFH version 2 header.

PUBACCT(*string*)
Accounting token passed by the subscriber, for propagation into messages published to this subscription in the *AccountingToken* field of the MQMD.

PUBAPPID(*string*)
Identity data passed by the subscriber, for propagation into messages published to this subscription in the *ApplIdentityData* field of the MQMD.

PUBPRTY
The priority of the message sent to this subscription.

ASPUB
Priority of the message sent to this subscription is taken from the priority supplied in the published message.

ASQDEF
Priority of the message sent to this subscription is taken from the default priority of the queue defined as a destination.

(integer)
An integer providing an explicit priority for messages published to this subscription.

REQONLY
Indicates whether the subscriber polls for updates using the MQSUBRQ API call, or whether all publications are delivered to this subscription.

NO
All publications on the topic are delivered to this subscription.

YES
Publications are only delivered to this subscription in response to an MQSUBRQ API call.

This parameter is equivalent to the subscribe option MQSO_PUBLICATIONS_ON_REQUEST.

SELECTOR(*string*)
A selector that is applied to messages published to the topic.

SELTYPE
The type of selector string that has been specified.

NONE
No selector has been specified.

STANDARD
The selector references only the properties of the message, not its content, using the standard WebSphere MQ selector syntax. Selectors of this type are to be handled internally by the queue manager.

EXTENDED
The selector uses extended selector syntax, typically referencing the content of the message. Selectors of this type cannot be handled internally by the queue manager; extended selectors can be handled only by another program such as WebSphere Message Broker.

SUB(*string*)
The application's unique identifier for a subscription.

SUBID(*string*)
The internal, unique key identifying a subscription.

SUBLEVEL(*integer*)
The level within the subscription hierarchy at which this subscription is made. The range is zero through 9.

SUBSCOPE
Determines whether this subscription is forwarded to other queue managers, so that the subscriber receives messages published at those other queue managers.

ALL
The subscription is forwarded to all queue managers directly connected through a publish/subscribe collective or hierarchy.

QMGR
The subscription forwards messages published on the topic only within this queue manager.

Note: Individual subscribers can only *restrict* **SUBSCOPE**. If the parameter is set to ALL at topic level, then an individual subscriber can restrict it to QMGR for this subscription. However, if the parameter is set to QMGR at topic level, then setting an individual subscriber to ALL has no effect.

SUBTYPE
Indicates how the subscription was created.

USER
Displays only **API** and **ADMIN** subscriptions.

PROXY
An internally created subscription used for routing publications through a queue manager.

ADMIN
Created using **DEF SUB** MQSC or PCF command. This **SUBTYPE** also indicates that a subscription has been modified using an administrative command.

API
Created using an **MQSUB** API request.

ALL
All.

SUBUSER(*string*)
Specifies the user ID that is used for security checks that are performed to ensure that publications can be put to the destination queue associated with the subscription. This ID is either the user ID associated with the creator of the subscription or, if subscription takeover is permitted, the user ID that last took over the subscription. The length of this parameter must not exceed 12 characters.

TOPICOBJ(*string*)
The name of a topic object used by this subscription.

TOPICSTR(*string*)
Specifies a fully qualified topic name, or a topic set using wildcard characters for the subscription.

USERDATA(*string*)
Specifies the user data associated with the subscription. The string is a variable length value that can be retrieved by the application on an MQSUB API call and passed in a message sent to this subscription as a message property.

V 7.5.0.8 From Version 7.5.0, Fix Pack 8, an IBM WebSphere MQ classes for JMS application can retrieve the subscription user data from the message by using the constant `JMS_IBM_SUBSCRIPTION_USER_DATA` in the JmsConstants interface with the method `javax.jms.Message.getStringProperty(java.lang.String)`. For more information, see Retrieval of user subscription data.

VARUSER
Specifies whether a user other than the subscription creator can connect to and take over ownership of the subscription.

ANY
Any user can connect to and takeover ownership of the subscription.

FIXED
Takeover by another **USERID** is not permitted.

WSCHEMA
The schema to be used when interpreting any wildcard characters in the topic string.

CHAR
Wildcard characters represent portions of strings.

TOPIC
Wildcard characters represent portions of the topic hierarchy.

DISPLAY SVSTATUS

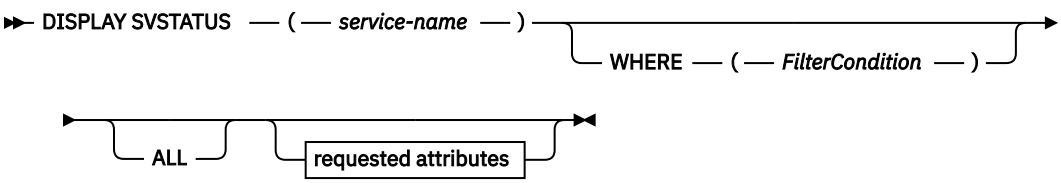
Use the MQSC command DISPLAY SVSTATUS to display status information for one or more services. Only services with a **SERVTYPE** of SERVER are displayed.

UNIX and Linux	Windows
✓	✓

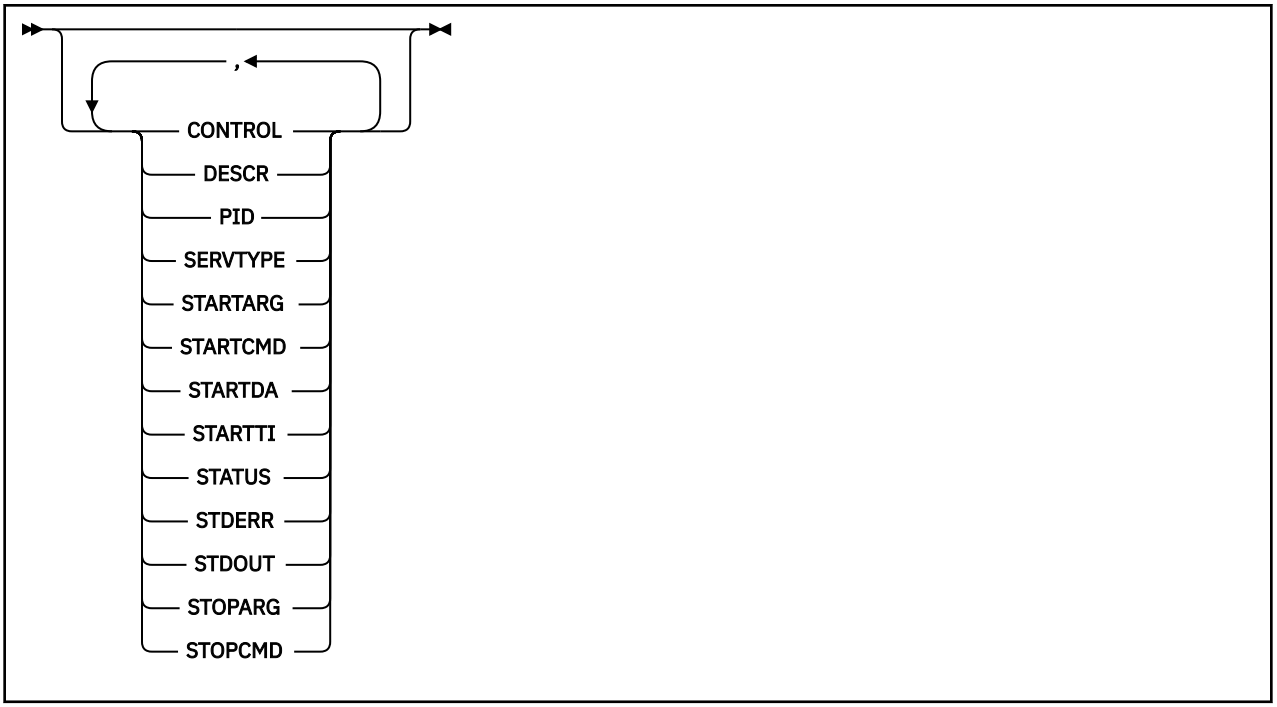
- Syntax diagram
- “Keyword and parameter descriptions for DISPLAY SVSTATUS” on page 617
- “Requested parameters” on page 618

Synonym:

DISPLAY SVSTATUS



Requested attributes



Keyword and parameter descriptions for DISPLAY SVSTATUS

You must specify a service for which you want to display status information. You can specify a service by using either a specific service name or a generic service name. By using a generic service name, you can display either:

- Status information for all service definitions, by using a single asterisk (*), or
- Status information for one or more services that match the specified name.

(*generic-service-name*)
The name of the service definition for which status information is to be displayed. A single asterisk (*) specifies that information for all connection identifiers is to be displayed. A character string with an asterisk at the end matches all services with the string followed by zero or more characters.

WHERE
Specify a filter condition to display status information for those services that satisfy the selection criterion of the filter condition. The filter condition is in three parts: *filter-keyword*, *operator*, and *filter-value*:

filter-keyword
Any parameter that can be used to display attributes for this DISPLAY command.

operator
This is used to determine whether a service satisfies the filter value on the given filter keyword. The operators are:

LT
Less than

GT
Greater than

EQ
Equal to

NE
Not equal to

LE
Less than or equal to

GE
Greater than or equal to

filter-value
The value that the attribute value must be tested against using the operator. Depending on the filter-keyword, this can be:

- An explicit value, that is a valid value for the attribute being tested.

  You can use operators LT, GT, EQ, NE, LE, or GE only. However, if the attribute value is one from a possible set of values on a parameter (for example, the value MANUAL on the CONTROL parameter), you can only use EQ or NE.
- A generic value. This is a character string. with an asterisk at the end, for example ABC*. If the operator is LK, all items where the attribute value begins with the string (ABC in the example) are listed. If the operator is NL, all items where the attribute value does not begin with the string are listed.

  You cannot use a generic filter-value for parameters with numeric values or with one of a set of values.

ALL
Display all the status information for each specified service. This is the default if you do not specify a generic name, and do not request any specific parameters.

Requested parameters

Specify one or more attributes that define the data to be displayed. The attributes can be specified in any order. Do not specify the same attribute more than once.

CONTROL
How the service is to be started and stopped:

MANUAL
The service is not to be started automatically or stopped automatically. It is to be controlled by use of the START SERVICE and STOP SERVICE commands.

QMGR
The service is to be started and stopped at the same time as the queue manager is started and stopped.

STARTONLY
The service is to be started at the same time as the queue manager is started, but is not requested to stop when the queue manager is stopped.

DESCR
Descriptive comment.

PID
The operating system process identifier associated with the service.

SERVTYPE
The mode in which the service runs. A service can have a **SERVTYPE** of SERVER or COMMAND, but only services with **SERVTYPE(SERVER)** are displayed by this command.

STARTARG
The arguments passed to the user program at startup.

STARTCMD
The name of the program being run.

STARTDA
The date on which the service was started.

STARTTI
The time at which the service was started.

STATUS
The status of the process:

RUNNING
The service is running.

STARTING
The service is in the process of initializing.

STOPPING
The service is stopping.

STDERR
Destination of the standard error (stderr) of the service program.

STDOUT
Destination of the standard output (stdout) of the service program.

STOPARG
The arguments to be passed to the stop program when instructed to stop the service.

STOPCMD
The name of the executable program to run when the service is requested to stop.

For more details of these parameters, see “DEFINE SERVICE” on page 432.

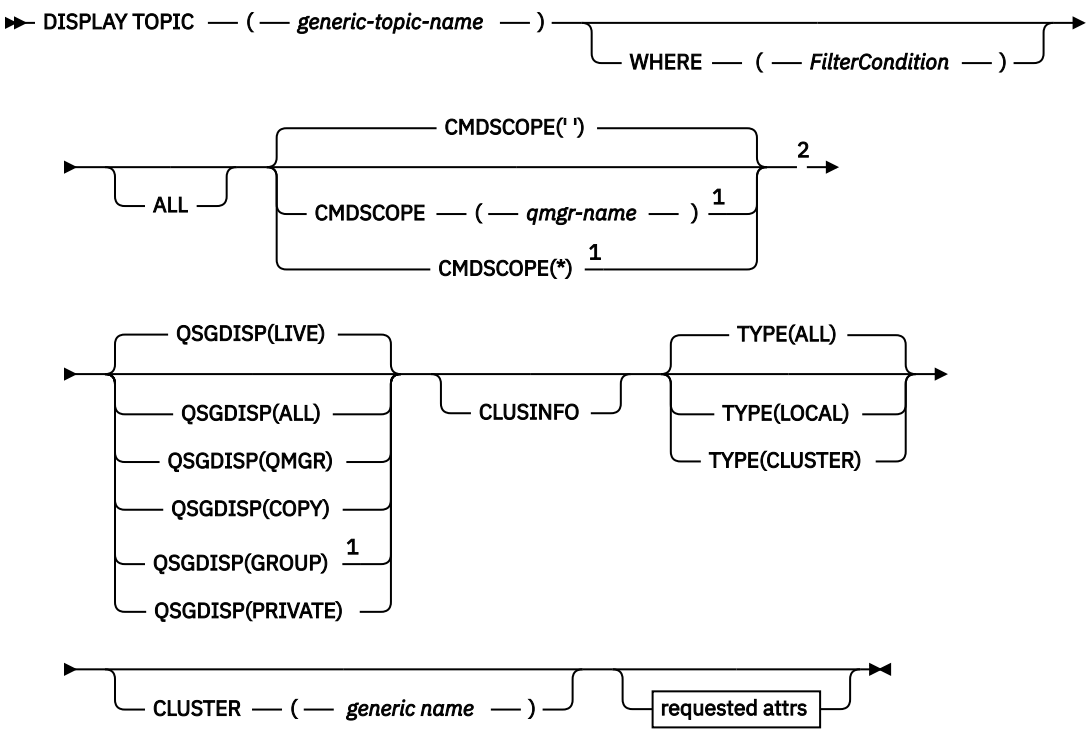
DISPLAY TOPIC

Use the MQSC command DISPLAY TOPIC to display the attributes of one or more IBM WebSphere MQ topic objects of any type.

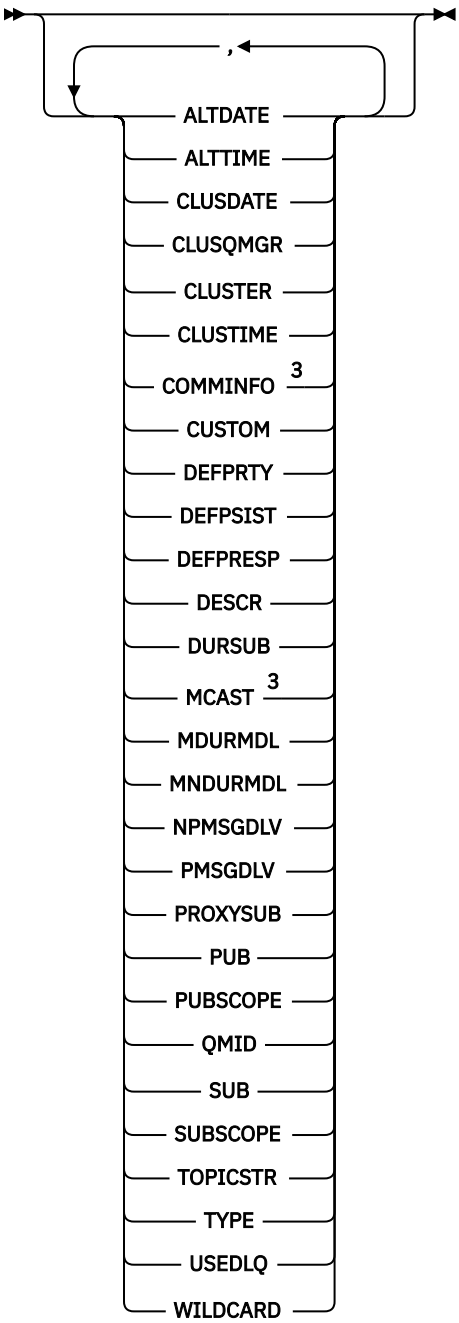
UNIX and Linux	Windows
✓	✓

Synonym: DIS TOPIC

DISPLAY TOPIC



Requested attrs



Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[2] Valid only on z/OS.
[3] Not valid on z/OS.

Usage notes for DISPLAY TOPIC

1. On z/OS, the channel initiator must be running before you can display information about cluster topics, using TYPE(CLUSTER) or the CLUSINFO parameter.
2. The TOPICSTR parameter might contain characters that cannot be translated into printable characters when the command output is displayed. On z/OS, these non-printable characters are displayed as blanks. On distributed platforms using the **runmqsc** command, these non-printable characters are displayed as dots.

3. You can use the following command (or synonym) as an alternative way to display these attributes.

   - **DISPLAY TCLUSTER**

   This command produces the same output as the DISPLAY TOPIC TYPE(CLUSTER) command. If you enter the command in this way, do not use the TYPE parameter.

Parameter descriptions for DISPLAY TOPIC

You must specify the name of the topic definition you want to display. This name can be a specific topic name or a generic topic name. By using a generic topic name, you can display either:

- All topic definitions
- One or more topic definitions that match the specified name

(generic-topic-name)
The name of the administrative topic definition to be displayed (see Rules for naming IBM WebSphere MQ objects). A trailing asterisk (*) matches all administrative topic objects with the specified stem followed by zero or more characters. An asterisk (*) on its own specifies all administrative topic objects.

WHERE
Specify a filter condition to display only those administrative topic object definitions that satisfy the selection criterion of the filter condition. The filter condition is in three parts: *filter-keyword*, *operator*, and *filter-value*:

filter-keyword
Almost any parameter that can be used to display attributes for this DISPLAY command. However, you cannot use the CMDSCOPE, or QSGDISP parameters as filter keywords.

operator
This part is used to determine whether a topic object satisfies the filter value on the given filter keyword. The operators are:

LT
Less than

GT
Greater than

EQ
Equal to

NE
Not equal to

LE
Less than or equal to

GE
Greater than or equal to

LK
Matches a generic string that you provide as a *filter-value*

NL
Does not match a generic string that you provide as a *filter-value*

filter-value
The value that the attribute value must be tested against using the operator. Depending on the filter-keyword, this value can be:

- An explicit value, that is a valid value for the attribute being tested.

  You can use operators LT, GT, EQ, NE, LE, or GE only. However, if the attribute value is one from a possible set of values on a parameter, you can use only EQ or NE.
- A generic value. This value is a character string (such as the character string you supply for the DESCR parameter) with an asterisk at the end, for example ABC*. If the operator is LK, all items

where the attribute value begins with the string (ABC in the example) are listed. If the operator is NL, all items where the attribute value does not begin with the string are listed. Only a single trailing wildcard character (asterisk) is permitted.

You cannot use a generic filter-value for parameters with numeric values or with one of a set of values.

ALL
Specify this parameter to display all the attributes. If this parameter is specified, any attributes that are requested specifically have no effect; all attributes are still displayed.

This is the default if you do not specify a generic name, and do not request any specific attributes.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if QSGDISP is set to GROUP.

' '
The command is executed on the queue manager on which it was entered. This value is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of this process is the same as entering the command on every queue manager in the queue-sharing group.

You cannot use CMDSCOPE as a filter keyword.

QSGDISP
Specifies the disposition of the objects for which information is to be displayed. Values are:

LIVE
LIVE is the default value and displays information for objects defined with QSGDISP(QMGR) or QSGDISP(COPY).

ALL
Display information for objects defined with QSGDISP(QMGR) or QSGDISP(COPY).

If there is a shared queue manager environment, and the command is being executed on the queue manager where it was issued, this option also displays information for objects defined with QSGDISP(GROUP).

If QSGDISP(ALL) is specified in a shared queue manager environment, the command might give duplicated names (with different dispositions).

In a shared queue manager environment, use

```
DISPLAY TOPIC(name) CMDSCOPE(*) QSGDISP(ALL)
```

to list ALL objects matching name in the queue-sharing group without duplicating those objects in the shared repository.

COPY
Display information only for objects defined with QSGDISP(COPY).

GROUP
Display information only for objects defined with QSGDISP(GROUP). This is allowed only if there is a shared queue manager environment.

PRIVATE
Display information only for objects defined with QSGDISP(QMGR) or QSGDISP(COPY). QSGDISP(PRIVATE) displays the same information as QSGDISP(LIVE).

QMGR
Display information only for objects defined with QSGDISP(QMGR).

QSGDISP
QSGDISP displays one of the following values:

QMGR
The object was defined with QSGDISP(QMGR).

GROUP
The object was defined with QSGDISP(GROUP).

COPY
The object was defined with QSGDISP(COPY).

You cannot use QSGDISP as a filter keyword.

CLUSINFO
Requests that, in addition to information about attributes of topics defined on this queue manager, information about these and other topics in the cluster, that match the selection criteria, is displayed. In this case, there might be multiple topics with the same topic string displayed. The cluster information is obtained from the repository on this queue manager.

On z/OS, the channel initiator must be running before you can use the CLUSINFO parameter to display information about cluster topics.

CLUSTER
Limits the information displayed to topics with the specified cluster name if entered with a value in brackets. The value can be a generic name.

If you do not enter a value to qualify this parameter, it is treated as a requested parameter, and cluster name information is returned about all the topics displayed.

On z/OS, the channel initiator must be running before you can use the CLUSINFO parameter to display information about cluster topics.

TYPE
Specifies the type of topics that you want to be displayed. Values are:

ALL
Display all topic types, including cluster topics if you also specify CLUSINFO.

LOCAL
Display locally defined topics.

CLUSTER
Display topics that are defined in publish/subscribe clusters. Cluster attributes include:

CLUSDATE
The date on which the definition became available to the local queue manager, in the form `yyyy-mm-dd`.

CLUSQMGR
The name of the queue manager hosting the topic.

CLUSTIME
The time at which the definition became available to the local queue manager, in the form `hh.mm.ss`.

QMID
The internally generated, unique name of the queue manager hosting the topic.

Requested parameters

Specify one or more parameters that define the data to be displayed. The parameters can be specified in any order, but do not specify the same parameter more than once.

Most of the parameters are relevant for both types of topics, but parameters that are not relevant for a particular type of topic cause no output, nor is an error raised.

The following table shows the parameters that are relevant for each type of topic. There is a brief description of each parameter after the table, but for more information, see "DEFINE TOPIC" on page 439.

Table 55. Parameters that can be returned by the DISPLAY TOPIC command

	Local topic	Cluster topic
ALTDATE	✓	✓
ALTTIME	✓	✓
CLUSDATE		✓
CLUSQMGR		✓
CLUSTER	✓	✓
CLUSTIME		✓
COMMINFO	✓	
CUSTOM	✓	✓
DEFPRTY	✓	✓
DEFPSIST	✓	✓
DEFPRESP	✓	✓
DESCR	✓	✓
DURSUB	✓	✓
MCAST	✓	
MDURMDL	✓	✓
MNDURMDL	✓	✓
NPMSGDLV	✓	✓
PMSGDLV	✓	✓
PROXYSUB	✓	✓
PUB	✓	✓
PUBSCOPE	✓	✓
QMID		✓
SUB	✓	✓

Table 55. Parameters that can be returned by the DISPLAY TOPIC command (continued)		
	Local topic	**Cluster topic**
SUBSCOPE	✓	✓
TOPICSTR	✓	✓
TYPE	✓	✓
USEDLQ	✓	
WILDCARD	✓	✓

ALTDATE
The date on which the definition or information was last altered, in the form `yyyy-mm-dd`.

ALTTIME
The time at which the definition or information was last altered, in the form `hh.mm.ss`.

CLUSDATE
The date on which the information became available to the local queue manager, in the form `yyyy-mm-dd`.

CLUSQMGR
The name of the queue manager that hosts the topic.

CLUSTER
The name of the cluster that the topic is in.

CLUSTIME
The time at which the information became available to the local queue manager, in the form `hh.mm.ss`.

COMMINFO
The communication information object name.

CUSTOM
This attribute is reserved for the configuration of new features before separate attributes have been introduced. It can contain the values of zero or more attributes as pairs of attribute name and value in the form `NAME(VALUE)`.

DEFPRTY
Default priority of the messages published to this topic.

DEFPSIST
Default persistence of messages published to this topic.

DEFPRESP
Default put response for this topic. This attribute defines the behavior that must be used by applications when the put response type in the MQPMO options has been set to MQPMO_RESPONSE_AS_TOPIC_DEF.

DESCR
Description of this administrative topic object.

DURSUB
Determines whether the topic permits durable subscriptions to be made.

MCAST
Specifies whether the topic is enabled for multicast.

MDURMDL
The name of the model queue for durable managed subscriptions.

MNDURMDL
The name of the model queue for non-durable managed subscriptions.

NPMSGDLV
The delivery mechanism for non-persistent messages.

PMSGDLV
The delivery mechanism for persistent messages.

PROXYSUB
Determines whether a proxy subscription is forced for this subscription, even if no local subscriptions exist.

PUB
Determines whether the topic is enabled for publication.

PUBSCOPE
Determines whether this queue manager propagates publications to queue managers as part of a hierarchy or as part of a publish/subscribe cluster.

QMID
The internally generated unique name of the queue manager that hosts the topic.

SUB
Determines whether the topic is enabled for subscription.

SUBSCOPE
Determines whether this queue manager propagates subscriptions to queue managers as part of a hierarchy or as part of a publish/subscribe cluster.

TOPICSTR
The topic string.

TYPE
Specifies whether this object is a local topic or cluster topic.

USEDLQ
Determines whether the dead-letter queue is used when publication messages cannot be delivered to their correct subscriber queue.

WILDCARD
The behavior of wildcard subscriptions with respect to this topic.

For more details of these parameters, see “DEFINE TOPIC” on page 439.

Related reference

“DISPLAY TPSTATUS” on page 627
Use the MQSC command DISPLAY TPSTATUS to display the status of one or more topics in a topic tree.

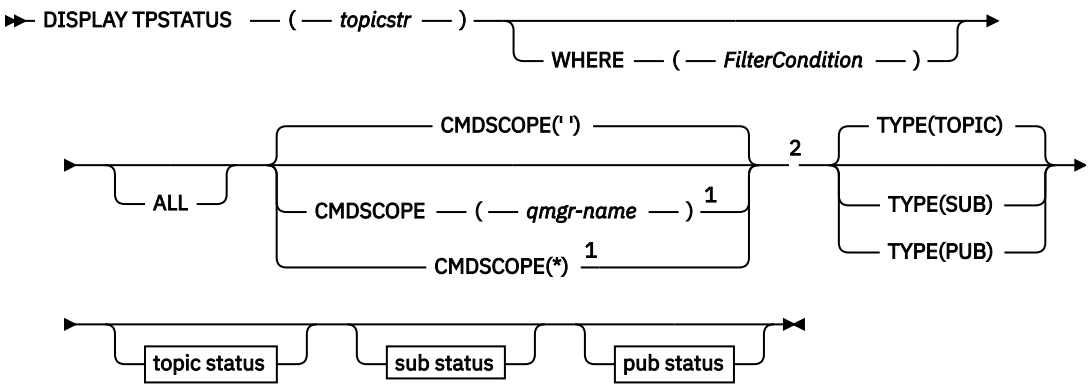
DISPLAY TPSTATUS

Use the MQSC command DISPLAY TPSTATUS to display the status of one or more topics in a topic tree.

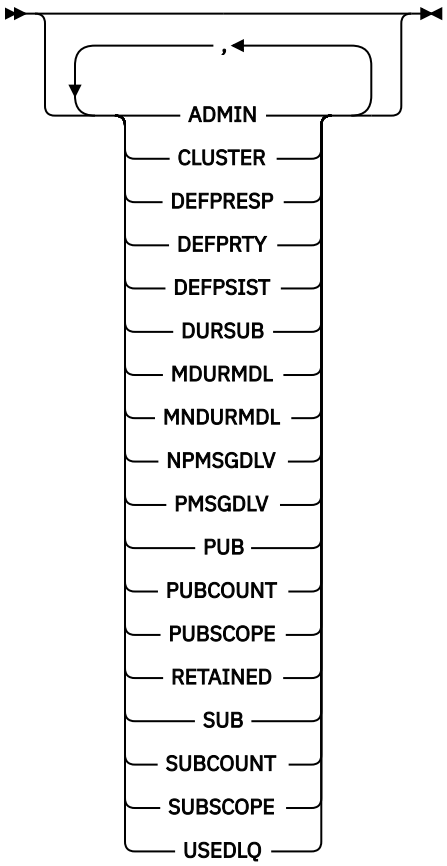
UNIX and Linux	Windows
✓	✓

Synonym: DIS TPS

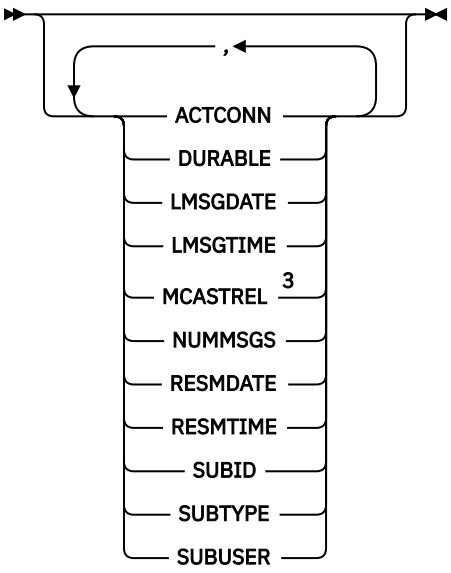
DISPLAY TPSTATUS



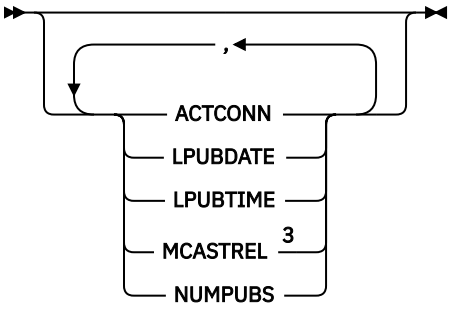
Topic status



Sub status



Pub status



Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[2] Valid only on z/OS.
[3] Not valid on z/OS.

Usage notes for DISPLAY TPSTATUS

1. The TOPICSTR parameter might contain characters that cannot be translated into printable characters when the command output is displayed. On z/OS, these non-printable characters are displayed as blanks. On distributed platforms using the **runmqsc** command, these non-printable characters are displayed as dots.
2. The topic-string input parameter on this command must match the topic you want to act on. Keep the character strings in your topic strings as characters that can be used from the location issuing the command. If you issue commands using MQSC, you have fewer characters available to you than if you are using an application that submits PCF messages, such as the WebSphere MQ Explorer.

Parameter descriptions for DISPLAY TPSTATUS

The DISPLAY TPSTATUS command requires a topic string value to determine which topic nodes the command returns.

(topicstr)
The value of the topic string for which you want to display status information. You cannot specify the name of a WebSphere MQ topic object.

The topic string can have one of the following values:

- A specific topic string value. For example, `DIS TPS('Sports/Football')` returns just the 'Sports/Football' node.
- A topic string containing a "+" wildcard character. For example, `DIS TPS('Sports/Football/+')` returns all direct child nodes of the 'Sports/Football' node.
- A topic string containing a "#" wildcard character. For example, `DIS TPS('Sports/Football/#')` returns the 'Sports/Football' node and all its descendant nodes.
- A topic string containing more than one wildcard. For example, `DIS TPS('Sports/+/Teams/#')` returns any direct child node of 'Sports' that also has a 'teams' child, with all descendants of the latter nodes.

The **DISPLAY TPSTATUS** command does not support the '*' wildcard. For more information about using wildcards, see the related topic.

- To return a list of all root-level topics, use `DIS TPS('+')`
- To return a list of all topics in the topic tree, use `DIS TPS('#')`, but note that this command might return a large amount of data.
- To filter the list of topics returned, use the **WHERE** parameter. For example, `DIS TPS('Sports/Football/+') WHERE(TOPICSTR LK 'Sports/Football/L*')` returns all direct child nodes of the 'Sports/Football' node, that begin with the letter "L".

WHERE

Specifies a filter condition to display only those administrative topic definitions that satisfy the selection criterion of the filter condition. The filter condition is in three parts: *filter-keyword*, *operator*, and *filter-value*:

filter-keyword

Except for the CMDSCOPE parameter, any parameter that you can use with this DISPLAY command.

operator

Determines whether a topic string satisfies the filter value on the given filter keyword. The operators are:

LT
Less than

GT
Greater than

EQ
Equal to

NE
Not equal to

LE
Less than or equal to

GE
Greater than or equal to

LK
Matches a generic string that you provide as a *topicstr*

NL
Does not match a generic string that you provide as a *topicstr*

filter-value

The value that the attribute value must be tested against using the operator. Depending on the filter-keyword, this value can be:

- An explicit value that is a valid value for the attribute being tested.

  You can use operators LT, GT, EQ, NE, LE, or GE only. However, if the attribute value is one from a possible set of values on a parameter, you can use only EQ or NE.

- A generic value. This value is a character string with an asterisk at the end, for example ABC*. If the operator is LK, the command lists all topic nodes that begin with the string (ABC in the example). If the operator is NL, the command lists all topic nodes that do not begin with the string.

  You cannot use a generic *filter-value* for parameters with numeric values or with one of a set of values.

ALL
Use this parameter to display all attributes.

If this parameter is specified, any attributes that you request specifically have no effect; the command displays all attributes.

This parameter is the default parameter if you do not specify a generic name, and do not request any specific attributes.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command runs when the queue manager is a member of a queue-sharing group.

' '
The command runs on the queue manager on which it was entered. This value is the default value.

qmgr-name
The command runs on the named queue manager, if the queue manager is active within the queue-sharing group.

You can specify a queue manager name other than the queue manager on which you enter the command, but only if you are using a queue-sharing group environment and the command server is enabled.

***
The command runs on the local queue manager and on every active queue manager in the queue-sharing group. The effect of this option is equivalent to entering the command on every queue manager in the queue-sharing group.

TYPE

TOPIC
The command displays status information relating to each topic node, which is the default if you do not provide a **TYPE** parameter.

PUB
The command displays status information relating to applications that have topic nodes open for publish.

SUB
The command displays status information relating to applications that subscribe to the topic node or nodes. The subscribers that the command returns are not necessarily the subscribers that would receive a message published to this topic node. The value of SelectionString or SubLevel determines which subscribers receive such messages.

Topic status parameters

Topic status parameters define the data that the command displays. You can specify these parameters in any order but must not specify the same parameter more than once.

ADMIN
If the topic node is an admin-node, the command displays the associated topic object name containing the node configuration. If the field is not an admin-node the command displays a blank.

CLUSTER
The name of the cluster to which this topic belongs.

' '
This topic does not belong to a cluster. Publications and subscriptions for this topic are not propagated to publish/subscribe cluster-connected queue managers.

DEFPRESP
Displays the resolved default put response of messages published to the topic, if it has no *ASPARENT* response value. The value can be *SYNC* or *ASYNC*

DEFPRTY
Displays the resolved default priority of messages published to the topic, if it has no *ASPARENT* response value.

DEFPSIST
Displays the resolved default persistence for this topic string, if it has no *ASPARENT* response value. The value can be *YES* or *NO*.

DURSUB
Displays the resolved value that shows whether applications can make durable subscriptions, if there is no *ASPARENT* response value. The value can be *YES* or *NO*.

MDURMDL
Displays the resolved value of the name of the model queue to be used for durable subscriptions. The name cannot be blank, because that is the equivalent of *ASPARENT* for this parameter.

MNDURMDL
Displays the resolved value of the name of the model queue used for non-durable subscriptions. The name cannot be blank, because that is the equivalent of *ASPARENT* for this parameter.

NPMSGDLV
Displays the resolved value for the delivery mechanism for non-persistent messages published to this topic. The value can be *ALL*, *ALLDUR*, or *ALLAVAIL*, but not ASPARENT.

PMSGDLV
Displays the resolved value for the delivery mechanism for persistent messages published to this topic. The value can be *ALL*, *ALLDUR*, or *ALLAVAIL*, but not ASPARENT.

PUB
Displays the resolved value that shows whether publications are allowed for this topic, if there is no *ASPARENT* response value. The values can be *ENABLED* or *DISABLED*.

PUBCOUNT
Displays the number of handles that are open for publish on this topic node.

PUBSCOPE
Determines whether this queue manager propagates publications, for this topic node, to queue managers as part of a hierarchy or as part of a publish/subscribe operation. The value can be *QMGR* or *ALL*.

RETAINED
Displays whether there is a retained publication associated with this topic. The value can be *YES* or *NO*.

SUB
Displays the resolved value that shows whether subscriptions are allowed for this topic, if there is no ASPARENT response value. The values can be *ENABLED* or *DISABLED*.

SUBCOUNT
Displays the number of subscribers to this topic node, including durable subscribers that are not currently connected.

SUBSCOPE
Determines whether this queue manager propagates subscriptions, for this topic node, to other queue managers as part of a hierarchy or cluster, or whether it restricts the subscriptions to only the local queue manager. The value can be *QMGR* or *ALL*.

USEDLQ
Determines whether the dead-letter queue is used when publication messages cannot be delivered to their correct subscriber queue. The value can be *YES* or *NO*.

Sub status parameters

Sub status parameters define the data that the command displays. You can specify these parameters in any order but must not specify the same parameter more than once.

ACTCONN
Detects local publications, returning the currently active ConnectionId (CONNID) that opened this subscription.

DURABLE
Indicates whether a durable subscription is not deleted when the creating application closes its subscription handle, and persists over queue manager restart. The value can be *YES* or *NO*.

LMSGDATE
The date on which an MQPUT call last sent a message to this subscription. The MQPUT call updates the date field only when the call successfully puts a message to the destination specified by this subscription. An MQSUBRQ call causes an update to this value.

LMSGTIME
The time at which an MQPUT call last sent a message to this subscription. The MQPUT call updates the time field only when the call successfully puts a message to the destination specified by this subscription. An MQSUBRQ call causes an update to this value.

MCASTREL
Indicator of the reliability of the multicast messages.

The values are expressed as a percentage. A value of 100 indicates that all messages are being delivered without problems. A value less than 100 indicates that some of the messages are experiencing network issues. To determine the nature of these issues the user can switch on event message generation, use the **COMMEV** parameter of the COMMINFO objects, and examine the generated event messages.

The following two values are returned:

- The first value is based on recent activity over a short period.
- The second value is based on activity over a longer period.

If no measurement is available the values are shown as blanks.

NUMMSGS
Number of messages put to the destination specified by this subscription. An MQSUBRQ call causes an update to this value.

RESMDATE
Date of the most recent MQSUB call that connected to this subscription.

RESMTIME
Time of the most recent MQSUB call that connected to this subscription.

SUBID
An all time unique identifier for this subscription, assigned by the queue manager. The format of **SUBID** matches that of a CorrelId. For durable subscriptions, the command returns the **SUBID** even if the subscriber is not currently connected to the queue manager.

SUBTYPE
The type of subscription, indicating how it was created. The value can be *ADMIN*, *API*, or *PROXY*.

SUBUSER
The user ID that owns this subscription, which can be either the user ID associated with the creator of the subscription or, if subscription takeover is permitted, the user ID that last took over the subscription.

Pub status parameters

Pub status parameters define the data that the command displays. You can specify these parameters in any order but must not specify the same parameter more than once.

ACTCONN
The currently active ConnectionId (CONNID) associated with the handle that has this topic node open for publish.

LPUBDATE
The date on which this publisher last sent a message.

LPUBTIME
The time at which this publisher last sent a message.

MCASTREL
Indicator of the reliability of the multicast messages.

The values are expressed as a percentage. A value of 100 indicates that all messages are being delivered without problems. A value less than 100 indicates that some of the messages are experiencing network issues. To determine the nature of these issues the user can switch on event message generation, using the **COMMEV** parameter of the COMMINFO objects, and examine the generated event messages.

The following two values are returned:

- The first value is based on recent activity over a short period.
- The second value is based on activity over a longer period.

If no measurement is available the values are shown as blanks.

NUMPUBS
Number of publishes by this publisher. This value records the actual number of publishes, not the total number of messages published to all subscribers.

PING CHANNEL

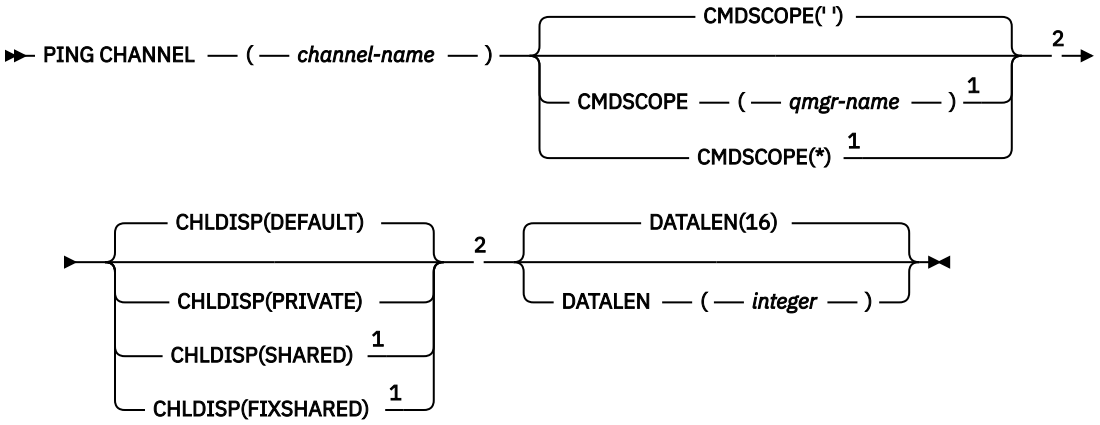
Use the MQSC command PING CHANNEL to test a channel by sending data as a special message to the remote queue manager, and checking that the data is returned. The data is generated by the local queue manager.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- "Usage notes" on page 635
- "Parameter descriptions for PING CHANNEL" on page 635

Synonym: PING CHL

PING CHANNEL



Notes:

[1] Valid only when the queue manager is a member of a queue-sharing group.
[2] Valid only on z/OS.

Usage notes

1. On z/OS, the command server and the channel initiator must be running.
2. Where there is both a locally defined channel and an auto-defined cluster-sender channel of the same name, the command applies to the locally defined channel. If there is no locally defined channel but more than one auto-defined cluster-sender channel, the command applies to the channel that was last added to the local queue manager's repository.
3. This command can be used only for sender (SDR), server (SVR), and cluster-sender (CLUSSDR) channels (including those that have been defined automatically). It is not valid if the channel is running; however, it is valid if the channel is stopped or in retry mode.

Parameter descriptions for PING CHANNEL

(channel-name)
The name of the channel to be tested. This is required.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

If CHLDISP is set to SHARED, CMDSCOPE must be blank or the local queue manager.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of this is the same as entering the command on every queue manager in the queue-sharing group.

Note: The '*' option is not permitted if CHLDISP is FIXSHARED.

CHLDISP

This parameter applies to z/OS only and can take the values of:

- DEFAULT
- PRIVATE
- SHARED
- FIXSHARED

If this parameter is omitted, then the DEFAULT value applies. This is the value of the default channel disposition attribute, DEFCDISP, of the channel object.

In conjunction with the various values of the CMDSCOPE parameter, this parameter controls two types of channel:

SHARED

A receiving channel is shared if it was started in response to an inbound transmission directed to the queue-sharing group.

A sending channel is shared if its transmission queue has a disposition of SHARED.

PRIVATE

A receiving channel is private if it was started in response to an inbound transmission directed to the queue manager.

A sending channel is private if its transmission queue has a disposition other than SHARED.

Note: This disposition is **not** related to the disposition set by the disposition of the queue-sharing group of the channel definition.

The combination of the CHLDISP and CMDSCOPE parameters also controls from which queue manager the channel is operated. The possible options are:

- On the local queue manager where the command is issued.
- On another specific named queue manager in the group.
- On the most suitable queue manager in the group, determined automatically by the queue manager itself.

The various combinations of CHLDISP and CMDSCOPE are summarized in the following table.

Table 56. CHLDISP and CMDSCOPE for PING CHANNEL

CHLDISP	**CMDSCOPE( ) or CMDSCOPE (local-qmgr)**	**CMDSCOPE (qmgr-name)**	**CMDSCOPE(*)**
PRIVATE	Ping private channel on the local queue manager	Ping private channel on the named queue manager	Ping private channel on all active queue managers

Table 56. CHLDISP and CMDSCOPE for PING CHANNEL (continued)			
CHLDISP	**CMDSCOPE( ) or CMDSCOPE (local-qmgr)**	**CMDSCOPE (qmgr-name)**	**CMDSCOPE(*)**
SHARED	Ping a shared channel on the most suitable queue manager in the group This might automatically generate a command using CMDSCOPE and send it to the appropriate queue manager. If there is no definition for the channel on the queue manager to which the command is sent, or if the definition is unsuitable for the command, the command fails. The definition of a channel on the queue manager where the command is entered might be used to determine the target queue manager where the command is actually run. Therefore, it is important that channel definitions are consistent. Inconsistent channel definitions might result in unexpected command behavior.	Not permitted	Not permitted
FIXSHARED	Ping a shared channel on the local queue manager	Ping a shared channel on the named queue manager	Not permitted

DATALEN(*integer*)
The length of the data, in the range 16 through 32 768. This is optional.

PING QMGR

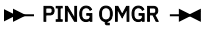
Use the MQSC command PING QMGR to test whether the queue manager is responsive to commands.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- "Usage notes" on page 637

Synonym: PING QMGR

PING QMGR



Usage notes

If commands are issued to the queue manager by sending messages to the command server queue, this command causes a special message to be sent to it, consisting of a command header only, and checking that a positive reply is returned.

PURGE CHANNEL

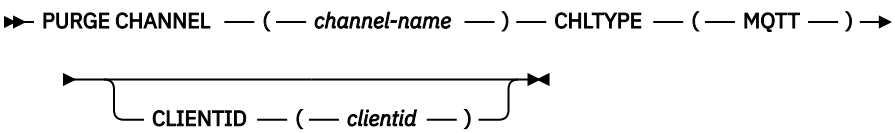
Use the MQSC command PURGE CHANNEL to stop and purge a telemetry channel. Purging a telemetry channel disconnects all the MQTT clients connected to it, cleans up the state of the MQTT clients, and stops the telemetry channel. Cleaning the state of a client deletes all the pending publications and removes all the subscriptions from the client.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- "Parameter descriptions for PURGE CHANNEL" on page 638

Synonym: None

PURGE CHANNEL



Parameter descriptions for PURGE CHANNEL

(channel name)
The name of the telemetry channel to be stopped and purged. This parameter is required.

CHLTYPE*(MQTT)*
Channel type. This parameter is required. It must follow immediately after the (channel-name) parameter on all platforms except z/OS, and the value must currently be MQTT.

CLIENTID*(string)*
Client identifier. The client identifier is a 23 byte string that identifies a IBM WebSphere MQ Telemetry Transport client. When the PURGE CHANNEL command specifies a CLIENTID, only the connection for the specified client identifier is purged. If the CLIENTID is not specified, all the connections on the channel are purged.

REFRESH CLUSTER

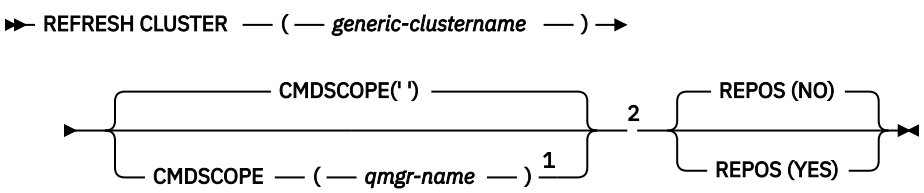
Use the MQSC command **REFRESH CLUSTER** to discard all locally held cluster information and force it to be rebuilt. The command also processes any autodefined channels that are in doubt. After the command completes processing, you can perform a "cold-start" on the cluster.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- "Usage Notes for REFRESH CLUSTER" on page 639
- "Parameter descriptions for REFRESH CLUSTER" on page 640

Synonym: REF CLUSTER

REFRESH CLUSTER



Notes:

[1] Valid only when the queue manager is a member of a queue-sharing group.
[2] Valid only on z/OS.

Usage Notes for REFRESH CLUSTER

1. Issuing **REFRESH CLUSTER** is disruptive to the cluster. It might make cluster objects invisible for a short time until the **REFRESH CLUSTER** processing completes. This can affect running applications, as described in Application issues seen when running REFRESH CLUSTER. If an application is publishing or subscribing on a cluster topic, that topic might become temporarily unavailable. See REFRESH CLUSTER considerations for publish/subscribe clusters. The unavailability results in a pause in the publication stream until the **REFRESH CLUSTER** command completes. If the command is issued on a full repository queue manager, **REFRESH CLUSTER** might make a large volume of messages flow.
2. For large clusters, use of the **REFRESH CLUSTER** command can be disruptive to the cluster while it is in progress, and again at 27 day intervals thereafter when the cluster objects automatically send status updates to all interested queue managers. See Refreshing in a large cluster can affect performance and availability of the cluster.
3. Quiesce all publish/subscribe applications before issuing the **REFRESH CLUSTER** command, because issuing this command in a publish/subscribe cluster disrupts delivery of publications to and from other queue managers in the cluster, and might result in proxy subscriptions from other queue managers being cancelled. If this happens, use `REFRESH QMGR TYPE(PROXYSUB)` to resynchronize after the cluster has refreshed, and keep all publish/subscribe applications quiesced until after the proxy subscriptions have been resynchronized. See REFRESH CLUSTER considerations for publish/subscribe clusters.
4. When the command returns control to the user, it does not signify the command has completed. Activity on `SYSTEM.CLUSTER.COMMAND.QUEUE` indicates the command is still processing.
5. If cluster-sender channels are running at the time **REFRESH CLUSTER** is issued, the refresh might not complete until the channels stop and restart. To hasten completion, stop all cluster-sender channels for the cluster before you run the **REFRESH CLUSTER** command. During the processing of the **REFRESH CLUSTER** command, if the channel is not in doubt, the channel state might be recreated.
6. If you select `REPOS(YES)`, check that all cluster-sender channels in the relevant cluster are inactive or stopped before you issue the **REFRESH CLUSTER** command.

   If cluster-sender channels are running at the time you run the **REFRESH CLUSTER** `REPOS(YES)` command, those cluster-sender channels are ended during the operation and left in an INACTIVE state after the operation completes. Alternatively, you can force the channels to stop using the STOP CHANNEL command with MODE(FORCE).

   Stopping the channels ensures that the refresh can remove the channel state, and that the channel runs with the refreshed version after the refresh completes. If the state of a channel cannot be deleted, its state is not renewed after the refresh. If a channel was stopped, it does not automatically restart. The channel state cannot be deleted if the channel is in doubt, or because it is also running as part of another cluster.

If you choose the option REPOS(YES) on full repository queue manager, you must alter it to be a partial repository. If it is the sole working repository in the cluster, the result is that there is no full repository left in the cluster. After the queue manager is refreshed, and restored to its status of a full repository, you must refresh the other partial repositories to restore a working cluster.

If it is not the sole remaining repository, you do not need to refresh the partial repositories manually. Another working full repository in the cluster informs the other members of the cluster that the full repository running the **REFRESH CLUSTER** command resumed its role as a full repository.

7. It is not normally necessary to issue a **REFRESH CLUSTER** command except in one of the following circumstances:
   - Messages were removed from either the SYSTEM.CLUSTER.COMMAND.QUEUE, or from another a cluster transmission queue, where the destination queue is SYSTEM.CLUSTER.COMMAND.QUEUE on the queue manager in question.
   - Issuing a **REFRESH CLUSTER** command is recommended by IBM Service.
   - The CLUSRCVR channels were removed from a cluster, or their CONNAMEs were altered on two or more full repository queue managers while they could not communicate.
   - The same name was used for a CLUSRCVR channel on more than one queue manager in a cluster. As a result, messages destined for one of the queue managers were delivered to another. In this case, remove the duplicates, and run a **REFRESH CLUSTER** command on the single remaining queue manager with a CLUSRCVR definition.
   - RESET CLUSTER ACTION(FORCEREMOVE) was issued in error.
   - The queue manager was restarted from an earlier point in time than it finished last time it was used; for example, by restoring backed up data.
8. Issuing **REFRESH CLUSTER** does not correct mistakes in cluster definitions, nor is it necessary to issue the command after such mistakes are corrected.
9. During **REFRESH CLUSTER** processing, the queue manager generates the message AMQ9875 followed by the message AMQ9442 or AMQ9404. The queue manager might also generate the message AMQ9420. If the cluster functionality is not affected, the message AMQ9420 can be ignored.
10. On UNIX systems, the command is valid only on AIX, HP-UX, Linux, and Solaris.
11. On z/OS, the command fails if the channel initiator is not started.
12. On z/OS, any errors are reported to the console on the system where the channel initiator is running. They are not reported to the system that issued the command.

Parameter descriptions for REFRESH CLUSTER

(*generic-clustername*)
The name of the cluster to be refreshed. Alternatively *generic-clustername* can be specified as "*". If "*" is specified, the queue manager is refreshed in all the clusters that it is a member of. If used with REPOS(YES), this forces the queue manager to restart its search for full repositories from the information in the local CLUSSDR definitions. It restarts its search, even if the CLUSSDR definitions connect the queue manager to several clusters.

The *generic-clustername* parameter is required.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

' '
The command is executed on the queue manager on which it was entered. ' ' is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered. If you do so, you must be using a queue-sharing group environment and the command server must be enabled.

REPOS

Specifies whether objects representing full repository cluster queue managers are also refreshed.

NO

The queue manager retains knowledge of all cluster queue manager and cluster queues marked as locally defined. It also retains knowledge of all cluster queue managers that are marked as full repositories. In addition, if the queue manager is a full repository for the cluster, it retains knowledge of the other cluster queue managers in the cluster. Everything else is removed from the local copy of the repository and rebuilt from the other full repositories in the cluster. Cluster channels are not stopped if REPOS(NO) is used. A full repository uses its CLUSSDR channels to inform the rest of the cluster that it completed its refresh.

NO is the default.

YES

Specifies that in addition to the REPOS(NO) behavior, objects representing full repository cluster queue managers are also refreshed. The REPOS(YES) option must not be used if the queue manager is itself a full repository. If it is a full repository, you must first alter it so that it is not a full repository for the cluster in question. The full repository location is recovered from the manually defined CLUSSDR definitions. After the refresh with REPOS(YES) is issued, the queue manager can be altered so that it is once again a full repository, if required.

On z/OS, N and Y are accepted synonyms of NO and YES.

Related concepts

Application issues seen when running REFRESH CLUSTER

REFRESH CLUSTER considerations for publish/subscribe clusters

Clustering: Using REFRESH CLUSTER best practices

REFRESH QMGR

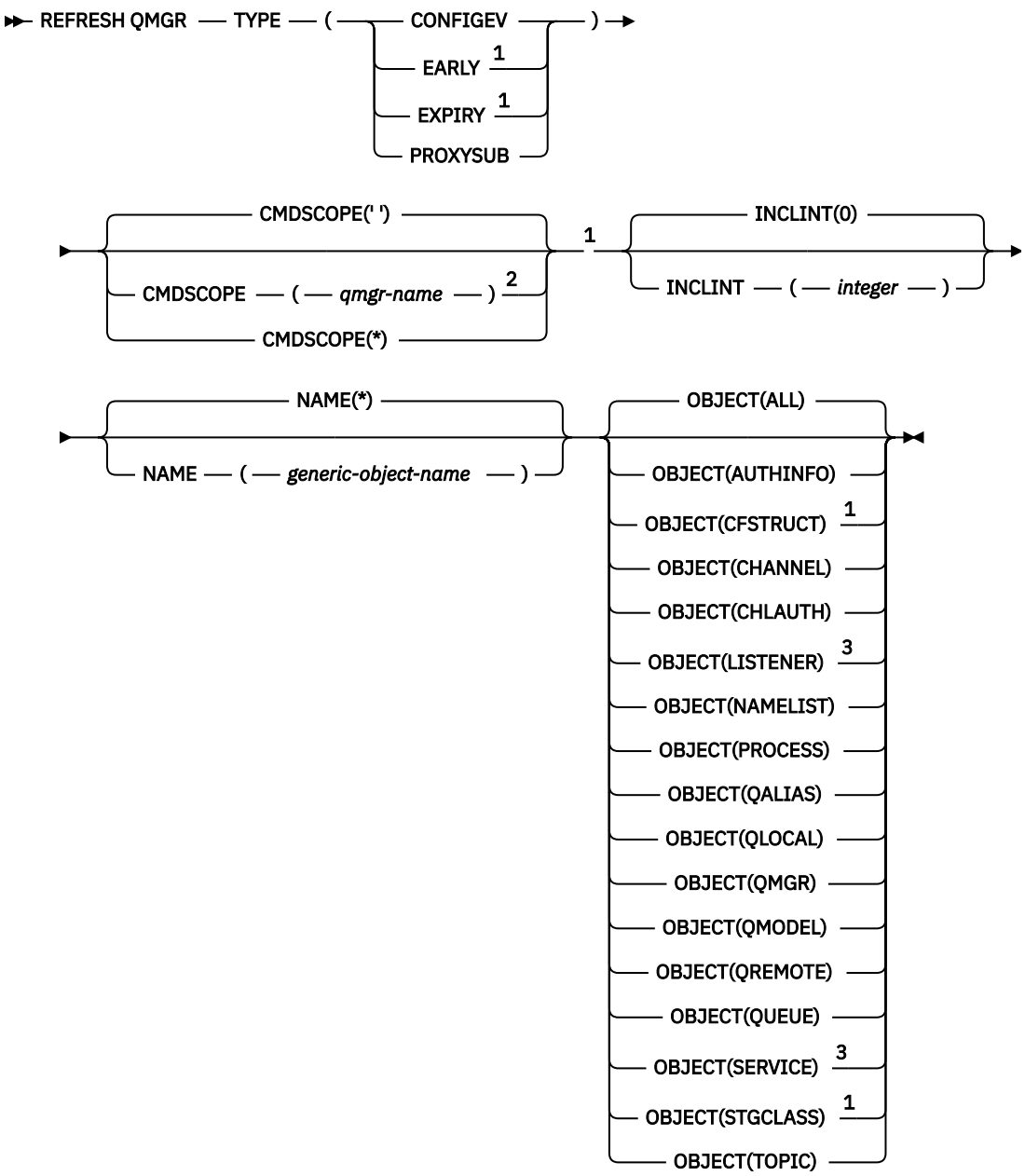
Use the MQSC command REFRESH QMGR to perform special operations on queue managers.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- “Usage Notes for REFRESH QMGR” on page 642
- “Parameter descriptions for REFRESH QMGR” on page 643

Synonym: None

REFRESH QMGR



Notes:

[1] Valid only on z/OS.
[2] Valid only when the queue manager is a member of a queue-sharing group.
[3] Not valid on z/OS.

Usage Notes for REFRESH QMGR

1. Issue this command with TYPE(CONFIGEV) after setting the CONFIGEV queue manager attribute to ENABLED, to bring the queue manager configuration up to date. To ensure that complete configuration information is generated, include all objects; if you have many objects, it might be preferable to use several commands, each with a different selection of objects, but such that all are included.

2. You can also use the command with TYPE(CONFIGEV) to recover from problems such as errors on the event queue. In such cases, use appropriate selection criteria, to avoid excessive processing time and event messages generation.
3. Issue the command with TYPE(EXPIRY) at any time when you believe that a queue could contain numbers of expired messages.
4. You are unlikely to use REFRESH QMGR TYPE(PROXYSUB) other than in exceptional circumstances. Typically, a queue manager revalidates proxy subscriptions with affected directly-connected queue managers as follows:
   - When forming a hierarchical connection
   - When modifying the PUBSCOPE or SUBSCOPE or CLUSTER attributes on a topic object
   - When restarting the queue manager

Parameter descriptions for REFRESH QMGR

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of this is the same as entering the command on every queue manager in the queue-sharing group.

This parameter is not valid with TYPE(EARLY).

INCLINT*(integer)*
Specifies a value in minutes defining a period immediately before the current time, and requests that only objects that have been created or changed within that period (as defined by the ALTDATE and ALTTIME attributes) are included. The value must be in the range zero through 999 999. A value of zero means there is no time limit (this is the default).

This parameter is valid only with TYPE(CONFIGEV).

NAME*(generic-object-name)*
Requests that only objects with names that match the one specified are included. A trailing asterisk (*) matches all object names with the specified stem followed by zero or more characters. An asterisk (*) on its own specifies all objects (this is the default). NAME is ignored if OBJECT(QMGR) is specified.

This parameter is not valid with TYPE(EARLY).

OBJECT*(objtype)*
Requests that only objects of the specified type are included. (Synonyms for object types, such as QL, can also be specified.) The default is ALL, to include objects of every type.

This parameter is valid only with TYPE(CONFIGEV).

TYPE
This is required. Values are:

CONFIGEV
Requests that the queue manager generates a configuration event message for every object that matches the selection criteria specified by the OBJECT, NAME and INCLINT parameters. Matching objects defined with QSGDISP(QMGR) or QSGDISP(COPY) are always included. Matching objects defined with QSGDISP(GROUP) or QSGDISP(SHARED) are included only if the command is being executed on the queue manager where it is entered.

EARLY
Requests that the subsystem function routines (generally known as early code) for the queue manager replace themselves with the corresponding routines in the linkpack area (LPA).

You need to use this command only after you install new subsystem function routines (provided as corrective maintenance or with a new version or release of WebSphere MQ). This command instructs the queue manager to use the new routines.

EXPIRY
Requests that the queue manager performs a scan to discard expired messages for every queue that matches the selection criteria specified by the NAME parameter. (The scan is performed regardless of the setting of the EXPRYINT queue manager attribute.)

PROXYSUB
Requests that the queue manager resynchronizes the proxy subscriptions that are held with, and on behalf of, queue managers that are connected in a hierarchy or publish/subscribe cluster.

You must resynchronize the proxy subscriptions only in exceptional circumstances, for example, when the queue manager is receiving subscriptions that it must not be sent, or not receiving subscriptions that it must receive. The following list describes some of the exceptional reasons for resynchronizing proxy subscriptions:

- Disaster recovery.
- Problems that are identified in a queue manager error log where messages inform of the issuing of the REFRESH QMGR TYPE(REPOS) command.
- Operator errors, for example, issuing a DELETE SUB command on a proxy subscription.

Missing proxy subscriptions can be caused if the closest matching topic definition is specified with **Subscription scope** set to `Queue Manager` or it has an empty or incorrect cluster name. Note that **Publication scope** does not prevent the sending of proxy subscriptions, but does prevent publications from being delivered to them.

Extraneous proxy subscriptions can be caused if the closest matching topic definition is specified with **Proxy subscription behavior** set to `Force`.

Missing or extraneous proxy subscriptions that are due to configuration errors are not changed by issuing a resynchronization. A resynchronization does resolve missing or extraneous publications as a result of the exceptional reasons listed.

Note: If TYPE(EARLY) is specified, no other keywords are allowed and the command can be issued only from the z/OS console and only if the queue manager is not active.

REFRESH SECURITY

Use the MQSC command REFRESH SECURITY to perform a security refresh.

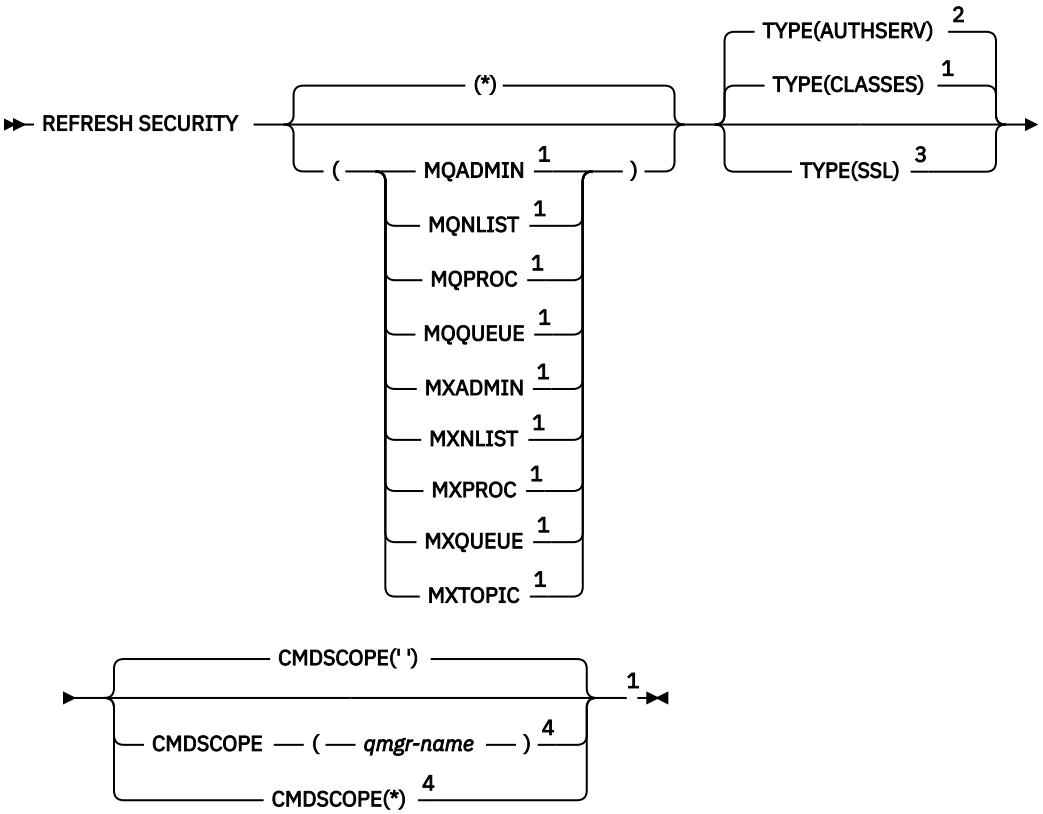
UNIX and Linux	Windows
✓	✓

- Syntax diagram
- “Usage notes for REFRESH SECURITY” on page 645
- “Parameter descriptions for REFRESH SECURITY” on page 646

Synonym: REF SEC

REBUILD SECURITY is another synonym for REFRESH SECURITY.

REFRESH SECURITY



Notes:

[1] Valid only on z/OS.
[2] Not valid on z/OS.
[3] On WebSphere MQ for z/OS, you cannot issue this from CSQINP2.
[4] Valid only on WebSphere MQ for z/OS when the queue manager is a member of a queue-sharing group.

Usage notes for REFRESH SECURITY

When you issue the REFRESH SECURITY TYPE(SSL) MQSC command, all running SSL channels are stopped and restarted. Sometimes SSL channels can take a long time to shut down and this means that the refresh operation takes some time to complete. There is a time limit of 10 minutes for an SSL refresh to complete (or 1 minute on z/OS), so it can potentially take 10 minutes for the command to finish. This can give the appearance that the refresh operation has "frozen". The refresh operation will fail with an MQSC error message of AMQ9710 or PCF error MQRCCF_COMMAND_FAILED if the timeout is exceeded before all channels have stopped. This is likely to happen if the following conditions are true:

- The queue manager has many SSL channels running simultaneously when the refresh command is invoked
- The channels are handling large numbers of messages

If a refresh fails under these conditions, retry the command later when the queue manager is less busy. In the case where many channels are running, you can choose to stop some of the channels manually before invoking the REFRESH command.

When using TYPE(SSL):

1. On z/OS, the command server and channel initiator must be running.

2. On z/OS, WebSphere MQ determines whether a refresh is needed due to one, or more, of the following reasons:
   - The contents of the key repository have changed
   - The location of the LDAP server to be used for Certification Revocation Lists has changed
   - The location of the key repository has changed

   If no refresh is needed, the command completes successfully and the channels are unaffected.
3. On platforms other than z/OS, the command updates all SSL channels regardless of whether a security refresh is needed.
4. If a refresh is to be performed, the command updates all SSL channels currently running, as follows:
   - Sender, server and cluster-sender channels using SSL are allowed to complete the current batch. In general they then run the SSL handshake again with the refreshed view of the SSL key repository. However, you must manually restart a requester-server channel on which the server definition has no CONNAME parameter.
   - All other channel types using SSL are stopped with a STOP CHANNEL MODE(FORCE) STATUS(INACTIVE) command. If the partner end of the stopped message channel has retry values defined, the channel retries and the new SSL handshake uses the refreshed view of the contents of the SSL key repository, the location of the LDAP server to be used for Certification Revocation Lists, and the location of the key repository. In the case of a server-connection channel, the client application loses its connection to the queue manager and has to reconnect in order to continue.

When using TYPE(CLASSES):

- Classes MQADMIN, MQNLIST, MQPROC, and MQQUEUE can only hold profiles defined in uppercase.
- Classes MXADMIN, MXNLIST, MXPROC, and MQXUEUE can hold profiles defined in mixed case.
- Class MXTOPIC can be refreshed whether using uppercase or mixed case classes. Although it is a mixed case class, it is the only mixed case class that can be active with either group of classes.

Notes:

1. Performing a `REFRESH SECURITY(*) TYPE(CLASSES)` operation is the only way to change the classes being used by your system from uppercase-only support to mixed case support.

   Do this by checking the queue manager attribute SCYCASE to see if it is set to UPPER or MIXED
2. It is your responsibility to ensure that you have copied, or defined, all the profiles you need in the appropriate classes before you carry out a `REFRESH SECURITY(*) TYPE(CLASSES)` operation.
3. A refresh of an individual class is allowed only if the classes currently being used are of the same type. For example, if MQPROC is in use, you can issue a refresh for MQPROC but not MXPROC.

Parameter descriptions for REFRESH SECURITY

The command qualifier allows you to indicate more precise behavior for a specific TYPE value. Select from:

*****
A full refresh of the type specified is performed. This is the default value.

MQADMIN
Valid only if TYPE is CLASSES. Specifies that Administration type resources are to be refreshed. Valid on z/OS only.

Note: If, when refreshing this class, it is determined that a security switch relating to one of the other classes has been changed, a refresh for that class also takes place.

MQNLIST
Valid only if TYPE is CLASSES. Specifies that Namelist resources are to be refreshed. Valid on z/OS only.

MQPROC
Valid only if TYPE is CLASSES. Specifies that Process resources are to be refreshed. Valid on z/OS only.

MQQUEUE
Valid only if TYPE is CLASSES. Specifies that Queue resources are to be refreshed. Valid on z/OS only.

MXADMIN
Valid only if TYPE is CLASSES. Specifies that administration type resources are to be refreshed. Valid on z/OS only.

Note: If, when refreshing this class, it is determined that a security switch relating to one of the other classes has been changed, a refresh for that class also takes place.

MXNLIST
Valid only if TYPE is CLASSES. Specifies that namelist resources are to be refreshed. Valid on z/OS only.

MXPROC
Valid only if TYPE is CLASSES. Specifies that process resources are to be refreshed. Valid on z/OS only.

MXQUEUE
Valid only if TYPE is CLASSES. Specifies that queue resources are to be refreshed. Valid on z/OS only.

MXTOPIC
Valid only if TYPE is CLASSES. Specifies that topic resources are to be refreshed. Valid on z/OS only.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of this is the same as entering the command on every queue manager in the queue-sharing group.

TYPE
Specifies the type of refresh that is to be performed.

AUTHSERV
The list of authorizations held internally by the authorization services component is refreshed.

This is valid only on non-z/OS platforms where it is the default.

CLASSES

WebSphere MQ in-storage ESM (external security manager, for example RACF) profiles are refreshed. The in-storage profiles for the resources being requested are deleted. New entries are created when security checks for them are performed, and are validated when the user next requests access.

You can select specific resource classes for which to perform the security refresh.

This is valid only on z/OS where it is the default.

SSL
Refreshes the cached view of the Secure Sockets Layer key repository and allows updates to become effective on successful completion of the command. Also refreshed are the locations of:

- the LDAP servers to be used for Certified Revocation Lists
- the key repository

as well as any cryptographic hardware parameters specified through WebSphere MQ.

RESET CHANNEL

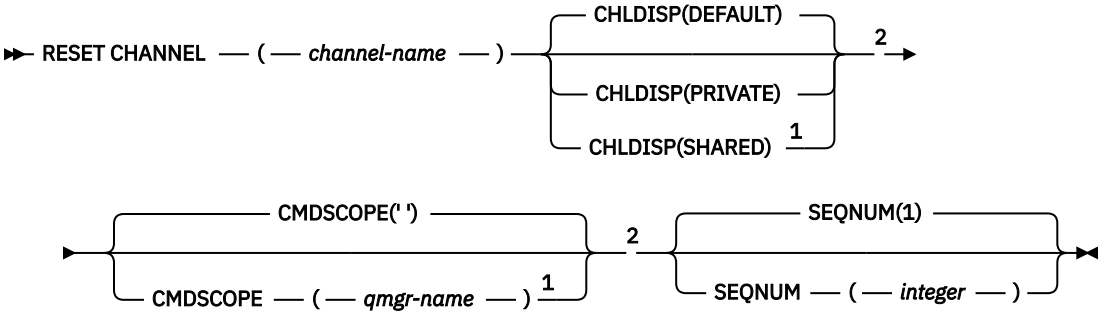
Use the MQSC command RESET CHANNEL to reset the message sequence number for a WebSphere MQ channel with, optionally, a specified sequence number to be used the next time that the channel is started.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- "Usage notes" on page 648
- "Parameter descriptions for RESET CHANNEL" on page 649

Synonym: RESET CHL

RESET CHANNEL



Notes:

[1] Valid only when the queue manager is a member of a queue-sharing group.
[2] Valid only on z/OS.

Usage notes

1. On z/OS, the command server and channel initiator must be running.
2. This command can be issued to a channel of any type except SVRCONN and CLNTCONN channels, (including those that have been defined automatically). However, if it is issued to a sender or server channel, then in addition to resetting the value at the end at which the command is issued, the value at the other (receiver or requester) end is also reset to the same value the next time this channel is initiated (and resynchronized if necessary). Issuing this command on a cluster-sender channel might reset the message sequence number at either end of the channel. However, this is not significant because the sequence numbers are not checked on clustering channels.
3. If the command is issued to a receiver, requester, or cluster-receiver channel, the value at the other end is *not* reset as well; this must be done separately if necessary.
4. Where there is both a locally defined channel and an auto-defined cluster-sender channel of the same name, the command applies to the locally defined channel. If there is no locally defined channel but more than one auto-defined cluster-sender channel, the command applies to the channel that was last added to the local queue manager's repository.

5. If the message is non-persistent, and the RESET CHANNEL command is issued to the sender channel, reset data is sent and flows every time the channel starts.

Parameter descriptions for RESET CHANNEL

(channel-name)
The name of the channel to be reset. This is required.

CHLDISP
This parameter applies to z/OS only and can take the values of:

- DEFAULT
- PRIVATE
- SHARED

If this parameter is omitted, then the DEFAULT value applies. This is taken from the default channel disposition attribute, DEFCDISP, of the channel object.

In conjunction with the various values of the CMDSCOPE parameter, this parameter controls two types of channel:

SHARED
A receiving channel is shared if it was started in response to an inbound transmission directed to the queue-sharing group.

A sending channel is shared if its transmission queue has a disposition of SHARED.

PRIVATE
A receiving channel is private if it was started in response to an inbound transmission directed to the queue manager.

A sending channel is private if its transmission queue has a disposition other than SHARED.

Note: This disposition is **not** related to the disposition set by the disposition of the queue-sharing group of the channel definition.

The combination of the CHLDISP and CMDSCOPE parameters also controls from which queue manager the channel is operated. The possible options are:

- On the local queue manager where the command is issued.
- On another specific named queue manager in the group.

The various combinations of CHLDISP and CMDSCOPE are summarized in the following table:

Table 57. CHLDISP and CMDSCOPE for RESET CHANNEL

CHLDISP	CMDSCOPE( ) or CMDSCOPE (local-qmgr)	CMDSCOPE (qmgr-name)
PRIVATE	Reset private channel on the local queue manager	Reset private channel on the named queue manager

Table 57. CHLDISP and CMDSCOPE for RESET CHANNEL (continued)		
CHLDISP	**CMDSCOPE( ) or CMDSCOPE (local-qmgr)**	**CMDSCOPE (qmgr-name)**
SHARED	Reset a shared channel on all active queue managers. This might automatically generate a command using CMDSCOPE and send it to the appropriate queue managers. If there is no definition for the channel on the queue managers to which the command is sent, or if the definition is unsuitable for the command, the action fails there. The definition of a channel on the queue manager where the command is entered might be used to determine the target queue manager where the command is actually run. Therefore, it is important that channel definitions are consistent. Inconsistent channel definitions might result in unexpected command behavior.	Not permitted

CMDSCOPE

This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

If CHLDISP is set to SHARED, CMDSCOPE must be blank or the local queue manager.

' '

The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name

The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name only if you are using a queue-sharing group environment and if the command server is enabled.

SEQNUM(*integer*)

The new message sequence number, which must be in the range 1 through 999 999 999. This is optional.

RESET CLUSTER

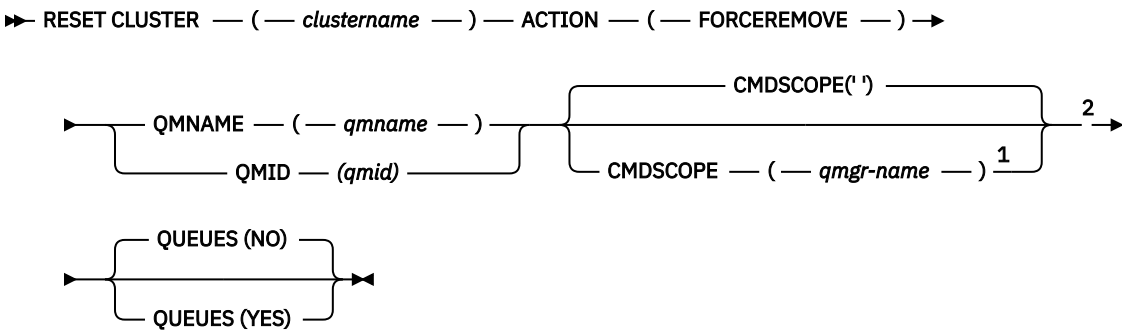
Use the MQSC command **RESET CLUSTER** to perform special operations on clusters.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- “Usage notes for RESET CLUSTER” on page 651
- “Parameter descriptions for RESET CLUSTER” on page 651

Synonym: None

RESET CLUSTER



Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[2] Valid only on z/OS.

Usage notes for RESET CLUSTER

1. On UNIX systems, the command is valid only on AIX, HP-UX, Linux, and Solaris.
2. On z/OS, the command fails if the channel initiator has not been started.
3. On z/OS, any errors are reported to the console on the system where the channel initiator is running; they are not reported to the system that issued the command.
4. To avoid any ambiguity, it is preferable to use QMID rather than QMNAME. The queue manager identifier can be found by commands such as DISPLAY QMGR and DISPLAY CLUSQMGR.

   If QMNAME is used, and there is more than one queue manager in the cluster with that name, the command is not actioned.
5. If you use characters other than those listed in Rules for naming IBM WebSphere MQ objects in your object or variable names, for example in QMID, you must enclose the name in quotation marks.
6. If you remove a queue manager from a cluster using this command, you can rejoin it to the cluster by issuing a **REFRESH CLUSTER** command. Wait at least 10 seconds before issuing a **REFRESH CLUSTER** command, because the repository ignores any attempt to rejoin the cluster within 10 seconds of a **RESET CLUSTER** command. If the queue manager is in a publish/subscribe cluster, you then need to issue the REFRESH QMGR TYPE(PROXYSUB) command to reinstate any required proxy subscriptions. See REFRESH CLUSTER considerations for publish/subscribe clusters.

   Note: For large clusters, use of the **REFRESH CLUSTER** command can be disruptive to the cluster while it is in progress, and again at 27 day intervals thereafter when the cluster objects automatically send status updates to all interested queue managers. See Refreshing in a large cluster can affect performance and availability of the cluster.

Parameter descriptions for RESET CLUSTER

(clustername)
The name of the cluster to be reset. This is required.

ACTION(FORCEREMOVE)

Requests that the queue manager is forcibly removed from the cluster. This might be needed to ensure correct cleanup after a queue manager has been deleted.

This action can be requested only by a repository queue manager.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

QMID(*qmid*)
The identifier of the queue manager to be forcibly removed.

QMNAME(*qmname*)
The name of the queue manager to be forcibly removed.

QUEUES
Specifies whether cluster queues owned by the queue manager being force removed are removed from the cluster.

NO
Cluster queues owned by the queue manager being force removed are not removed from the cluster. This is the default.

YES
Cluster queues owned by the queue manager being force removed are removed from the cluster in addition to the cluster queue manager itself. The cluster queues are removed even if the cluster queue manager is not visible in the cluster, perhaps because it was previously force removed without the QUEUES option.

On z/OS, **N** and **Y** are accepted synonyms of **NO** and **YES**.

Related reference
RESET CLUSTER: Forcibly removing a queue manager from a cluster

RESET QMGR

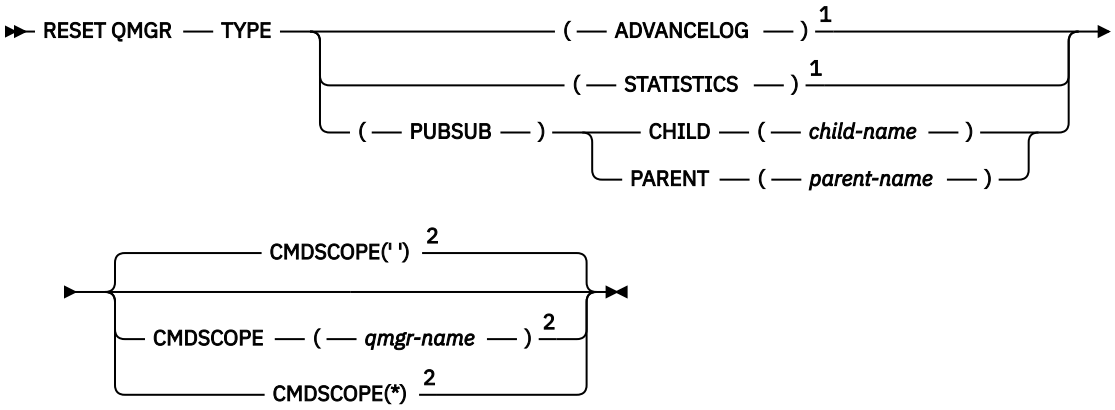
Use the MQSC command RESET QMGR as part of your backup and recovery procedures.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- “Usage notes for RESET QMGR” on page 653
- “Parameter descriptions for RESET QMGR” on page 653

Synonym: None

RESET QMGR



Notes:

1 Not valid on z/OS.

2 Valid only on z/OS when the queue manager is a member of a queue-sharing group

Usage notes for RESET QMGR

You can use this command to request that the queue manager starts writing to a new log extent, making the previous log extent available for backup. See Updating a backup queue manager. Alternatively, you can use this command to request that the queue manager ends the current statistics collection period and writes the collected statistics. You can also use this command to forcibly remove a publish/subscribe hierarchical connection for which this queue manager is nominated as either the parent or the child in the hierarchical connection.

1. The queue manager might refuse a request to advance the recovery log, if advancing the recovery log would cause the queue manager to become short of space in the active log.
2. You are unlikely to use RESET QMGR TYPE(PUBSUB) other than in exceptional circumstances. Typically the child queue manager uses ALTER QMGR PARENT(' ') to remove the hierarchical connection.

   When you need to disconnect from a child or parent queue manager with which the queue manager has become unable to communicate, you must issue the RESET QMGR TYPE (PUBSUB) command from a queue manager. When using this command, the remote queue manager is not informed of the canceled connection. It might, therefore, be necessary to issue the ALTER QMGR PARENT(' ') command at the remote queue manager. If the child queue manager is not manually disconnected, it is forcibly disconnected and the parent status is set to REFUSED.

   If you are resetting the parent relationship, issue the ALTER QMGR PARENT(' ') command, otherwise the queue manager attempts to re-establish the connection when the publish/subscribe capability of the queue manager is later enabled.

Parameter descriptions for RESET QMGR

TYPE

ADVANCELOG
Requests that the queue manager starts writing to a new log extent, making the previous log extent available for backup. See Updating a backup queue manager. This command is accepted only if the queue manager is configured to use linear logging.

STATISTICS
Requests that the queue manager ends the current statistics collection period and writes the collected statistics.

PUBSUB
Requests that the queue manager cancels the indicated publish/subscribe hierarchical connection. This value requires that one of the CHILD or PARENT attributes is specified:

CHILD
The name of the child queue manager for which the hierarchical connection is to be forcibly canceled. This attribute is used only with TYPE(PUBSUB). It cannot be used together with PARENT.

PARENT
The name of a parent queue manager for which the hierarchical connection is to be forcibly canceled. This attribute is used only with TYPE(PUBSUB). It cannot be used together with CHILD.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

CMDSCOPE must be blank, or the local queue manager, if QSGDISP is set to GROUP.

' '
The command is executed on the queue manager on which it was entered. This value is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name other than the queue manager on which it was entered, only if you are using a shared queue environment and if the command server is enabled.

*****
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of setting this value is the same as entering the command on every queue manager in the queue-sharing group.

RESOLVE CHANNEL

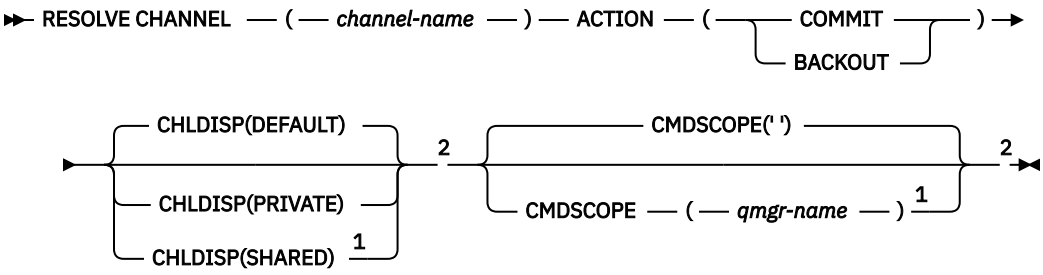
Use the MQSC command RESOLVE CHANNEL to request a channel to commit or back out in-doubt messages.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- “Usage notes for RESOLVE CHANNEL” on page 655
- “Parameter descriptions for RESOLVE CHANNEL” on page 655

Synonym: RESOLVE CHL (RES CHL on z/OS)

RESOLVE CHANNEL



Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[2] Valid only on z/OS.

Usage notes for RESOLVE CHANNEL

1. This command is used when the other end of a link fails during the confirmation period, and for some reason it is not possible to reestablish the connection.
2. In this situation the sending end remains in doubt as to whether the messages were received. Any outstanding units of work must be resolved by being backed out or committed.
3. If the resolution specified is not the same as the resolution at the receiving end, messages can be lost or duplicated.
4. On z/OS, the command server and the channel initiator must be running.
5. This command can be used only for sender (SDR), server (SVR), and cluster-sender (CLUSSDR) channels (including those that have been defined automatically).
6. Where there is both a locally defined channel and an auto-defined cluster-sender channel of the same name, the command applies to the locally defined channel. If there is no locally defined channel but more than one auto-defined cluster-sender channel, the command applies to the channel that was last added to the local queue manager's repository.

Parameter descriptions for RESOLVE CHANNEL

(channel-name)
The name of the channel for which in-doubt messages are to be resolved. This is required.

ACTION
Specifies whether to commit or back out the in-doubt messages (this is required):

COMMIT
The messages are committed, that is, they are deleted from the transmission queue

BACKOUT
The messages are backed out, that is, they are restored to the transmission queue

CHLDISP
This parameter applies to z/OS only and can take the values of:

- DEFAULT
- PRIVATE
- SHARED

If this parameter is omitted, then the DEFAULT value applies. This is taken from the default channel disposition attribute, DEFCDISP, of the channel object.

In conjunction with the various values of the CMDSCOPE parameter, this parameter controls two types of channel:

SHARED
A receiving channel is shared if it was started in response to an inbound transmission directed to the queue-sharing group.

A sending channel is shared if its transmission queue has a disposition of SHARED.

PRIVATE
A receiving channel is private if it was started in response to an inbound transmission directed to the queue manager.

A sending channel is private if its transmission queue has a disposition other than SHARED.

Note: This disposition is **not** related to the disposition set by the disposition of the queue-sharing group of the channel definition.

The combination of the CHLDISP and CMDSCOPE parameters also controls from which queue manager the channel is operated. The possible options are:

- On the local queue manager where the command is issued.
- On another specific named queue manager in the group.

The various combinations of CHLDISP and CMDSCOPE are summarized in the following table:

Table 58. CHLDISP and CMDSCOPE for RESOLVE CHANNEL

CHLDISP	CMDSCOPE( ) or CMDSCOPE (local-qmgr)	CMDSCOPE (qmgr-name)
PRIVATE	Resolve private channel on the local queue manager	Resolve private channel on the named queue manager
SHARED	Resolve a shared channel on all active queue managers. This might automatically generate a command using CMDSCOPE and send it to the appropriate queue manager. If there is no definition for the channel on the queue manager to which the command is sent, or if the definition is unsuitable for the command, the command fails. The definition of a channel on the queue manager where the command is entered might be used to determine the target queue manager where the command is actually run. Therefore, it is important that channel definitions are consistent. Inconsistent channel definitions might result in unexpected command behavior.	Not permitted

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

If CHLDISP is set to SHARED, CMDSCOPE must be blank or the local queue manager.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name only if you are using a queue-sharing group environment and if the command server is enabled.

RESUME QMGR

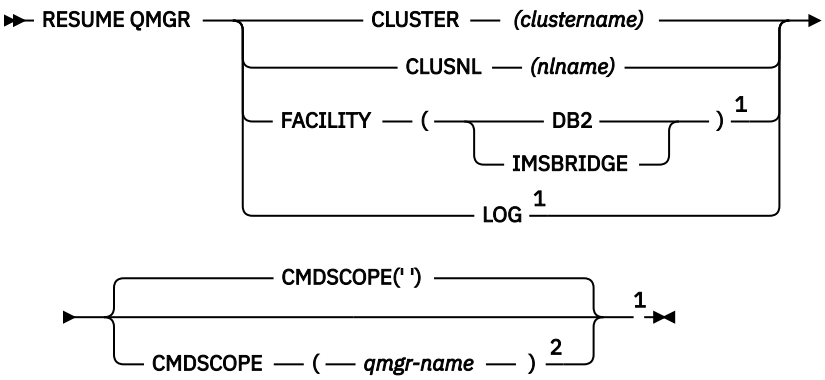
Use the MQSC command RESUME QMGR to inform other queue managers in a cluster that the local queue manager is available again for processing and can be sent messages. It reverses the action of the SUSPEND QMGR command.

UNIX and Linux	Windows
✓	✓

- Syntax diagram

Synonym: None

RESUME QMGR



Notes:

1 Valid only on z/OS.

2 Valid only on WebSphere MQ for z/OS when the queue manager is a member of a queue-sharing group.

Usage notes

1. On UNIX systems, the command is valid only on AIX, HP-UX, Linux, and Solaris.
2. On z/OS, if you define CLUSTER or CLUSNL:
   a. The command fails if the channel initiator has not been started.
   b. Any errors are reported to the console on the system where the channel initiator is running; they are not reported to the system that issued the command.
3. On z/OS, you cannot issue RESUME QMGR CLUSTER *(clustername)* or RESUME QMGR FACILITY commands from CSQINP2.
4. This command, with the CLUSTER and CLUSNL parameters, is **not** available on the reduced function form of WebSphere MQ for z/OS supplied with WebSphere Application Server.
5. On z/OS, the SUSPEND QMGR and RESUME QMGR commands are supported through the console only. However, all the other SUSPEND and RESUME commands are supported through the console and command server.

Parameter descriptions for RESUME QMGR

CLUSTER*(clustername)*
The name of the cluster for which availability is to be resumed.

CLUSNL*(nlname)*
The name of the namelist specifying a list of clusters for which availability is to be resumed.

FACILITY
Specifies the facility to which connection is to be re-established.

DB2®
Re-establishes connection to Db2.

IMSBRIDGE
Resumes normal IMS Bridge activity.

This parameter is only valid on z/OS.

LOG
Resumes logging and update activity for the queue manager that was suspended by a previous SUSPEND QMGR command. Valid on z/OS only. If LOG is specified, the command can be issued only from the z/OS console.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

SET AUTHREC

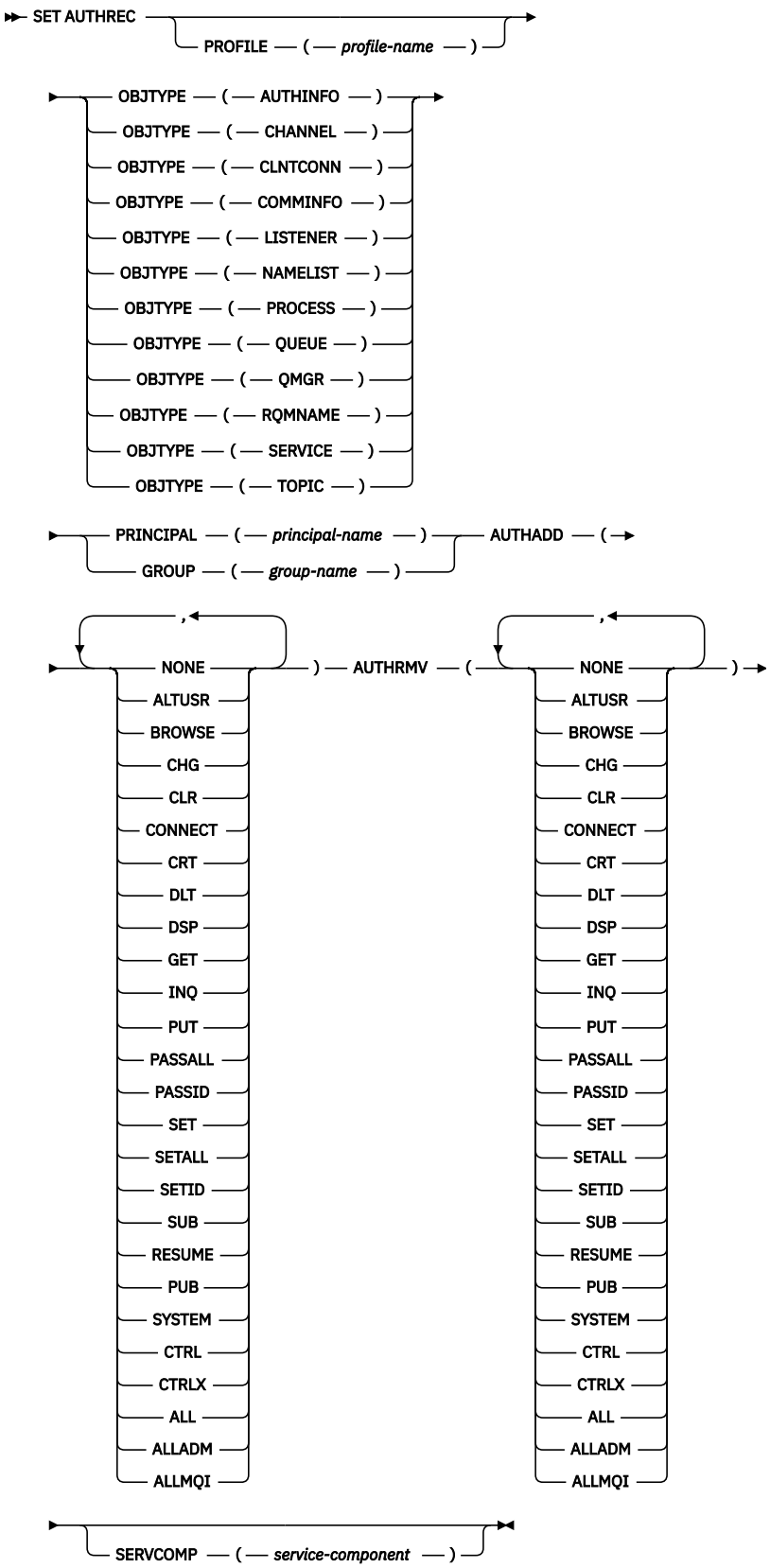
Use the MQSC command SET AUTHREC to set authority records associated with a profile name.

UNIX and Linux	Windows
✓	✓

- - Syntax diagram
- “Parameter descriptions” on page 660
- “Usage notes” on page 663

See “setmqaut” on page 109 for more information on the options that you can select.

SET AUTHREC


SET AUTHREC
PROFILE (profile-name)
OBJTYPE (AUTHINFO)
OBJTYPE (CHANNEL)
OBJTYPE (CLNTCONN)
OBJTYPE (COMMINFO)
OBJTYPE (LISTENER)
OBJTYPE (NAMELIST)
OBJTYPE (PROCESS)
OBJTYPE (QUEUE)
OBJTYPE (QMGR)
OBJTYPE (RQMNAME)
OBJTYPE (SERVICE)
OBJTYPE (TOPIC)
PRINCIPAL (principal-name)
GROUP (group-name)
AUTHADD (, NONE ALTUSR BROWSE CHG CLR CONNECT CRT DLT DSP GET INQ PUT PASSALL PASSID SET SETALL SETID SUB RESUME PUB SYSTEM CTRL CTRLX ALL ALLADM ALLMQI)
AUTHRMV (, NONE ALTUSR BROWSE CHG CLR CONNECT CRT DLT DSP GET INQ PUT PASSALL PASSID SET SETALL SETID SUB RESUME PUB SYSTEM CTRL CTRLX ALL ALLADM ALLMQI)
SERVCOMP (service-component)

Parameter descriptions

PROFILE(*profile-name*)
The name of the object or generic profile for which to display the authority records. This parameter is required unless the **OBJTYPE** parameter is QMGR, in which case it can be omitted.

See Using OAM generic profiles on UNIX or Linux systems and Windows for more information on generic profiles and wildcard characters.

OBJTYPE
The type of object referred to by the profile. Specify one of the following values:

AUTHINFO
Authentication information record

CHANNEL
Channel

CLNTCONN
Client connection channel

COMMINFO
Communication information object

LISTENER
Listener

NAMELIST
Namelist

PROCESS
Process

QUEUE
Queue

QMGR
Queue manager

RQMNAME
Remote queue manager

SERVICE
Service

TOPIC
Topic

PRINCIPAL(*principal-name*)
A principal name. This is the name of a user for whom to set authority records for the specified profile. On IBM WebSphere MQ for Windows, the name of the principal can optionally include a domain name, specified in this format: `user@domain`.

You must specify either PRINCIPAL or GROUP.

GROUP(*group-name*)
A group name. This is the name of the user group for which to set authority records for the specified profile. You can specify one name only and it must be the name of an existing user group.

Windows For IBM WebSphere MQ for Windows only, the group name can optionally include a domain name, specified in the following format:

```
GroupName@domain
```

You must specify either PRINCIPAL or GROUP.

AUTHADD
A list of authorizations to add in the authority records. Specify any combination of the following values:

NONE
No authorization

ALTUSR
Specify an alternative user ID on an MQI call

BROWSE
Retrieve a message from a queue by issuing an **MQGET** call with the BROWSE option

CHG
Change the attributes of the specified object, using the appropriate command set

CLR
Clear a queue or a topic

CONNECT
Connect an application to a queue manager by issuing an **MQCONN** call

CRT
Create objects of the specified type using the appropriate command set

DLT
Delete the specified object using the appropriate command set

DSP
Display the attributes of the specified object using the appropriate command set

GET
Retrieve a message from a queue by issuing an **MQGET** call

INQ
Make an inquiry on a specific queue by issuing an **MQINQ** call

PUT
Put a message on a specific queue by issuing an **MQPUT** call

PASSALL
Pass all context

PASSID
Pass the identity context

SET
Set attributes on a queue by issuing an **MQSET** call

SETALL
Set all context on a queue

SETID
Set the identity context on a queue

SUB
Create, alter, or resume a subscription to a topic using the **MQSUB** call

RESUME
Resume a subscription using the MQSUB call

PUB
Publish a message on a topic using the **MQPUT** call

SYSTEM
Use queue manager for internal system operations

CTRL
Start and stop the specified channel, listener, or service, and ping the specified channel

CTRLX
Reset or resolve the specified channel

ALL
Use all operations relevant to the object

`all` authority is equivalent to the union of the authorities `alladm`, `allmqi`, and `system` appropriate to the object type.

ALLADM
Perform all administration operations relevant to the object

ALLMQI
Use all MQI calls relevant to the object

AUTHRMV
A list of authorizations to remove from the authority records. Specify any combination of the following values:

NONE
No authorization

ALTUSR
Specify an alternative user ID on an MQI call

BROWSE
Retrieve a message from a queue by issuing an **MQGET** call with the BROWSE option

CHG
Change the attributes of the specified object, using the appropriate command set

CLR
Clear a queue or a topic

CONNECT
Connect an application to a queue manager by issuing an **MQCONN** call

CRT
Create objects of the specified type using the appropriate command set

DLT
Delete the specified object using the appropriate command set

DSP
Display the attributes of the specified object using the appropriate command set

GET
Retrieve a message from a queue by issuing an **MQGET** call

INQ
Make an inquiry on a specific queue by issuing an **MQINQ** call

PUT
Put a message on a specific queue by issuing an **MQPUT** call

PASSALL
Pass all context

PASSID
Pass the identity context

SET
Set attributes on a queue by issuing an **MQSET** call

SETALL
Set all context on a queue

SETID
Set the identity context on a queue

SUB
Create, alter, or resume a subscription to a topic using the **MQSUB** call

RESUME
Resume a subscription using the MQSUB call

PUB
Publish a message on a topic using the **MQPUT** call

SYSTEM
Use queue manager for internal system operations

CTRL
Start and stop the specified channel, listener, or service, and ping the specified channel

CTRLX
Reset or resolve the specified channel

ALL
Use all operations relevant to the object

`all` authority is equivalent to the union of the authorities `alladm`, `allmqi`, and `system` appropriate to the object type.

ALLADM
Perform all administration operations relevant to the object

ALLMQI
Use all MQI calls relevant to the object

SERVCOMP(*service-component*)
The name of the authorization service for which information is to be set.

If you specify this parameter, it specifies the name of the authorization service to which the authorizations apply. If you omit this parameter, the authority record is set using the registered authorization services in turn in accordance with the rules for chaining authorization services.

Usage notes

The list of authorizations to add and the list of authorizations to remove must not overlap. For example, you cannot add display authority and remove display authority with the same command. This rule applies even if the authorities are expressed using different options. For example, the following command fails because DSP authority overlaps with ALLADM authority:

```
SET AUTHREC PROFILE(*) OBJTYPE(QUEUE) PRINCIPAL(PRINC01) AUTHADD(DSP) AUTHRMV(ALLADM)
```

The exception to this overlap behavior is with the ALL authority. The following command first adds ALL authorities then removes the SETID authority:

```
SET AUTHREC PROFILE(*) OBJTYPE(QUEUE) PRINCIPAL(PRINC01) AUTHADD(ALL) AUTHRMV(SETID)
```

The following command first removes ALL authorities then adds the DSP authority:

```
SET AUTHREC PROFILE(*) OBJTYPE(QUEUE) PRINCIPAL(PRINC01) AUTHADD(DSP) AUTHRMV(ALL)
```

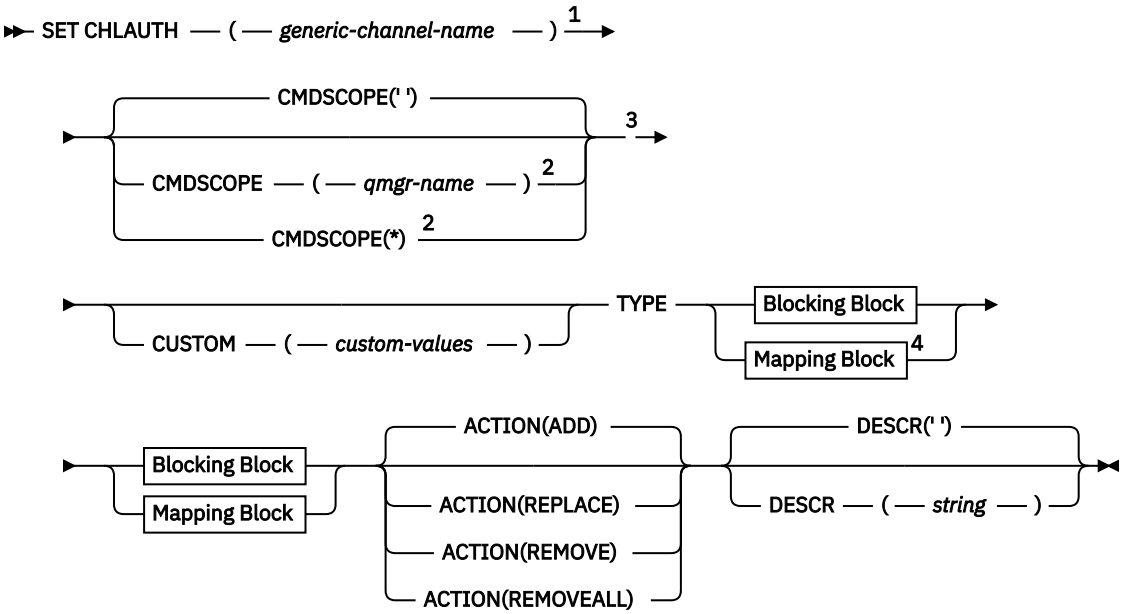
Regardless of the order in which they are provided on the command, the ALL are processed first.

SET CHLAUTH

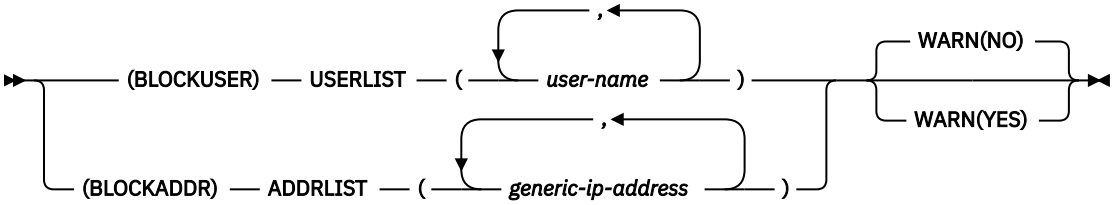
Use the MQSC command SET CHLAUTH to create or modify a channel authentication record.

UNIX and Linux	Windows
✓	✓

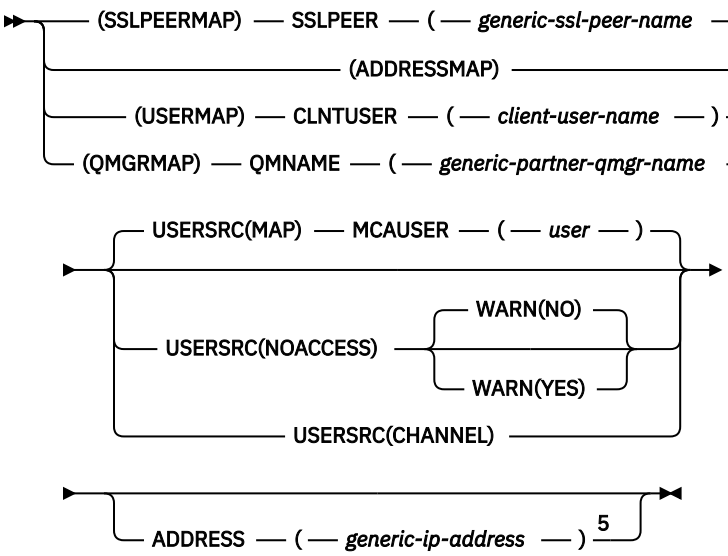
SET CHLAUTH



Blocking Block



Mapping Block



Notes:

1 The generic channel name must be '*' when TYPE is BLOCKADDR

2 Valid only on z/OS when the queue manager is a member of a queue-sharing group.

3 Valid only on z/OS.

4 Select the appropriate value for TYPE, depending upon the option that you select from the two types of block.

[5] Mandatory when TYPE is ADDRESSMAP

Usage notes

The following table shows which parameters are valid for each value of **ACTION**:

	Action		
Parameter	**ADD or REPLACE**	**REMOVE**	**REMOVEALL**
CHLAUTH	✓	✓	✓
TYPE	✓	✓	✓
CMDSCOPE	✓	✓	✓
ACTION	✓	✓	✓
ADDRESS	✓	✓	
ADDRLIST	✓	✓	
CLNTUSER	✓	✓	
MCAUSER	✓		
QMNAME	✓	✓	
SSLPEER	✓	✓	
USERLIST	✓	✓	
USERSRC	✓		
WARN	✓		
DESCR	✓		

Parameters

generic-channel-name

The name of the channel or set of channels for which you are setting channel authentication configuration. You can use one or more asterisks (*), in any position, as wildcards to specify a set of channels. If you set **TYPE** to BLOCKADDR, you must set the generic channel name to a single asterisk, which matches all channel names. On z/OS the generic-channel-name must be in quotes if it contains an asterisk.

TYPE

The **TYPE** parameter must follow the **generic-channel-name** parameter.

The type of channel authentication record for which to set allowed partner details or mappings to MCAUSER. This parameter is required. The following values can be used:

BLOCKUSER

This channel authentication record prevents a specified user or users from connecting. The BLOCKUSER parameter must be accompanied by a USERLIST.

BLOCKADDR
This channel authentication record prevents connections from a specified IP address or addresses. The BLOCKADDR parameter must be accompanied by an ADDRLIST. BLOCKADDR operates at the listener before the channel name is known.

SSLPEERMAP
This channel authentication record maps SSL or TLS Distinguished Names (DNs) to MCAUSER values. The SSLPEERMAP parameter must be accompanied by an SSLPEER.

ADDRESSMAP
This channel authentication record maps IP addresses to MCAUSER values. The ADDRESSMAP parameter must be accompanied by an ADDRESS. ADDRESSMAP operates at the channel.

USERMAP
This channel authentication record maps asserted user IDs to MCAUSER values. The USERMAP parameter must be accompanied by a CLNTUSER.

QMGRMAP
This channel authentication record maps remote queue manager names to MCAUSER values. The QMGRMAP parameter must be accompanied by a QMNAME.

ACTION
The action to perform on the channel authentication record. The following values are valid:

ADD
Add the specified configuration to a channel authentication record. This is the default value.

For types SSLPEERMAP, ADDRESSMAP, USERMAP and QMGRMAP, if the specified configuration exists, the command fails.

For types BLOCKUSER and BLOCKADDR, the configuration is added to the list.

REPLACE
Replace the current configuration of a channel authentication record.

For types SSLPEERMAP, ADDRESSMAP, USERMAP and QMGRMAP, if the specified configuration exists, it is replaced with the new configuration. If it does not exist it is added.

For types BLOCKUSER and BLOCKADDR, the configuration specified replaces the current list, even if the current list is empty. If you replace the current list with an empty list, this acts like REMOVEALL.

REMOVE
Remove the specified configuration from the channel authentication records. If the configuration does not exist the command fails. If you remove the last entry from a list, this acts like REMOVEALL.

REMOVEALL
Remove all members of the list and thus the whole record (for BLOCKADDR and BLOCKUSER) or all previously defined mappings (for ADDRESSMAP, SSLPEERMAP, QMGRMAP and USERMAP) from the channel authentication records. This option cannot be combined with specific values supplied in **ADDRLIST**, **USERLIST**, **ADDRESS**, **SSLPEER**, **QMNAME** or **CLNTUSER**. If the specified type has no current configuration the command still succeeds.

ADDRESS
The filter to be used to compare with the IP address of the partner queue manager or client at the other end of the channel.

This parameter is mandatory with **TYPE(ADDRESSMAP)**

This parameter is also valid when **TYPE** is SSLPEERMAP, USERMAP, or QMGRMAP and **ACTION** is ADD, REPLACE, or REMOVE. You can define more than one channel authentication object with the same main identity, for example the same SSL peer name, with different addresses. However, you cannot define channel authentication records with overlapping address ranges for the same main identity. See "Generic IP addresses" on page 668 for more information about filtering IP addresses.

If the address is generic then it must be in quotes.

ADDRLIST
A list of up to 256 generic IP addresses which are banned from accessing this queue manager on any channel. This parameter is only valid with TYPE(BLOCKADDR). See "Generic IP addresses" on page 668 for more information about filtering IP addresses.

If the address is generic then it must be in quotes.

CLNTUSER
The client asserted user ID to be mapped to a new user ID or blocked.

This parameter is valid only with **TYPE(USERMAP)**.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is run when the queue manager is a member of a queue-sharing group.

' '
The command is run on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is run on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

*****
The command is run on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect is the same as entering the command on every queue manager in the queue-sharing group.

CUSTOM
Reserved for future use.

DESCR
Provides descriptive information about the channel authentication record, which is displayed when you issue the DISPLAY CHLAUTH command. It must contain only displayable characters. The maximum length is 64 characters. In a DBCS installation, it can contain DBCS characters (subject to a maximum length of 64 bytes).

Note: Use characters from the coded character set identifier (CCSID) for this queue manager. Other characters might be translated incorrectly if the information is sent to another queue manager.

MCAUSER
The user identifier to be used when the inbound connection matches the SSL or TLS DN, IP address, client asserted user ID or remote queue manager name supplied.

This parameter is mandatory with **USERSRC(MAP)** and is valid when **TYPE** is SSLPEERMAP, ADDRESSMAP, USERMAP, or QMGRMAP.

This parameter can only be used when **ACTION** is ADD or REPLACE.

QMNAME
The name of the remote partner queue manager, or pattern that matches a set of queue manager names, to be mapped to a user ID or blocked.

This parameter is valid only with **TYPE(QMGRMAP)**.

If the queue manager name is generic then it must be in quotes.

SSLPEER

The filter to use to compare with the Subject Distinguished Name of the certificate from the peer queue manager or client at the other end of the channel.

The **SSLPEER** filter is specified in the standard form used to specify a Distinguished Name. See WebSphere MQ rules for SSLPEER values for details.

The maximum length of the parameter is 1024 bytes.

USERLIST
A list of up to 100 user IDs which are banned from use of this channel or set of channels. Use the special value *MQADMIN to mean privileged or administrative users. The definition of this value depends on the operating system, as follows:

- On Windows, all members of the mqm group, the Administrators group and SYSTEM.
- On UNIX and Linux, all members of the mqm group.
- On IBM i, the profiles (users) qmqm and qmqmadm and all members of the qmqmadm group, and any user defined with the *ALLOBJ special setting.
- On z/OS, the user ID that the channel initiator and queue manager address spaces are running under.

For more information about privileged users, see Privileged users .

This parameter is only valid with **TYPE(BLOCKUSER)**.

USERSRC
The source of the user ID to be used for MCAUSER at run time. The following values are valid:

MAP
Inbound connections that match this mapping use the user ID specified in the **MCAUSER** attribute. This is the default value.

NOACCESS
Inbound connections that match this mapping have no access to the queue manager and the channel ends immediately.

CHANNEL
Inbound connections that match this mapping use the flowed user ID or any user defined on the channel object in the MCAUSER field.

Note that WARN and USERSRC(CHANNEL), or USERSRC(MAP) are incompatible. This is because channel access is never blocked in these cases, so there is never a reason to generate a warning.

WARN
Indicates whether this record operates in warning mode.

NO
This record does not operate in warning mode. Any inbound connection that matches this record is blocked. This is the default value.

YES
This record operates in warning mode. Any inbound connection that matches this record and would therefore be blocked is allowed access. An error message is written and, if channel events are configured, a channel event message is created showing the details of what would have been blocked, see Channel Blocked. The connection is allowed to continue. An attempt is made to find another record that is set to WARN(NO) to set the credentials for the inbound channel.

Related information
Channel authentication records
Securing remote connectivity to the queue manager

Generic IP addresses
In the various commands that create and display channel authentication records, you can specify certain parameters as either a single IP address or a pattern to match a set of IP addresses.

When you create a channel authentication record, using the MQSC command SET CHLAUTH or the PCF command Set Channel Authentication Record , you can specify a generic IP address in various contexts. You can also specify a generic IP address in the filter condition when you display a channel authentication record using the commands DISPLAY CHLAUTH or Inquire Channel Authentication Records .

You can specify the address in any of the following ways:

- a single IPv4 address, such as 192.0.2.0
- a pattern based on an IPv4 address, including an asterisk (*) as a wildcard. The wildcard represents one or more parts of the address, depending on context. For example, the following are all valid values:
  - 192.0.2.*
  - 192.0.*
  - 192.0.*.2
  - 192.*.2
  - *
- a pattern based on an IPv4 address, including a hyphen (-) to indicate a range, for example 192.0.2.1-8
- a pattern based on an IPv4 address, including both an asterisk and a hyphen, for example 192.0.*.1-8
- a single IPv6 address, such as 2001:DB8:0:0:0:0:0:0
- a pattern based on an IPv6 address including an asterisk (*) as a wildcard. The wildcard represents one or more parts of the address, depending on context. For example, the following are all valid values:
  - 2001:DB8:0:0:0:0:0:*
  - 2001:DB8:0:0:0:*
  - 2001:DB8:0:0:0:*:0:1
  - 2001:*:1
  - *
- a pattern based on an IPv6 address, including a hyphen (-) to indicate a range, for example 2001:DB8:0:0:0:0:0:0-8
- a pattern based on an IPv6 address, including both an asterisk and a hyphen, for example 2001:DB8:0:0:0:*:0:0-8

If your system supports both IPv4 and IPv6, you can use either address format. IBM WebSphere MQ recognizes IPv4 mapped addresses in IPv6.

Certain patterns are invalid:

- A pattern cannot have fewer than the required number of parts, unless the pattern ends with a single trailing asterisk. For example 192.0.2 is invalid, but 192.0.2.* is valid.
- A trailing asterisk must be separated from the rest of the address by the appropriate part separator (a dot (.) for IPv4, a colon (:) for IPv6). For example, 192.0* is not valid because the asterisk is not in a part of its own.
- A pattern may contain additional asterisks provided that no asterisk is adjacent to the trailing asterisk. For example, 192.*.2.* is valid, but 192.0.*.* is not valid.
- An IPv6 address pattern cannot contain a double colon and a trailing asterisk, because the resulting address would be ambiguous. For example, 2001::* could expand to 2001:0000:*, 2001:0000:0000:* and so on

Related information

Mapping an IP address to an MCAUSER user ID

START CHANNEL

Use the MQSC command START CHANNEL to start a channel.

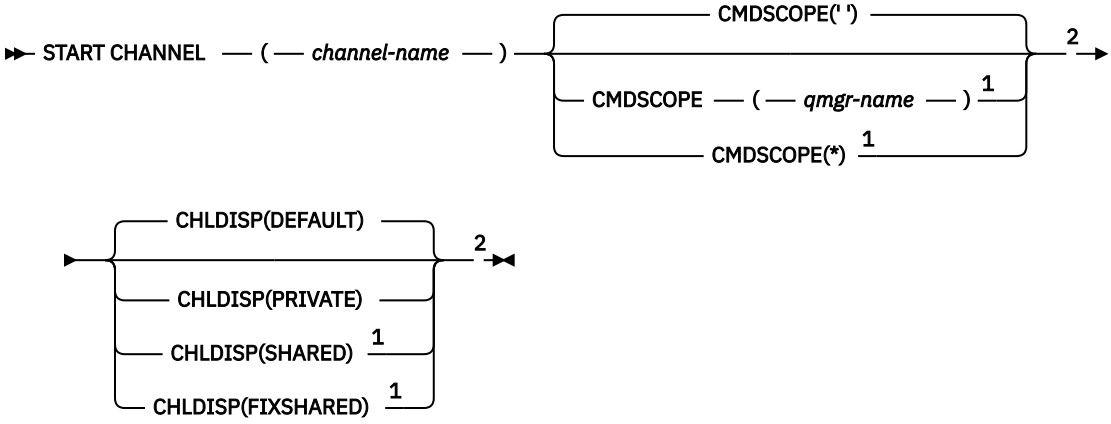
UNIX and Linux	Windows
✓	✓

- Syntax diagram
- “Usage notes” on page 670

- "Parameter descriptions for START CHANNEL" on page 670

Synonym: STA CHL

START CHANNEL



Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[2] Valid only on z/OS.

Usage notes

1. On z/OS, the command server and the channel initiator must be running.
2. This command can be issued to a channel of any type except CLNTCONN channels (including those that have been defined automatically). If, however, it is issued to a receiver (RCVR), server-connection (SVRCONN) or cluster-receiver (CLUSRCVR) channel, the only action is to enable the channel, not to start it.
3. Where there is both a locally defined channel and an auto-defined cluster-sender channel of the same name, the command applies to the locally defined channel. If there is no locally defined channel but more than one auto-defined cluster-sender channel, the command applies to the channel that was last added to the local queue manager's repository.

Parameter descriptions for START CHANNEL

(channel-name)
The name of the channel definition to be started. This is required for all channel types. The name must be that of an existing channel.

CHLDISP
This parameter applies to z/OS only and can take the values of:

- DEFAULT
- PRIVATE
- SHARED
- FIXSHARED

If this parameter is omitted, then the DEFAULT value applies. This is taken from the default channel disposition attribute, DEFCDISP, of the channel object.

In conjunction with the various values of the CMDSCOPE parameter, this parameter controls two types of channel:

SHARED
A receiving channel is shared if it was started in response to an inbound transmission directed to the queue-sharing group.

A sending channel is shared if its transmission queue has a disposition of SHARED.

PRIVATE
A receiving channel is private if it was started in response to an inbound transmission directed to the queue manager.

A sending channel is private if its transmission queue has a disposition other than SHARED.

Note: This disposition is not related to the disposition set by the disposition of the queue-sharing group of the channel definition.

The combination of the CHLDISP and CMDSCOPE parameters also controls from which queue manager the channel is operated. The possible options are:

- On the local queue manager where the command is issued.
- On another specific named queue manager in the group.
- On every active queue manager in the group.
- On the most suitable queue manager in the group, determined automatically by the queue manager itself.

The various combinations of CHLDISP and CMDSCOPE are summarized in the following table:

Table 59. CHLDISP and CMDSCOPE for START CHANNEL

CHLDISP	CMDSCOPE( ) or CMDSCOPE (local-qmgr)	CMDSCOPE (qmgr-name)	CMDSCOPE(*)
PRIVATE	Start as a private channel on the local queue manager	Start as a private channel on the named queue manager	Start as a private channel on all active queue managers
SHARED	For a shared SDR, RQSTR, and SVR channel, start as a shared channel on the most suitable queue manager in the group. For a shared RCVR and SVRCONN channel, start the channel as a shared channel on all active queue managers. For a shared CLUSSDR or CLUSRCVR channel, this option is not permitted. This might automatically generate a command using CMDSCOPE and send it to the appropriate queue managers. If there is no definition for the channel on the queue managers to which the command is sent, or if the definition is unsuitable for the command, the action fails there. The definition of a channel on the queue manager where the command is entered might be used to determine the target queue manager where the command is actually run. Therefore, it is important that channel definitions are consistent. Inconsistent channel definitions might result in unexpected command behavior.	Not permitted	Not permitted

Table 59. CHLDISP and CMDSCOPE for START CHANNEL (continued)			
CHLDISP	**CMDSCOPE( ) or CMDSCOPE (local-qmgr)**	**CMDSCOPE (qmgr-name)**	**CMDSCOPE(*)**
FIXSHARED	For a shared SDR, RQSTR, and SVR channel, with a nonblank CONNAME, start as a shared channel on the local queue manager. For all other types, this option is not permitted.	For a shared SDR, RQSTR, and SVR with a nonblank CONNAME, start as a shared channel on the named queue manager. For all other types, this option is not permitted.	Not permitted

Channels started with CHLDISP(FIXSHARED) are tied to the specific queue manager; if the channel initiator on that queue manager stops for any reason, the channels are not recovered by another queue manager in the group.

CMDSCOPE

This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

If CHLDISP is set to SHARED, CMDSCOPE must be blank or the local queue manager.

' '

The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name

The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name only if you are using a queue-sharing group environment and if the command server is enabled.

*****

The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group. The effect of this is the same as entering the command on every queue manager in the queue-sharing group.

This option is not permitted if CHLDISP is FIXSHARED.

START CHANNEL (MQTT)

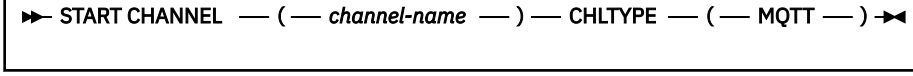
Use the MQSC command START CHANNEL to start a IBM WebSphere MQ Telemetry channel.

UNIX and Linux	Windows
✓	✓

The START CHANNEL (MQTT) command is only valid for IBM WebSphere MQ Telemetry channels. Supported platforms for IBM WebSphere MQ Telemetry are AIX, Linux, Windows.

Synonym: STA CHL

START CHANNEL



Parameter descriptions for START CHANNEL

(channel-name)
The name of the channel definition to be started. The name must be that of an existing channel.

CHLTYPE
Channel type. The value must be MQTT.

START CHINIT

Use the MQSC command START CHINIT to start a channel initiator.

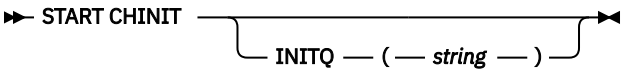
UNIX and Linux	Windows
✓	✓

- Syntax diagram
- "Usage notes" on page 673
- "Parameter descriptions for START CHINIT" on page 673

Synonym: STA CHI

Syntax diagram

START CHINIT



Usage notes

Parameter descriptions for START CHINIT

INITQ(*string*)
The name of the initiation queue for the channel initiation process. This is the initiation queue that is specified in the definition of the transmission queue.

On AIX, HP-UX, Linux, IBM i, Solaris, and Windows, you can specify which initiation queue to use; if you do not specify this, SYSTEM.CHANNEL.INITQ is used. On other platforms it must be specified.

START LISTENER

Use the MQSC command START LISTENER to start a channel listener.

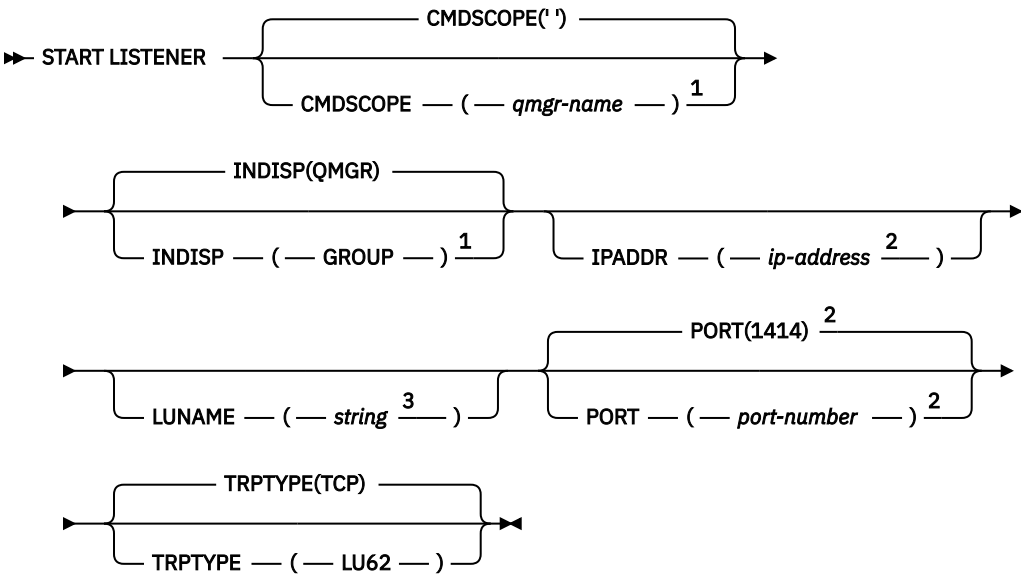
UNIX and Linux	Windows
✓	✓

- Syntax diagram for WebSphere MQ for z/OS
- Syntax diagram for WebSphere MQ on other platforms
- "Usage notes" on page 674
- "Parameter descriptions for START LISTENER" on page 675

Synonym: STA LSTR

WebSphere MQ for z/OS

START LISTENER

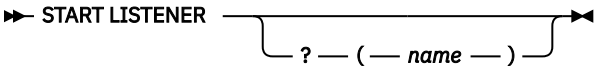


Notes:

[1] Valid only on z/OS when the queue manager is a member of a queue-sharing group.
[2] Valid only for TRPTYPE(TCP).
[3] Valid only for TRPTYPE(LU62).

WebSphere MQ on other platforms

START LISTENER



Usage notes

1. On z/OS:
   a. The command server and the channel initiator must be running.
   b. If IPADDR is not specified, the listener listens on all available IPv4 and IPv6 addresses.
   c. For TCP/IP, it is possible to listen on multiple addresses and port combinations.
   d. For each START LISTENER for TCP/IP request, the address and port combination is added to the list of combinations upon which the listener is currently listening.
   e. A START LISTENER for TCP/IP request fails if it specifies the same, or a subset or superset of an existing, combination of addresses and ports upon which a TCP/IP listener is currently listening.
   f. If you are starting a listener on a specific address to provide a secure interface with a security product, for example a firewall, it is important to ensure there is no linkage to the other non-secure interfaces in the system.

      You should disable IP forwarding and routing from other non-secure interfaces so that packets arriving at the other interface do not get passed to this specific address.

      Consult the appropriate TCP/IP documentation for information on how to do this.

2. On IBM i, UNIX systems, and Windows, this command is valid only for channels for which the transmission protocol (TRPTYPE) is TCP.

Parameter descriptions for START LISTENER

(*name*)
Name of the listener to be started. If you specify this parameter, you cannot specify any other parameters.

If you do not specify a name (on platforms other than z/OS), the SYSTEM.DEFAULT.LISTENER.TCP is started.

This parameter is not valid on z/OS.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

INDISP
Specifies the disposition of the inbound transmissions that are to be handled. The possible values are:

QMGR
Listen for transmissions directed to the queue manager. This is the default.

GROUP
Listen for transmissions directed to the queue-sharing group. This is allowed only if there is a shared queue manager environment.

This parameter is valid only on z/OS.

IPADDR
IP address for TCP/IP specified in IPv4 dotted decimal, IPv6 hexadecimal notation, or alphanumeric form. This is valid only if the transmission protocol (TRPTYPE) is TCP/IP.

This parameter is valid only on z/OS.

LUNAME(*string*)
The symbolic destination name for the logical unit as specified in the APPC side information data set. (This must be the same LU that was specified for the queue manager, using the LUNAME parameter of the ALTER QMGR command.)

This parameter is valid only for channels with a transmission protocol (TRPTYPE) of LU 6.2. A START LISTENER command that specifies TRPTYPE(LU62) must also specify the LUNAME parameter.

This parameter is valid only on z/OS.

PORT(*port-number*)
Port number for TCP. This is valid only if the transmission protocol (TRPTYPE) is TCP.

This parameter is valid only on z/OS.

TRPTYPE
Transport type to be used. This is optional.

TCP
TCP. This is the default if TRPTYPE is not specified.

LU62
SNA LU 6.2.

This parameter is valid only on z/OS.

START SERVICE

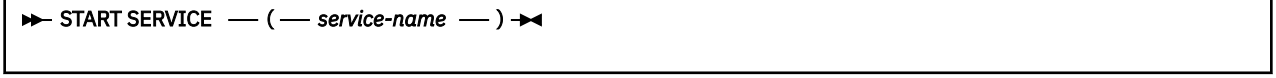
Use the MQSC command START SERVICE to start a service. The identified service definition is started within the queue manager and inherits the environment and security variables of the queue manager.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- "Parameter descriptions for START SERVICE" on page 676

Synonym:

START SERVICE



Parameter descriptions for START SERVICE

(*service-name*)
The name of the service definition to be started. This is required. The name must that of an existing service on this queue manager.

If the service is already running, and the operating system task is active, an error is returned.

Related information
Working with services

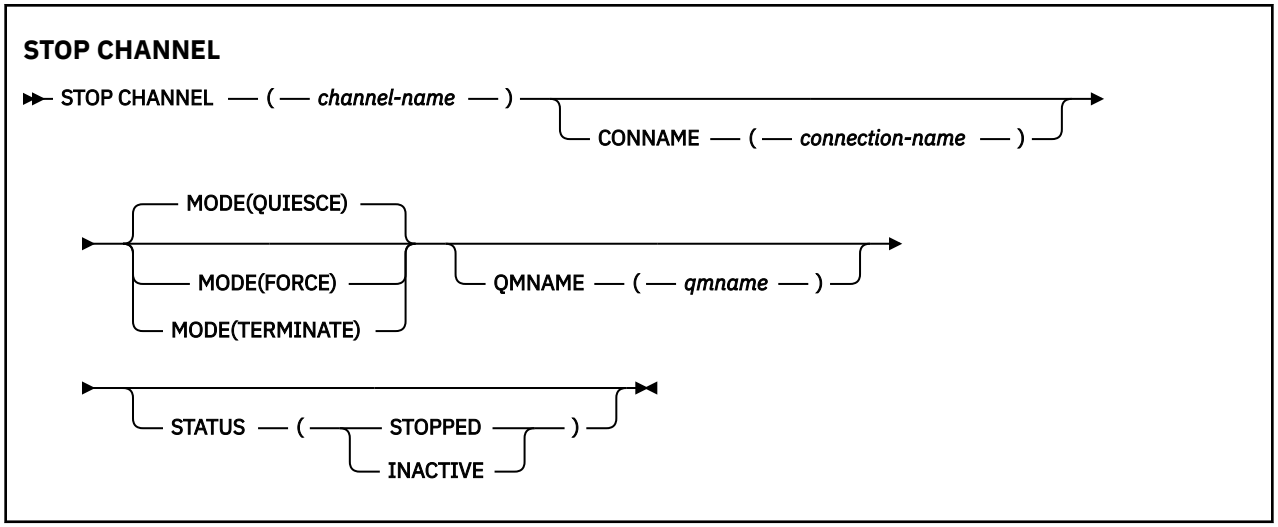
STOP CHANNEL

Use the MQSC command STOP CHANNEL to stop a channel.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- "Usage notes for STOP CHANNEL" on page 677
- "Parameter descriptions for STOP CHANNEL" on page 677

Synonym: STOP CHL



Usage notes for STOP CHANNEL

1. If you specify either QMNAME or CONNAME, STATUS must either be INACTIVE or not specified. Do not specify a QMNAME or CONNAME and STATUS(STOPPED). It is not possible to have a channel stopped for one partner but not for others. This sort of function can be provided by a channel security exit. For more information about channel exits, see Channel exit programs.
2. On z/OS, the command server and the channel initiator must be running.
3. Any channels in STOPPED state need to be started manually; they are not started automatically. See Restarting stopped channels for information about restarting stopped channels.
4. This command can be issued to a channel of any type except CLNTCONN channels (including those that have been defined automatically).
5. Where there is both a locally defined channel and an auto-defined cluster-sender channel of the same name, the command applies to the locally defined channel. If there is no locally defined channel but more than one auto-defined cluster-sender channel, the command applies to the channel that was last added to the local queue manager repository.

Parameter descriptions for STOP CHANNEL

(channel-name)
The name of the channel to be stopped. This parameter is required for all channel types.

CONNAME*(connection-name)*
Connection name. Only channels matching the specified connection name are stopped

MODE
Specifies whether the current batch is allowed to finish in a controlled manner. This parameter is optional.

QUIESCE
This is the default.

Allows the current batch to finish processing on distributed platforms.

For a receiving channel, if there is no batch in progress, the channel waits for either of the following to take place before it stops:

- The next batch to start
- The next heartbeat (if heartbeats are being used)

For server-connection channels, allows the current connection to end.

If you issue a STOP CHANNEL *channelname* MODE (QUIESCE) command on a server-connection channel, the IBM WebSphere MQ client infrastructure becomes aware of the stop request in a timely manner. This time is dependent upon the speed of the network.

If a client application is using the server-connection channel and is performing either of the following operations at the time that the command is issued, then the MQPUT or MQGET operation fails:

- An MQPUT operation with the PMO option MQPMO_FAIL_IF_QUIESCE specified.
- An MQGET operation with the GMO option MQGMO_FAIL_IF_QUIESCE set.

The client application receives reason code MQRC_CONNECTION_QUIESCING.

If a client application is using the server-connection channel and is performing either of the following operations, then the client application is allowed to complete the MQPUT or MQGET operation:

- An MQPUT operation without the PMO option MQPMO_FAIL_IF_QUIESCE specified.
- An MQGET operation without the GMO option MQGMO_FAIL_IF_QUIESCE set.

The next time the application tries to use the server-connection channel, it receives reason code MQRC_CONNECTION_QUIESCING.

If the client application is not performing an MQ API call when the server-connection channel is stopped, it becomes aware of the stop request as a result of issuing a subsequent call to IBM WebSphere MQ and receives return code MQRC_CONNECTION_QUIESCING.

After sending the MQRC_CONNECTION_QUIESCING return code to the client, and allowing any outstanding MQPUT or MQGET operations to complete if necessary, the server ends the client connections for the server-connection channel.

Due to the imprecise timing of network operations, the client application should not attempt further MQ API operations.

FORCE

For server-connection channels, breaks the current connection, returning MQRC_CONNECTION_BROKEN.

For other channel types, terminates transmission of any current batch. This is likely to result in in-doubt situations.

TERMINATE

On other platforms other than z/OS, this parameter terminates transmission of any current batch. This allows the command to actually terminate the channel thread or process.

For server-connection channels, breaks the current connection, returning MQRC_CONNECTION_BROKEN.

QMNAME*(qmname)*

Queue manager name. Only channels matching the specified remote queue manager are stopped

STATUS

Specifies the new state of any channels stopped by this command. For details about channels in STOPPED state, and especially SVRCONN channels, see Restarting stopped channels.

STOPPED

The channel is stopped. For a sender or server channel the transmission queue is set to GET(DISABLED) and NOTRIGGER.

This is the default if QMNAME or CONNAME are not specified.

INACTIVE

The channel is inactive.

This is the default if QMNAME or CONNAME are specified.

STOP CHANNEL (MQTT)

Use the MQSC command STOP CHANNEL to stop a IBM WebSphere MQ Telemetry channel.

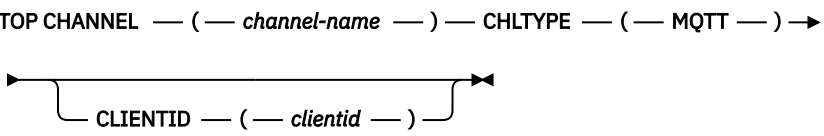
UNIX and Linux	Windows
✓	✓

Note: For the telemetry server, AIX is the only supported UNIX platform.

The STOP CHANNEL (MQTT) command is only valid for IBM WebSphere MQ Telemetry channels.

Synonym: STOP CHL

STOP CHANNEL



Usage notes for STOP CHANNEL

1. Any channels in STOPPED state need to be started manually; they are not started automatically. See Restarting stopped channels for information about restarting stopped channels.

Parameter descriptions for STOP CHANNEL

(channel-name)
The name of the channel to be stopped. This parameter is required for all channel types including MQTT channels.

CHLTYPE
Channel type. Tthe value must be MQTT.

CLIENTID*(string)*
Client identifier. The client identifier is a 23-byte string that identifies a IBM WebSphere MQ Telemetry Transport client. When the STOP CHANNEL command specifies a CLIENTID, only the connection for the specified client identifier is stopped. If the CLIENTID is not specified, all the connections on the channel are stopped.

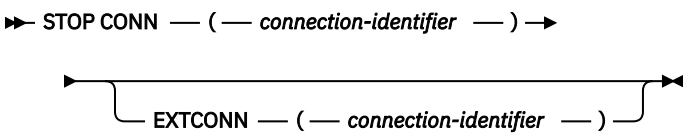
STOP CONN

Use the MQSC command STOP CONN to break a connection between an application and the queue manager.

UNIX and Linux	Windows
✓	✓

Synonym: STOP CONN

STOP CONN



Usage notes

There might be circumstances in which the queue manager cannot implement this command when the success of this command cannot be guaranteed.

Parameter descriptions for STOP CONN

(*connection-identifier*)
The identifier of the connection definition for the connection to be broken.

When an application connects to WebSphere MQ, it is given a unique 24-byte connection identifier (ConnectionId). The value of CONN is formed by converting the last eight bytes of the ConnectionId to its 16-character hexadecimal equivalent.

EXTCONN
The value of EXTCONN is based on the first sixteen bytes of the ConnectionId converted to its 32-character hexadecimal equivalent.

Connections are identified by a 24-byte connection identifier. The connection identifier comprises a prefix, which identifies the queue manager, and a suffix which identifies the connection to that queue manager. By default, the prefix is for the queue manager currently being administered, but you can specify a prefix explicitly by using the EXTCONN parameter. Use the CONN parameter to specify the suffix.

When connection identifiers are obtained from other sources, specify the fully qualified connection identifier (both EXTCONN and CONN) to avoid possible problems related to non-unique CONN values.

Related reference

"DISPLAY CONN" on page 527
Use the MQSC command DISPLAY CONN to display connection information about the applications connected to the queue manager. This is a useful command because it enables you to identify applications with long-running units of work.

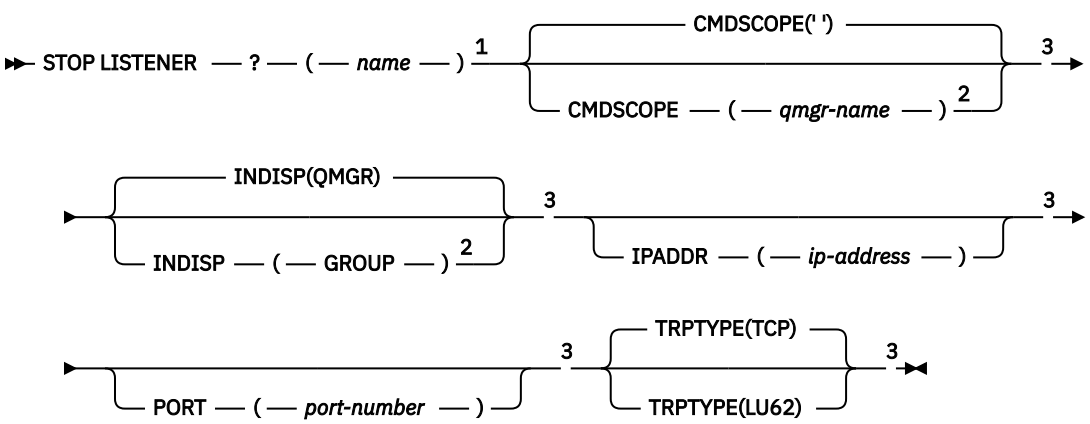
STOP LISTENER

Use the MQSC command STOP LISTENER to stop a channel listener.

UNIX and Linux	Windows
✓	✓

Synonym: STOP LSTR

STOP LISTENER



Notes:

[1] Not valid on z/OS.
[2] Valid only on WebSphere MQ for z/OS when the queue manager is a member of a queue-sharing group.
[3] Valid only on z/OS.

Usage notes

On z/OS:

- The command server and the channel initiator must be running.
- If a listener is listening on multiple addresses or ports, only the address and port combinations with the address, or port, specified are stopped.
- If a listener is listening on all addresses for a particular port, a stop request for a specific IPADDR with the same port fails.
- If neither an address nor a port is specified, all addresses and ports are stopped and the listener task ends.

Parameter descriptions for STOP LISTENER

(*name*)
Name of the listener to be stopped. If you specify this parameter, you cannot specify any other parameters.

This parameter is required on all platforms other than z/OS where it is not a supported parameter.

CMDSCOPE
This parameter specifies how the command is executed when the queue manager is a member of a queue-sharing group.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

This parameter is valid only on z/OS.

INDISP
Specifies the disposition of the inbound transmissions that the listener handles. The possible values are:

QMGR
Handling for transmissions directed to the queue manager. This is the default.

GROUP
Handling for transmissions directed to the queue-sharing group. This is allowed only if there is a shared queue manager environment.

This parameter is valid only on z/OS.

IPADDR
IP address for TCP/IP specified in IPv4 dotted decimal, IPv6 hexadecimal notation, or alphanumeric form. This is valid only if the transmission protocol (TRPTYPE) is TCP/IP.

This parameter is valid only on z/OS.

PORT
The port number for TCP/IP. This is the port number on which the listener is to stop listening. This is valid only if the transmission protocol is TCP/IP.

This parameter is valid only on z/OS.

TRPTYPE
Transmission protocol used. This is optional.

TCP
TCP. This is the default if TRPTYPE is not specified.

LU62
SNA LU 6.2.

This parameter is valid only on z/OS.

The listener stops in quiesce mode (it disregards any further requests).

STOP SERVICE

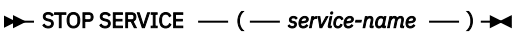
Use the MQSC command STOP SERVICE to stop a service.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- “Usage notes” on page 682
- “Parameter descriptions for STOP SERVICE” on page 683

Synonym:

STOP SERVICE



Usage notes

If the service is running, it is requested to stop. This command is processed asynchronously so might return before the service has stopped.

If the service that is requested to stop has no STOP command defined, an error is returned.

Parameter descriptions for STOP SERVICE

(*service-name*)
The name of the service definition to be stopped. This is required. The name must that of an existing service on this queue manager.

Related reference

"ALTER SERVICE" on page 303
Use the MQSC command ALTER SERVICE to alter the parameters of an existing WebSphere MQ service definition.

"START SERVICE" on page 676
Use the MQSC command START SERVICE to start a service. The identified service definition is started within the queue manager and inherits the environment and security variables of the queue manager.

Related information

Working with services

SUSPEND QMGR

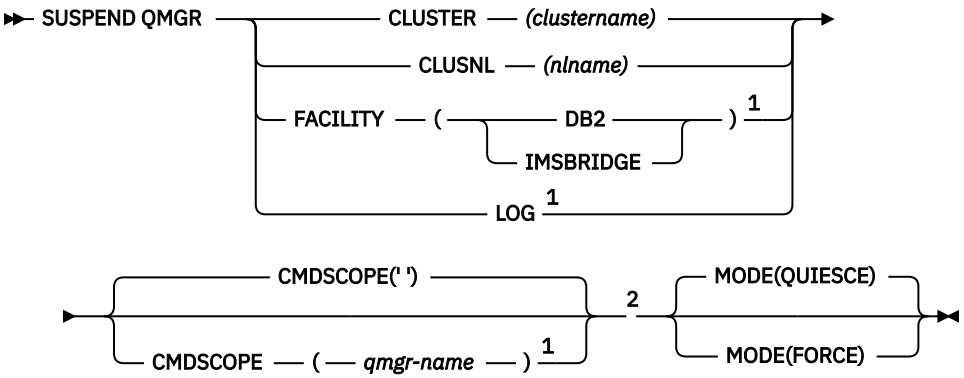
Use the MQSC command SUSPEND QMGR to advise other queue managers in a cluster to avoid sending messages to the local queue manager if possible, or to suspend logging and update activity for the queue manager until a subsequent RESUME QMGR command is issued. Its action can be reversed by the RESUME QMGR command. This command does not mean that the queue manager is disabled.

UNIX and Linux	Windows
✓	✓

- Syntax diagram
- "Usage notes" on page 683
- "Parameter descriptions for SUSPEND QMGR" on page 684

Synonym: None

SUSPEND QMGR



Notes:

1 Valid only on z/OS.
2 Valid only on WebSphere MQ for z/OS when the queue manager is a member of a queue-sharing group.

Usage notes

On z/OS:

- If you define CLUSTER or CLUSNL, be aware of the following behavior:

  - The command fails if the channel initiator has not been started.
  - Any errors are reported to the system console where the channel initiator is running; they are not reported to the system that issued the command.
- The SUSPEND QMGR and RESUME QMGR commands are supported through the console only. However, all the other SUSPEND and RESUME commands are supported through the console and command server.

Parameter descriptions for SUSPEND QMGR

The SUSPEND QMGR with the CLUSTER or CLUSNL parameters to specify the cluster or clusters for which availability is suspended, how the suspension takes effect and, on z/OS, controls logging and update activity and how the command is executed when the queue manager is a member of a queue-sharing group.

You can use the SUSPEND QMGR FACILITY(DB2) to terminate the queue manager connection to Db2. This command might be useful if you want to apply service to Db2. Be aware, if you use this option then there is no access to Db2 resources, for example, large messages which might be offloaded to Db2 from a coupling facility.

You can use the SUSPEND QMGR FACILITY(IMSBRIDGE) to stop sending messages from the WebSphere MQ IMS bridge to IMS OTMA.

CLUSTER*(clustername)*
The name of the cluster for which availability is to be suspended.

CLUSNL*(nlname)*
The name of the namelist that specifies a list of clusters for which availability is to be suspended.

LOG
Suspends logging and update activity for the queue manager until a subsequent RESUME request is issued. Any unwritten log buffers are externalized, a system checkpoint is taken (non-data sharing environment only), and the BSDS is updated with the high-written RBA before the update activity is suspended. A highlighted message (CSQJ372I) is issued and remains on the system console until update activity has been resumed. Valid on z/OS only. If LOG is specified, the command can be issued only from the z/OS system console.

This option is not permitted when a system quiesce is active by either the ARCHIVE LOG or STOP QMGR command.

Update activity remains suspended until a RESUME QMGR LOG or STOP QMGR command is issued.

This command must not be used during periods of high activity, or for long periods of time. Suspending update activity can cause timing-related events such as lock timeouts or WebSphere MQ diagnostic memory dumps when delays are detected.

CMDSCOPE
This parameter applies to z/OS only and specifies how the command is executed when the queue manager is a member of a queue-sharing group.

' '
The command is executed on the queue manager on which it was entered. This is the default value.

qmgr-name
The command is executed on the queue manager you specify, providing the queue manager is active within the queue-sharing group.

You can specify a queue manager name, other than the queue manager on which the command was entered, only if you are using a queue-sharing group environment and if the command server is enabled.

MODE
Specifies how the suspension of availability is to take effect:

QUIESCE
Other queue managers in the cluster are advised to avoid sending messages to the local queue manager if possible. It does not mean that the queue manager is disabled.

FORCE
All inbound channels from other queue managers in the cluster are stopped forcibly. This occurs only if the queue manager has also been forcibly suspended from all other clusters to which the channel belongs.

The MODE keyword is permitted only with CLUSTER or CLUSNL. It is not permitted with the LOG or FACILITY parameter.

Programmable command formats reference

Programmable Command Formats (PCFs) define command and reply messages that can be exchanged between a program and any queue manager (that supports PCFs) in a network. PCFs simplify queue manager administration and other network administration.

For an introduction to PCFs, see Introduction to Programmable Command Formats.

For the full list of PCFs, see "Definitions of the Programmable Command Formats" on page 685.

PCF commands and responses have a consistent structure including of a header and any number of parameter structures of defined types. For information about these structures, see "Structures for commands and responses" on page 1082.

For an example PCF, see "PCF example" on page 1109.

Related concepts

"IBM WebSphere MQ Control commands" on page 6
Find out how to use the WebSphere MQ control commands.

"MQSC reference" on page 169
Use MQSC commands to manage queue manager objects, including the queue manager itself, queues, process definitions, channels, client connection channels, listeners, services, namelists, clusters, and authentication information objects.

Definitions of the Programmable Command Formats

All the available Programmable Command Formats (PCFs) are listed including their parameters (required and optional), response data and error codes.

Following is the reference information for the Programmable Command Formats (PCFs) of commands and responses sent between a WebSphere MQ systems management application program and a WebSphere MQ queue manager.

How the definitions are shown

The definitions of the Programmable Command Formats (PCFs) including their commands, responses, parameters, constants, and error codes are shown in a consistent format.

For each PCF command or response, there is a description of what the command or response does, giving the command identifier in parentheses. See Constants for all values of the command identifier. Each command description starts with a table that identifies the platforms on which the command is valid. For additional, more detailed, usage notes for each command, see the corresponding command description in the MQSC reference.

WebSphere MQ products, other than WebSphere MQ for z/OS, can use the WebSphere MQ Administration Interface (MQAI), which provides a simplified way for applications written in the C and Visual Basic programming language to build and send PCF commands. For information about the MQAI see the second section of this topic.

Commands

The *required parameters* and the *optional parameters* are listed. On platforms other than z/OS, the parameters ***must*** occur in the order:

1. All required parameters, in the order stated, followed by
2. Optional parameters as required, in any order, unless noted in the PCF definition.

On z/OS, the parameters can be in any order.

Responses

The response data attribute is *always returned* whether it is requested or not. This parameter is required to identify, uniquely, the object when there is a possibility of multiple reply messages being returned.

The other attributes shown are *returned if requested* as optional parameters on the command. The response data attributes are not returned in a defined order.

Parameters and response data

Each parameter name is followed by its structure name in parentheses (details are given in "Structures for commands and responses" on page 1082). The parameter identifier is given at the beginning of the description.

Constants

For the values of constants used by PCF commands and responses see Constants.

Informational messages

On z/OS, a number of command responses return a structure, MQIACF_COMMAND_INFO, with values that provide information about the command.

Table 60. MQIACF_COMMAND_INFO values

MQIACF_COMMAND_INFO value	**Meaning**
MQCMDI_CMDSCOPE_ACCEPTED	A command that specified *CommandScope* was entered. It has been passed to the one or more requested queue managers for processing
MQCMDI_CMDSCOPE_GENERATED	A command that specified *CommandScope* was generated in response to the command originally entered
MQCMDI_CMDSCOPE_COMPLETED	Processing for the command that specified *CommandScope* - either entered or generated by another command - has completed successfully on all requested queue managers
MQCMDI_QSG_DISP_COMPLETED	Processing for the command that refers to an object with the indicated disposition has completed successfully
MQCMDI_COMMAND_ACCEPTED	Initial processing for the command has completed successfully. The command requires further action by the channel initiator, for which a request has been queued. Messages reporting the success or otherwise of the action are be sent to the command issuer later

Table 60. MQIACF_COMMAND_INFO values (continued)	
MQIACF_COMMAND_INFO value	**Meaning**
MQCMDI_CLUSTER_REQUEST_QUEUED	Initial processing for the command has completed successfully. The command requires further action by the cluster repository manager, for which a request has been queued
MQCMDI_CHANNEL_INIT_STARTED	A Start Channel Initiator command has been issued and the channel initiator address space has been started successfully
MQCMDI_RECOVER_STARTED	The queue manager has successfully started a task to process the Recover CF Structure command for the named structure
MQCMDI_BACKUP_STARTED	The queue manager has successfully started a task to process the Backup CF Structure command for the named structure
MQCMDI_RECOVER_COMPLETED	The named CF structure has been recovered successfully. The structure is available for use again
MQCMDI_SEC_TIMER_ZERO	The Change Security command was entered with the *SecurityInterval* attribute set to 0. This means that no user timeouts occur
MQCMDI_REFRESH_CONFIGURATION	A Change Queue Manager command has been issued that enables configuration events. Event messages need to be generated to ensure that the configuration information is complete and up to date
MQCMDI_IMS_BRIDGE_SUSPENDED	The MQ-IMS Bridge facility is suspended.
MQCMDI_DB2_SUSPENDED	The connection to DB2 is suspended
MQCMDI_DB2_OBSOLETE_MSGS	Obsolete DB2 messages exist in the queue-sharing group

Error codes

At the end of most command format definitions, there is a list of error codes that might be returned by that command.

Error codes applicable to all commands

In addition to those error codes listed under each command format, any command might return the following error codes in the response format header (descriptions of the MQRC_* error codes are given in the Reason codes:

***Reason* (MQLONG)**
The value can be:

MQRC_NONE
(0, X'000') No reason to report.

MQRC_MSG_TOO_BIG_FOR_Q
(2030, X'7EE') Message length greater than maximum for queue.

MQRC_CONNECTION_BROKEN
(2009, X'7D9') Connection to queue manager lost.

MQRC_NOT_AUTHORIZED
(2035, X'7F3') Not authorized for access.

MQRC_UNKNOWN_OBJECT_NAME
(2067, X'813') Attribute selector not valid.

MQRC_STORAGE_NOT_AVAILABLE
(2071, X'817') Insufficient storage available.

MQRC_UNKNOWN_OBJECT_NAME
(2085, X'825') Unknown object name.

MQRCCF_ATTR_VALUE_ERROR
Attribute value not valid.

MQRCCF_CFBF_FILTER_VAL_LEN_ERROR
Filter value length not valid.

MQRCCF_CFBF_LENGTH_ERROR
Structure length not valid.

MQRCCF_CFBF_OPERATOR_ERROR
Operator error.

MQRCCF_CFBF_PARM_ID_ERROR
Parameter identifier not valid.

MQRCCF_CFBS_DUPLICATE_PARM
Duplicate parameter.

MQRCCF_CFBS_LENGTH_ERROR
Structure length not valid.

MQRCCF_CFBS_PARM_ID_ERROR
Parameter identifier not valid.

MQRCCF_CFBS_STRING_LENGTH_ERROR
String length not valid.

MQRCCF_CFGR_LENGTH_ERROR
Structure length not valid.

MQRCCF_CFGR_PARM_COUNT_ERROR
Parameter count not valid.

MQRCCF_CFGR_PARM_ID_ERROR
Parameter identifier not valid.

MQRCCF_CFH_COMMAND_ERROR
Command identifier not valid.

MQRCCF_CFH_CONTROL_ERROR
Control option not valid.

MQRCCF_CFH_LENGTH_ERROR
Structure length not valid.

MQRCCF_CFH_MSG_SEQ_NUMBER_ERR
Message sequence number not valid.

MQRCCF_CFH_PARM_COUNT_ERROR
Parameter count not valid.

MQRCCF_CFH_TYPE_ERROR
Type not valid.

MQRCCF_CFH_VERSION_ERROR
Structure version number is not valid.

MQRCCF_CFIF_LENGTH_ERROR
Structure length not valid.

MQRCCF_CFIF_OPERATOR_ERROR
Operator error.

MQRCCF_CFIF_PARM_ID_ERROR
Parameter identifier not valid.

MQRCCF_CFIL_COUNT_ERROR
Count of parameter values not valid.

MQRCCF_CFIL_DUPLICATE_VALUE
Duplicate parameter.

MQRCCF_CFIL_LENGTH_ERROR
Structure length not valid.

MQRCCF_CFIL_PARM_ID_ERROR
Parameter identifier not valid.

MQRCCF_CFIN_DUPLICATE_PARM
Duplicate parameter.

MQRCCF_CFIN_LENGTH_ERROR
Structure length not valid.

MQRCCF_CFIN_PARM_ID_ERROR
Parameter identifier not valid.

MQRCCF_CFSF_FILTER_VAL_LEN_ERROR
Filter value length not valid.

MQRCCF_CFSF_LENGTH_ERROR
Structure length not valid.

MQRCCF_CFSF_OPERATOR_ERROR
Operator error.

MQRCCF_CFSF_PARM_ID_ERROR
Parameter identifier not valid.

MQRCCF_CFSL_COUNT_ERROR
Count of parameter values not valid.

MQRCCF_CFSL_DUPLICATE_PARM
Duplicate parameter.

MQRCCF_CFSL_LENGTH_ERROR
Structure length not valid.

MQRCCF_CFSL_PARM_ID_ERROR
Parameter identifier not valid.

MQRCCF_CFSL_STRING_LENGTH_ERROR
String length value not valid.

MQRCCF_CFSL_TOTAL_LENGTH_ERROR
Total string length error.

MQRCCF_CFST_CONFLICTING_PARM
Conflicting parameters.

MQRCCF_CFST_DUPLICATE_PARM
Duplicate parameter.

MQRCCF_CFST_LENGTH_ERROR
Structure length not valid.

MQRCCF_CFST_PARM_ID_ERROR
Parameter identifier not valid.

MQRCCF_CFST_STRING_LENGTH_ERROR
String length value not valid.

MQRCCF_COMMAND_FAILED
Command failed.

MQRCCF_ENCODING_ERROR
Encoding error.

MQRCCF_MD_FORMAT_ERROR
Format not valid.

MQRCCF_MSG_SEQ_NUMBER_ERROR
Message sequence number not valid.

MQRCCF_MSG_TRUNCATED
Message truncated.

MQRCCF_MSG_LENGTH_ERROR
Message length not valid.

MQRCCF_OBJECT_NAME_ERROR
Object name not valid.

MQRCCF_OBJECT_OPEN
Object is open.

MQRCCF_PARM_COUNT_TOO_BIG
Parameter count too large.

MQRCCF_PARM_COUNT_TOO_SMALL
Parameter count too small.

MQRCCF_PARM_SEQUENCE_ERROR
Parameter sequence not valid.

MQRCCF_PARM_SYNTAX_ERROR
Syntax error found in parameter.

MQRCCF_STRUCTURE_TYPE_ERROR
Structure type not valid.

PCF commands and responses in groups

In this product documentation, the commands and data responses are given in alphabetical order.

They can be usefully grouped as follows:

Authentication Information commands

- "Change, Copy, and Create Authentication Information Object" on page 694
- "Delete Authentication Information Object" on page 805
- "Inquire Authentication Information Object" on page 820
- "Inquire Authentication Information Object Names" on page 824

Authority Record commands

- "Delete Authority Record" on page 807
- "Inquire Authority Records" on page 826
- "Inquire Authority Service" on page 832
- "Inquire Entity Authority" on page 919
- "Set Authority Record" on page 1058

Channel commands

- "Change, Copy, and Create Channel" on page 698
- "Delete Channel" on page 808
- "Inquire Channel" on page 834
- "Inquire Channel Names" on page 867
- "Inquire Channel Status" on page 869

- “Ping Channel” on page 1039
- “Reset Channel” on page 1049
- “Resolve Channel” on page 1055
- “Start Channel” on page 1067
- “Start Channel Initiator” on page 1071
- “Stop Channel” on page 1074

Channel commands (MQTT)

- “Change, Copy, and Create Channel (MQTT)” on page 729
- “Delete Channel (MQTT)” on page 810
- “Inquire Channel (MQTT)” on page 841
- “Inquire Channel Status (MQTT)” on page 879
- “Purge Channel” on page 1043
- “Start Channel (MQTT)” on page 1070
- “Stop Channel (MQTT)” on page 1078

Channel Authentication commands

- “Inquire Channel Authentication Records” on page 854
- “Set Channel Authentication Record” on page 1063

Channel Listener commands

- “Change, Copy, and Create Channel Listener” on page 734
- “Delete Channel Listener” on page 811
- “Inquire Channel Listener” on page 859
- “Inquire Channel Listener Status” on page 862
- “Start Channel Listener” on page 1072
- “Stop Channel Listener” on page 1079

Cluster commands

- “Inquire Cluster Queue Manager” on page 893
- “Refresh Cluster” on page 1043
- “Reset Cluster” on page 1051
- “Resume Queue Manager Cluster” on page 1057
- “Suspend Queue Manager Cluster” on page 1081

Communication Information commands

- “Change, Copy, and Create Communication Information Object” on page 736
- “Delete Communication Information Object” on page 812
- “Inquire Communication Information Object” on page 905

Connection commands

- “Inquire Connection” on page 909
- “Stop Connection” on page 1080

Escape command

- “Escape” on page 819

Namelist commands

- “Change, Copy, and Create Namelist” on page 740
- “Delete Namelist” on page 812
- “Inquire Namelist” on page 924
- “Inquire Namelist Names” on page 928

Process commands

- “Change, Copy, and Create Process” on page 743
- “Delete Process” on page 813
- “Inquire Process” on page 930
- “Inquire Process Names” on page 933

Publish/subscribe commands

- “Change, Copy, and Create Subscription” on page 791
- “Change, Copy, and Create Topic” on page 796
- “Clear Topic String” on page 805
- “Delete Subscription” on page 817
- “Delete Topic” on page 818
- “Inquire Pub/Sub Status” on page 935
- “Inquire Subscription” on page 1012
- “Inquire Subscription Status” on page 1019
- “Inquire Topic” on page 1022
- “Inquire Topic Names” on page 1031
- “Inquire Topic Status” on page 1032

Queue commands

- “Change, Copy, and Create Queue” on page 747
- “Clear Queue” on page 803
- “Delete Queue” on page 814
- “Inquire Queue” on page 939
- “Inquire Queue Names” on page 992
- “Inquire Queue Status” on page 995
- “Reset Queue Statistics” on page 1053

Queue Manager commands

- “Change Queue Manager” on page 764
- “Inquire Queue Manager” on page 958
- “Inquire Queue Manager Status” on page 989
- “Ping Queue Manager” on page 1042
- “Refresh Queue Manager” on page 1045

- “Reset Queue Manager” on page 1052

Security commands

- “Refresh Security” on page 1047

Service commands

- “Change, Copy, and Create Service” on page 789
- “Delete Service” on page 817
- “Inquire Service” on page 1006
- “Inquire Service Status” on page 1009
- “Start Service” on page 1074
- “Stop Service” on page 1081

Data responses to commands

- “Escape (Response)” on page 820
- “Inquire Authentication Information Object (Response)” on page 823
- “Inquire Authentication Information Object Names (Response)” on page 825
- “Inquire Authority Records (Response)” on page 829
- “Inquire Authority Service (Response)” on page 833
- “Inquire Channel (Response)” on page 843
- “Inquire Channel Authentication Records (Response)” on page 856
- “Inquire Channel Listener (Response)” on page 860
- “Inquire Channel Listener Status (Response)” on page 864
- “Inquire Channel Names (Response)” on page 869
- “Inquire Channel Status (Response)” on page 881
- “Inquire Channel Status (Response)” on page 891
- “Inquire Cluster Queue Manager (Response)” on page 898
- “Inquire Communication Information Object (Response)” on page 906
- “Inquire Connection (Response)” on page 913
- “Inquire Entity Authority (Response)” on page 922
- “Inquire Namelist (Response)” on page 927
- “Inquire Namelist Names (Response)” on page 929
- “Inquire Process (Response)” on page 932
- “Inquire Process Names (Response)” on page 934
- “Inquire Pub/Sub Status (Response)” on page 936
- “Inquire Queue (Response)” on page 948
- “Inquire Queue Manager (Response)” on page 967
- “Inquire Queue Manager Status (Response)” on page 990
- “Inquire Queue Names (Response)” on page 994
- “Reset Queue Statistics (Response)” on page 1054
- “Inquire Queue Status (Response)” on page 999
- “Inquire Service (Response)” on page 1007
- “Inquire Service Status (Response)” on page 1010

- “Inquire Subscription (Response)” on page 1015
- “Inquire Subscription Status (Response)” on page 1021
- “Inquire Topic (Response)” on page 1026
- “Inquire Topic Names (Response)” on page 1032
- “Inquire Topic Status (Response)” on page 1034

Change, Copy, and Create Authentication Information Object

The Change authentication information command changes attributes of an existing authentication information object. The Create and Copy authentication information commands create new authentication information objects - the Copy command uses attribute values of an existing object.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

The Change authentication information (MQCMD_CHANGE_AUTH_INFO) command changes the specified attributes in an authentication information object. For any optional parameters that are omitted, the value does not change.

The Copy authentication information (MQCMD_COPY_AUTH_INFO) command creates new authentication information object using, for attributes not specified in the command, the attribute values of an existing authentication information object.

The Create authentication information (MQCMD_CREATE_AUTH_INFO) command creates an authentication information object. Any attributes that are not defined explicitly are set to the default values on the destination queue manager. A system default authentication information object exists and default values are taken from it.

Required parameters (Change authentication information)

***AuthInfoName* (MQCFST)**
The authentication information object name (parameter identifier: MQCA_AUTH_INFO_NAME).

The maximum length of the string is MQ_AUTH_INFO_NAME_LENGTH.

AuthInfoType (MQCFIN)
The type of authentication information object (parameter identifier: MQIA_AUTH_INFO_TYPE).

The value can be:

MQAIT_CRL_LDAP
This defines this authentication information object as specifying an LDAP server containing Certificate Revocation Lists.

MQAIT_OCSP
This value defines this authentication information object as specifying certificate revocation checking using OCSP.

AuthInfoType MQAIT_OCSP does not apply for use on IBM i or z/OS queue managers, but it can be specified on those platforms to be copied to the client channel definition table for client use.

See Security for more information.

Required parameters (Copy authentication information)

FromAuthInfoName (MQCFST)
The name of the authentication information object definition to be copied from (parameter identifier: MQCACF_FROM_AUTH_INFO_NAME).

On z/OS, the queue manager searches for an object with the name you specify and a disposition of MQQSGD_Q_MGR or MQQSGD_COPY to copy from. This parameter is ignored if a value of

MQQSGD_COPY is specified for *QSGDisposition*. In this case, an object with the name specified by *ToAuthInfoName* and the disposition of MQQSGD_GROUP is searched for to copy from.

The maximum length of the string is MQ_AUTH_INFO_NAME_LENGTH.

ToAuthInfoName (MQCFST)
The name of the authentication information object to copy to (parameter identifier: MQCACF_TO_AUTH_INFO_NAME).

The maximum length of the string is MQ_AUTH_INFO_NAME_LENGTH.

AuthInfoType (MQCFIN)
The type of authentication information object (parameter identifier: MQIA_AUTH_INFO_TYPE). The value must match the AuthInfoType of the authentication information object from which you are copying.

The value can be:

MQAIT_CRL_LDAP
This value defines this authentication information object as specifying Certificate Revocation Lists that are held on LDAP.

MQAIT_OCSP
This value defines this authentication information object as specifying certificate revocation checking using OCSP.

See Security for more information.

Required parameters (Create authentication information)

***AuthInfoName* (MQCFST)**
Authentication information object name (parameter identifier: MQCA_AUTH_INFO_NAME).

The maximum length of the string is MQ_AUTH_INFO_NAME_LENGTH.

***AuthInfoType* (MQCFIN)**
The type of authentication information object (parameter identifier: MQIA_AUTH_INFO_TYPE).

The following values are accepted:

MQAIT_CRL_LDAP
This value defines this authentication information object as specifying an LDAP server containing Certificate Revocation Lists.

MQAIT_OCSP
This value defines this authentication information object as specifying certificate revocation checking using OCSP.

An authentication information object with AuthInfoType MQAIT_OCSP does not apply for use on IBM i or z/OS queue managers, but it can be specified on those platforms to be copied to the client channel definition table for client use.

See Security for more information.

Optional parameters (Change, Copy, and Create Authentication Information Object)

AuthInfoConnName (MQCFST)
The connection name of the authentication information object (parameter identifier: MQCA_AUTH_INFO_CONN_NAME).

On platforms other than z/OS, the maximum length is MQ_AUTH_INFO_CONN_NAME_LENGTH. On z/OS, it is MQ_LOCAL_ADDRESS_LENGTH.

This parameter is relevant only when AuthInfoType is set to MQAIT_CRL_LDAP, when it is required.

AuthInfoDesc (MQCFST)
The description of the authentication information object(parameter identifier: MQCA_AUTH_INFO_DESC).

The maximum length is MQ_AUTH_INFO_DESC_LENGTH.

CommandScope (MQCFST)
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

LDAPPassword (MQCFST)
The LDAP password (parameter identifier: MQCA_LDAP_PASSWORD).

The maximum length is MQ_LDAP_PASSWORD_LENGTH.

This parameter is relevant only when AuthInfoType is set to MQAIT_CRL_LDAP.

LDAPUserName (MQCFST)
The LDAP user name (parameter identifier: MQCA_LDAP_USER_NAME).

On platforms other than z/OS, the maximum length is MQ_DISTINGUISHED_NAME_LENGTH. On z/OS, it is MQ_SHORT_DNAME_LENGTH.

This parameter is relevant only when AuthInfoType is set to MQAIT_CRL_LDAP.

OCSPResponderURL (MQCFST)
The URL at which the OCSP responder can be contacted (parameter identifier: MQCA_AUTH_INFO_OCSP_URL).

This parameter is relevant only when AuthInfoType is set to MQAIT_OCSP, when it is required.

This field is case-sensitive. It must start with the string http:// in lowercase. The rest of the URL might be case sensitive, depending on the OCSP server implementation.

QSGDisposition (MQCFIN)
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OSonly.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves). The value can be:

QSGDisposition	Change	Copy, Create
MQQSGD_COPY	The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameter MQQSGD_COPY. Any object residing in the shared repository, or any object defined using a command that had the parameter MQQSGD_Q_MGR, is not affected by this command.	The object is defined on the page set of the queue manager that executes the command using the MQQSGD_GROUP object of the same name as the *ToAuthInfoName* object (for Copy) or the *AuthInfoName* object (for Create).

MQQSGD_GROUP	The object definition resides in the shared repository. The object was defined using a command that had the parameter MQQSGD_GROUP. Any object residing on the page set of the queue manager that executes the command (except a local copy of the object) is not affected by this command.
	If the command is successful, the following MQSC command is generated and sent to all active queue managers in the queue-sharing group so that they refresh local copies on page set zero:
	`DEFINE AUTHINFO(name)`
	`REPLACE QSGDISP(COPY)`
	The Change for the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.
		The object definition resides in the shared repository. This definition is allowed only if the queue manager is in a queue-sharing group.
		If the definition is successful, the following MQSC command is generated and sent to all active queue managers in the queue-sharing group so that they make or refresh local copies on page set zero:
		`DEFINE AUTHINFO(name)`
		`REPLACE QSGDISP(COPY)`
		The Copy or Create for the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.

MQQSGD_PRIVATE	The object resides on the page set of the queue manager that executes the command, and was defined with MQQSGD_Q_MGR, or MQQSGD_COPY. Any object residing in the shared repository is unaffected.	Not permitted.
MQQSGD_Q_MGR	The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameter MQQSGD_Q_MGR. Any object residing in the shared repository, or any local copy of such an object, is not affected by this command. This value is the default value.	The object is defined on the page set of the queue manager that executes the command. This value is the default value.

***Replace* (MQCFIN)**
Replace attributes (parameter identifier: MQIACF_REPLACE).

If an Authentication Information object with the same name as AuthInfoName or ToAuthInfoName exists, it specifies whether it is to be replaced. The value can be:

MQRP_YES
Replace existing definition

MQRP_NO
Do not replace existing definition

Change, Copy, and Create Channel

The Change Channel command changes existing channel definitions. The Copy and Create Channel commands create new channel definitions - the Copy command uses attribute values of an existing channel definition.

HP Integrity NonStop Server	UNIX and Linux	Windows
✓	✓	✓

The Change Channel (MQCMD_CHANGE_CHANNEL) command changes the specified attributes in a channel definition. For any optional parameters that are omitted, the value does not change.

The Copy Channel (MQCMD_COPY_CHANNEL) command creates new channel definition using, for attributes not specified in the command, the attribute values of an existing channel definition.

The Create Channel (MQCMD_CREATE_CHANNEL) command creates an IBM WebSphere MQ channel definition. Any attributes that are not defined explicitly are set to the default values on the destination queue manager. If a system default channel exists for the type of channel being created, the default values are taken from there.

Table 61 on page 698 shows the parameters that are applicable to each type of channel.

Table 61. Change, Copy, Create Channel parameters

Parameter	Sender	Server	Receiver	Requester	Client conn	Server conn	Cluster sender	Cluster receiver
BatchHeartBeat	✓	✓					✓	✓
BatchInterval	✓	✓					✓	✓
BatchDataLimit	✓	✓					✓	✓
BatchSize	✓	✓	✓	✓			✓	✓
ChannelDesc	✓	✓	✓	✓	✓	✓	✓	✓
ChannelMonitoring	✓	✓	✓	✓		✓	✓	✓
ChannelStatistics	✓	✓	✓	✓			✓	✓
ChannelName[1]	✓	✓	✓	✓	✓	✓	✓	✓
ChannelType[3]	✓	✓	✓	✓	✓	✓	✓	✓
ClientChannelWeight					✓			
ClusterName							✓	✓
ClusterNameList							✓	✓
CLWLChannelPriority							✓	✓
CLWLChannelRank							✓	✓
CLWLChannelWeight							✓	✓
CommandScope	✓	✓	✓	✓	✓	✓	✓	✓
ConnectionAffinity					✓			

Table 61. Change, Copy, Create Channel parameters (continued)								
Parameter	**Sender**	**Server**	**Receiver**	**Requester**	**Client conn**	**Server conn**	**Cluster sender**	**Cluster receiver**
ConnectionName	✓	✓		✓	✓		✓	✓
DataConversion	✓	✓		✓	✓		✓	✓
DefaultChannelDisposition	✓	✓	✓	✓		✓	✓	✓
DefReconnect					✓			
DiscInterval	✓	✓				✓	✓	✓
FromChannelName[2]	✓	✓	✓	✓	✓	✓	✓	✓
HeaderCompession	✓	✓	✓	✓	✓	✓	✓	✓
HeartBeatInterval	✓	✓	✓	✓	✓	✓	✓	✓
KeepAliveInterval	✓	✓	✓	✓	✓	✓	✓	✓
LocalAddress	✓	✓		✓	✓		✓	✓
LongRetryCount	✓	✓					✓	✓
LongRetryInterval	✓	✓					✓	✓
MaxInstances						✓		
MaxInstancesPerClient						✓		
MaxMsgLength	✓	✓	✓	✓	✓	✓	✓	✓
MCAName	✓	✓		✓			✓	
MCAType	✓	✓		✓			✓	✓
MCAUserIdentifier			✓	✓		✓		✓
MessageCompression	✓	✓	✓	✓	✓	✓	✓	✓
ModeName	✓	✓		✓	✓		✓	✓
MsgExit	✓	✓	✓	✓			✓	✓
MsgRetryCount			✓	✓				✓
MsgRetryExit			✓	✓				✓
MsgRetryInterval			✓	✓				✓
MsgRetryUserData			✓	✓				✓
MsgUserData	✓	✓	✓	✓			✓	✓
NetworkPriority								✓

Table 61. Change, Copy, Create Channel parameters (continued)								
Parameter	**Sender**	**Server**	**Receiver**	**Requester**	**Client conn**	**Server conn**	**Cluster sender**	**Cluster receiver**
NonPersistentMsgSpeed	✓	✓	✓	✓			✓	✓
Password	✓	✓		✓	✓		✓	
PropertyControl	✓	✓					✓	✓
PutAuthority			✓	✓		✓		✓
QMgrName					✓			
QSGDisposition	✓	✓	✓	✓	✓	✓	✓	✓
ReceiveExit	✓	✓	✓	✓	✓	✓	✓	✓
ReceiveUserData	✓	✓	✓	✓	✓	✓	✓	✓
Replace	✓	✓	✓	✓	✓	✓	✓	✓
SecurityExit	✓	✓	✓	✓	✓	✓	✓	✓
SecurityUserData	✓	✓	✓	✓	✓	✓	✓	✓
SendExit	✓	✓	✓	✓	✓	✓	✓	✓
SendUserData	✓	✓	✓	✓	✓	✓	✓	✓
SeqNumberWrap	✓	✓	✓	✓			✓	✓
SharingConversations					✓	✓		
ShortRetryCount	✓	✓					✓	✓
ShortRetryInterval	✓	✓					✓	✓
SSLCipherSpec	✓	✓	✓	✓	✓	✓	✓	✓
SSLClientAuth		✓	✓	✓		✓		✓
SSLPeerName	✓	✓	✓	✓	✓	✓	✓	✓
ToChannelName[2]	✓	✓	✓	✓	✓	✓	✓	✓
TpName	✓	✓		✓	✓	✓	✓	✓
TransportType	✓	✓	✓	✓	✓	✓	✓	✓
UseDLQ	✓	✓	✓	✓			✓	✓
UserIdentifier	✓	✓		✓	✓		✓	
XmitQName	✓	✓						

Table 61. Change, Copy, Create Channel parameters (continued)

Parameter	Sender	Server	Receiver	Requester	Client conn	Server conn	Cluster sender	Cluster receiver

Note:

1. Required parameter on Change and Create Channel commands.
2. Required parameter on Copy Channel command.
3. Required parameter on Change, Create, and Copy Channel commands.
4. PUTAUT is valid for a channel type of SVRCONN on z/OS only.
5. Required parameter on Create Channel command if TrpType is TCP.
6. Required parameter on Create Channel command for a channel type of MQTT.

Required parameters (Change, Create Channel)

***ChannelName* (MQCFST)**
Channel name (parameter identifier: MQCACH_CHANNEL_NAME).

Specifies the name of the channel definition to be changed, or created

The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

This parameter is required on all types of channel; on a CLUSSDR it can be different from on the other channel types. If your convention for naming channels includes the name of the queue manager, you can make a CLUSSDR definition using the +QMNAME+ construction, and IBM WebSphere MQ substitutes the correct repository queue manager name in place of +QMNAME+ . This facility applies to AIX , HP-UX, Linux , IBM i , Solaris, and Windows only. See Configuring a queue manager cluster for more details.

***ChannelType* (MQCFIN)**
Channel type (parameter identifier: MQIACH_CHANNEL_TYPE).

Specifies the type of the channel being changed, copied, or created. The value can be:

MQCHT_SENDER
Sender.

MQCHT_SERVER
Server.

MQCHT_RECEIVER
Receiver.

MQCHT_REQUESTER
Requester.

MQCHT_SVRCONN
Server-connection (for use by clients).

MQCHT_CLNTCONN
Client connection.

MQCHT_CLUSRCVR
Cluster-receiver.

MQCHT_CLUSSDR
Cluster-sender.

Required parameters (Copy Channel)

***FromChannelName* (MQCFST)**
From channel name (parameter identifier: MQCACF_FROM_CHANNEL_NAME).

The name of the existing channel definition that contains values for the attributes that are not specified in this command.

On z/OS , the queue manager searches for an object with the name you specify and a disposition of MQQSGD_Q_MGR or MQQSGD_COPY to copy from. This parameter is ignored if a value of MQQSGD_COPY is specified for *QSGDisposition* . In this case, an object with the name specified by *ToChannelName* and the disposition MQQSGD_GROUP is searched for to copy from.

The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

***ChannelType* (MQCFIN)**
Channel type (parameter identifier: MQIACH_CHANNEL_TYPE).

Specifies the type of the channel being changed, copied, or created. The value can be:

MQCHT_SENDER
Sender.

MQCHT_SERVER
Server.

MQCHT_RECEIVER
Receiver.

MQCHT_REQUESTER
Requester.

MQCHT_SVRCONN
Server-connection (for use by clients).

MQCHT_CLNTCONN
Client connection.

MQCHT_CLUSRCVR
Cluster-receiver.

MQCHT_CLUSSDR
Cluster-sender.

***ToChannelName* (MQCFST)**
To channel name (parameter identifier: MQCACF_TO_CHANNEL_NAME).

The name of the new channel definition.

The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

Channel names must be unique; if a channel definition with this name exists, the value of *Replace* must be MQRP_YES. The channel type of the existing channel definition must be the same as the channel type of the new channel definition otherwise it cannot be replaced.

Optional parameters (Change, Copy, and Create Channel)

***BatchHeartbeat* (MQCFIN)**
The batch heartbeat interval (parameter identifier: MQIACH_BATCH_HB).

Batch heartbeating allows sender-type channels to determine whether the remote channel instance is still active, before going in-doubt. The value can be in the range 0 - 999999. A value of 0 indicates that batch heart-eating is not to be used. Batch heartbeat is measured in milliseconds.

This parameter is valid only for *ChannelType* values of MQCHT_SENDER, MQCHT_SERVER, MQCHT_CLUSSDR, or MQCHT_CLUSRCVR.

***BatchInterval* (MQCFIN)**
Batch interval (parameter identifier: MQIACH_BATCH_INTERVAL).

This interval is the approximate time in milliseconds that a channel keeps a batch open, if fewer than *BatchSize* messages have been transmitted in the current batch.

If *BatchInterval* is greater than zero, the batch is terminated by whichever of the following situations occurs first:

- *BatchSize* messages have been sent, or
- *BatchInterval* milliseconds have elapsed since the start of the batch.

If *BatchInterval* is zero, the batch is terminated by whichever of the following situations occurs first:

- *BatchSize* messages have been sent, or
- *BatchDataLimit* bytes have been sent, or
- the transmission queue becomes empty.

BatchInterval must be in the range 0 - 999999999.

This parameter applies only to channels with a *ChannelType* of: MQCHT_SENDER, MQCHT_SERVER, MQCHT_CLUSSDR, or MQCHT_CLUSRCVR.

***BatchDataLimit* (MQCFIN)**

Batch data limit (parameter identifier: MQIACH_BATCH_DATA_LIMIT).

The limit, in kilobytes, of the amount of data that can be sent through a channel before taking a sync point. A sync point is taken after the message that caused the limit to be reached has flowed across the channel. A value of zero in this attribute means that no data limit is applied to batches over this channel.

The value must be in the range 0 - 999999. The default value is 5000.

This parameter is supported on all platforms.

This parameter only applies to channels with a *ChannelType* of MQCHT_SENDER, MQCHT_SERVER, MQCHT_CLUSRCVR, or MQCHT_CLUSSDR.

***BatchSize* (MQCFIN)**

Batch size (parameter identifier: MQIACH_BATCH_SIZE).

The maximum number of messages that must be sent through a channel before a checkpoint is taken.

The batch size which is used is the lowest of the following:

- The *BatchSize* of the sending channel
- The *BatchSize* of the receiving channel
- The maximum number of uncommitted messages at the sending queue manager
- The maximum number of uncommitted messages at the receiving queue manager

The maximum number of uncommitted messages is specified by the *MaxUncommittedMsgs* parameter of the Change Queue Manager command.

Specify a value in the range 1 - 9999.

This parameter is not valid for channels with a *ChannelType* of MQCHT_SVRCONN or MQCHT_CLNTCONN.

***ChannelDesc* (MQCFST)**

Channel description (parameter identifier: MQCACH_DESC).

The maximum length of the string is MQ_CHANNEL_DESC_LENGTH.

Use characters from the character set, identified by the coded character set identifier (CCSID) for the message queue manager on which the command is executing, to ensure that the text is translated correctly.

***ChannelMonitoring* (MQCFIN)**

Online monitoring data collection (parameter identifier: MQIA_MONITORING_CHANNEL).

Specifies whether online monitoring data is to be collected and, if so, the rate at which the data is collected. The value can be:

MQMON_OFF
Online monitoring data collection is turned off for this channel.

MQMON_Q_MGR
The value of the queue manager's *ChannelMonitoring* parameter is inherited by the channel.

MQMON_LOW
If the value of the queue manager's *ChannelMonitoring* parameter is not MQMON_NONE, online monitoring data collection is turned on, with a low rate of data collection, for this channel.

MQMON_MEDIUM
If the value of the queue manager's *ChannelMonitoring* parameter is not MQMON_NONE, online monitoring data collection is turned on, with a moderate rate of data collection, for this channel.

MQMON_HIGH
If the value of the queue manager's *ChannelMonitoring* parameter is not MQMON_NONE, online monitoring data collection is turned on, with a high rate of data collection, for this channel.

***ChannelStatistics* (MQCFIN)**
Statistics data collection (parameter identifier: MQIA_STATISTICS_CHANNEL).

Specifies whether statistics data is to be collected and, if so, the rate at which the data is collected. The value can be:

MQMON_OFF
Statistics data collection is turned off for this channel.

MQMON_Q_MGR
The value of the queue manager's *ChannelStatistics* parameter is inherited by the channel.

MQMON_LOW
If the value of the queue manager's *ChannelStatistics* parameter is not MQMON_NONE, online monitoring data collection is turned on, with a low rate of data collection, for this channel.

MQMON_MEDIUM
If the value of the queue manager's *ChannelStatistics* parameter is not MQMON_NONE, online monitoring data collection is turned on, with a moderate rate of data collection, for this channel.

MQMON_HIGH
If the value of the queue manager's *ChannelStatistics* parameter is not MQMON_NONE, online monitoring data collection is turned on, with a high rate of data collection, for this channel.

This parameter is valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.

***ClientChannelWeight* (MQCFIN)**
Client Channel Weight (parameter identifier: MQIACH_CLIENT_CHANNEL_WEIGHT).

The client channel weighting attribute is used so client channel definitions can be selected at random, with the larger weightings having a higher probability of selection, when more than one suitable definition is available.

Specify a value in the range 0 - 99. The default is 0.

This parameter is only valid for channels with a ChannelType of MQCHT_CLNTCONN

***ClusterName* (MQCFST)**
Cluster name (parameter identifier: MQCA_CLUSTER_NAME).

The name of the cluster to which the channel belongs.

This parameter applies only to channels with a *ChannelType* of:

- MQCHT_CLUSSDR
- MQCHT_CLUSRCVR

Only one of the values of *ClusterName* and *ClusterNamelist* can be nonblank; the other must be blank.

The maximum length of the string is MQ_CLUSTER_NAME_LENGTH.

***ClusterNamelist* (MQCFST)**
Cluster namelist (parameter identifier: MQCA_CLUSTER_NAMELIST).

The name, of the namelist, that specifies a list of clusters to which the channel belongs.

This parameter applies only to channels with a *ChannelType* of:

- MQCHT_CLUSSDR
- MQCHT_CLUSRCVR

Only one of the values of *ClusterName* and *ClusterNamelist* can be nonblank; the other must be blank.

***CLWLChannelPriority* (MQCFIN)**
Channel priority for the purposes of cluster workload distribution (parameter identifier: MQIACH_CLWL_CHANNEL_PRIORITY).

Specify a value in the range 0 - 9 where 0 is the lowest priority and 9 is the highest.

This parameter applies only to channels with a *ChannelType* of:

- MQCHT_CLUSSDR
- MQCHT_CLUSRCVR

***CLWLChannelRank* (MQCFIN)**
Channel rank for the purposes of cluster workload distribution (parameter identifier: MQIACH_CLWL_CHANNEL_RANK).

Specify a value in the range 0 - 9 where 0 is the lowest priority and 9 is the highest.

This parameter applies only to channels with a *ChannelType* of:

- MQCHT_CLUSSDR
- MQCHT_CLUSRCVR

***CLWLChannelWeight* (MQCFIN)**
Channel weighting for the purposes of cluster workload distribution (parameter identifier: MQIACH_CLWL_CHANNEL_WEIGHT).

Specify a weighting for the channel for use in workload management. Specify a value in the range 1 - 99 where 1 is the lowest priority and 99 is the highest.

This parameter applies only to channels with a *ChannelType* of:

- MQCHT_CLUSSDR
- MQCHT_CLUSRCVR

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.

- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***ConnectionAffinity* (MQCFIN)**
Channel Affinity (parameter identifier: MQIACH_CONNECTION_AFFINITY)

The channel affinity attribute specifies whether client applications that connect multiple times using the same queue manager name, use the same client channel. The value can be:

MQCAFTY_PREFERRED
The first connection in a process reading a client channel definition table (CCDT) creates a list of applicable definitions based on the weighting with any zero ClientChannelWeight definitions first in alphabetical order. Each connection in the process attempts to connect using the first definition in the list. If a connection is unsuccessful the next definition is used. Unsuccessful nonzero ClientChannelWeight definitions are moved to the end of the list. Zero ClientChannelWeight definitions remain at the start of the list and are selected first for each connection. For C, C++ and .NET (including fully managed .NET) clients the list is updated if the CCDT has been modified since the list was created. Each client process with the same host name creates the same list.

This value is the default value.

MQCAFTY_NONE
The first connection in a process reading a CCDT creates a list of applicable definitions. All connections in a process independently select an applicable definition based on the weighting with any applicable zero ClientChannelWeight definitions selected first in alphabetical order. For C, C++ and .NET (including fully managed .NET) clients the list is updated if the CCDT has been modified since the list was created.

This parameter is only valid for channels with a ChannelType of MQCHT_CLNTCONN.

***ConnectionName*(MQCFST)**
Connection name (parameter identifier: MQCACH_CONNECTION_NAME).

On platforms other than z/OS , the maximum length of the string is 264. On z/OS , it is 48.

Specify *ConnectionName* as a comma-separated list of names of machines for the stated *TransportType*. Typically, only one machine name is required. You can provide multiple machine names to configure multiple connections with the same properties. The connections are tried in the order they are specified in the connection list until a connection is successfully established. If no connection is successful, the channel starts to try processing again. Connection lists are an alternative to queue manager groups to configure connections for reconnectable clients, and also to configure channel connections to multi-instance queue managers.

Specify the name of the machine as required for the stated *TransportType*:

- For MQXPT_LU62 on IBM i , and UNIX systems, specify the name of the CPI-C communications side object. On Windows specify the CPI-C symbolic destination name.

  On z/OS , there are two forms in which to specify the value:

  Logical unit name
  The logical unit information for the queue manager, comprising the logical unit name, TP name, and optional mode name. This name can be specified in one of three forms:

Form	Example
luname	IGY12355
luname/TPname	IGY12345/APING
luname/TPname/modename	IGY12345/APINGD/#INTER

  For the first form, the TP name and mode name must be specified for the *TpName* and *ModeName* parameters; otherwise these parameters must be blank.

Note: For client-connection channels, only the first form is allowed.

Symbolic name
The symbolic destination name for the logical unit information for the queue manager, as defined in the side information data set. The *TpName* and *ModeName* parameters must be blank.

Note: For cluster-receiver channels, the side information is on the other queue managers in the cluster. Alternatively, in this case it can be a name that a channel auto-definition exit can resolve into the appropriate logical unit information for the local queue manager.

The specified or implied LU name can be that of a VTAM generic resources group.

- For MQXPT_TCP, you can specify a connection name, or a connection list, containing the host name or the network address of the remote machine. Separate connection names in a connection list with commas.

  On AIX, HP-UX, IBM i, Linux, Solaris, and Windows platforms, the TCP/IP connection name parameter of a cluster-receiver channel is optional. If you leave the connection name blank, IBM WebSphere MQ generates a connection name for you, assuming the default port and using the current IP address of the system. You can override the default port number, but still use the current IP address of the system. For each connection name leave the IP name blank, and provide the port number in parentheses; for example:

  ```
  (1415)
  ```

  The generated CONNAME is always in the dotted decimal (IPv4) or hexadecimal (IPv6) form, rather than in the form of an alphanumeric DNS host name.
- For MQXPT_NETBIOS specify the NetBIOS station name.
- For MQXPT_SPX specify the 4 byte network address, the 6 byte node address, and the 2 byte socket number. These values must be entered in hexadecimal, with a period separating the network and node addresses. The socket number must be enclosed in brackets, for example:

  ```
  0a0b0c0d.804abcde23a1(5e86)
  ```

  If the socket number is omitted, the WebSphere MQ default value (5e86 hex) is assumed.

This parameter is valid only for *ChannelType* values of MQCHT_SENDER, MQCHT_SERVER, MQCHT_REQUESTER, MQCHT_CLNTCONN, MQCHT_CLUSSDR, or MQCHT_CLUSRCVR.

Note: If you are using clustering between IPv6 -only and IPv4 -only queue managers, do not specify an IPv6 network address as the *ConnectionName* for cluster-receiver channels. A queue manager that is capable only of IPv4 communication is unable to start a cluster sender channel definition that specifies the *ConnectionName* in IPv6 hexadecimal form. Consider, instead, using host names in a heterogeneous IP environment.

***DataConversion* (MQCFIN)**
Whether sender must convert application data (parameter identifier: MQIACH_DATA_CONVERSION).

This parameter is valid only for *ChannelType* values of MQCHT_SENDER, MQCHT_SERVER, MQCHT_CLUSSDR, or MQCHT_CLUSRCVR.

The value can be:

MQCDC_NO_SENDER_CONVERSION
No conversion by sender.

MQCDC_SENDER_CONVERSION
Conversion by sender.

***DefaultChannelDisposition* (MQCFIN)**
Intended disposition of the channel when activated or started (parameter identifier: MQIACH_DEF_CHANNEL_DISP).

This parameter applies to z/OS only.

The value can be:

MQCHLD_PRIVATE
The intended use of the object is as a private channel.

This value is the default value.

MQCHLD_FIXSHARED
The intended use of the object is as a fixshared channel.

MQCHLD_SHARED
The intended use of the object is as a shared channel.

***DefReconnect*(MQCFIN)**
Client channel default reconnection option (parameter identifier: MQIACH_DEF_RECONNECT).

The default automatic client reconnection option. You can configure a IBM WebSphere MQ MQI client to automatically reconnect a client application. The IBM WebSphere MQ MQI client tries to reconnect to a queue manager after a connection failure. It tries to reconnect without the application client issuing an MQCONN or MQCONNX MQI call.

MQRCN_NO
MQRCN_NO is the default value.

Unless overridden by MQCONNX, the client is not reconnected automatically.

MQRCN_YES
Unless overridden by MQCONNX, the client reconnects automatically.

MQRCN_Q_MGR
Unless overridden by MQCONNX, the client reconnects automatically, but only to the same queue manager. The QMGR option has the same effect as MQCNO_RECONNECT_Q_MGR.

MQRCN_DISABLED
Reconnection is disabled, even if requested by the client program using the MQCONNX MQI call.

Table 62. Automatic reconnection depends on the values set in the application and in the channel definition

DefReconnect	**Reconnection options set in the application**			
	MQCNO_RECONNECT	MQCNO_RECONNECT_Q_MGR	MQCNO_RECONNECT_AS_DEF	MQCNO_RECONNECT_DISABLED
MQRCN_NO	YES	QMGR	NO	NO
MQRCN_YES	YES	QMGR	YES	NO
MQRCN_Q_MGR	YES	QMGR	QMGR	NO
MQRCN_DISABLED	NO	NO	NO	NO

This parameter is valid only for a *ChannelType* value of MQCHT_CLNTCONN.

***DiscInterval* (MQCFIN)**
Disconnection interval (parameter identifier: MQIACH_DISC_INTERVAL).

This interval defines the maximum number of seconds that the channel waits for messages to be put on a transmission queue before terminating the channel. A value of zero causes the message channel agent to wait indefinitely.

Specify a value in the range 0 - 999 999.

This parameter is valid only for *ChannelType* values of MQCHT_SENDER MQCHT_SERVER, MQCHT_SVRCONN, MQCHT_CLUSSDR, or MQCHT_CLUSRCVR.

For server-connection channels using the TCP protocol, this interval is the minimum time in seconds for which the server-connection channel instance remains active without any communication from its partner client. A value of zero disables this disconnect processing. The server-connection inactivity interval only applies between MQ API calls from a client, so no client is disconnected during an

extended MQGET with wait call. This attribute is ignored for server-connection channels using protocols other than TCP.

***HeaderCompression* (MQCFIL)**
Header data compression techniques supported by the channel (parameter identifier: MQIACH_HDR_COMPRESSION).

The list of header data compression techniques supported by the channel. For sender, server, cluster-sender, cluster-receiver, and client-connection channels, the values specified are in order of preference with the first compression technique supported by the remote end of the channel being used.

The mutually supported compression techniques of the channel are passed to the message exit of the sending channel where the compression technique used can be altered on a per message basis. Compression alters the data passed to send and receive exits.

Specify one or more of:

MQCOMPRESS_NONE
No header data compression is performed. This value is the default value.

MQCOMPRESS_SYSTEM
Header data compression is performed.

***HeartbeatInterval* (MQCFIN)**
Heartbeat interval (parameter identifier: MQIACH_HB_INTERVAL).

The interpretation of this parameter depends on the channel type, as follows:

- For a channel type of MQCHT_SENDER, MQCHT_SERVER, MQCHT_RECEIVER, MQCHT_REQUESTER, MQCHT_CLUSSDR, or MQCHT_CLUSRCVR, this interval is the time in seconds between heartbeat flows passed from the sending MCA when there are no messages on the transmission queue. This interval gives the receiving MCA the opportunity to quiesce the channel. To be useful, *HeartbeatInterval* must be less than *DiscInterval* . However, the only check is that the value is within the permitted range.

  This type of heartbeat is supported in the following environments: AIX , HP-UX, IBM i , Solaris, Windows , and z/OS .
- For a channel type of MQCHT_CLNTCONN or MQCHT_SVRCONN, this interval is the time in seconds between heartbeat flows passed from the server MCA when that MCA has issued an MQGET call with the MQGMO_WAIT option on behalf of a client application. This interval allows the server MCA to handle situations where the client connection fails during an MQGET with MQGMO_WAIT.

  This type of heartbeat is supported in the following environments: AIX , HP-UX, IBM i , Solaris, Windows, Linux, and z/OS .

The value must be in the range 0 - 999 999. A value of 0 means that no heartbeat exchange occurs. The value that is used is the larger of the values specified at the sending side and receiving side.

***KeepAliveInterval* (MQCFIN)**
KeepAlive interval (parameter identifier: MQIACH_KEEP_ALIVE_INTERVAL).

Specifies the value passed to the communications stack for KeepAlive timing for the channel.

For this attribute to be effective, TCP/IP keepalive must be enabled. On z/OS , you enable TCP/IP keepalive by issuing the Change Queue Manager command with a value of MQTCPKEEP in the *TCPKeepAlive* parameter; if the *TCPKeepAlive* queue manager parameter has a value of MQTCPKEEP_NO, the value is ignored, and the KeepAlive facility is not used. On other platforms, TCP/IP keepalive is enabled when the KEEPALIVE=YES parameter is specified in the TCP stanza in the distributed queuing configuration file, qm.ini, or through the WebSphere MQ Explorer. Keepalive must also be switched on within TCP/IP itself, using the TCP profile configuration data set.

Although this parameter is available on all platforms, its setting is implemented only on z/OS . On platforms other than z/OS , you can access and modify the parameter, but it is only stored and forwarded; there is no functional implementation of the parameter. This parameter is useful in

a clustered environment where a value set in a cluster-receiver channel definition on Solaris, for example, flows to (and is implemented by) z/OS queue managers that are in, or join, the cluster.

Specify either:

integer
The KeepAlive interval to be used, in seconds, in the range 0 - 99 999. If you specify a value of 0, the value used is that specified by the INTERVAL statement in the TCP profile configuration data set.

MQKAI_AUTO
The KeepAlive interval is calculated based upon the negotiated heartbeat value as follows:

- If the negotiated *HeartbeatInterval* is greater than zero, KeepAlive interval is set to that value plus 60 seconds.
- If the negotiated *HeartbeatInterval* is zero, the value used is that specified by the INTERVAL statement in the TCP profile configuration data set.

On platforms other than z/OS , if you need the functionality provided by the *KeepAliveInterval* parameter, use the *HeartBeatInterval* parameter.

***LocalAddress* (MQCFST)**
Local communications address for the channel (parameter identifier: MQCACH_LOCAL_ADDRESS).

The maximum length of the string is MQ_LOCAL_ADDRESS_LENGTH.

The value that you specify depends on the transport type *(TransportType)* to be used:

TCP/IP
The value is the optional IP address and optional port or port range to be used for outbound TCP/IP communications. The format for this information is as follows:

```
LOCLADDR([ip-addr][(low-port[,high-port])][,[ip-addr][(low-port[,high-port])]])
```

where `ip-addr` is specified in IPv4 dotted decimal, IPv6 hexadecimal notation, or alphanumeric form, and `low-port` and `high-port` are port numbers enclosed in parentheses. All are optional.

Specify *[,[ip-addr][(low-port[,high-port])]]* multiple times for each additional local address. Use multiple local addresses if you want to specify a specific subset of local network adapters. You can also use *[,[ip-addr][(low-port[,high-port])]]* to represent a particular local network address on different servers that are part of a multi-instance queue manager configuration.

All Others
The value is ignored; no error is diagnosed.

Use this parameter if you want a channel to use a particular IP address, port, or port range for outbound communications. This parameter is useful when a machine is connected to multiple networks with different IP addresses.

Examples of use

Value	Meaning
9.20.4.98	Channel binds to this address locally
9.20.4.98 (1000)	Channel binds to this address and port 1000 locally
9.20.4.98 (1000,2000)	Channel binds to this address and uses a port in the range 1000 - 2000 locally
(1000)	Channel binds to port 1000 locally
(1000,2000)	Channel binds to a port in the range 1000 - 2000 locally

This parameter is valid for the following channel types:

- MQCHT_SENDER
- MQCHT_SERVER
- MQCHT_REQUESTER
- MQCHT_CLNTCONN
- MQCHT_CLUSRCVR
- MQCHT_CLUSSDR

Note:

- Do not confuse this parameter with *ConnectionName* . The *LocalAddress* parameter specifies the characteristics of the local communications; the *ConnectionName* parameter specifies how to reach a remote queue manager.

***LongRetryCount* (MQCFIN)**
Long retry count (parameter identifier: MQIACH_LONG_RETRY).

When a sender or server channel is attempting to connect to the remote machine, and the count specified by *ShortRetryCount* has been exhausted, this count specifies the maximum number of further attempts that are made to connect to the remote machine, at intervals specified by *LongRetryInterval* .

If this count is also exhausted without success, an error is logged to the operator, and the channel is stopped. The channel must later be restarted with a command (it is not started automatically by the channel initiator), and it then makes only one attempt to connect, as it is assumed that the problem has now been cleared by the administrator. The retry sequence is not carried out again until after the channel has successfully connected.

Specify a value in the range 0 - 999 999 999.

This parameter is valid only for *ChannelType* values of MQCHT_SENDER, MQCHT_SERVER, MQCHT_CLUSSDR, or MQCHT_CLUSRCVR.

***LongRetryInterval* (MQCFIN)**
Long timer (parameter identifier: MQIACH_LONG_TIMER).

Specifies the long retry wait interval for a sender or server channel that is started automatically by the channel initiator. It defines the interval in seconds between attempts to establish a connection to the remote machine, after the count specified by *ShortRetryCount* has been exhausted.

The time is approximate; zero means that another connection attempt is made as soon as possible.

Specify a value in the range 0 - 999 999. Values exceeding this value are treated as 999 999.

This parameter is valid only for *ChannelType* values of MQCHT_SENDER, MQCHT_SERVER, MQCHT_CLUSSDR, or MQCHT_CLUSRCVR.

***MaxInstances* (MQCFIN)**
Maximum number of simultaneous instances of a server-connection channel (parameter identifier: MQIACH_MAX_INSTANCES).

Specify a value in the range 0 - 999 999 999.

The default value is 999 999 999.

A value of zero indicates that no client connections are allowed on the channel.

If the value is reduced below the number of instances of the server-connection channel that are currently running, the running channels are not affected. This parameter applies even if the value is zero. However, if the value is reduced below the number of instances of the server-connection channel that are currently running, then new instances cannot be started until sufficient existing instances have ceased to run.

If you do not have the Client Attachment feature installed, the attribute can be set from zero to five only on the SYSTEM.ADMIN.SVRCONN channel. A value greater than five is interpreted as zero without the Client Attachment feature installed.

This parameter is valid only for channels with a *ChannelType* value of MQCHT_SVRCONN.

***MaxInstancesPerClient* (MQCFIN)**
Maximum number of simultaneous instances of a server-connection channel that can be started from a single client (parameter identifier: MQIACH_MAX_INSTS_PER_CLIENT). In this context, connections that originate from the same remote network address are regarded as coming from the same client.

Specify a value in the range 0 - 999 999 999.

The default value is 999 999 999.

A value of zero indicates that no client connections are allowed on the channel.

If the value is reduced below the number of instances of the server-connection channel that are currently running from individual clients, the running channels are not affected. This parameter applies even if the value is zero. However, if the value is reduced below the number of instances of the server-connection channel that are currently running from individual clients, new instances from those clients cannot start until sufficient existing instances have ceased to run.

If you do not have the Client Attachment feature installed, the attribute can be set from zero to five only on the SYSTEM.ADMIN.SVRCONN channel. A value greater than five is interpreted as zero without the Client Attachment feature installed.

This parameter is valid only for channels with a *ChannelType* value of MQCHT_SVRCONN.

***MaxMsgLength* (MQCFIN)**
Maximum message length (parameter identifier: MQIACH_MAX_MSG_LENGTH).

Specifies the maximum message length that can be transmitted on the channel. This value is compared with the value for the remote channel and the actual maximum is the lower of the two values.

The value zero means the maximum message length for the queue manager.

The lower limit for this parameter is 0. The maximum message length is 100 MB (104 857 600 bytes).

***MCAName* (MQCFST)**
Message channel agent name (parameter identifier: MQCACH_MCA_NAME).

Note: An alternative way of providing a user ID for a channel to run under is to use channel authentication records. With channel authentication records, different connections can use the same channel while using different credentials. If both MCAUSER on the channel is set and channel authentication records are used to apply to the same channel, the channel authentication records take precedence. The MCAUSER on the channel definition is only used if the channel authentication record uses USERSRC(CHANNEL). For more details, see Channel authentication records

This parameter is reserved, and if specified can be set only to blanks.

The maximum length of the string is MQ_MCA_NAME_LENGTH.

This parameter is valid only for *ChannelType* values of MQCHT_SENDER, MQCHT_SERVER, MQCHT_REQUESTER, MQCHT_CLUSSDR, or MQCHT_CLUSRCVR.

***MCAType* (MQCFIN)**
Message channel agent type (parameter identifier: MQIACH_MCA_TYPE).

Specifies the type of the message channel agent program.

On AIX , HP-UX, IBM i , Solaris, Windows, and Linux , this parameter is valid only for *ChannelType* values of MQCHT_SENDER, MQCHT_SERVER, MQCHT_REQUESTER, or MQCHT_CLUSSDR.

On z/OS , this parameter is valid only for a *ChannelType* value of MQCHT_CLURCVR.

The value can be:

MQMCAT_PROCESS
Process.

MQMCAT_THREAD
Thread.

***MCAUserIdentifier* (MQCFST)**
Message channel agent user identifier (parameter identifier: MQCACH_MCA_USER_ID).

If this parameter is nonblank, it is the user identifier which is to be used by the message channel agent for authorization to access WebSphere MQ resources, including (if *PutAuthority* is MQPA_DEFAULT) authorization to put the message to the destination queue for receiver or requester channels.

If it is blank, the message channel agent uses its default user identifier.

This user identifier can be overridden by one supplied by a channel security exit.

This parameter is not valid for channels with a *ChannelType* of MQCHT_SDR, MQCHT_SVR, MQCHT_CLNTCONN, MQCHT_CLUSSDR.

The maximum length of the MCA user identifier depends on the environment in which the MCA is running. MQ_MCA_USER_ID_LENGTH gives the maximum length for the environment for which your application is running. MQ_MAX_MCA_USER_ID_LENGTH gives the maximum for all supported environments.

On Windows , you can optionally qualify a user identifier with the domain name in the following format:

```
user@domain
```

***MessageCompression* (MQCFIL)**
Header data compression techniques supported by the channel (parameter identifier: MQIACH_MSG_COMPRESSION). The list of message data compression techniques supported by the channel. For sender, server, cluster-sender, cluster-receiver, and client-connection channels, the values specified are in order of preference with the first compression technique supported by the remote end of the channel being used.

The mutually supported compression techniques of the channel are passed to the message exit of the sending channel where the compression technique used can be altered on a per message basis. Compression alters the data passed to send and receive exits.

Specify one or more of:

MQCOMPRESS_NONE
No message data compression is performed. This value is the default value.

MQCOMPRESS_RLE
Message data compression is performed using run-length encoding.

MQCOMPRESS_ZLIBFAST
Message data compression is performed using ZLIB encoding with speed prioritized.

MQCOMPRESS_ZLIBHIGH
Message data compression is performed using ZLIB encoding with compression prioritized.

MQCOMPRESS_ANY
Any compression technique supported by the queue manager can be used. This value is only valid for receiver, requester, and server-connection channels.

***ModeName* (MQCFST)**
Mode name (parameter identifier: MQCACH_MODE_NAME).

This parameter is the LU 6.2 mode name.

The maximum length of the string is MQ_MODE_NAME_LENGTH.

- On IBM i , HP Integrity NonStop Server, UNIX systems, and Windows , this parameter can be set only to blanks. The actual name is taken instead from the CPI-C Communications Side Object or (on Windows) from the CPI-C symbolic destination name properties.

This parameter is valid only for channels with a *TransportType* of MQXPT_LU62. It is not valid for receiver or server-connection channels.

***MsgExit* (MQCFSL)**
Message exit name (parameter identifier: MQCACH_MSG_EXIT_NAME).

If a nonblank name is defined, the exit is invoked immediately after a message has been retrieved from the transmission queue. The exit is given the entire application message and message descriptor for modification.

For channels with a channel type (*ChannelType*) of MQCHT_SVRCONN or MQCHT_CLNTCONN, this parameter is accepted but ignored, since message exits are not invoked for such channels.

The format of the string is the same as for *SecurityExit* .

The maximum length of the exit name depends on the environment in which the exit is running. MQ_EXIT_NAME_LENGTH gives the maximum length for the environment in which your application is running. MQ_MAX_EXIT_NAME_LENGTH gives the maximum for all supported environments.

You can specify a list of exit names by using an MQCFSL structure instead of an MQCFST structure.

- The exits are invoked in the order specified in the list.
- A list with only one name is equivalent to specifying a single name in an MQCFST structure.
- You cannot specify both a list (MQCFSL) and a single entry (MQCFST) structure for the same channel attribute.
- The total length of all the exit names in the list (excluding trailing blanks in each name) must not exceed MQ_TOTAL_EXIT_NAME_LENGTH. An individual string must not exceed MQ_EXIT_NAME_LENGTH.
- On z/OS , you can specify the names of up to eight exit programs.

***MsgRetryCount* (MQCFIN)**
Message retry count (parameter identifier: MQIACH_MR_COUNT).

Specifies the number of times that a failing message must be retried.

Specify a value in the range 0 - 999 999 999.

This parameter is valid only for *ChannelType* values of MQCHT_RECEIVER, MQCHT_REQUESTER, or MQCHT_CLUSRCVR.

***MsgRetryExit* (MQCFST)**
Message retry exit name (parameter identifier: MQCACH_MR_EXIT_NAME).

If a nonblank name is defined, the exit is invoked before performing a wait before retrying a failing message.

The format of the string is the same as for *SecurityExit* .

The maximum length of the exit name depends on the environment in which the exit is running. MQ_EXIT_NAME_LENGTH gives the maximum length for the environment in which your application is running. MQ_MAX_EXIT_NAME_LENGTH gives the maximum for all supported environments.

This parameter is valid only for *ChannelType* values of MQCHT_RECEIVER, MQCHT_REQUESTER, or MQCHT_CLUSRCVR.

***MsgRetryInterval* (MQCFIN)**
Message retry interval (parameter identifier: MQIACH_MR_INTERVAL).

Specifies the minimum time interval in milliseconds between retries of failing messages.

Specify a value in the range 0 - 999 999 999.

This parameter is valid only for *ChannelType* values of MQCHT_RECEIVER, MQCHT_REQUESTER, or MQCHT_CLUSRCVR.

***MsgRetryUserData* (MQCFST)**
Message retry exit user data (parameter identifier: MQCACH_MR_EXIT_USER_DATA).

Specifies user data that is passed to the message retry exit.

The maximum length of the string is MQ_EXIT_DATA_LENGTH.

This parameter is valid only for *ChannelType* values of MQCHT_RECEIVER, MQCHT_REQUESTER, or MQCHT_CLUSRCVR.

***MsgUserData* (MQCFSL)**
Message exit user data (parameter identifier: MQCACH_MSG_EXIT_USER_DATA).

Specifies user data that is passed to the message exit.

The maximum length of the string is MQ_EXIT_DATA_LENGTH.

For channels with a channel type (*ChannelType*) of MQCHT_SVRCONN or MQCHT_CLNTCONN, this parameter is accepted but ignored, since message exits are not invoked for such channels.

You can specify a list of exit user data strings by using an MQCFSL structure instead of an MQCFST structure.

- Each exit user data string is passed to the exit at the same ordinal position in the *MsgExit* list.
- A list with only one name is equivalent to specifying a single name in an MQCFST structure.
- You cannot specify both a list (MQCFSL) and a single entry (MQCFST) structure for the same channel attribute.
- The total length of all the exit user data in the list (excluding trailing blanks in each string) must not exceed MQ_TOTAL_EXIT_DATA_LENGTH. An individual string must not exceed MQ_EXIT_DATA_LENGTH.
- On z/OS , you can specify up to eight strings.

***NetworkPriority* (MQCFIN)**
Network priority (parameter identifier: MQIACH_NETWORK_PRIORITY).

The priority for the network connection. If there are multiple paths available, distributed queuing selects the path with the highest priority.

The value must be in the range 0 (lowest) - 9 (highest).

This parameter applies only to channels with a *ChannelType* of MQCHT_CLUSRCVR

***NonPersistentMsgSpeed* (MQCFIN)**
Speed at which nonpersistent messages are to be sent (parameter identifier: MQIACH_NPM_SPEED).

This parameter is supported in the following environments: AIX , HP-UX, IBM i , Solaris, Windows, and Linux .

Specifying MQNPMS_FAST means that nonpersistent messages on a channel need not wait for a syncpoint before being made available for retrieval. The advantage of this is that nonpersistent messages become available for retrieval far more quickly. The disadvantage is that because they do not wait for a syncpoint, they might be lost if there is a transmission failure.

This parameter is valid only for *ChannelType* values of MQCHT_SENDER, MQCHT_SERVER, MQCHT_RECEIVER, MQCHT_REQUESTER, MQCHT_CLUSSDR, or MQCHT_CLUSRCVR. The value can be:

MQNPMS_NORMAL
Normal speed.

MQNPMS_FAST
Fast speed.

***Password* (MQCFST)**
Password (parameter identifier: MQCACH_PASSWORD).

This parameter is used by the message channel agent when attempting to initiate a secure SNA session with a remote message channel agent. On IBM i , HP Integrity NonStop Server, and UNIX systems, it is valid only for *ChannelType* values of MQCHT_SENDER, MQCHT_SERVER,

MQCHT_REQUESTER, MQCHT_CLNTCONN, or MQCHT_CLUSSDR. On z/OS , it is valid only for a *ChannelType* value of MQCHT_CLNTCONN.

The maximum length of the string is MQ_PASSWORD_LENGTH. However, only the first 10 characters are used.

***PropertyControl* (MQCFIN)**
Property control attribute (parameter identifier MQIA_PROPERTY_CONTROL).

Specifies what happens to properties of messages when the message is about to be sent to a V6 or prior queue manager (a queue manager that does not understand the concept of a property descriptor). The value can be:

MQPROP_COMPATIBILITY
If the message contains a property with a prefix of **mcd.** , **jms.** , **usr.** or **mqext.** , all message properties are delivered to the application in an MQRFH2 header. Otherwise all properties of the message, except those properties contained in the message descriptor (or extension), are discarded and are no longer accessible to the application.

This value is the default value; it allows applications which expect JMS-related properties to be in an MQRFH2 header in the message data to continue to work unmodified.

MQPROP_NONE
All properties of the message, except those properties in the message descriptor (or extension), are removed from the message before the message is sent to the remote queue manager.

MQPROP_ALL
All properties of the message are included with the message when it is sent to the remote queue manager. The properties, except those properties in the message descriptor (or extension), are placed in one or more MQRFH2 headers in the message data.

This attribute is applicable to Sender, Server, Cluster Sender, and Cluster Receiver channels.

***PutAuthority* (MQCFIN)**
Put authority (parameter identifier: MQIACH_PUT_AUTHORITY).

Specifies whether the user identifier in the context information associated with a message must be used to establish authority to put the message on the destination queue.

This parameter is valid only for channels with a *ChannelType* value of MQCHT_RECEIVER, MQCHT_REQUESTER, MQCHT_CLUSRCVR, or MQCHT_SVRCONN.

The value can be:

MQPA_DEFAULT
Default user identifier is used.

MQPA_CONTEXT
Context user identifier is used. This value is not valid for channels of type MQCHT_SVRCONN.

MQPA_ALTERNATE_OR_MCA
The user ID from the *UserIdentifier* field of the message descriptor is used. Any user ID received from the network is not used. This value is supported only on z/OS and is not valid for channels of type MQCHT_SVRCONN.

MQPA_ONLY_MCA
The default user ID is used. Any user ID received from the network is not used. This value is supported only on z/OS .

***QMgrName* (MQCFST)**
Queue-manager name (parameter identifier: MQCA_Q_MGR_NAME).

For channels with a *ChannelType* of MQCHT_CLNTCONN, this name is the name of a queue manager to which a client application can request connection.

For channels of other types, this parameter is not valid. The maximum length of the string is MQ_Q_MGR_NAME_LENGTH.

***QSGDisposition* (MQCFIN)**
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves). The value can be:

QSGDisposition	Change	Copy, Create
MQQSGD_COPY	The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameter MQQSGD_COPY. Any object residing in the shared repository, or any object defined using a command that had the parameters MQQSGD_Q_MGR, is not affected by this command.	The object is defined on the page set of the queue manager that executes the command using the MQQSGD_GROUP object of the same name as the *ToChannelName* object (for Copy) or *ChannelName* object (for Create).
MQQSGD_GROUP	The object definition resides in the shared repository. The object was defined using a command that had the parameter MQQSGD_GROUP. Any object residing on the page set of the queue manager that executes the command (except a local copy of the object) is not affected by this command. If the command is successful, the following MQSC command is generated and sent to all active queue managers in the queue-sharing group to attempt to refresh local copies on page set zero: `DEFINE CHANNEL(channel-name) CHLTYPE(type) REPLACE QSGDISP(COPY)` The Change for the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.	The object definition resides in the shared repository. This definition is allowed only if the queue manager is in a queue-sharing group. If the definition is successful, the following MQSC command is generated and sent to all active queue managers in the queue-sharing group to attempt to make or refresh local copies on page set zero: `DEFINE CHANNEL(channe-name) CHLTYPE(type) REPLACE QSGDISP(COPY)` The Copy or Create for the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.
MQQSGD_PRIVATE	The object resides on the page set of the queue manager that executes the command, and was defined with MQQSGD_Q_MGR or MQQSGD_COPY. Any object residing in the shared repository is unaffected.	Not permitted.
MQQSGD_Q_MGR	The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameter MQQSGD_Q_MGR. Any object residing in the shared repository, or any local copy of such an object, is not affected by this command. This value is the default value.	The object is defined on the page set of the queue manager that executes the command. This value is the default value.

***ReceiveExit* (MQCFSL)**
Receive exit name (parameter identifier: MQCACH_RCV_EXIT_NAME).

If a nonblank name is defined, the exit is invoked before data received from the network is processed. The complete transmission buffer is passed to the exit and the contents of the buffer can be modified as required.

The format of the string is the same as for *SecurityExit* .

The maximum length of the exit name depends on the environment in which the exit is running. MQ_EXIT_NAME_LENGTH gives the maximum length for the environment in which your application is running. MQ_MAX_EXIT_NAME_LENGTH gives the maximum for all supported environments.

You can specify a list of exit names by using an MQCFSL structure instead of an MQCFST structure.

- The exits are invoked in the order specified in the list.
- A list with only one name is equivalent to specifying a single name in an MQCFST structure.
- You cannot specify both a list (MQCFSL) and a single entry (MQCFST) structure for the same channel attribute.
- The total length of all the exit names in the list (excluding trailing blanks in each name) must not exceed MQ_TOTAL_EXIT_NAME_LENGTH. An individual string must not exceed MQ_EXIT_NAME_LENGTH.
- On z/OS , you can specify the names of up to eight exit programs.

***ReceiveUserData* (MQCFSL)**
Receive exit user data (parameter identifier: MQCACH_RCV_EXIT_USER_DATA).

Specifies user data that is passed to the receive exit.

The maximum length of the string is MQ_EXIT_DATA_LENGTH.

You can specify a list of exit user data strings by using an MQCFSL structure instead of an MQCFST structure.

- Each exit user data string is passed to the exit at the same ordinal position in the *ReceiveExit* list.
- A list with only one name is equivalent to specifying a single name in an MQCFST structure.
- You cannot specify both a list (MQCFSL) and a single entry (MQCFST) structure for the same channel attribute.
- The total length of all the exit user data in the list (excluding trailing blanks in each string) must not exceed MQ_TOTAL_EXIT_DATA_LENGTH. An individual string must not exceed MQ_EXIT_DATA_LENGTH.
- On z/OS , you can specify up to eight strings.

***Replace* (MQCFIN)**
Replace channel definition (parameter identifier: MQIACF_REPLACE).

The value can be:

MQRP_YES
Replace existing definition.

If *ChannelType* is MQCHT_CLUSSDR, MQRP_YES can be specified only if the channel was created manually.

MQRP_NO
Do not replace existing definition.

***SecurityExit* (MQCFST)**
Security exit name (parameter identifier: MQCACH_SEC_EXIT_NAME).

If a nonblank name is defined, the security exit is invoked at the following times:

- Immediately after establishing a channel.

Before any messages are transferred, the exit is enabled to instigate security flows to validate connection authorization.

- Upon receipt of a response to a security message flow.

  Any security message flows received from the remote processor on the remote machine are passed to the exit.

The exit is given the entire application message and message descriptor for modification.

The format of the string depends on the platform, as follows:

- On IBM i and UNIX systems, it is of the form

  ```
  libraryname(functionname)
  ```

  Note: On IBM i systems, the following form is also supported for compatibility with older releases:

  ```
  progname libname
  ```

  where *progname* occupies the first 10 characters, and *libname* the second 10 characters (both blank-padded to the right if necessary).
- On Windows, it is of the form

  ```
  dllname(functionname)
  ```

  where *dllname* is specified without the suffix `.DLL`.
- On z/OS, it is a load module name, maximum length 8 characters (128 characters are allowed for exit names for client-connection channels, subject to a maximum total length of 999).

The maximum length of the exit name depends on the environment in which the exit is running. MQ_EXIT_NAME_LENGTH gives the maximum length for the environment in which your application is running. MQ_MAX_EXIT_NAME_LENGTH gives the maximum for all supported environments.

***SecurityUserData* (MQCFST)**
Security exit user data (parameter identifier: MQCACH_SEC_EXIT_USER_DATA).

Specifies user data that is passed to the security exit.

The maximum length of the string is MQ_EXIT_DATA_LENGTH.

***SendExit* (MQCFSL)**
Send exit name (parameter identifier: MQCACH_SEND_EXIT_NAME).

If a nonblank name is defined, the exit is invoked immediately before data is sent out on the network. The exit is given the complete transmission buffer before it is transmitted; the contents of the buffer can be modified as required.

The format of the string is the same as for *SecurityExit* .

The maximum length of the exit name depends on the environment in which the exit is running. MQ_EXIT_NAME_LENGTH gives the maximum length for the environment in which your application is running. MQ_MAX_EXIT_NAME_LENGTH gives the maximum for all supported environments.

You can specify a list of exit names by using an MQCFSL structure instead of an MQCFST structure.

- The exits are invoked in the order specified in the list.
- A list with only one name is equivalent to specifying a single name in an MQCFST structure.
- You cannot specify both a list (MQCFSL) and a single entry (MQCFST) structure for the same channel attribute.
- The total length of all the exit names in the list (excluding trailing blanks in each name) must not exceed MQ_TOTAL_EXIT_NAME_LENGTH. An individual string must not exceed MQ_EXIT_NAME_LENGTH.
- On z/OS , you can specify the names of up to eight exit programs.

***SendUserData* (MQCFSL)**
Send exit user data (parameter identifier: MQCACH_SEND_EXIT_USER_DATA).

Specifies user data that is passed to the send exit.

The maximum length of the string is MQ_EXIT_DATA_LENGTH.

You can specify a list of exit user data strings by using an MQCFSL structure instead of an MQCFST structure.

- Each exit user data string is passed to the exit at the same ordinal position in the *SendExit* list.
- A list with only one name is equivalent to specifying a single name in an MQCFST structure.
- You cannot specify both a list (MQCFSL) and a single entry (MQCFST) structure for the same channel attribute.
- The total length of all the exit user data in the list (excluding trailing blanks in each string) must not exceed MQ_TOTAL_EXIT_DATA_LENGTH. An individual string must not exceed MQ_EXIT_DATA_LENGTH.
- On z/OS , you can specify up to eight strings.

***SeqNumberWrap* (MQCFIN)**
Sequence wrap number (parameter identifier: MQIACH_SEQUENCE_NUMBER_WRAP).

Specifies the maximum message sequence number. When the maximum is reached, sequence numbers wrap to start again at 1.

The maximum message sequence number is not negotiable; the local and remote channels must wrap at the same number.

Specify a value in the range 100 - 999 999 999.

This parameter is not valid for channels with a *ChannelType* of MQCHT_SVRCONN or MQCHT_CLNTCONN.

***SharingConversations* (MQCFIN)**
Maximum number of sharing conversations (parameter identifier: MQIACH_SHARING_CONVERSATIONS).

Specifies the maximum number of conversations that can share a particular TCP/IP MQI channel instance (socket).

Specify a value in the range 0 - 999 999 999. The default value is 10 and the migrated value is 10.

This parameter is valid only for channels with a *ChannelType* of MQCHT_CLNTCONN or MQCHT_SVRCONN. It is ignored for channels with a *TransportType* other than MQXPT_TCP.

The number of shared conversations does not contribute to the *MaxInstances* or *MaxInstancesPerClient* totals.

A value of:

1
Means that there is no sharing of conversations over a TCP/IP channel instance, but client heartbeating is available whether in an MQGET call or not, read ahead and client asynchronous consumption are available, and channel quiescing is more controllable.

0
Specifies no sharing of conversations over a TCP/IP channel instance. The channel instance runs in a mode before that of WebSphere MQ Version 7.0, regarding:

- Administrator stop-quiesce
- Heartbeating
- Read ahead
- Client asynchronous consumption

***ShortRetryCount* (MQCFIN)**
Short retry count (parameter identifier: MQIACH_SHORT_RETRY).

The maximum number of attempts that are made by a sender or server channel to establish a connection to the remote machine, at intervals specified by *ShortRetryInterval* before the (normally longer) *LongRetryCount* and *LongRetryInterval* are used.

Retry attempts are made if the channel fails to connect initially (whether it is started automatically by the channel initiator or by an explicit command), and also if the connection fails after the channel has successfully connected. However, if the cause of the failure is such that retry is unlikely to be successful, retries are not attempted.

Specify a value in the range 0 - 999 999 999.

This parameter is valid only for *ChannelType* values of MQCHT_SENDER, MQCHT_SERVER, MQCHT_CLUSSDR, or MQCHT_CLUSRCVR.

***ShortRetryInterval* (MQCFIN)**
Short timer (parameter identifier: MQIACH_SHORT_TIMER).

Specifies the short retry wait interval for a sender or server channel that is started automatically by the channel initiator. It defines the interval in seconds between attempts to establish a connection to the remote machine.

The time is approximate.

Specify a value in the range 0 - 999 999. Values exceeding this value are treated as 999 999.

This parameter is valid only for *ChannelType* values of MQCHT_SENDER, MQCHT_SERVER, MQCHT_CLUSSDR, or MQCHT_CLUSRCVR.

***SSLCipherSpec* (MQCFST)**
CipherSpec (parameter identifier: MQCACH_SSL_CIPHER_SPEC).

The length of the string is MQ_SSL_CIPHER_SPEC_LENGTH.

It is valid only for channels with a transport type (TRPTYPE) of TCP. If the TRPTYPE is not TCP, the data is ignored and no error message is issued.

The SSLCIPH values must specify the same CipherSpec on both ends of the channel.

Specify the name of the CipherSpec that you are using. Alternatively, on IBM i , and z/OS , you can specify the two-digit hexadecimal code.

The following table shows the CipherSpecs that can be used with WebSphere MQ SSL.

On IBM i , installation of AC3 is a prerequisite of the use of SSL.

A table describing the CipherSpecs you can use with WebSphere MQ SSL and TLS support.

CipherSpec name	Protocol used	Data integrity	Encryption algorithm	Encryption bits	FIPS[1]	Suite B 128 bit	Suite B 192 bit
NULL_MD5 [a]	SSL 3.0	MD5	None	0	No	No	No
NULL_SHA [a]	SSL 3.0	SHA-1	None	0	No	No	No
RC4_MD5_EXPORT [2] [a]	SSL 3.0	MD5	RC4	40	No	No	No
RC4_MD5_US [a]	SSL 3.0	MD5	RC4	128	No	No	No
RC4_SHA_US [a]	SSL 3.0	SHA-1	RC4	128	No	No	No
RC2_MD5_EXPORT [2] [a]	SSL 3.0	MD5	RC2	40	No	No	No
DES_SHA_EXPORT [2] [a]	SSL 3.0	SHA-1	DES	56	No	No	No

A table describing the CipherSpecs you can use with WebSphere MQ SSL and TLS support.

(continued)

CipherSpec name	Protocol used	Data integrity	Encryption algorithm	Encryption bits	FIPS[1]	Suite B 128 bit	Suite B 192 bit
RC4_56_SHA_EXPORT1024 [3] [b]	SSL 3.0	SHA-1	RC4	56	No	No	No
DES_SHA_EXPORT1024 [3] [b]	SSL 3.0	SHA-1	DES	56	No	No	No
TLS_RSA_WITH_AES_128_CBC_SHA [a]	TLS 1.0	SHA-1	AES	128	Yes	No	No
TLS_RSA_WITH_AES_256_CBC_SHA [4] [a]	TLS 1.0	SHA-1	AES	256	Yes	No	No
TLS_RSA_WITH_DES_CBC_SHA [a]	TLS 1.0	SHA-1	DES	56	No[5]	No	No
FIPS_WITH_DES_CBC_SHA [b]	SSL 3.0	SHA-1	DES	56	No[6]	No	No
TLS_RSA_WITH_AES_128_GCM_SHA256 [b]	TLS 1.2	AEAD AES-128 GCM	AES	128	Yes	No	No
TLS_RSA_WITH_AES_256_GCM_SHA384 [b]	TLS 1.2	AEAD AES-256 GCM	AES	256	Yes	No	No
TLS_RSA_WITH_AES_128_CBC_SHA256 [b]	TLS 1.2	SHA-256	AES	128	Yes	No	No
TLS_RSA_WITH_AES_256_CBC_SHA256 [b]	TLS 1.2	SHA-256	AES	256	Yes	No	No
ECDHE_ECDSA_RC4_128_SHA256 [b]	TLS 1.2	SHA-1	RC4	128	No	No	No
ECDHE_RSA_RC4_128_SHA256 [b]	TLS 1.2	SHA_1	RC4	128	No	No	No
ECDHE_ECDSA_AES_128_CBC_SHA256 [b]	TLS 1.2	SHA-256	AES	128	Yes	No	No
ECDHE_ECDSA_AES_256_CBC_SHA384 [b]	TLS 1.2	SHA-384	AES	256	Yes	No	No
ECDHE_RSA_AES_128_CBC_SHA256 [b]	TLS 1.2	SHA-256	AES	128	Yes	No	No
ECDHE_RSA_AES_256_CBC_SHA384 [b]	TLS 1.2	SHA-384	AES	256	Yes	No	No
ECDHE_ECDSA_AES_128_GCM_SHA256 [b]	TLS 1.2	AEAD AES-128 GCM	AES	128	Yes	Yes	No
ECDHE_ECDSA_AES_256_GCM_SHA384 [b]	TLS 1.2	AEAD AES-256 GCM	AES	256	Yes	No	Yes
ECDHE_RSA_AES_128_GCM_SHA256 [b]	TLS 1.2	AEAD AES-128 GCM	AES	128	Yes	No	No
ECDHE_RSA_AES_256_GCM_SHA384 [b]	TLS 1.2	AEAD AES-256 GCM	AES	256	Yes	No	No
TLS_RSA_WITH_NULL_SHA256 [b]	TLS 1.2	SHA-256	None	0	No	No	No
ECDHE_RSA_NULL_SHA256 [b]	TLS 1.2	SHA-1	None	0	No	No	No
ECDHE_ECDSA_NULL_SHA256 [b]	TLS 1.2	SHA-1	None	0	No	No	No
TLS_RSA_WITH_NULL_NULL [b]	TLS 1.2	None	None	0	No	No	No

A table describing the CipherSpecs you can use with WebSphere MQ SSL and TLS support.

(continued)

CipherSpec name	Protocol used	Data integrity	Encryption algorithm	Encryption bits	FIPS[1]	Suite B 128 bit	Suite B 192 bit
TLS_RSA_WITH_RC4_128_SHA256 [b]	TLS 1.2	SHA-1	RC4	128	No	No	No

Notes:

1. Specifies whether the CipherSpec is FIPS-certified on a FIPS-certified platform. See Federal Information Processing Standards (FIPS) for an explanation of FIPS.
2. The maximum handshake key size is 512 bits. If either of the certificates exchanged during the SSL handshake has a key size greater than 512 bits, a temporary 512-bit key is generated for use during the handshake.
3. The handshake key size is 1024 bits.
4. This CipherSpec cannot be used to secure a connection from the WebSphere MQ Explorer to a queue manager unless the appropriate unrestricted policy files are applied to the JRE used by the Explorer.
5. This CipherSpec was FIPS 140-2 certified before 19 May 2007.
6. This CipherSpec was FIPS 140-2 certified before 19 May 2007. The name FIPS_WITH_DES_CBC_SHA is historical and reflects the fact that this CipherSpec was previously (but is no longer) FIPS-compliant. This CipherSpec is deprecated and its use is not recommended.
7. This CipherSpec can be used to transfer up to 32 GB of data before the connection is terminated with error AMQ9288. To avoid this error, either avoid using triple DES, or enable secret key reset when using this CipherSpec.

Platform support:

- a Available on all supported platforms.
- b Available only on UNIX, Linux, and Windows platforms.

When you request a personal certificate, you specify a key size for the public and private key pair. The key size that is used during the SSL handshake can depend on the size stored in the certificate and on the CipherSpec:

- On UNIX systems, Windows systems, and z/OS , when a CipherSpec name includes _EXPORT , the maximum handshake key size is 512 bits. If either of the certificates exchanged during the SSL handshake has a key size greater than 512 bits, a temporary 512-bit key is generated for use during the handshake.
- On UNIX and Windows systems, when a CipherSpec name includes _EXPORT1024 , the handshake key size is 1024 bits.
- Otherwise the handshake key size is the size stored in the certificate.

If the SSLCIPH parameter is blank, no attempt is made to use SSL on the channel.

***SSLClientAuth* (MQCFIN)**

Client authentication (parameter identifier: MQIACH_SSL_CLIENT_AUTH).

The value can be:

MQSCA_REQUIRED
Client authentication required.

MQSCA_OPTIONAL
Client authentication optional.

Defines whether IBM WebSphere MQ requires a certificate from the SSL client.

The SSL client is the end of the message channel that initiates the connection. The SSL Server is the end of the message channel that receives the initiation flow.

The parameter is used only for channels with SSLCIPH specified. If SSLCIPH is blank, the data is ignored and no error message is issued.

***SSLPeerName* (MQCFST)**
Peer name (parameter identifier: MQCACH_SSL_PEER_NAME).

Note: An alternative way of restricting connections into channels by matching against the SSL or TLS Subject Distinguished Name, is to use channel authentication records. With channel authentication records, different SSL or TLS Subject Distinguished Name patterns can be applied to the same channel. If both SSLPEER on the channel and a channel authentication record are used to apply to the same channel, the inbound certificate must match both patterns in order to connect. For more information, see Channel authentication records.

On platforms other than z/OS , the length of the string is MQ_SSL_PEER_NAME_LENGTH. On z/OS , it is MQ_SSL_SHORT_PEER_NAME_LENGTH.

Specifies the filter to use to compare with the Distinguished Name of the certificate from the peer queue manager or client at the other end of the channel. (A Distinguished Name is the identifier of the SSL certificate.) If the Distinguished Name in the certificate received from the peer does not match the SSLPEER filter, the channel does not start.

This parameter is optional; if it is not specified, the Distinguished Name of the peer is not checked when the channel is started. (The Distinguished Name from the certificate is still written into the SSLPEER definition held in memory, and passed to the security exit). If SSLCIPH is blank, the data is ignored and no error message is issued.

This parameter is valid for all channel types.

The SSLPEER value is specified in the standard form
used to specify a Distinguished Name. For example:
```
SSLPEER('SERIALNUMBER=4C:D0:49:D5:02:5F:38,CN="H1_C_FR1",O=IBM,C=GB')
```

You can use a semi-colon as a separator instead of a comma.

The possible attribute types supported are:

Attribute	Description
SERIALNUMBER	Certificate serial number
MAIL	Email address
E	Email address (Deprecated in preference to MAIL)
UID or USERID	User identifier
CN	Common Name
T	Title
OU	Organizational Unit name
DC	Domain component
O	Organization name
STREET	Street / First line of address
L	Locality name
ST (or SP or S)	State or Province name
PC	Postal code / zip code
C	Country
UNSTRUCTUREDNAME	Host name

Attribute	Description
UNSTRUCTUREDADDRESS	IP address
DNQ	Distinguished name qualifier

IBM WebSphere MQ only accepts uppercase letters for the attribute types.

If any of the unsupported attribute types are specified in the SSLPEER string, an error is output either when the attribute is defined or at run time (depending on which platform you are running on), and the string is deemed not to have matched the Distinguished Name of the flowed certificate.

If the Distinguished Name of the flowed certificate contains multiple OU (organizational unit) attributes, and SSLPEER specifies these attributes to be compared, they must be defined in descending hierarchical order. For example, if the Distinguished Name of the flowed certificate contains the OUs `OU=Large Unit,OU=Medium Unit,OU=Small Unit`, specifying the following SSLPEER values work:

```
 ('OU=Large Unit,OU=Medium Unit') ('OU=*,OU=Medium Unit,OU=Small Unit') ('OU=*,OU=Medium
Unit')
```

but specifying the following SSLPEER values fail:

```
 ('OU=Medium Unit,OU=Small Unit') ('OU=Large Unit,OU=Small Unit') ('OU=Medium Unit')
```

Any or all the attribute values can be generic, either an asterisk (*) on its own, or a stem with initiating or trailing asterisks. This value allows the SSLPEER to match any Distinguished Name value, or any value starting with the stem for that attribute.

If an asterisk is specified at the beginning or end of any attribute value in the Distinguished Name on the certificate, you can specify * to check for an exact match in SSLPEER. For example, if you have an attribute of CN=Test* in the Distinguished Name of the certificate, you can use the following command:

```
SSLPEER('CN=Test\*')
```

***TpName* (MQCFST)**
Transaction program name (parameter identifier: MQCACH_TP_NAME).

This name is the LU 6.2 transaction program name.

The maximum length of the string is MQ_TP_NAME_LENGTH.

- On IBM i, HP Integrity NonStop Server, UNIX systems, and Windows , this parameter can be set only to blanks. The actual name is taken instead from the CPI-C Communications Side Object or (on Windows) from the CPI-C symbolic destination name properties.

This parameter is valid only for channels with a *TransportType* of MQXPT_LU62. It is not valid for receiver channels.

***TransportType* (MQCFIN)**
Transmission protocol type (parameter identifier: MQIACH_XMIT_PROTOCOL_TYPE).

No check is made that the correct transport type has been specified if the channel is initiated from the other end. The value can be:

MQXPT_LU62
LU 6.2.

MQXPT_TCP
TCP.

MQXPT_NETBIOS
NetBIOS.

This value is supported in Windows . It also applies to z/OS for defining client-connection channels that connect to servers on the platforms supporting NetBIOS.

MQXPT_SPX
SPX.

This value is supported in Windows. It also applies to z/OS for defining client-connection channels that connect to servers on the platforms supporting SPX.

***UseDLQ* (MQCFIN)**
Determines whether the dead-letter queue is used when messages cannot be delivered by channels. (parameter identifier: MQIA_USE_DEAD_LETTER_Q).

The value can be:

MQUSEDLQ_NO
Messages that cannot be delivered by a channel are treated as a failure. The channel either discards the message, or the channel ends, in accordance with the NonPersistentMsgSpeed setting.

MQUSEDLQ_YES
When the DEADQ queue manager attribute provides the name of a dead-letter queue, then it is used, else the behavior is as for MQUSEDLQ_NO.

***UserIdentifier* (MQCFST)**
Task user identifier (parameter identifier: MQCACH_USER_ID).

This parameter is used by the message channel agent when attempting to initiate a secure SNA session with a remote message channel agent. On IBM i and UNIX systems, it is valid only for *ChannelType* values of MQCHT_SENDER, MQCHT_SERVER, MQCHT_REQUESTER, MQCHT_CLNTCONN, MQCHT_CLUSSDR, or MQCHT_CLUSRCVR. On z/OS , it is valid only for a *ChannelType* value of MQCHT_CLNTCONN.

The maximum length of the string is MQ_USER_ID_LENGTH. However, only the first 10 characters are used.

***XmitQName* (MQCFST)**
Transmission queue name (parameter identifier: MQCACH_XMIT_Q_NAME).

The maximum length of the string is MQ_Q_NAME_LENGTH.

A transmission queue name is required (either previously defined or specified here) if *ChannelType* is MQCHT_SENDER or MQCHT_SERVER. It is not valid for other channel types.

Error codes (Change, Copy, and Create Channel)

This command might return the following error codes in the response format header, in addition to those codes listed in “Error codes applicable to all commands” on page 687 .

***Reason* (MQLONG)**
The value can be:

MQRCCF_BATCH_INT_ERROR
Batch interval not valid.

MQRCCF_BATCH_INT_WRONG_TYPE
Batch interval parameter not allowed for this channel type.

MQRCCF_BATCH_SIZE_ERROR
Batch size not valid.

MQRCCF_CHANNEL_NAME_ERROR
Channel name error.

MQRCCF_CHANNEL_NOT_FOUND
Channel not found.

MQRCCF_CHANNEL_TYPE_ERROR
Channel type not valid.

MQRCCF_CLUSTER_NAME_CONFLICT
Cluster name conflict.

MQRCCF_DISC_INT_ERROR
Disconnection interval not valid.

MQRCCF_DISC_INT_WRONG_TYPE
Disconnection interval not allowed for this channel type.

MQRCCF_HB_INTERVAL_ERROR
Heartbeat interval not valid.

MQRCCF_HB_INTERVAL_WRONG_TYPE
Heartbeat interval parameter not allowed for this channel type.

MQRCCF_LONG_RETRY_ERROR
Long retry count not valid.

MQRCCF_LONG_RETRY_WRONG_TYPE
Long retry parameter not allowed for this channel type.

MQRCCF_LONG_TIMER_ERROR
Long timer not valid.

MQRCCF_LONG_TIMER_WRONG_TYPE
Long timer parameter not allowed for this channel type.

MQRCCF_MAX_INSTANCES_ERROR
Maximum instances value not valid.

MQRCCF_MAX_INSTS_PER_CLNT_ERR
Maximum instances per client value not valid.

MQRCCF_MAX_MSG_LENGTH_ERROR
Maximum message length not valid.

MQRCCF_MCA_NAME_ERROR
Message channel agent name error.

MQRCCF_MCA_NAME_WRONG_TYPE
Message channel agent name not allowed for this channel type.

MQRCCF_MCA_TYPE_ERROR
Message channel agent type not valid.

MQRCCF_MISSING_CONN_NAME
Connection name parameter required but missing.

MQRCCF_MR_COUNT_ERROR
Message retry count not valid.

MQRCCF_MR_COUNT_WRONG_TYPE
Message-retry count parameter not allowed for this channel type.

MQRCCF_MR_EXIT_NAME_ERROR
Channel message-retry exit name error.

MQRCCF_MR_EXIT_NAME_WRONG_TYPE
Message-retry exit parameter not allowed for this channel type.

MQRCCF_MR_INTERVAL_ERROR
Message retry interval not valid.

MQRCCF_MR_INTERVAL_WRONG_TYPE
Message-retry interval parameter not allowed for this channel type.

MQRCCF_MSG_EXIT_NAME_ERROR
Channel message exit name error.

MQRCCF_NET_PRIORITY_ERROR
Network priority value error.

MQRCCF_NET_PRIORITY_WRONG_TYPE
Network priority attribute not allowed for this channel type.

MQRCCF_NPM_SPEED_ERROR
Nonpersistent message speed not valid.

MQRCCF_NPM_SPEED_WRONG_TYPE
Nonpersistent message speed parameter not allowed for this channel type.

MQRCCF_PARM_SEQUENCE_ERROR
Parameter sequence not valid.

MQRCCF_PUT_AUTH_ERROR
Put authority value not valid.

MQRCCF_PUT_AUTH_WRONG_TYPE
Put authority parameter not allowed for this channel type.

MQRCCF_RCV_EXIT_NAME_ERROR
Channel receive exit name error.

MQRCCF_SEC_EXIT_NAME_ERROR
Channel security exit name error.

MQRCCF_SEND_EXIT_NAME_ERROR
Channel send exit name error.

MQRCCF_SEQ_NUMBER_WRAP_ERROR
Sequence wrap number not valid.

MQRCCF_SHARING_CONVS_ERROR
Value given for Sharing Conversations not valid.

MQRCCF_SHARING_CONVS_TYPE
Sharing Conversations parameter not valid for this channel type.

MQRCCF_SHORT_RETRY_ERROR
Short retry count not valid.

MQRCCF_SHORT_RETRY_WRONG_TYPE
Short retry parameter not allowed for this channel type.

MQRCCF_SHORT_TIMER_ERROR
Short timer value not valid.

MQRCCF_SHORT_TIMER_WRONG_TYPE
Short timer parameter not allowed for this channel type.

MQRCCF_SSL_CIPHER_SPEC_ERROR
SSL CipherSpec not valid.

MQRCCF_SSL_CLIENT_AUTH_ERROR
SSL client authentication not valid.

MQRCCF_SSL_PEER_NAME_ERROR
SSL peer name not valid.

MQRCCF_WRONG_CHANNEL_TYPE
Parameter not allowed for this channel type.

MQRCCF_XMIT_PROTOCOL_TYPE_ERR
Transmission protocol type not valid.

MQRCCF_XMIT_Q_NAME_ERROR
Transmission queue name error.

MQRCCF_XMIT_Q_NAME_WRONG_TYPE
Transmission queue name not allowed for this channel type.

Change, Copy, and Create Channel (MQTT)

The Change Channel command changes existing Telemetry channel definitions. The Copy and Create Channel commands create new Telemetry channel definitions - the Copy command uses attribute values of an existing channel definition.

The Change Channel (MQCMD_CHANGE_CHANNEL) command changes the specified attributes in a channel definition. For any optional parameters that are omitted, the value does not change.

The Copy Channel (MQCMD_COPY_CHANNEL) command creates new channel definition using, for attributes not specified in the command, the attribute values of an existing channel definition.

The Create Channel (MQCMD_CREATE_CHANNEL) command creates a WebSphere MQ channel definition. Any attributes that are not defined explicitly are set to the default values on the destination queue manager. If a system default channel exists for the type of channel being created, the default values are taken from there.

Required parameters (Change, Create Channel)

***ChannelName*(MQCFST)**
Channel name (parameter identifier: MQCACH_CHANNEL_NAME).

Specifies the name of the channel definition to be changed, or created

The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

This parameter is required on all types of channel; on a CLUSSDR it can be different from on the other channel types. If your convention for naming channels includes the name of the queue manager, you can make a CLUSSDR definition using the +QMNAME+ construction, and WebSphere MQ substitutes the correct repository queue manager name in place of +QMNAME+. This facility applies to AIX , HP-UX, Linux, IBM i, Solaris, and Windows only. See Configuring a queue manager cluster for more details.

***ChannelType*(MQCFIN)**
Channel type (parameter identifier: MQIACH_CHANNEL_TYPE).

Specifies the type of the channel being changed, copied, or created. The value can be:

MQCHT_MQTT
Telemetry.

***TrpType*(MQCFIN)**
Transmission protocol type of the channel (parameter identifier: MQIACH_XMIT_PROTOCOL_TYPE). This parameter is required for a create command in telemetry.

No check is made that the correct transport type has been specified if the channel is initiated from the other end. The value is:

MQXPT_TCP
TCP.

***Port*(MQCFIN)**
The port number to use if *TrpType* is set to MQXPT_TCP. This parameter is required for a create command in telemetry, if *TrpType* is set to MQXPT_TCP.

The value is in the range 1 - 65335.

Required parameters (Copy Channel)

***ChannelType*(MQCFIN)**
Channel type (parameter identifier: MQIACH_CHANNEL_TYPE).

Specifies the type of the channel being changed, copied, or created. The value can be:

MQCHT_MQTT
Telemetry.

Optional parameters (Change, Copy, and Create Channel)

***Backlog*(MQCFIN)**
The number of concurrent connection requests that the telemetry channel supports at any one time (parameter identifier: MQIACH_BACKLOG).

The value is in the range 0 - 999999999.

***JAASConfig*(MQCFST)**
The file path of the JAAS configuration (parameter identifier: MQCACH_JAAS_CONFIG).

The maximum length of this value is MQ_JAAS_CONFIG_LENGTH.

Only one of JAASCONFIG, MCAUSER, and USECLIENTID can be specified for a telemetry channel; if none is specified, no authentication is performed. If JAASConfig is specified, the client flows a user name and password. In all other cases, the flowed user name is ignored.

***LocalAddress*(MQCFST)**
Local communications address for the channel (parameter identifier: MQCACH_LOCAL_ADDRESS).

The maximum length of the string is MQ_LOCAL_ADDRESS_LENGTH.

The value that you specify depends on the transport type *(TransportType)* to be used:

TCP/IP
The value is the optional IP address and optional port or port range to be used for outbound TCP/IP communications. The format for this information is as follows:

```
[ip-addr][(low-port[,high-port])]
```

where `ip-addr` is specified in IPv4 dotted decimal, IPv6 hexadecimal notation, or alphanumeric form, and `low-port` and `high-port` are port numbers enclosed in parentheses. All are optional.

All Others
The value is ignored; no error is diagnosed.

Use this parameter if you want a channel to use a particular IP address, port, or port range for outbound communications. This parameter is useful when a machine is connected to multiple networks with different IP addresses.

Examples of use

Value	Meaning
9.20.4.98	Channel binds to this address locally
9.20.4.98 (1000)	Channel binds to this address and port 1000 locally
9.20.4.98 (1000,2000)	Channel binds to this address and uses a port in the range 1000 - 2000 locally
(1000)	Channel binds to port 1000 locally
(1000,2000)	Channel binds to a port in the range 1000 - 2000 locally

Note:

- Do not confuse this parameter with *ConnectionName* . The *LocalAddress* parameter specifies the characteristics of the local communications; the *ConnectionName* parameter specifies how to reach a remote queue manager.

***SSLCipherSuite* (MQCFST)**
CipherSuite (parameter identifier: MQCACH_SSL_CIPHER_SUITE).

The length of the string is MQ_SSL_CIPHER_SUITE_LENGTH.

SSL CIPHER SUITE character channel parameter type.

***SSLClientAuth*(MQCFIN)**
Client authentication (parameter identifier: MQIACH_SSL_CLIENT_AUTH).

The value can be:

MQSCA_REQUIRED
Client authentication required.

MQSCA_OPTIONAL
Client authentication optional.

Defines whether IBM WebSphere MQ requires a certificate from the SSL client.

The SSL client is the end of the message channel that initiates the connection. The SSL Server is the end of the message channel that receives the initiation flow.

The parameter is used only for channels with SSLCIPH specified. If SSLCIPH is blank, the data is ignored and no error message is issued.

***SSLKeyFile*(MQCFST)**
The store for digital certificates and their associated private keys (parameter identifier: MQCA_SSL_KEY_REPOSITORY).

If you do not specify a key file, SSL is not used.

The maximum length of this parameter is MQ_SSL_KEY_REPOSITORY_LENGTH.

***SSLPassPhrase*(MQCFST)**
The password for the key repository (parameter identifier: MQCACH_SSL_KEY_PASSPHRASE).

If no pass phrase is entered, then unencrypted connections must be used.

The maximum length of this parameter is MQ_SSL_KEY_PASSPHRASE_LENGTH.

***TransportType*(MQCFIN)**
Transmission protocol type (parameter identifier: MQIACH_XMIT_PROTOCOL_TYPE).

No check is made that the correct transport type has been specified if the channel is initiated from the other end. The value can be:

MQXPT_LU62
LU 6.2.

MQXPT_TCP
TCP.

MQXPT_NETBIOS
NetBIOS.

This value is supported in Windows.

MQXPT_SPX
SPX.

This value is supported in Windows.

This parameter is required for a create command in telemetry; see TransportType for more information.

***UseClientIdentifier*(MQCFIN)**
Determines whether to use the client ID of a new connection as the user ID for that connection (parameter identifier: MQIACH_USE_CLIENT_ID).

The value is either:

MQUCI_YES
Yes.

MQUCI_NO
No.

Only one of JAASCONFIG, MCAUSER, and USECLIENTID can be specified for a telemetry channel; if none is specified, no authentication is performed. If USECLIENTID is specified, the flowed user name of the client is ignored.

Error codes (Change, Copy, and Create Channel)

This command might return the following error codes in the response format header, in addition to those codes listed in "Error codes applicable to all commands" on page 687.

***Reason*(MQLONG)**
The value can be:

MQRCCF_BATCH_INT_ERROR
Batch interval not valid.

MQRCCF_BATCH_INT_WRONG_TYPE
Batch interval parameter not allowed for this channel type.

MQRCCF_BATCH_SIZE_ERROR
Batch size not valid.

MQRCCF_CHANNEL_NAME_ERROR
Channel name error.

MQRCCF_CHANNEL_NOT_FOUND
Channel not found.

MQRCCF_CHANNEL_TYPE_ERROR
Channel type not valid.

MQRCCF_CLUSTER_NAME_CONFLICT
Cluster name conflict.

MQRCCF_DISC_INT_ERROR
Disconnection interval not valid.

MQRCCF_DISC_INT_WRONG_TYPE
Disconnection interval not allowed for this channel type.

MQRCCF_HB_INTERVAL_ERROR
Heartbeat interval not valid.

MQRCCF_HB_INTERVAL_WRONG_TYPE
Heartbeat interval parameter not allowed for this channel type.

MQRCCF_LONG_RETRY_ERROR
Long retry count not valid.

MQRCCF_LONG_RETRY_WRONG_TYPE
Long retry parameter not allowed for this channel type.

MQRCCF_LONG_TIMER_ERROR
Long timer not valid.

MQRCCF_LONG_TIMER_WRONG_TYPE
Long timer parameter not allowed for this channel type.

MQRCCF_MAX_INSTANCES_ERROR
Maximum instances value not valid.

MQRCCF_MAX_INSTS_PER_CLNT_ERR
Maximum instances per client value not valid.

MQRCCF_MAX_MSG_LENGTH_ERROR
Maximum message length not valid.

MQRCCF_MCA_NAME_ERROR
Message channel agent name error.

MQRCCF_MCA_NAME_WRONG_TYPE
Message channel agent name not allowed for this channel type.

MQRCCF_MCA_TYPE_ERROR
Message channel agent type not valid.

MQRCCF_MISSING_CONN_NAME
Connection name parameter required but missing.

MQRCCF_MR_COUNT_ERROR
Message retry count not valid.

MQRCCF_MR_COUNT_WRONG_TYPE
Message-retry count parameter not allowed for this channel type.

MQRCCF_MR_EXIT_NAME_ERROR
Channel message-retry exit name error.

MQRCCF_MR_EXIT_NAME_WRONG_TYPE
Message-retry exit parameter not allowed for this channel type.

MQRCCF_MR_INTERVAL_ERROR
Message retry interval not valid.

MQRCCF_MR_INTERVAL_WRONG_TYPE
Message-retry interval parameter not allowed for this channel type.

MQRCCF_MSG_EXIT_NAME_ERROR
Channel message exit name error.

MQRCCF_NET_PRIORITY_ERROR
Network priority value error.

MQRCCF_NET_PRIORITY_WRONG_TYPE
Network priority attribute not allowed for this channel type.

MQRCCF_NPM_SPEED_ERROR
Nonpersistent message speed not valid.

MQRCCF_NPM_SPEED_WRONG_TYPE
Nonpersistent message speed parameter not allowed for this channel type.

MQRCCF_PARM_SEQUENCE_ERROR
Parameter sequence not valid.

MQRCCF_PUT_AUTH_ERROR
Put authority value not valid.

MQRCCF_PUT_AUTH_WRONG_TYPE
Put authority parameter not allowed for this channel type.

MQRCCF_RCV_EXIT_NAME_ERROR
Channel receive exit name error.

MQRCCF_SEC_EXIT_NAME_ERROR
Channel security exit name error.

MQRCCF_SEND_EXIT_NAME_ERROR
Channel send exit name error.

MQRCCF_SEQ_NUMBER_WRAP_ERROR
Sequence wrap number not valid.

MQRCCF_SHARING_CONVS_ERROR
Value given for Sharing Conversations not valid.

MQRCCF_SHARING_CONVS_TYPE
Sharing Conversations parameter not valid for this channel type.

MQRCCF_SHORT_RETRY_ERROR
Short retry count not valid.

MQRCCF_SHORT_RETRY_WRONG_TYPE
Short retry parameter not allowed for this channel type.

MQRCCF_SHORT_TIMER_ERROR
Short timer value not valid.

MQRCCF_SHORT_TIMER_WRONG_TYPE
Short timer parameter not allowed for this channel type.

MQRCCF_SSL_CIPHER_SPEC_ERROR
SSL CipherSpec not valid.

MQRCCF_SSL_CLIENT_AUTH_ERROR
SSL client authentication not valid.

MQRCCF_SSL_PEER_NAME_ERROR
SSL peer name not valid.

MQRCCF_WRONG_CHANNEL_TYPE
Parameter not allowed for this channel type.

MQRCCF_XMIT_PROTOCOL_TYPE_ERR
Transmission protocol type not valid.

MQRCCF_XMIT_Q_NAME_ERROR
Transmission queue name error.

MQRCCF_XMIT_Q_NAME_WRONG_TYPE
Transmission queue name not allowed for this channel type.

Change, Copy, and Create Channel Listener

The Change Channel Listener command changes existing channel listener definitions. The Copy and Create Channel Listener commands create new channel listener definitions - the Copy command uses attribute values of an existing channel listener definition.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

The Change Channel Listener (MQCMD_CHANGE_LISTENER) command changes the specified attributes of an existing WebSphere MQ listener definition. For any optional parameters that are omitted, the value does not change.

The Copy Channel Listener (MQCMD_ COPY_LISTENER) command creates a WebSphere MQ listener definition, using, for attributes not specified in the command, the attribute values of an existing listener definition.

The Create Channel Listener (MQCMD_CREATE_LISTENER) command creates a WebSphere MQ listener definition. Any attributes that are not defined explicitly are set to the default values on the destination queue manager.

Required parameters (Change and Create Channel Listener)

***ListenerName* (MQCFST)**
The name of the listener definition to be changed or created (parameter identifier: MQCACH_LISTENER_NAME).

The maximum length of the string is MQ_LISTENER_NAME_LENGTH.

***TransportType* (MQCFIN)**
Transmission protocol (parameter identifier: MQIACH_XMIT_PROTOCOL_TYPE).

The value can be:

MQXPT_TCP
TCP.

MQXPT_LU62
LU 6.2. This value is valid only on Windows.

MQXPT_NETBIOS
NetBIOS. This value is valid only on Windows.

MQXPT_SPX
SPX. This value is valid only on Windows.

Required parameters (Copy Channel Listener)

***FromListenerName* (MQCFST)**
The name of the listener definition to be copied from (parameter identifier: MQCACF_FROM_LISTENER_NAME).

This parameter specifies the name of the existing listener definition that contains values for the attributes not specified in this command.

The maximum length of the string is MQ_LISTENER_NAME_LENGTH.

***ToListenerName* (MQCFST)**
To listener name (parameter identifier: MQCACF_TO_LISTENER_NAME).

This parameter specifies the name of the new listener definition. If a listener definition with this name exists, *Replace* must be specified as MQRP_YES.

The maximum length of the string is MQ_LISTENER_NAME_LENGTH.

Optional parameters (Change, Copy, and Create Channel Listener)

***Adapter* (MQCFIN)**
Adapter number (parameter identifier: MQIACH_ADAPTER).

The adapter number on which NetBIOS listens. This parameter is valid only on Windows.

***Backlog* (MQCFIN)**
Backlog (parameter identifier: MQIACH_BACKLOG).

The number of concurrent connection requests that the listener supports.

***Commands* (MQCFIN)**
Adapter number (parameter identifier: MQIACH_COMMAND_COUNT).

The number of commands that the listener can use. This parameter is valid only on Windows.

***IPAddress* (MQCFST)**
IP address (parameter identifier: MQCACH_IP_ADDRESS).

IP address for the listener specified in IPv4 dotted decimal, IPv6 hexadecimal notation, or alphanumeric host name form. If you do not specify a value for this parameter, the listener listens on all configured IPv4 and IPv6 stacks.

The maximum length of the string is MQ_LOCAL_ADDRESS_LENGTH

***ListenerDesc* (MQCFST)**
Description of listener definition (parameter identifier: MQCACH_LISTENER_DESC).

This parameter is a plain-text comment that provides descriptive information about the listener definition. It must contain only displayable characters.

If characters are used that are not in the coded character set identifier (CCSID) for the queue manager on which the command is executing, they might be translated incorrectly.

The maximum length of the string is MQ_LISTENER_DESC_LENGTH.

***LocalName* (MQCFST)**
NetBIOS local name (parameter identifier: MQCACH_LOCAL_NAME).

The NetBIOS local name that the listener uses. This parameter is valid only on Windows.

The maximum length of the string is MQ_CONN_NAME_LENGTH

***NetbiosNames* (MQCFIN)**
NetBIOS names (parameter identifier: MQIACH_NAME_COUNT).

The number of names that the listener supports. This parameter is valid only on Windows.

***Port* (MQCFIN)**
Port number (parameter identifier: MQIACH_PORT).

The port number for TCP/IP. This parameter is valid only if the value of *TransportType* is MQXPT_TCP.

***Replace* (MQCFIN)**
Replace attributes (parameter identifier: MQIACF_REPLACE).

If a namelist definition with the same name as *ToListenerName* exists, this definition specifies whether it is to be replaced. The value can be:

MQRP_YES
Replace existing definition.

MQRP_NO
Do not replace existing definition.

***Sessions* (MQCFIN)**
NetBIOS sessions (parameter identifier: MQIACH_SESSION_COUNT).

The number of sessions that the listener can use. This parameter is valid only on Windows.

***Socket* (MQCFIN)**
SPX socket number (parameter identifier: MQIACH_SOCKET).

The SPX socket on which to listen. This parameter is valid only if the value of *TransportType* is MQXPT_SPX.

***StartMode* (MQCFIN)**
Service mode (parameter identifier: MQIACH_LISTENER_CONTROL).

Specifies how the listener is to be started and stopped. The value can be:

MQSVC_CONTROL_MANUAL
The listener is not to be started automatically or stopped automatically. It is to be controlled by user command. This value is the default value.

MQSVC_CONTROL_Q_MGR
The listener being defined is to be started and stopped at the same time as the queue manager is started and stopped.

MQSVC_CONTROL_Q_MGR_START
The listener is to be started at the same time as the queue manager is started, but is not requested to stop when the queue manager is stopped.

***TPName* (MQCFST)**
Transaction program name (parameter identifier: MQCACH_TP_NAME).

The LU 6.2 transaction program name. This parameter is valid only on Windows.

The maximum length of the string is MQ_TP_NAME_LENGTH

Change, Copy, and Create Communication Information Object

The Change Communication Information Object command changes existing communication information object definitions. The Copy and Create Communication Information Object commands create new communication information object definitions - the Copy command uses attribute values of an existing communication information object definition.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

The Change communication information (MQCMD_CHANGE_COMM_INFO) command changes the specified attributes of an existing WebSphere MQ communication information object definition. For any optional parameters that are omitted, the value does not change.

The Copy communication information (MQCMD_COPY_COMM_INFO) command creates a WebSphere MQ communication information object definition, using, for attributes not specified in the command, the attribute values of an existing communication information definition.

The Create communication information (MQCMD_CREATE_COMM_INFO) command creates a WebSphere MQ communication information object definition. Any attributes that are not defined explicitly are set to the default values on the destination queue manager.

Required parameter (Change communication information)

***CominfoName* (MQCFST)**
The name of the communication information definition to be changed (parameter identifier: MQCA_COMM_INFO_NAME).

The maximum length of the string is MQ_COMM_INFO_NAME_LENGTH.

Required parameters (Copy communication information)

***FromCominfoName* (MQCFST)**
The name of the communication information object definition to be copied from (parameter identifier: MQCACF_FROM_COMM_INFO_NAME).

The maximum length of the string is MQ_COMM_INFO_NAME_LENGTH.

***ToCominfoName* (MQCFST)**
The name of the communication information definition to copy to (parameter identifier: MQCACF_TO_COMM_INFO_NAME).

The maximum length of the string is MQ_COMM_INFO_NAME_LENGTH.

Required parameters (Create communication information)

***CominfoName* (MQCFST)**
The name of the communication information definition to be created (parameter identifier: MQCA_COMM_INFO_NAME).

The maximum length of the string is MQ_COMM_INFO_NAME_LENGTH.

Optional parameters (Change, Copy, and Create communication information)

***Bridge* (MQCFIN)**
Controls whether publications from applications not using Multicast are bridged to applications using multicast (parameter identifier: MQIA_MCAST_BRIDGE).

Bridging does not apply to topics that are marked as **MCAST(ONLY)**. As these topics can only have multicast traffic, it is not applicable to bridge to the non-multicast publish/subscribe domain.

MQMCB_DISABLED
Publications from applications not using multicast are not bridged to applications that do use Multicast. This is the default for IBM i.

MQMCB_ENABLED
Publications from applications not using multicast are bridged to applications that do use Multicast. This is the default for platforms other than IBM i. This value is not valid on IBM i.

***CCSID* (MQCFIN)**
The coded character set identifier that messages are transmitted on (parameter identifier: MQIA_CODED_CHAR_SET_ID).

Specify a value in the range 1 to 65535.

The CCSID must specify a value that is defined for use on your platform, and use a character set that is appropriate to the platform. If you use this parameter to change the CCSID, applications that are running when the change is applied continue to use the original CCSID. Because of this, you must stop and restart all running applications before you continue.

This includes the command server and channel programs. To do this, stop and restart the queue manager after making the change. The default value is ASPUB which means that the coded character set is taken from the one that is supplied in the published message.

***CommEvent* (MQCFIN)**
Controls whether event messages are generated for multicast handles that are created using this COMMINFO object (parameter identifier: MQIA_COMM_EVENT).

Events are only generated if monitoring is also enabled using the *MonitorInterval* parameter.

MQEVR_DISABLED
Publications from applications not using multicast are not bridged to applications that do use multicast. This is the default value.

MQEVR_ENABLED
Publications from applications not using multicast are bridged to applications that do use multicast.

MQEVR_EXCEPTION
Event messages are written if the message reliability is below the reliability threshold The reliability threshold is set to 90 by default.

***Description* (MQCFST)**
Plain-text comment that provides descriptive information about the communication information object (parameter identifier: MQCA_COMM_INFO_DESC).

It must contain only displayable characters. The maximum length is 64 characters. In a DBCS installation, it can contain DBCS characters (subject to a maximum length of 64 bytes).

If characters are used that are not in the coded character set identifier (CCSID) for this queue manager, they might be translated incorrectly if the information is sent to another queue manager.

The maximum length is MQ_COMM_INFO_DESC_LENGTH.

***Encoding* (MQCFIN)**
The encoding that the messages are transmitted in (parameter identifier: MQIACF_ENCODING).

MQENC_AS_PUBLISHED
The encoding of the message is taken from the one that is supplied in the published message. This is the default value.

MQENC_NORMAL

MQENC_REVERSED

MQENC_S390

MQENC_TNS

***GrpAddress* (MQCFST)**
The group IP address or DNS name (parameter identifier: MQCACH_GROUP_ADDRESS).

It is the administrator's responsibility to manage the group addresses. It is possible for all multicast clients to use the same group address for every topic; only the messages that match outstanding subscriptions on the client are delivered. Using the same group address can be inefficient because every client must examine and process every multicast packet in the network. It is more efficient to allocate different IP group addresses to different topics or sets of topics, but this requires careful management, especially if other non-MQ multicast applications are in use on the network. The default value is `239.0.0.0`.

The maximum length is MQ_GROUP_ADDRESS_LENGTH.

***MonitorInterval* (MQCFIN)**
How frequently monitoring information is updated and event messages are generated (parameter identifier: MQIA_MONITOR_INTERVAL).

The value is specified as a number of seconds in the range 0 to 999 999. A value of `0` indicates that no monitoring is required.

If a non-zero value is specified, monitoring is enabled. Monitoring information is updated and event messages (if enabled using *CommEvent*, are generated about the status of the multicast handles created using this communication information object.

***MsgHistory* (MQCFIN)**
This value is the amount of message history in kilobytes that is kept by the system to handle retransmissions in the case of NACKs (parameter identifier: MQIACH_MSG_HISTORY).

The value is in the range 0 to 999 999 999. A value of `0` gives the least level of reliability. The default value is `100`.

***MulticastHeartbeat* (MQCFIN)**
The heartbeat interval is measured in milliseconds, and specifies the frequency at which the transmitter notifies any receivers that there is no further data available (parameter identifier: MQIACH_MC_HB_INTERVAL).

The value is in the range 0 to 999 999. The default value is `2000` milliseconds.

***MulticastPropControl* (MQCFIN)**
The multicast properties control how many of the MQMD properties and user properties flow with the message (parameter identifier: MQIACH_MULTICAST_PROPERTIES).

MQMCP_ALL
All user properties and all the fields of the MQMD are transported. This is the default value.

MQMCP_REPLY
Only user properties, and MQMD fields that deal with replying to the messages, are transmitted. These properties are:

- MsgType
- MessageId
- CorrelId
- ReplyToQ
- ReplyToQmgr

MQMCP_USER
Only the user properties are transmitted.

MQMCP_NONE
No user properties or MQMD fields are transmitted.

MQMCP_COMPAT
Properties are transmitted in a format compatible with previous MQ multicast clients.

***NewSubHistory* (MQCFIN)**
The new subscriber history controls whether a subscriber joining a publication stream receives as much data as is currently available, or receives only publications made from the time of the subscription (parameter identifier: MQIACH_NEW_SUBSCRIBER_HISTORY).

MQNSH_NONE
A value of NONE causes the transmitter to transmit only publication made from the time of the subscription. This is the default value.

MQNSH_ALL
A value of ALL causes the transmitter to retransmit as much history of the topic as is known. In some circumstances, this can give a similar behavior to retained publications.

Using the value of MQNSH_ALL might have a detrimental effect on performance if there is a large topic history because all the topic history is retransmitted.

***PortNumber* (MQCFIN)**
The port number to transmit on (parameter identifier: MQIACH_PORT).

The default port number is 1414.

***Type* (MQCFIN)**
The type of the communications information object (parameter identifier: MQIA_COMM_INFO_TYPE).

The only type supported is `MQCIT_MULTICAST`.

Change, Copy, and Create Namelist

The Change Namelist command changes existing namelist definitions. The Copy and Create Namelist commands create new namelist definitions - the Copy command uses attribute values of an existing namelist definition.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

The Change Namelist (MQCMD_CHANGE_NAMELIST) command changes the specified attributes of an existing WebSphere MQ namelist definition. For any optional parameters that are omitted, the value does not change.

The Copy Namelist (MQCMD_COPY_NAMELIST) command creates a WebSphere MQ namelist definition, using, for attributes not specified in the command, the attribute values of an existing namelist definition.

The Create Namelist (MQCMD_CREATE_NAMELIST) command creates a WebSphere MQ namelist definition. Any attributes that are not defined explicitly are set to the default values on the destination queue manager.

Required parameter (Change and Create Namelist)

***NamelistName* (MQCFST)**
The name of the namelist definition to be changed (parameter identifier: MQCA_NAMELIST_NAME).

The maximum length of the string is MQ_NAMELIST_NAME_LENGTH.

Required parameters (Copy Namelist)

***FromNamelistName* (MQCFST)**
The name of the namelist definition to be copied from (parameter identifier: MQCACF_FROM_NAMELIST_NAME).

This parameter specifies the name of the existing namelist definition that contains values for the attributes not specified in this command.

On z/OS, the queue manager searches for an object with the name you specify and a disposition of MQQSGD_Q_MGR or MQQSGD_COPY to copy from. This parameter is ignored if a value of MQQSGD_COPY is specified for *QSGDisposition*. In this case, an object with the name specified by *ToNamelistName* and the disposition MQQSGD_GROUP is searched for to copy from.

The maximum length of the string is MQ_NAMELIST_NAME_LENGTH.

***ToNamelistName* (MQCFST)**
To namelist name (parameter identifier: MQCACF_TO_NAMELIST_NAME).

This parameter specifies the name of the new namelist definition. If a namelist definition with this name exists, *Replace* must be specified as MQRP_YES.

The maximum length of the string is MQ_NAMELIST_NAME_LENGTH.

Optional parameters (Change, Copy, and Create Namelist)

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***NamelistDesc* (MQCFST)**
Description of namelist definition (parameter identifier: MQCA_NAMELIST_DESC).

This parameter is a plain-text comment that provides descriptive information about the namelist definition. It must contain only displayable characters.

If characters are used that are not in the coded character set identifier (CCSID) for the queue manager on which the command is executing, they might be translated incorrectly.

The maximum length of the string is MQ_NAMELIST_DESC_LENGTH.

***NamelistType* (MQCFIN)**
Type of names in the namelist (parameter identifier: MQIA_NAMELIST_TYPE). This parameter applies to z/OS only.

Specifies the type of names in the namelist. The value can be:

MQNT_NONE
The names are of no particular type.

MQNT_Q
A namelist that holds a list of queue names.

MQNT_CLUSTER
A namelist that is associated with clustering, containing a list of the cluster names.

MQNT_AUTH_INFO
The namelist is associated with SSL, and contains a list of authentication information object names.

***Names* (MQCFSL)**
The names to be placed in the namelist (parameter identifier: MQCA_NAMES).

The number of names in the list is given by the *Count* field in the MQCFSL structure. The length of each name is given by the *StringLength* field in that structure. The maximum length of a name is MQ_OBJECT_NAME_LENGTH.

***QSGDisposition* (MQCFIN)**
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves). The value can be:

QSGDisposition	Change	Copy, Create
MQQSGD_COPY	The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameter MQQSGD_COPY. Any object residing in the shared repository, or any object defined using a command that had the parameters MQQSGD_Q_MGR, is not affected by this command.	The object is defined on the page set of the queue manager that executes the command using the MQQSGD_GROUP object of the same name as the *ToNameListName* object (for Copy) or *NameListName* object (for Create).

MQQSGD_GROUP	The object definition resides in the shared repository. The object was defined using a command that had the parameter MQQSGD_GROUP. Any object residing on the page set of the queue manager that executes the command (except a local copy of the object) is not affected by this command.
	If the command is successful, the following MQSC command is generated and sent to all active queue managers in the queue-sharing group so that they refresh local copies on page set zero:
	`DEFINE NAMELIST(name)`
	`REPLACE QSGDISP(COPY)`
	The Change for the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.
		The object definition resides in the shared repository. This is allowed only if the queue manager is in a queue-sharing group.
		If the definition is successful, the following MQSC command is generated and sent to all active queue managers in the queue-sharing group so that they make or refresh local copies on page set zero:
		`DEFINE NAMELIST(name)`
		`REPLACE QSGDISP(COPY)`
		The Copy or Create for the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.

MQQSGD_PRIVATE	The object resides on the page set of the queue manager that executes the command, and was defined with MQQSGD_Q_MGR or MQQSGD_COPY. Any object residing in the shared repository is unaffected.	Not permitted.
MQQSGD_Q_MGR	The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameter MQQSGD_Q_MGR. Any object residing in the shared repository, or any local copy of such an object, is not affected by this command. This value is the default value.	The object is defined on the page set of the queue manager that executes the command. This value is the default value.

***Replace* (MQCFIN)**
Replace attributes (parameter identifier: MQIACF_REPLACE).

If a namelist definition with the same name as *ToNamelistName* exists, this definition specifies whether it is to be replaced. The value can be:

MQRP_YES
Replace existing definition.

MQRP_NO
Do not replace existing definition.

Change, Copy, and Create Process

The Change Process command changes existing process definitions. The Copy and Create Process commands create new process definitions - the Copy command uses attribute values of an existing process definition.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

The Change Process (MQCMD_CHANGE_PROCESS) command changes the specified attributes of an existing WebSphere MQ process definition. For any optional parameters that are omitted, the value does not change.

The Copy Process (MQCMD_COPY_PROCESS) command creates a WebSphere MQ process definition, using, for attributes not specified in the command, the attribute values of an existing process definition.

The Create Process (MQCMD_CREATE_PROCESS) command creates a WebSphere MQ process definition. Any attributes that are not defined explicitly are set to the default values on the destination queue manager.

Required parameters (Change and Create Process)

***ProcessName* (MQCFST)**
The name of the process definition to be changed or created (parameter identifier: MQCA_PROCESS_NAME).

The maximum length of the string is MQ_PROCESS_NAME_LENGTH.

Required parameters (Copy Process)

***FromProcessName* (MQCFST)**
The name of the process definition to be copied from (parameter identifier: MQCACF_FROM_PROCESS_NAME).

Specifies the name of the existing process definition that contains values for the attributes not specified in this command.

On z/OS, the queue manager searches for an object with the name you specify and a disposition of MQQSGD_Q_MGR or MQQSGD_COPY to copy from. This parameter is ignored if a value of MQQSGD_COPY is specified for *QSGDisposition*. In this case, an object with the name specified by *ToProcessName* and the disposition MQQSGD_GROUP is searched for to copy from.

The maximum length of the string is MQ_PROCESS_NAME_LENGTH.

***ToProcessName* (MQCFST)**
To process name (parameter identifier: MQCACF_TO_PROCESS_NAME).

The name of the new process definition. If a process definition with this name exists, *Replace* must be specified as MQRP_YES.

The maximum length of the string is MQ_PROCESS_NAME_LENGTH.

Optional parameters (Change, Copy, and Create Process)

***ApplId* (MQCFST)**
Application identifier (parameter identifier: MQCA_APPL_ID).

ApplId is the name of the application to be started. The application must be on the platform for which the command is executing. The name might typically be a fully qualified file name of an executable object. Qualifying the file name is particularly important if you have multiple IBM WebSphere MQ installations, to ensure the correct version of the application is run.

The maximum length of the string is MQ_PROCESS_APPL_ID_LENGTH.

***ApplType* (MQCFIN)**
Application type (parameter identifier: MQIA_APPL_TYPE).

Valid application types are:

MQAT_OS400
IBM i application.

MQAT_WINDOWS_NT
Windows or Windows 95, Windows 98 application.

MQAT_DOS
DOS client application.

MQAT_WINDOWS
Windows client application.

MQAT_UNIX
UNIX application.

MQAT_AIX
AIX application (same value as MQAT_UNIX).

MQAT_CICS
CICS transaction.

MQAT_NSK
HP Integrity NonStop Server application.

MQAT_ZOS
z/OS application.

MQAT_DEFAULT
Default application type.

integer: System-defined application type in the range zero through 65 535 or a user-defined application type in the range 65 536 through 999 999 999 (not checked).

Only specify application types (other than user-defined types) that are supported on the platform at which the command is executed:

- On IBM i:

  MQAT_OS400,
  MQAT_CICS, and
  MQAT_DEFAULT are supported.

- On HP Integrity NonStop Server:

  MQAT_NSK,
  MQAT_DOS,
  MQAT_WINDOWS, and
  MQAT_DEFAULT are supported.

- On UNIX systems:

  MQAT_UNIX,
  MQAT_OS2,
  MQAT_DOS,
  MQAT_WINDOWS,
  MQAT_CICS, and
  MQAT_DEFAULT are supported.

- On Windows:

  MQAT_WINDOWS_NT,
  MQAT_OS2,
  MQAT_DOS,
  MQAT_WINDOWS,

MQAT_CICS, and
MQAT_DEFAULT are supported.

- On z/OS:

  MQAT_DOS,
  MQAT_IMS
  MQAT_MVS,
  MQAT_UNIX,
  MQAT_CICS, and
  MQAT_DEFAULT are supported.

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- Blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- A queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. In a shared queue environment, you can provide a different queue manager name from the one you are using to enter the command. The command server must be enabled.
- An asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***EnvData* (MQCFST)**
Environment data (parameter identifier: MQCA_ENV_DATA).

A character string that contains environment information pertaining to the application to be started.

The maximum length of the string is MQ_PROCESS_ENV_DATA_LENGTH.

***ProcessDesc* (MQCFST)**
Description of process definition (parameter identifier: MQCA_PROCESS_DESC).

A plain-text comment that provides descriptive information about the process definition. It must contain only displayable characters.

The maximum length of the string is MQ_PROCESS_DESC_LENGTH.

Use characters from the coded character set identifier (CCSID) for this queue manager. Other characters might be translated incorrectly if the information is sent to another queue manager.

***QSGDisposition* (MQCFIN)**
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves). The value can be:

QSGDisposition	Change	Copy, Create
MQQSGD_COPY	The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameter MQQSGD_COPY. Any object residing in the shared repository, or any object defined using a command that had the parameters MQQSGD_Q_MGR, is not affected by this command.	The object is defined on the page set of the queue manager that executes the command using the MQQSGD_GROUP object of the same name as the *ToProcessName* object (for Copy) or *ProcessName* object (for Create).

MQQSGD_GROUP	The object definition resides in the shared repository. The object was defined using a command that had the parameters QSGDISP(GROUP). On the page set of the queue manager that executes the command, only a local copy of the object is altered by this command. If the command is successful, the following command is generated.
	`DEFINE PROCESS(process-name)`
	`REPLACE QSGDISP(COPY)`
	The command is sent to all active queue managers in the queue-sharing group to attempt to refresh local copies on page set zero. The Change for the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.
		The object definition resides in the shared repository. GROUP is allowed only if the queue manager is in a queue-sharing group. If the definition is successful, the following command is generated.
		`DEFINE PROCESS(process-name)`
		`REPLACE QSGDISP(COPY)`
		The command is sent to all active queue managers in the queue-sharing group to attempt to make or refresh local copies on page set zero. The Copy or Create for the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.

MQQSGD_PRIVATE	The object resides on the page set of the queue manager that executes the command, and was defined with MQQSGD_Q_MGR or MQQSGD_COPY. Any object residing in the shared repository is unaffected.	Not permitted.
MQQSGD_Q_MGR	The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameter MQQSGD_Q_MGR. Any object residing in the shared repository, or any local copy of such an object, is not affected by this command. MQQSGD_Q_MGR is the default value.	The object is defined on the page set of the queue manager that executes the command. MQQSGD_Q_MGR is the default value.

***Replace* (MQCFIN)**
Replace attributes (parameter identifier: MQIACF_REPLACE).

If a process definition with the same name as *ToProcessName* exists, specify whether to replace it.

The value can be:

MQRP_YES
Replace existing definition.

MQRP_NO
Do not replace existing definition.

***UserData* (MQCFST)**
User data (parameter identifier: MQCA_USER_DATA).

A character string that contains user information pertaining to the application (defined by *ApplId*) that is to be started.

For Microsoft Windows, the character string must not contain double quotation marks if the process definition is going to be passed to **runmqtrm**.

The maximum length of the string is MQ_PROCESS_USER_DATA_LENGTH.

Change, Copy, and Create Queue

The Change Queue command changes existing queue definitions. The Copy and Create Queue commands create new queue definitions - the Copy command uses attribute values of an existing queue definition.

HP Integrity NonStop Server	UNIX and Linux	Windows
✓	✓	✓

The Change Queue command MQCMD_CHANGE_Q changes the specified attributes of an existing WebSphere MQ queue. For any optional parameters that are omitted, the value does not change.

The Copy Queue command MQCMD_COPY_Q creates a queue definition of the same type. For attributes not specified in the command, it uses the attribute values of an existing queue definition.

The Create Queue command MQCMD_CREATE_Q creates a queue definition with the specified attributes. All attributes that are not specified are set to the default value for the type of queue that is created.

Required parameters (Change and Create Queue)

***QName* (MQCFST)**
Queue name (parameter identifier: MQCA_Q_NAME).

The name of the queue to be changed. The maximum length of the string is MQ_Q_NAME_LENGTH.

Required parameters (Copy Queue)

***FromQName* (MQCFST)**
From queue name (parameter identifier: MQCACF_FROM_Q_NAME).

Specifies the name of the existing queue definition.

On z/OS, the queue manager searches for an object with the name you specify and a disposition of MQQSGD_Q_MGR, MQQSGD_COPY, or MQQSGD_SHARED to copy from. This parameter is ignored if a value of MQQSGD_COPY is specified for *QSGDisposition*. In this case, an object with the name specified by *ToQName* and the disposition MQQSGD_GROUP is searched for to copy from.

The maximum length of the string is MQ_Q_NAME_LENGTH.

***ToQName* (MQCFST)**
To queue name (parameter identifier: MQCACF_TO_Q_NAME).

Specifies the name of the new queue definition.

The maximum length of the string is MQ_Q_NAME_LENGTH.

Queue names must be unique; if a queue definition exists with the name and type of the new queue, *Replace* must be specified as MQRP_YES. If a queue definition exists with the same name as and a different type from the new queue, the command fails.

Required parameters (all commands)

***QType*(MQCFIN)**
Queue type (parameter identifier: MQIA_Q_TYPE).

The value specified must match the type of the queue being changed.

The value can be:

MQQT_ALIAS
Alias queue definition.

MQQT_LOCAL
Local queue.

MQQT_REMOTE
Local definition of a remote queue.

MQQT_MODEL
Model queue definition.

Optional parameters (Change, Copy, and Create Queue)

***BackoutRequeueName*(MQCFST)**
Excessive backout requeue name (parameter identifier: MQCA_BACKOUT_REQ_Q_NAME).

Specifies the name of the queue to which a message is transferred if it is backed out more times than the value of *BackoutThreshold*. The queue does not have to be a local queue.

The backout queue does not need to exist at this time but it must exist when the *BackoutThreshold* value is exceeded.

The maximum length of the string is MQ_Q_NAME_LENGTH.

***BackoutThreshold*(MQCFIN)**
Backout threshold (parameter identifier: MQIA_BACKOUT_THRESHOLD).

The number of times a message can be backed out before it is transferred to the backout queue specified by *BackoutRequeueName*.

If the value is later reduced, messages that are already on the queue that were backed out at least as many times as the new value remain on the queue. Those messages are transferred if they are backed out again.

Specify a value in the range 0 - 999,999,999.

***BaseObjectName*(MQCFST)**
Name of the object to which the alias resolves (parameter identifier: MQCA_BASE_OBJECT_NAME).

This parameter is the name of a queue or topic that is defined to the local queue manager.

The maximum length of the string is MQ_OBJECT_NAME_LENGTH.

***BaseQName*(MQCFST)**
Queue name to which the alias resolves (parameter identifier: MQCA_BASE_Q_NAME).

This parameter is the name of a local or remote queue that is defined to the local queue manager.

The maximum length of the string is MQ_Q_NAME_LENGTH.

***CFStructure*(MQCFST)**
coupling facility structure name (parameter identifier: MQCA_CF_STRUC_NAME). This parameter applies to z/OS only.

Specifies the name of the coupling facility structure where you want to store messages when you use shared queues. The name:

- Cannot have more than 12 characters
- Must start with an uppercase letter (A - Z)

- Can include only the characters A - Z and 0 - 9

The maximum length of the string is MQ_CF_STRUC_NAME_LENGTH.

The name of the queue-sharing group to which the queue manager is connected is prefixed to the name you supply. The name of the queue-sharing group is always four characters, padded with @ symbols if necessary. For example, if you use a queue-sharing group named NY03 and you supply the name PRODUCT7, the resultant coupling facility structure name is NY03PRODUCT7. Note the administrative structure for the queue-sharing group (in this case NY03CSQ_ADMIN) cannot be used for storing messages.

For local and model queues, the following rules apply. The rules apply if you use the Create Queue command with a value of MQRP_YES in the *Replace* parameter. The rules also apply if you use the Change Queue command.

- On a local queue with a value of MQQSGD_SHARED in the *QSGDisposition* parameter, *CFStructure* cannot change.

  If you need to change either the *CFStructure* or *QSGDisposition* value, you must delete and redefine the queue. To preserve any of the messages on the queue you must offload the messages before you delete the queue. Reload the messages after you redefine the queue, or move the messages to another queue.
- On a model queue with a value of MQQDT_SHARED_DYNAMIC in the *DefinitionType* parameter, *CFStructure* cannot be blank.
- On a local queue with a value other than MQQSGD_SHARED in the *QSGDisposition* parameter, the value of *CFStructure* does not matter. The value *CFStructure* also does not matter for a model queue with a value other than MQQDT_SHARED_DYNAMIC in the *DefinitionType* parameter.

For local and model queues, when you use the Create Queue command with a value of MQRP_NO in the *Replace* parameter, the coupling facility structure:

- On a local queue with a value of MQQSGD_SHARED in the *QSGDisposition* parameter, or a model queue with a value of MQQDT_SHARED_DYNAMIC in the *DefinitionType* parameter, *CFStructure* cannot be blank.
- On a local queue with a value other than MQQSGD_SHARED in the *QSGDisposition* parameter, the value of *CFStructure* does not matter. The value *CFStructure* also does not matter for a model queue with a value other than MQQDT_SHARED_DYNAMIC in the *DefinitionType* parameter.

Note: Before you can use the queue, the structure must be defined in the coupling facility Resource Management (CFRM) policy data set.

***ClusterChannelName*(MQCFST)**

This parameter is supported only on transmission queues.

ClusterChannelName is the generic name of the cluster-sender channels that use this queue as a transmission queue. The attribute specifies which cluster-sender channels send messages to a cluster-receiver channel from this cluster transmission queue. ClusterChannelName is not supported on z/OS. (Parameter identifier: MQCA_CLUS_CHL_NAME.)

You can also set the transmission queue attribute ClusterChannelName attribute to a cluster-sender channel manually. Messages that are destined for the queue manager connected by the cluster-sender channel are stored in the transmission queue that identifies the cluster-sender channel. They are not stored in the default cluster transmission queue. If you set the ClusterChannelName attribute to blanks, the channel switches to the default cluster transmission queue when the channel restarts. The default queue is either SYSTEM.CLUSTER.TRANSMIT.*ChannelName* or SYSTEM.CLUSTER.TRANSMIT.QUEUE, depending on the value of the queue manager DefClusterXmitQueueType attribute.

By specifying asterisks, "*", in ClusterChannelName, you can associate a transmission queue with a set of cluster-sender channels. The asterisks can be at the beginning, end, or any number of places in the middle of the channel name string. ClusterChannelName is limited to a length of 20 characters: MQ_CHANNEL_NAME_LENGTH.

The default queue manager configuration is for all cluster-sender channels to send messages from a single transmission queue, SYSTEM.CLUSTER.TRANSMIT.QUEUE. The default configuration can be changed by modified by changing the queue manager attribute, DefClusterXmitQueueType. The default value of the attribute is SCTQ. You can change the value to CHANNEL. If you set the DefClusterXmitQueueType attribute to CHANNEL, each cluster-sender channel defaults to using a specific cluster transmission queue, SYSTEM.CLUSTER.TRANSMIT.*ChannelName*.

***ClusterName*(MQCFST)**
Cluster name (parameter identifier: MQCA_CLUSTER_NAME).

The name of the cluster to which the queue belongs.

Changes to this parameter do not affect instances of the queue that are open.

Only one of the resultant values of *ClusterName* and *ClusterNamelist* can be nonblank; you cannot specify a value for both.

The maximum length of the string is MQ_CLUSTER_NAME_LENGTH.

***ClusterNamelist*(MQCFST)**
Cluster namelist (parameter identifier: MQCA_CLUSTER_NAMELIST).

The name of the namelist, that specifies a list of clusters to which the queue belongs.

Changes to this parameter do not affect instances of the queue that are open.

Only one of the resultant values of *ClusterName* and *ClusterNamelist* can be nonblank; you cannot specify a value for both.

***CLWLQueuePriority*(MQCFIN)**
Cluster workload queue priority (parameter identifier: MQIA_CLWL_Q_PRIORITY).

Specifies the priority of the queue in cluster workload management; see Configuring a queue manager cluster . The value must be in the range 0 - 9, where 0 is the lowest priority and 9 is the highest.

***CLWLQueueRank*(MQCFIN)**
Cluster workload queue rank (parameter identifier: MQIA_CLWL_Q_RANK).

Specifies the rank of the queue in cluster workload management. The value must be in the range 0 - 9, where 0 is the lowest priority and 9 is the highest.

***CLWLUseQ*(MQCFIN)**
Cluster workload use remote queue (parameter identifier: MQIA_CLWL_USEQ).

Specifies whether remote and local queues are to be used in cluster workload distribution. The value can be:

MQCLWL_USEQ_AS_Q_MGR
Use the value of the *CLWLUseQ* parameter on the definition of the queue manager.

MQCLWL_USEQ_ANY
Use remote and local queues.

MQCLWL_USEQ_LOCAL
Do not use remote queues.

***CommandScope*(MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is run when the queue manager is a member of a queue-sharing group. You can specify one of the following values:

- Blank, or omit the parameter altogether. The command is run on the queue manager on which it was entered.
- A queue manager name. The command is run on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue

manager on which it was entered, you must be using a queue-sharing group environment. The command server must be enabled.

- An asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***Custom*(MQCFST)**
Custom attribute for new features (parameter identifier: MQCA_CUSTOM).

This attribute is reserved for the configuration of new features before separate attributes are named. It can contain the values of zero or more attributes as pairs of attribute name and value, separated by at least one space. The attribute name and value pairs have the form NAME(VALUE). Single quotation marks must be escaped with another single quotation mark.

This description is updated when features using this attribute are introduced. There are currently no values for *Custom*.

***DefaultPutResponse*(MQCFIN)**
Default put response type definition (parameter identifier: MQIA_DEF_PUT_RESPONSE_TYPE).

The parameter specifies the type of response to be used for put operations to the queue when an application specifies MQPMO_RESPONSE_AS_Q_DEF. The value can be:

MQPRT_SYNC_RESPONSE
The put operation is issued synchronously, returning a response.

MQPRT_ASYNC_RESPONSE
The put operation is issued asynchronously, returning a subset of MQMD fields.

***DefBind*(MQCFIN)**
Bind definition (parameter identifier: MQIA_DEF_BIND).

The parameter specifies the binding to be used when MQOO_BIND_AS_Q_DEF is specified on the MQOPEN call. The value can be:

MQBND_BIND_ON_OPEN
The binding is fixed by the MQOPEN call.

MQBND_BIND_NOT_FIXED
The binding is not fixed.

MQBND_BIND_ON_GROUP
Allows an application to request that a group of messages are all allocated to the same destination instance.

Changes to this parameter do not affect instances of the queue that are open.

***DefinitionType*(MQCFIN)**
Queue definition type (parameter identifier: MQIA_DEFINITION_TYPE).

The value can be:

MQQDT_PERMANENT_DYNAMIC
Dynamically defined permanent queue.

MQQDT_SHARED_DYNAMIC
Dynamically defined shared queue. This option is available on z/OS only.

MQQDT_TEMPORARY_DYNAMIC
Dynamically defined temporary queue.

***DefInputOpenOption*(MQCFIN)**
Default input open option (parameter identifier: MQIA_DEF_INPUT_OPEN_OPTION).

Specifies the default share option for applications opening this queue for input.

The value can be:

MQOO_INPUT_EXCLUSIVE
Open queue to get messages with exclusive access.

MQOO_INPUT_SHARED
Open queue to get messages with shared access.

***DefPersistence*(MQCFIN)**
Default persistence (parameter identifier: MQIA_DEF_PERSISTENCE).

Specifies the default for message-persistence on the queue. Message persistence determines whether messages are preserved across restarts of the queue manager.

The value can be:

MQPER_PERSISTENT
Message is persistent.

MQPER_NOT_PERSISTENT
Message is not persistent.

***DefPriority*(MQCFIN)**
Default priority (parameter identifier: MQIA_DEF_PRIORITY).

Specifies the default priority of messages put on the queue. The value must be in the range zero through to the maximum priority value that is supported (9).

***DefReadAhead*(MQCFIN)**
Default read ahead (parameter identifier: MQIA_DEF_READ_AHEAD).

Specifies the default read ahead behavior for non-persistent messages delivered to the client.

The value can be:

MQREADA_NO
Non-persistent messages are not read ahead unless the client application is configured to request read ahead.

MQREADA_YES
Non-persistent messages are sent ahead to the client before an application requests them. Non-persistent messages can be lost if the client ends abnormally or if the client does not consume all the messages it is sent.

MQREADA_DISABLED
Read ahead of non-persistent messages is not enabled for this queue. Messages are not sent ahead to the client regardless of whether read ahead is requested by the client application.

***DistLists*(MQCFIN)**
Distribution list support (parameter identifier: MQIA_DIST_LISTS).

Specifies whether distribution-list messages can be placed on the queue.

Note: This attribute is set by the sending message channel agent (MCA). The sending MCA removes messages from the queue each time it establishes a connection to a receiving MCA on a partner queue manager. The attribute is not normally set by administrators, although it can be set if the need arises.

This parameter is supported in the following environments: AIX, HP-UX, IBM i, Solaris, Windows, and Linux.

The value can be:

MQDL_SUPPORTED
Distribution lists supported.

MQDL_NOT_SUPPORTED
Distribution lists not supported.

***Force*(MQCFIN)**
Force changes (parameter identifier: MQIACF_FORCE).

Specifies whether the command must be forced to complete when conditions are such that completing the command would affect an open queue. The conditions depend upon the type of the queue that is being changed:

QALIAS
BaseQName is specified with a queue name and an application has the alias queue open.

QLOCAL
Either of the following conditions indicates that a local queue would be affected:

- *Shareability* is specified as MQQA_NOT_SHAREABLE and more than one application has the local queue open for input.
- The *Usage* value is changed and one or more applications has the local queue open, or there are one or more messages on the queue. (The *Usage* value must not normally be changed while there are messages on the queue. The format of messages changes when they are put on a transmission queue.)

QREMOTE
Either of the following conditions indicates that a remote queue would be affected:

- If *XmitQName* is specified with a transmission-queue name, or blank, and an application has a remote queue open that would be affected by this change.
- If any of the following parameters are specified with a queue or queue-manager name, and one or more applications has a queue open that resolved through this definition as a queue-manager alias. The parameters are:
  1. *RemoteQName*
  2. *RemoteQMgrName*
  3. *XmitQName*

QMODEL
This parameter is not valid for model queues.

Note: A value of MQFC_YES is not required if this definition is in use as a reply-to queue definition only.

The value can be:

MQFC_YES
Force the change.

MQFC_NO
Do not force the change.

***HardenGetBackout*(MQCFIN)**
Harden the backout count, or not (parameter identifier: MQIA_HARDEN_GET_BACKOUT).

Specifies whether the count of backed out messages is saved (hardened) across restarts of the message queue manager.

Note: WebSphere MQ for IBM i always hardens the count, regardless of the setting of this attribute.

The value can be:

MQQA_BACKOUT_HARDENED
Backout count remembered.

MQQA_BACKOUT_NOT_HARDENED
Backout count might not be remembered.

***IndexType*(MQCFIN)**
Index type (parameter identifier: MQIA_INDEX_TYPE). This parameter applies to z/OS only.

Specifies the type of index maintained by the queue manager to expedite MQGET operations on the queue. For shared queues, the type of index determines what type of MQGET calls can be used. The value can be:

MQIT_NONE
No index.

MQIT_MSG_ID
The queue is indexed using message identifiers.

MQIT_CORREL_ID
The queue is indexed using correlation identifiers.

MQIT_MSG_TOKEN
The queue is indexed using message tokens.

MQIT_GROUP_ID
The queue is indexed using group identifiers.

Messages can be retrieved using a selection criterion only if an appropriate index type is maintained, as the following table shows:

Retrieval selection criterion	***IndexType* required**	
	Shared queue	**Other queue**
None (sequential retrieval)	Any	Any
Message identifier	MQIT_MSG_ID or MQIT_NONE	Any
Correlation identifier	MQIT_CORREL_ID	Any
Message and correlation identifiers	MQIT_MSG_ID or MQIT_CORREL_ID	Any
Group identifier	MQIT_GROUP_ID	Any
Grouping	MQIT_GROUP_ID	MQIT_GROUP_ID
Message token	Not allowed	MQIT_MSG_TOKEN

***InhibitGet*(MQCFIN)**
Get operations are allowed or inhibited (parameter identifier: MQIA_INHIBIT_GET).

The value can be:

MQQA_GET_ALLOWED
Get operations are allowed.

MQQA_GET_INHIBITED
Get operations are inhibited.

***InhibitPut*(MQCFIN)**
Put operations are allowed or inhibited (parameter identifier: MQIA_INHIBIT_PUT).

Specifies whether messages can be put on the queue.

The value can be:

MQQA_PUT_ALLOWED
Put operations are allowed.

MQQA_PUT_INHIBITED
Put operations are inhibited.

***InitiationQName*(MQCFST)**
Initiation queue name (parameter identifier: MQCA_INITIATION_Q_NAME).

The local queue for trigger messages relating to this queue. The initiation queue must be on the same queue manager.

The maximum length of the string is MQ_Q_NAME_LENGTH.

***MaxMsgLength*(MQCFIN)**
Maximum message length (parameter identifier: MQIA_MAX_MSG_LENGTH).

The maximum length for messages on the queue. Applications might use the value of this attribute to determine the size of buffer they need to retrieve messages from the queue. If you change this value it might cause an application to operate incorrectly.

Do not set a value that is greater than the *MaxMsgLength* attribute of a queue manager.

The lower limit for this parameter is 0. The upper limit depends on the environment:

- On AIX, HP Integrity NonStop Server, HP-UX, IBM i, Solaris, Linux, Windows, and z/OS, the maximum message length is 100 MB (104,857,600 bytes).
- On other UNIX systems, the maximum message length is 4 MB (4,194,304 bytes).

***MaxQDepth*(MQCFIN)**
Maximum queue depth (parameter identifier: MQIA_MAX_Q_DEPTH).

The maximum number of messages allowed on the queue.

Note: Other factors might cause the queue to be treated as full. For example, it appears to be full if there is no storage available for a message.

Specify a value greater than or equal to 0, and less than or equal to:

- 999,999,999 if the queue is on AIX, HP-UX, IBM i, Solaris, Linux, Windows, or z/OS
- 640,000 if the queue is on any otherIBM WebSphere MQ platform.

***MsgDeliverySequence*(MQCFIN)**
Messages are delivered in priority order or sequence (parameter identifier: MQIA_MSG_DELIVERY_SEQUENCE).

The value can be:

MQMDS_PRIORITY
Messages are returned in priority order.

MQMDS_FIFO
Messages are returned in FIFO order (first in, first out).

***NonPersistentMessageClass*(MQCFIN)**
The level of reliability to be assigned to non-persistent messages that are put to the queue (parameter identifier: MQIA_NPM_CLASS).

The value can be:

MQNPM_CLASS_NORMAL
Non-persistent messages persist as long as the lifetime of the queue manager session. They are discarded in the event of a queue manager restart. This value is the default value.

MQNPM_CLASS_HIGH
The queue manager attempts to retain non-persistent messages for the lifetime of the queue. Non-persistent messages might still be lost in the event of a failure.

This parameter is valid only on local and model queues. It is not valid on z/OS.

***ProcessName*(MQCFST)**
Name of process definition for the queue (parameter identifier: MQCA_PROCESS_NAME).

Specifies the local name of the WebSphere MQ process that identifies the application to be started when a trigger event occurs.

- If the queue is a transmission queue, the process definition contains the name of the channel to be started. This parameter is optional for transmission queues on AIX, HP-UX, Linux, IBM i, Solaris, Windows, and z/OS. If you do not specify it, the channel name is taken from the value specified for the *TriggerData* parameter.
- In other environments, the process name must be nonblank for a trigger event to occur, although it can be set after creating the queue.

The maximum length of the string is MQ_PROCESS_NAME_LENGTH.

***PropertyControl* (MQCFIN)**
Property control attribute (parameter identifier: MQIA_PROPERTY_CONTROL).

Specifies how message properties are handled when messages are retrieved from queues using the MQGET call with the MQGMO_PROPERTIES_AS_Q_DEF option. The value can be:

MQPROP_COMPATIBILITY
If the message contains a property with a prefix of **mcd.**, **jms.**, **usr.** or **mqext.**, all message properties are delivered to the application in an MQRFH2 header. Otherwise all properties of the message, except those properties contained in the message descriptor (or extension), are discarded and are no longer accessible to the application.

This value is the default value. It allows applications which expect JMS-related properties to be in an MQRFH2 header in the message data to continue to work unmodified.

MQPROP_NONE
All properties of the message are removed from the message before the message is sent to the remote queue manager. Properties in the message descriptor, or extension, are not removed.

MQPROP_ALL
All properties of the message are included with the message when it is sent to the remote queue manager. The properties, except those properties in the message descriptor (or extension), are placed in one or more MQRFH2 headers in the message data.

MQPROP_FORCE_MQRFH2
Properties are always returned in the message data in an MQRFH2 header regardless of whether the application specifies a message handle.

A valid message handle supplied in the MsgHandle field of the MQGMO structure on the MQGET call is ignored. Properties of the message are not accessible using the message handle.

MQPROP_V6COMPAT
Any application MQRFH2 header is received as it was sent. Any properties set using MQSETMP must be retrieved using MQINQMP. They are not added to the MQRFH2 created by the application. Properties that were set in the MQRFH2 header by the sending application cannot be retrieved using MQINQMP.

This parameter is applicable to Local, Alias, and Model queues.

***QDepthHighEvent*(MQCFIN)**
Controls whether Queue Depth High events are generated (parameter identifier: MQIA_Q_DEPTH_HIGH_EVENT).

A Queue Depth High event indicates that an application put a message on a queue. This event caused the number of messages on the queue to become greater than or equal to the queue depth high threshold. See the *QDepthHighLimit* parameter.

Note: The value of this attribute can change implicitly; see "Definitions of the Programmable Command Formats" on page 685.

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

***QDepthHighLimit*(MQCFIN)**
High limit for queue depth (parameter identifier: MQIA_Q_DEPTH_HIGH_LIMIT).

The threshold against which the queue depth is compared to generate a Queue Depth High event.

This event indicates that an application put a message to a queue. This event caused the number of messages on the queue to become greater than or equal to the queue depth high threshold. See the *QDepthHighEvent* parameter.

The value is expressed as a percentage of the maximum queue depth, *MaxQDepth*. It must be greater than or equal to 0 and less than or equal to 100.

***QDepthLowEvent*(MQCFIN)**
Controls whether Queue Depth Low events are generated (parameter identifier: MQIA_Q_DEPTH_LOW_EVENT).

A Queue Depth Low event indicates that an application retrieved a message from a queue. This event caused the number of messages on the queue to become less than or equal to the queue depth low threshold. See the *QDepthLowLimit* parameter.

Note: The value of this attribute can change implicitly. See "Definitions of the Programmable Command Formats" on page 685.

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

***QDepthLowLimit*(MQCFIN)**
Low limit for queue depth (parameter identifier: MQIA_Q_DEPTH_LOW_LIMIT).

The threshold against which the queue depth is compared to generate a Queue Depth Low event.

This event indicates that an application retrieved a message from a queue. This event caused the number of messages on the queue to become less than or equal to the queue depth low threshold. See the *QDepthLowEvent* parameter.

Specify the value as a percentage of the maximum queue depth (*MaxQDepth* attribute), in the range 0 through 100.

***QDepthMaxEvent*(MQCFIN)**
Controls whether Queue Full events are generated (parameter identifier: MQIA_Q_DEPTH_MAX_EVENT).

A Queue Full event indicates that an MQPUT call to a queue was rejected because the queue is full. That is, the queue depth reached its maximum value.

Note: The value of this attribute can change implicitly; see "Definitions of the Programmable Command Formats" on page 685.

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

***QDesc*(MQCFST)**
Queue description (parameter identifier: MQCA_Q_DESC).

Text that briefly describes the object.

The maximum length of the string is MQ_Q_DESC_LENGTH.

Use characters from the character set identified by the coded character set identifier (CCSID) for the message queue manager on which the command is executing. This choice ensures that the text is translated correctly if it is sent to another queue manager.

***QServiceInterval*(MQCFIN)**
Target for queue service interval (parameter identifier: MQIA_Q_SERVICE_INTERVAL).

The service interval used for comparison to generate Queue Service Interval High and Queue Service Interval OK events. See the *QServiceIntervalEvent* parameter.

Specify a value in the range 0 through 999 999 999 milliseconds.

***QServiceIntervalEvent*(MQCFIN)**
Controls whether Service Interval High or Service Interval OK events are generated (parameter identifier: MQIA_Q_SERVICE_INTERVAL_EVENT).

A Queue Service Interval High event is generated when a check indicates that no messages were retrieved from, or put to, the queue for at least the time indicated by the *QServiceInterval* attribute.

A Queue Service Interval OK event is generated when a check indicates that a message was retrieved from the queue within the time indicated by the *QServiceInterval* attribute.

Note: The value of this attribute can change implicitly; see "Definitions of the Programmable Command Formats" on page 685.

The value can be:

MQQSIE_HIGH
Queue Service Interval High events enabled.

- Queue Service Interval High events are enabled and
- Queue Service Interval OK events are disabled.

MQQSIE_OK
Queue Service Interval OK events enabled.

- Queue Service Interval High events are disabled and
- Queue Service Interval OK events are enabled.

MQQSIE_NONE
No queue service interval events enabled.

- Queue Service Interval High events are disabled and
- Queue Service Interval OK events are also disabled.

***QSGDisposition*(MQCFIN)**
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves). The value can be:

QSGDisposition	Change	Copy, Create
MQQSGD_COPY	The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameter MQQSGD_COPY. Any object residing in the shared repository, or any object defined using a command that had the parameters MQQSGD_Q_MGR, is not affected by this command.	The object is defined on the page set of the queue manager that executes the command using the MQQSGD_GROUP object of the same name as the *ToQName* object (for Copy) or the *QName* object (for Create). For local queues, messages are stored on the page sets of each queue manager and are available only through that queue manager.

QSGDisposition	Change	Copy, Create

MQQSGD_GROUP	The object definition resides in the shared repository. The object was defined using a command that had the parameter MQQSGD_GROUP. Any object residing on the page set of the queue manager that executes the command (except a local copy of the object) is not affected by this command.
	If the command is successful, the following MQSC command is generated and sent to all active queue managers in the queue-sharing group to attempt to refresh local copies on page set zero:
	`DEFINE QUEUE(q-name)`
	`REPLACE QSGDISP(COPY)`
	The Change for the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.
		The object definition resides in the shared repository. This value is allowed only in a shared queue manager environment.
		If the definition is successful, the following MQSC command is generated and sent to all active queue managers to attempt to make or refresh local copies on page set zero:
		`DEFINE QUEUE(q-name)`
		`REPLACE QSGDISP(COPY)`
		The Copy or Create for the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.

MQQSGD_PRIVATE	The object resides on the page set of the queue manager that executes the command, and was defined with MQQSGD_Q_MGR or MQQSGD_COPY. Any object residing in the shared repository is unaffected.	Not permitted.
MQQSGD_Q_MGR	The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameter MQQSGD_Q_MGR. Any object residing in the shared repository, or any local copy of such an object, is not affected by this command. This value is the default value.	The object is defined on the page set of the queue manager that executes the command. This value is the default value. For local queues, messages are stored on the page sets of each queue manager and are available only through that queue manager.
MQQSGD_SHARED	This value applies only to local queues. The object definition resides in the shared repository. The object was defined by a command using the parameter MQQSGD_SHARED. Any object residing on the page set of the queue manager that executes the command, or any object defined by a command using the parameter MQQSGD_GROUP, is not affected by this command.	This option applies only to local queues. The object is defined in the shared repository. Messages are stored in the coupling facility and are available to any queue manager in the queue-sharing group. You can specify MQQSGD_SHARED only if: • *CFStructure* is nonblank • *IndexType* is not MQIT_MSG_TOKEN • The queue is not one of the following: – SYSTEM.CHANNEL.INITQ – SYSTEM.COMMAND.INPUT

***QueueAccounting*(MQCFIN)**

Controls the collection of accounting data (parameter identifier: MQIA_ACCOUNTING_Q).

The value can be:

MQMON_Q_MGR
The collection of accounting data for the queue is performed based upon the setting of the *QueueAccounting* parameter on the queue manager.

MQMON_OFF
Accounting data collection is disabled for the queue.

MQMON_ON
If the value of the queue manager's *QueueAccounting* parameter is not MQMON_NONE, accounting data collection is enabled for the queue.

***QueueMonitoring*(MQCFIN)**
Online monitoring data collection (parameter identifier: MQIA_MONITORING_Q).

Specifies whether online monitoring data is to be collected and, if so, the rate at which the data is collected. The value can be:

MQMON_OFF
Online monitoring data collection is turned off for this queue.

MQMON_Q_MGR
The value of the queue manager's *QueueMonitoring* parameter is inherited by the queue.

MQMON_LOW
If the value of the queue manager *QueueMonitoring* parameter is not MQMON_NONE, online monitoring data collection is turned on. The rate of data collection is low for this queue.

MQMON_MEDIUM
If the value of the queue manager *QueueMonitoring* parameter is not MQMON_NONE, online monitoring data collection is turned on. The rate of data collection is moderate for this queue.

MQMON_HIGH
If the value of the queue manager *QueueMonitoring* parameter is not MQMON_NONE, online monitoring data collection is turned on. The rate of data collection is high for this queue.

***QueueStatistics*(MQCFIN)**
Statistics data collection (parameter identifier: MQIA_STATISTICS_Q).

Specifies whether statistics data collection is enabled. The value can be:

MQMON_Q_MGR
The value of the queue manager's *QueueStatistics* parameter is inherited by the queue.

MQMON_OFF
Statistics data collection is disabled

MQMON_ON
If the value of the queue manager's *QueueStatistics* parameter is not MQMON_NONE, statistics data collection is enabled

This parameter is valid only on IBM i, UNIX systems, and Windows.

***RemoteQMgrName*(MQCFST)**
Name of remote queue manager (parameter identifier: MQCA_REMOTE_Q_MGR_NAME).

If an application opens the local definition of a remote queue, *RemoteQMgrName* must not be blank or the name of the queue manager the application is connected to. If *XmitQName* is blank there must be a local queue called *RemoteQMgrName*. That queue is used as the transmission queue.

If this definition is used for a queue-manager alias, *RemoteQMgrName* is the name of the queue manager. The queue manager name can be the name of the connected queue manager. If *XmitQName* is blank, when the queue is opened there must be a local queue called *RemoteQMgrName*. That queue is used as the transmission queue.

If this definition is used for a reply-to queue alias, *RemoteQMgrName* is the name of the queue manager that is to be the reply-to queue manager.

The maximum length of the string is MQ_Q_MGR_NAME_LENGTH.

***RemoteQName*(MQCFST)**
Name of remote queue as known locally on the remote queue manager (parameter identifier: MQCA_REMOTE_Q_NAME).

If this definition is used for a local definition of a remote queue, *RemoteQName* must not be blank when the open occurs.

If this definition is used for a queue-manager alias definition, *RemoteQName* must be blank when the open occurs.

If this definition is used for a reply-to queue alias, this name is the name of the queue that is to be the reply-to queue.

The maximum length of the string is MQ_Q_NAME_LENGTH.

***Replace*(MQCFIN)**
Replace attributes (parameter identifier: MQIACF_REPLACE). This parameter is not valid on a Change Queue command.

If the object exists, the effect is like issuing the Change Queue command. It is like a Change Queue command without the MQFC_YES option on the *Force* parameter, and with all of the other attributes specified. In particular, note that any messages which are on the existing queue are retained.

The Change Queue command without MQFC_YES on the *Force* parameter, and the Create Queue command with MQRP_YES on the *Replace* parameter, are different. The difference is that the Change Queue command does not change unspecified attributes. Create Queue with MQRP_YES sets all the attributes. If you use MQRP_YES, unspecified attributes are taken from the default definition, and the attributes of the object being replaced, if one exists, are ignored.)

The command fails if both of the following are true:

- The command sets attributes that would require the use of MQFC_YES on the *Force* parameter if you were using the Change Queue command
- The object is open

The Change Queue command with MQFC_YES on the *Force* parameter succeeds in this situation.

If MQSCO_CELL is specified on the *Scope* parameter on UNIX systems, and there is already a queue with the same name in the cell directory, the command fails. The command fails even if MQRP_YES is specified.

The value can be:

MQRP_YES
Replace existing definition.

MQRP_NO
Do not replace existing definition.

***RetentionInterval*(MQCFIN)**
Retention interval (parameter identifier: MQIA_RETENTION_INTERVAL).

The number of hours for which the queue might be needed, based on the date and time when the queue was created.

This information is available to a housekeeping application or an operator and can be used to determine when a queue is no longer required. The queue manager does not delete queues nor does it prevent queues from being deleted if their retention interval is not expired. It is the responsibility of the user to take any required action.

Specify a value in the range 0 - 999,999,999.

***Scope*(MQCFIN)**
Scope of the queue definition (parameter identifier: MQIA_SCOPE).

Specifies whether the scope of the queue definition extends beyond the queue manager which owns the queue. It does so if the queue name is contained in a cell directory, so that it is known to all the queue managers within the cell.

If this attribute is changed from MQSCO_CELL to MQSCO_Q_MGR, the entry for the queue is deleted from the cell directory.

Model and dynamic queues cannot be changed to have cell scope.

If it is changed from MQSCO_Q_MGR to MQSCO_CELL, an entry for the queue is created in the cell directory. If there is already a queue with the same name in the cell directory, the command fails. The command also fails if no name service supporting a cell directory is configured.

The value can be:

MQSCO_Q_MGR
Queue-manager scope.

MQSCO_CELL
Cell scope.

This value is not supported on IBM i.

This parameter is not available on z/OS.

***Shareability*(MQCFIN)**
The queue can be shared, or not (parameter identifier: MQIA_SHAREABILITY).

Specifies whether multiple instances of applications can open this queue for input.

The value can be:

MQQA_SHAREABLE
Queue is shareable.

MQQA_NOT_SHAREABLE
Queue is not shareable.

***StorageClass*(MQCFST)**
Storage class (parameter identifier: MQCA_STORAGE_CLASS). This parameter applies to z/OS only.

Specifies the name of the storage class.

The maximum length of the string is MQ_STORAGE_CLASS_LENGTH.

***TargetType*(MQCFIN)**
Target type (parameter identifier: MQIA_BASE_TYPE).

Specifies the type of object to which the alias resolves.

The value can be:

MQOT_Q
The object is a queue.

MQOT_TOPIC
The object is a topic.

***TriggerControl*(MQCFIN)**
Trigger control (parameter identifier: MQIA_TRIGGER_CONTROL).

Specifies whether trigger messages are written to the initiation queue.

The value can be:

MQTC_OFF
Trigger messages not required.

MQTC_ON
Trigger messages required.

***TriggerData*(MQCFST)**
Trigger data (parameter identifier: MQCA_TRIGGER_DATA).

Specifies user data that the queue manager includes in the trigger message. This data is made available to the monitoring application that processes the initiation queue and to the application that is started by the monitor.

The maximum length of the string is MQ_TRIGGER_DATA_LENGTH.

***TriggerDepth*(MQCFIN)**
Trigger depth (parameter identifier: MQIA_TRIGGER_DEPTH).

Specifies (when *TriggerType* is MQTT_DEPTH) the number of messages that initiates a trigger message to the initiation queue. The value must be in the range 1 through 999 999 999.

***TriggerMsgPriority*(MQCFIN)**
Threshold message priority for triggers (parameter identifier: MQIA_TRIGGER_MSG_PRIORITY).

Specifies the minimum priority that a message must have before it can cause, or be counted for, a trigger event. The value must be in the range of priority values that is supported (0 through 9).

***TriggerType*(MQCFIN)**
Trigger type (parameter identifier: MQIA_TRIGGER_TYPE).

Specifies the condition that initiates a trigger event. When the condition is true, a trigger message is sent to the initiation queue.

The value can be:

MQTT_NONE
No trigger messages.

MQTT_EVERY
Trigger message for every message.

MQTT_FIRST
Trigger message when queue depth goes from 0 to 1.

MQTT_DEPTH
Trigger message when depth threshold exceeded.

***Usage*(MQCFIN)**
Usage (parameter identifier: MQIA_USAGE).

Specifies whether the queue is for normal usage or for transmitting messages to a remote message queue manager.

The value can be:

MQUS_NORMAL
Normal usage.

MQUS_TRANSMISSION
Transmission queue.

***XmitQName*(MQCFST)**
Transmission queue name (parameter identifier: MQCA_XMIT_Q_NAME).

Specifies the local name of the transmission queue to be used for messages destined for either a remote queue or for a queue-manager alias definition.

If *XmitQName* is blank, a queue with the same name as *RemoteQMgrName* is used as the transmission queue.

This attribute is ignored if the definition is being used as a queue-manager alias and *RemoteQMgrName* is the name of the connected queue manager.

It is also ignored if the definition is used as a reply-to queue alias definition.

The maximum length of the string is MQ_Q_NAME_LENGTH.

Error codes (Change, Copy, and Create Queue)

This command might return the following errors in the response format header, in addition to the values shown on in “Error codes applicable to all commands” on page 687.

***Reason*(MQLONG)**
The value can be:

MQRCCF_CELL_DIR_NOT_AVAILABLE
Cell directory is not available.

MQRCCF_CLUSTER_NAME_CONFLICT
Cluster name conflict.

MQRCCF_CLUSTER_Q_USAGE_ERROR
Cluster usage conflict.

MQRCCF_DYNAMIC_Q_SCOPE_ERROR
Dynamic queue scope error.

MQRCCF_FORCE_VALUE_ERROR
Force value not valid.

MQRCCF_Q_ALREADY_IN_CELL
Queue exists in cell.

MQRCCF_Q_TYPE_ERROR
Queue type not valid.

Change Queue Manager

The Change Queue Manager (MQCMD_CHANGE_Q_MGR) command changes the specified attributes of the queue manager.

HP Integrity NonStop Server	UNIX and Linux	Windows
✓	✓	✓

For any optional parameters that are omitted, the value does not change.

Required parameters:
None

Optional parameters (Change Queue Manager)

***AccountingConnOverride*(MQCFIN)**
Specifies whether applications can override the settings of the *QueueAccounting* and *MQIAccounting* queue manager parameters (parameter identifier: MQIA_ACCOUNTING_CONN_OVERRIDE).

The value can be:

MQMON_DISABLED
Applications cannot override the settings of the *QueueAccounting* and *MQIAccounting* parameters.

This value is the initial default value for the queue manager.

MQMON_ENABLED
Applications can override the settings of the *QueueAccounting* and *MQIAccounting* parameters by using the options field of the MQCNO structure of the MQCONNX API call.

This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

***AccountingInterval*(MQCFIN)**
The time interval, in seconds, at which intermediate accounting records are written (parameter identifier: MQIA_ACCOUNTING_INTERVAL).

Specify a value in the range 1 - 604,000.

This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

***ActivityRecording*(MQCFIN)**
Specifies whether activity reports can be generated (parameter identifier: MQIA_ACTIVITY_RECORDING).

The value can be:

MQRECORDING_DISABLED
Activity reports cannot be generated.

MQRECORDING_MSG
Activity reports can be generated and sent to the reply queue specified by the originator in the message causing the report.

MQRECORDING_Q
Activity reports can be generated and sent to SYSTEM.ADMIN.ACTIVITY.QUEUE.

***AdoptNewMCACheck*(MQCFIN)**
The elements checked to determine whether an MCA must be adopted (restarted) when a new inbound channel is detected. It must be adopted (restarted) if it that has the same name as a currently active MCA (parameter identifier: MQIA_ADOPTNEWMCA_CHECK).

The value can be:

MQADOPT_CHECK_Q_MGR_NAME
Check the queue manager name.

MQADOPT_CHECK_NET_ADDR
Check the network address.

MQADOPT_CHECK_ALL
Check the queue manager name and network address. Perform this check to prevent your channels from being inadvertently shut down. This value is the initial default value of the queue manager.

MQADOPT_CHECK_NONE
Do not check any elements.

This parameter applies to z/OS only.

***AdoptNewMCAType*(MQCFIN)**
Adoption of orphaned channel instances (parameter identifier: MQIA_ADOPTNEWMCA_TYPE).

Specify whether an orphaned MCA instance is to be adopted when a new inbound channel request is detected matching the *AdoptNewMCACheck* parameters.

The value can be:

MQADOPT_TYPE_NO
Do not adopt orphaned channel instances.

MQADOPT_TYPE_ALL
Adopt all channel types. This value is the initial default value of the queue manager.

This parameter applies to z/OS only.

***AuthorityEvent*(MQCFIN)**
Controls whether authorization (Not Authorized) events are generated (parameter identifier: MQIA_AUTHORITY_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled. This value is not permitted on z/OS.

***BridgeEvent*(MQCFIN)**
Controls whether IMS Bridge events are generated (parameter identifier: MQIA_BRIDGE_EVENT). This parameter applies to z/OS only.

The value can be:

MQEVR_DISABLED
Event reporting disabled. This value is the default value.

MQEVR_ENABLED
Event reporting enabled. This value is not supported on z/OS.

***CertificateValPolicy*(MQCFIN)**
Specifies which SSL/TLS certificate validation policy is used to validate digital certificates received from remote partner systems (parameter identifier: MQIA_CERT_VAL_POLICY).

This attribute can be used to control how strictly the certificate chain validation conforms to industry security standards. For more information, see Certificate validation policies in WebSphere MQ.

The value can be:

MQ_CERT_VAL_POLICY_ANY
Apply each of the certificate validation policies supported by the secure sockets library and accept the certificate chain if any of the policies considers the certificate chain valid. This setting can be used for maximum backwards compatibility with older digital certificates which do not comply with the modern certificate standards.

MQ_CERT_VAL_POLICY_RFC5280
Apply only the RFC 5280 compliant certificate validation policy. This setting provides stricter validation than the ANY setting, but rejects some older digital certificates.

This parameter is only valid on UNIX, Linux, and Windows and can be used only on a queue manager with a command level of 711, or higher.

Changes to **CertificateValPolicy** become effective either:

- When a new channel process is started.
- For channels that run as threads of the channel initiator, when the channel initiator is restarted.
- For channels that run as threads of the listener, when the listener is restarted.
- For channels that run as threads of a process pooling process, when the process pooling process is started or restarted and first runs an SSL channel. If the process pooling process has already run an SSL channel, and you want the change to become effective immediately, run the MQSC command **REFRESH SECURITY TYPE(SSL)**. The process pooling process is amqrmppa on UNIX, Linux, and Windows systems.
- When a **REFRESH SECURITY TYPE(SSL)** command is issued.

***CFConlos*(MQCFIN)**
Specifies the action to be taken when the queue manager loses connectivity to the administration structure, or any CF structure with CFConlos set to ASQMGR (parameter identifier: MQIA_QMGR_CFCONLOS).

The value can be:

MQCFCONLOS_TERMINATE
The queue manager terminates when connectivity to CF structures is lost.

MQCFCONLOS_TOLERATE
The queue manager tolerates loss of connectivity to CF structures without terminating.

This parameter applies to z/OS only.

You can select MQCFCONLOS_TOLERATE only if all the queue managers in the queue-sharing group are at command level 710 or greater and have OPMODE set to NEWFUNC.

***ChannelAutoDef*(MQCFIN)**
Controls whether receiver and server-connection channels can be auto-defined (parameter identifier: MQIA_CHANNEL_AUTO_DEF).

Auto-definition for cluster-sender channels is always enabled.

This parameter is supported in the following environments: IBM i, UNIX, Linux, and Windows systems.

The value can be:

MQCHAD_DISABLED
Channel auto-definition disabled.

MQCHAD_ENABLED
Channel auto-definition enabled.

***ChannelAutoDefEvent*(MQCFIN)**
Controls whether channel auto-definition events are generated (parameter identifier: MQIA_CHANNEL_AUTO_DEF_EVENT), when a receiver, server-connection, or cluster-sender channel is auto-defined.

This parameter is supported in the following environments: IBM i, UNIX, Linux, and Windows systems.

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

***ChannelAutoDefExit*(MQCFIN)**
Channel auto-definition exit name (parameter identifier: MQCA_CHANNEL_AUTO_DEF_EXIT).

This exit is invoked when an inbound request for an undefined channel is received, if:

1. The channel is a cluster-sender, or
2. Channel auto-definition is enabled (see *ChannelAutoDef*).

This exit is also invoked when a cluster-receiver channel is started.

The format of the name is the same as for the *SecurityExit* parameter described in "Change, Copy, and Create Channel" on page 698.

The maximum length of the exit name depends on the environment in which the exit is running. MQ_EXIT_NAME_LENGTH gives the maximum length for the environment in which your application is running. MQ_MAX_EXIT_NAME_LENGTH gives the maximum for all supported environments.

This parameter is supported in the following environments: IBM i, z/OS, UNIX, Linux, and Windows. On z/OS, it applies only to cluster-sender and cluster-receiver channels.

***ChannelAuthenticationRecords*(MQCFIN)**
Controls whether channel authentication records are used. Channel authentication records can still be set and displayed regardless of the value of this attribute. (parameter identifier: MQIA_CHLAUTH_RECORDS).

The value can be:

MQCHLA_DISABLED
Channel authentication records are not checked.

MQCHLA_ENABLED
Channel authentication records are checked.

***ChannelEvent*(MQCFIN)**
Controls whether channel events are generated (parameter identifier: MQIA_CHANNEL_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

MQEVR_EXCEPTION
Reporting of exception channel events enabled.

***ChannelInitiatorControl*(MQCFIN)**
Specifies whether the channel initiator is to be started when the queue manager starts (parameter identifier: MQIA_CHINIT_CONTROL).

The value can be:

MQSVC_CONTROL_MANUAL
The channel initiator is not to be started automatically.

MQSVC_CONTROL_Q_MGR
The channel initiator is to be started automatically when the queue manager starts.

This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

***ChannelMonitoring*(MQCFIN)**
Default setting for online monitoring for channels (parameter identifier: MQIA_MONITORING_CHANNEL).

The value can be:

MQMON_NONE
Online monitoring data collection is turned off for channels regardless of the setting of their *ChannelMonitoring* parameter.

MQMON_OFF
Online monitoring data collection is turned off for channels specifying a value of MQMON_Q_MGR in their *ChannelMonitoring* parameter. This value is the initial default value of the queue manager.

MQMON_LOW
Online monitoring data collection is turned on, with a low ratio of data collection, for channels specifying a value of MQMON_Q_MGR in their *ChannelMonitoring* parameter.

MQMON_MEDIUM
Online monitoring data collection is turned on, with a moderate ratio of data collection, for channels specifying a value of MQMON_Q_MGR in their *ChannelMonitoring* parameter.

MQMON_HIGH
Online monitoring data collection is turned on, with a high ratio of data collection, for channels specifying a value of MQMON_Q_MGR in their *ChannelMonitoring* parameter.

***ChannelStatistics*(MQCFIN)**
Controls whether statistics data is to be collected for channels (parameter identifier: MQIA_STATISTICS_CHANNEL).

The value can be:

MQMON_NONE
Statistics data collection is turned off for channels regardless of the setting of their *ChannelStatistics* parameter. This value is the initial default value of the queue manager.

MQMON_OFF
Statistics data collection is turned off for channels specifying a value of MQMON_Q_MGR in their *ChannelStatistics* parameter.

MQMON_LOW
Statistics data collection is turned on, with a low ratio of data collection, for channels specifying a value of MQMON_Q_MGR in their *ChannelStatistics* parameter.

MQMON_MEDIUM
Statistics data collection is turned on, with a moderate ratio of data collection, for channels specifying a value of MQMON_Q_MGR in their *ChannelStatistics* parameter.

MQMON_HIGH
Statistics data collection is turned on, with a high ratio of data collection, for channels specifying a value of MQMON_Q_MGR in their *ChannelStatistics* parameter.

This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

***ChinitAdapters*(MQCFIN)**
Number of adapter subtasks (parameter identifier: MQIA_CHINIT_ADAPTERS).

The number of adapter subtasks to use for processing IBM WebSphere MQ calls. This parameter applies to z/OS only.

Specify a value in the range 1 - 9999. The initial default value of the queue manager is 8.

***ChinitDispatchers*(MQCFIN)**
Number of dispatchers (parameter identifier: MQIA_CHINIT_DISPATCHERS).

The number of dispatchers to use for the channel initiator. This parameter applies to z/OS only.

Specify a value in the range 1 - 9999. The initial default value of the queue manager is 5.

***ChinitServiceParm*(MQCFIN)**
Reserved for use by IBM (parameter identifier: MQCA_CHINIT_SERVICE_PARM).

This parameter applies to z/OS only.

***ChinitTraceAutoStart*(MQCFIN)**
Specifies whether the channel initiator trace must start automatically (parameter identifier: MQIA_CHINIT_TRACE_AUTO_START).

The value can be:

MQTRAXSTR_YES
Channel initiator trace is to start automatically.

MQTRAXSTR_NO
Channel initiator trace is not to start automatically. This value is the initial default value of the queue manager.

This parameter applies to z/OS only.

***ChinitTraceTableSize*(MQCFIN)**
The size, in megabytes, of the trace data space of the channel initiator (parameter identifier: MQIA_CHINIT_TRACE_TABLE_SIZE).

Specify a value in the range 2 - 2048. The initial default value of the queue manager is 2.

This parameter applies to z/OS only.

***ClusterSenderMonitoringDefault*(MQCFIN)**
Default setting for online monitoring for automatically defined cluster-sender channels (parameter identifier: MQIA_MONITORING_AUTO_CLUSSDR).

Specifies the value to be used for the *ChannelMonitoring* attribute of automatically defined cluster-sender channels. The value can be:

MQMON_Q_MGR
Collection of online monitoring data is inherited from the setting of the queue manager's *ChannelMonitoring* parameter. This value is the initial default value of the queue manager.

MQMON_OFF
Monitoring for the channel is switched off.

MQMON_LOW
Unless *ChannelMonitoring* is MQMON_NONE, this value specifies a low rate of data collection with a minimal effect on system performance. The data collected is not likely to be the most current.

MQMON_MEDIUM
Unless *ChannelMonitoring* is MQMON_NONE, this value specifies a moderate rate of data collection with limited effect on system performance.

MQMON_HIGH
Unless *ChannelMonitoring* is MQMON_NONE, this value specifies a high rate of data collection with a likely effect on system performance. The data collected is the most current available.

***ClusterSenderStatistics*(MQCFIN)**
Controls whether statistics data is to be collected for auto-defined cluster-sender channels (parameter identifier: MQIA_STATISTICS_AUTO_CLUSSDR).

The value can be:

MQMON_Q_MGR
Collection of statistics data is inherited from the setting of the queue manager's *ChannelStatistics* parameter. This value is the initial default value of the queue manager.

MQMON_OFF
Statistics data collection for the channel is switched off.

MQMON_LOW
Unless *ChannelStatistics* is MQMON_NONE, this value specifies a low rate of data collection with a minimal effect on system performance.

MQMON_MEDIUM
Unless *ChannelStatistics* is MQMON_NONE, this value specifies a moderate rate of data collection.

MQMON_HIGH
Unless *ChannelStatistics* is MQMON_NONE, this value specifies a high rate of data collection.

This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

***ClusterWorkLoadData*(MQCFST)**
Cluster workload exit data (parameter identifier: MQCA_CLUSTER_WORKLOAD_DATA).

This parameter is passed to the cluster workload exit when it is called.

The maximum length of the string is MQ_EXIT_DATA_LENGTH.

***ClusterWorkLoadExit*(MQCFST)**
Cluster workload exit name (parameter identifier: MQCA_CLUSTER_WORKLOAD_EXIT).

If a nonblank name is defined this exit is invoked when a message is put to a cluster queue.

The format of the name is the same as for the *SecurityExit* parameter described in "Change, Copy, and Create Channel" on page 698.

The maximum length of the exit name depends on the environment in which the exit is running. MQ_EXIT_NAME_LENGTH gives the maximum length for the environment in which your application is running. MQ_MAX_EXIT_NAME_LENGTH gives the maximum for all supported environments.

***ClusterWorkLoadLength*(MQCFIN)**
Cluster workload length (parameter identifier: MQIA_CLUSTER_WORKLOAD_LENGTH).

The maximum length of the message passed to the cluster workload exit.

The value of this attribute must be in the range 0 - 999,999 999.

***CLWLMRUChannels*(MQCFIN)**
Cluster workload most recently used (MRU) channels (parameter identifier: MQIA_CLWL_MRU_CHANNELS).

The maximum number of active most recently used outbound channels.

Specify a value in the range 1 - 999,999 999.

***CLWLUseQ*(MQCFIN)**
Use of remote queue (parameter identifier: MQIA_CLWL_USEQ).

Specifies whether a cluster queue manager is to use remote puts to other queues defined in other queue managers within the cluster during workload management.

Specify either:

MQCLWL_USEQ_ANY
Use remote queues.

MQCLWL_USEQ_LOCAL
Do not use remote queues.

***CodedCharSetId*(MQCFIN)**
Queue manager coded character set identifier (parameter identifier: MQIA_CODED_CHAR_SET_ID).

The coded character set identifier (CCSID) for the queue manager. The CCSID is the identifier used with all character string fields defined by the application programming interface (API). If the CCSID in a message descriptor is set to the value MQCCSI_Q_MGR, it applies to the character data written into the body of a message. Data is written using MQPUT or MQPUT1. Character data is identified by the format specified for the message.

Specify a value in the range 1 - 65,535.

The CCSID must specify a value that is defined for use on the platform and use an appropriate character set. The character set must be:

- EBCDIC on IBM i
- ASCII or ASCII-related on other platforms

Stop and restart the queue manager after execution of this command so that all processes reflect the changed CCSID of the queue manager.

This parameter is not supported on z/OS.

***CommandEvent*(MQCFIN)**
Controls whether command events are generated (parameter identifier: MQIA_COMMAND_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

MQEVR_NO_DISPLAY
Event reporting enabled for all successful commands except Inquire commands.

***CommandScope*(MQCFIN)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following values:

- Blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- A queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment. The command server must be enabled.
- An asterisk "*". The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***CommandServerControl*(MQCFIN)**
Specifies whether the command server is to be started when the queue manager starts (parameter identifier: MQIA_CMD_SERVER_CONTROL).

The value can be:

MQSVC_CONTROL_MANUAL
The command server is not to be started automatically.

MQSVC_CONTROL_Q_MGR
The command server is to be started automatically when the queue manager starts.

This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

***ConfigurationEvent*(MQCFIN)**
Controls whether configuration events are generated (parameter identifier: MQIA_CONFIGURATION_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

***Custom*(MQCFST)**
Custom attribute for new features (parameter identifier: MQCA_CUSTOM).

This attribute is reserved for the configuration of new features before separate attributes are introduced. It can contain the values of zero or more attributes as pairs of attribute name and value, separated by at least one space. The attribute name and value pairs have the form NAME(VALUE). Single quotation marks must be escaped with another single quotation mark.

This description is updated when features using this attribute are introduced. Currently there are no possible values for *Custom*.

The maximum length of the string is MQ_CUSTOM_LENGTH.

***DeadLetterQName*(MQCFIN)**
Dead letter (undelivered message) queue name (parameter identifier: MQCA_DEAD_LETTER_Q_NAME).

Specifies the name of the local queue that is to be used for undelivered messages. Messages are put on this queue if they cannot be routed to their correct destination. The maximum length of the string is MQ_Q_NAME_LENGTH.

***DefClusterXmitQueueType* (MQCFIN)**
The DefClusterXmitQueueType attribute controls which transmission queue is selected by default by cluster-sender channels to get messages from, to send the messages to cluster-receiver channels. (Parameter identifier: MQIA_DEF_CLUSTER_XMIT_Q_TYPE.)

The values of DefClusterXmitQueueType are MQCLXQ_SCTQ or MQCLXQ_CHANNEL.

MQCLXQ_SCTQ

All cluster-sender channels send messages from SYSTEM.CLUSTER.TRANSMIT.QUEUE. The correlID of messages placed on the transmission queue identifies which cluster-sender channel the message is destined for.

SCTQ is set when a queue manager is defined. This behavior is implicit in versions of IBM WebSphere MQ, earlier than Version 7.5. In earlier versions, the queue manager attribute DefClusterXmitQueueType was not present.

MQCLXQ_CHANNEL
Each cluster-sender channel sends messages from a different transmission queue. Each transmission queue is created as a permanent dynamic queue from the model queue SYSTEM.CLUSTER.TRANSMIT.MODEL.QUEUE.

The attribute is not supported on z/OS.

***DefXmitQName*(MQCFST)**
Default transmission queue name (parameter identifier: MQCA_DEF_XMIT_Q_NAME).

This parameter is the name of the default transmission queue that is used for the transmission of messages to remote queue managers. It is selected if there is no other indication of which transmission queue to use.

The maximum length of the string is MQ_Q_NAME_LENGTH.

***DNSGroup*(MQCFST)**
DNS group name (parameter identifier: MQCA_DNS_GROUP).

Specify the name of the group that the TCP listener handling inbound transmissions for the queue-sharing group must join. It must join it when using Workload Manager for Dynamic Domain Name Services support (WLM/DNS). This parameter applies to z/OS only.

The maximum length of the string is MQ_DNS_GROUP_NAME_LENGTH.

***DNSWLM*(MQCFIN)**
Controls whether the TCP listener that handles inbound transmissions for the queue-sharing group must register with WLM/DNS: (parameter identifier: MQIA_DNS_WLM).

The value can be:

MQDNSWLM_YES
The listener must register with WLM.

MQDNSWLM_NO
The listener is not to register with WLM. This value is the initial default value of the queue manager.

This parameter applies to z/OS only.

***ExpiryInterval*(MQCFIN)**
Interval between scans for expired messages (parameter identifier: MQIA_EXPIRY_INTERVAL). This parameter applies to z/OS only.

Specifies the frequency with which the queue manager scans the queues looking for expired messages. Specify a time interval in seconds in the range 1 - 99,999,999, or the following special value:

MQEXPI_OFF
No scans for expired messages.

The minimum scan interval used is 5 seconds, even if you specify a lower value.

***EncryptionPolicySuiteB*(MQCFIL)**
Specifies whether Suite B-compliant cryptography is used and what level of strength is employed (parameter identifier MQIA_SUITE_B_STRENGTH).

The value can be one or more of:

MQ_SUITE_B_NONE
Suite B-compliant cryptography is not used.

MQ_SUITE_B_128_BIT
Suite B 128-bit strength security is used.

MQ_SUITE_B_192_BIT
Suite B 192-bit strength security is used.

If invalid lists are specified, such as MQ_SUITE_B_NONE with MQ_SUITE_B_128_BIT, the error MQRCCF_SUITE_B_ERROR is issued.

***Force*(MQCFIN)**
Force changes (parameter identifier: MQIACF_FORCE).

Specifies whether the command is forced to complete if both of the following are true:

- *DefXmitQName* is specified, and
- An application has a remote queue open, the resolution for which is affected by this change.

***GroupUR*(MQCFIN)**
Controls whether CICS and XA client applications can establish transactions with a GROUP unit of recovery disposition.

This attribute is only valid on z/OS and can be enabled only when the queue manager is a member of a queue-sharing group.

The value can be:

MQGUR_DISABLED
CICS and XA client applications must connect using a queue manager name.

MQGUR_ENABLED
CICS and XA client applications can establish transactions with a group unit of recovery disposition by specifying a QSG name when they connect.

***IGQPutAuthority*(MQCFIN)**
Command scope (parameter identifier: MQIA_IGQ_PUT_AUTHORITY). This parameter is valid only on z/OS when the queue manager is a member of a queue-sharing group.

Specifies the type of authority checking and, therefore, the user IDs to be used by the IGQ agent (IGQA). This parameter establishes the authority to put messages to a destination queue. The value can be:

MQIGQPA_DEFAULT
Default user identifier is used.

The user identifier used for authorization is the value of the *UserIdentifier* field. The *UserIdentifier* field is in the separate MQMD that is associated with the message when the message is on the shared transmission queue. This value is the user identifier of the program that placed the message on the shared transmission queue. It is typically the same as the user identifier under which the remote queue manager is running.

If the RESLEVEL profile indicates that more than one user identifier is to be checked, the user identifier of the local IGQ agent (*IGQUserId*) is checked.

MQIGQPA_CONTEXT
Context user identifier is used.

The user identifier used for authorization is the value of the *UserIdentifier* field. The *UserIdentifier* field is in the separate MQMD that is associated with the message when the message is on the shared transmission queue. This value is the user identifier of the program that placed the message on the shared transmission queue. It is typically the same as the user identifier under which the remote queue manager is running.

If the RESLEVEL profile indicates that more than one user identifier is to be checked, the user identifier of the local IGQ agent (*IGQUserId*) is checked.. The value of the *UserIdentifier* field in the embedded MQMD is also checked. The latter user identifier is typically the user identifier of the application that originated the message.

MQIGQPA_ONLY_IGQ
Only the IGQ user identifier is used.

The user identifier used for authorization is the user identifier of the local IGQ agent (*IGQUserId*).

If the RESLEVEL profile indicates that more than one user identifier is to be checked, this user identifier is used for all checks.

MQIGQPA_ALTERNATE_OR_IGQ
Alternate user identifier or IGQ-agent user identifier is used.

The user identifier used for authorization is the user identifier of the local IGQ agent (*IGQUserId*).

If the RESLEVEL profile indicates that more than one user identifier is to be checked, the value of the *UserIdentifier* field in the embedded MQMD is also checked. The latter user identifier is typically the user identifier of the application that originated the message.

***IGQUserId*(MQCFST)**
Intra-group queuing agent user identifier (parameter identifier: MQCA_IGQ_USER_ID). This parameter is valid only on z/OS when the queue manager is a member of a queue-sharing group.

Specifies the user identifier that is associated with the local intra-group queuing agent. This identifier is one of the user identifiers that might be checked for authorization when the IGQ agent puts messages on local queues. The actual user identifiers checked depend on the setting of the *IGQPutAuthority* attribute, and on external security options.

The maximum length is MQ_USER_ID_LENGTH.

***InhibitEvent*(MQCFIN)**
Controls whether inhibit (Inhibit Get and Inhibit Put) events are generated (parameter identifier: MQIA_INHIBIT_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

***IntraGroupQueuing*(MQCFIN)**
Command scope (parameter identifier: MQIA_INTRA_GROUP_QUEUING). This parameter is valid only on z/OS when the queue manager is a member of a queue-sharing group.

Specifies whether intra-group queuing is used. The value can be:

MQIGQ_DISABLED
Intra-group queuing disabled.

MQIGQ_ENABLED
Intra-group queuing enabled.

***IPAddressVersion*(MQCFIN)**
IP address version selector (parameter identifier: MQIA_IP_ADDRESS_VERSION).

Specifies which IP address version, either IPv4 or IPv6, is used. The value can be:

MQIPADDR_IPV4
IPv4 is used.

MQIPADDR_IPV6
IPv6 is used.

This parameter is only relevant for systems that run both IPv4 and IPv6. It affects only channels defined as having a *TransportType* of MQXPY_TCP when one of the following conditions is true:

- The channel attribute*ConnectionName* is a host name that resolves to both an IPv4 and IPv6 address and its *LocalAddress* parameter is not specified.
- The channel attributes *ConnectionName* and *LocalAddress* are both host names that resolve to both IPv4 and IPv6 addresses.

***ListenerTimer*(MQCFIN)**
Listener restart interval (parameter identifier: MQIA_LISTENER_TIMER).

The time interval, in seconds, between attempts by WebSphere MQ to restart the listener after an APPC or TCP/IP failure. This parameter applies to z/OS only.

Specify a value in the range 5 - 9,999. The initial default value of the queue manager is 60.

***LocalEvent*(MQCFIN)**
Controls whether local error events are generated (parameter identifier: MQIA_LOCAL_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

***LoggerEvent*(MQCFIN)**
Controls whether recovery log events are generated (parameter identifier: MQIA_LOGGER_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled. This value is valid only on queue managers that use linear logging.

This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

***LUGroupName*(MQCFST)**
Generic LU name for the LU 6.2 listener (parameter identifier: MQCA_LU_GROUP_NAME).

The generic LU name to be used by the LU 6.2 listener that handles inbound transmissions for the queue-sharing group.

This parameter applies to z/OS only.

The maximum length of the string is MQ_LU_NAME_LENGTH.

***LUName*(MQCFST)**
LU name to use for outbound LU 6.2 transmissions (parameter identifier: MQCA_LU_NAME).

The name of the LU to use for outbound LU 6.2 transmissions. Set this parameter to be the same as the name of the LU to be used by the listener for inbound transmissions.

This parameter applies to z/OS only.

The maximum length of the string is MQ_LU_NAME_LENGTH.

***LU62ARMSuffix*(MQCFST)**
APPCPM suffix (parameter identifier: MQCA_LU62_ARM_SUFFIX).

The suffix of the APPCPM member of SYS1.PARMLIB. This suffix nominates the LUADD for this channel initiator.

This parameter applies to z/OS only.

The maximum length of the string is MQ_ARM_SUFFIX_LENGTH.

***LU62Channels*(MQCFIN)**
Maximum number of LU 6.2 channels (parameter identifier: MQIA_LU62_CHANNELS).

The maximum number of channels that can be current, or clients that can be connected, that use the LU 6.2 transmission protocol.

This parameter applies to z/OS only.

Specify a value in the range 0 - 9999. The initial default value of the queue manager is 200.

***MaxActiveChannels*(MQCFIN)**
Maximum number of active channels (parameter identifier: MQIA_ACTIVE_CHANNELS).

The maximum number of channels that can be *active* at any time.

This parameter applies to z/OS only.

Sharing conversations do not contribute to the total for this parameter.

Specify a value in the range 1 - 9999. The initial default value of the queue manager is 200.

***MaxChannels*(MQCFIN)**
Maximum number of current channels (parameter identifier: MQIA_MAX_CHANNELS).

The maximum number of channels that can be *current* (including server-connection channels with connected clients).

This parameter applies to z/OS only.

Sharing conversations do not contribute to the total for this parameter.

Specify a value in the range 1 - 9999.

***MaxHandles*(MQCFIN)**
Maximum number of handles (parameter identifier: MQIA_MAX_HANDLES).

The maximum number of handles that any one connection can have open at the same time.

Specify a value in the range 0 - 999,999,999.

***MaxMsgLength*(MQCFIN)**
Maximum message length (parameter identifier: MQIA_MAX_MSG_LENGTH).

Specifies the maximum length of messages allowed on queues on the queue manager. No message that is larger than either the queue attribute *MaxMsgLength* or the queue manager attribute *MaxMsgLength* can be put on a queue.

If you reduce the maximum message length for the queue manager, you must also reduce the maximum message length of the SYSTEM.DEFAULT.LOCAL.QUEUE definition, and your other queues. Reduce the definitions on the queues to less than or equal to the limit of the queue manager. If you do not reduce the message lengths appropriately, and applications inquire only the value of the queue attribute *MaxMsgLength*, they might not work correctly.

The lower limit for this parameter is 32 KB (32,768 bytes). The upper limit is 100 MB (104,857,600 bytes).

This parameter is not valid on z/OS.

***MaxPropertiesLength*(MQCFIN)**
Maximum property length (parameter identifier: MQIA_MAX_PROPERTIES_LENGTH).

Specifies the maximum length of the properties, including both the property name in bytes and the size of the property value in bytes.

Specify a value in the range 0 - 100 MB (104,857,600 bytes), or the special value:

MQPROP_UNRESTRICTED_LENGTH
The size of the properties is restricted only by the upper limit.

***MaxUncommittedMsgs*(MQCFIN)**
Maximum uncommitted messages (parameter identifier: MQIA_MAX_UNCOMMITTED_MSGS).

Specifies the maximum number of uncommitted messages. The maximum number of uncommitted messages under any sync point is the sum of the following messages:

The number of messages that can be retrieved.
The number of messages that can be put.
The number of trigger messages generated within this unit of work.

The limit does not apply to messages that are retrieved or put outside sync point.

Specify a value in the range 1 - 10,000.

***MQIAccounting*(MQCFIN)**
Controls whether accounting information for MQI data is to be collected (parameter identifier: MQIA_ACCOUNTING_MQI).

The value can be:

MQMON_OFF
MQI accounting data collection is disabled. This value is the initial default value of the queue manager.

MQMON_ON
MQI accounting data collection is enabled.

This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

***MQIStatistics*(MQCFIN)**
Controls whether statistics monitoring data is to be collected for the queue manager (parameter identifier: MQIA_STATISTICS_MQI).

The value can be:

MQMON_OFF
Data collection for MQI statistics is disabled. This value is the initial default value of the queue manager.

MQMON_ON
Data collection for MQI statistics is enabled.

This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

***MsgMarkBrowseInterval*(MQCFIN)**
Mark-browse interval (parameter identifier: MQIA_MSG_MARK_BROWSE_INTERVAL).

Specifies the time interval in milliseconds after which the queue manager can automatically unmark messages.

Specify a value up to the maximum of 999,999,999, or the special value MQMMBI_UNLIMITED. The default value is 5000.

Attention: You should not reduce the value below the default of 5000.

MQMMBI_UNLIMITED indicates that the queue manager does not automatically unmark messages.

***OutboundPortMax*(MQCFIN)**
The maximum value in the range for the binding of outgoing channels (parameter identifier: MQIA_OUTBOUND_PORT_MAX).

The maximum value in the range of port numbers to be used when binding outgoing channels. This parameter applies to z/OS only.

Specify a value in the range 0 - 65,535. The initial default value of the queue manager is zero.

Specify a corresponding value for *OutboundPortMin* and ensure that the value of *OutboundPortMax* is greater than or equal to the value of *OutboundPortMin*.

***OutboundPortMin*(MQCFIN)**
The minimum value in the range for the binding of outgoing channels (parameter identifier: MQIA_OUTBOUND_PORT_MIN).

The minimum value in the range of port numbers to be used when binding outgoing channels. This parameter applies to z/OS only.

Specify a value in the range 0 - 65,535. The initial default value of the queue manager is zero.

Specify a corresponding value for *OutboundPortMax* and ensure that the value of *OutboundPortMin* is less than or equal to the value of *OutboundPortMax*.

***Parent*(MQCFST)**
The name of the queue manager to which this queue manager is to connect hierarchically as its child (parameter identifier: MQCA_PARENT).

A blank value indicates that this queue manager has no parent queue manager. If there is an existing parent queue manager it is disconnected. This value is the initial default value of the queue manager.

The maximum length of the string is MQ_Q_MGR_NAME_LENGTH.

Note:

- The use ofIBM WebSphere MQ hierarchical connections requires that the queue manager attribute PSMode is set to MQPSM_ENABLED.
- The value of *Parent* can be set to a blank value if PSMode is set to MQPSM_DISABLED.
- Before connecting to a queue manager hierarchically as its child, channels in both directions must exist between the parent queue manager and child queue manager.
- If a parent is defined, the **Change Queue Manager** command disconnects from the original parent and sends a connection flow to the new parent queue manager.
- Successful completion of the command does not mean that the action completed or that it is going to complete successfully. Use the **Inquire Pub/Sub Status** command to track the status of the requested parent relationship.

***PerformanceEvent*(MQCFIN)**
Controls whether performance-related events are generated (parameter identifier: MQIA_PERFORMANCE_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

***PubSubClus*(MQCFIN)**
Controls whether the queue manager participates in publish/subscribe clustering (parameter identifier: MQIA_PUBSUB_CLUSTER).

The value can be:

MQPSCLUS_ENABLED
The creating or receipt of clustered topic definitions and cluster subscriptions is permitted.

Note: The introduction of a clustered topic into a large IBM WebSphere MQ cluster can cause a degradation in performance. This degradation occurs because all partial repositories are notified of all the other members of the cluster. Unexpected subscriptions might be created at all other nodes; for example; where proxysub(FORCE) is specified. Large numbers of channels might be started from a queue manager; for example, on resync after a queue manager failure.

MQPSCLUS_DISABLED
The creating or receipt of clustered topic definitions and cluster subscriptions is inhibited. The creations or receipts are recorded as warnings in the queue manager error logs.

***PubSubMaxMsgRetryCount*(MQCFIN)**
The number of attempts to reprocess a message when processing a failed command message under sync point (parameter identifier: MQIA_PUBSUB_MAXMSG_RETRY_COUNT).

The value can be:

0 to 999 999 999
The initial value is 5.

***PubSubMode*(MQCFIN)**
Specifies whether the publish/subscribe engine and the queued publish/subscribe interface are running. The publish/subscribe engine enables applications to publish or subscribe by using the application programming interface. The publish/subscribe interface monitors the queues used the queued publish/subscribe interface (parameter identifier: MQIA_PUBSUB_MODE).

The value can be:

MQPSM_COMPAT
The publish/subscribe engine is running. It is therefore possible to publish or subscribe by using the application programming interface. The queued publish/subscribe interface is not running. Any message that is put to the queues that are monitored by the queued publish/subscribe interface are not acted on. Use this setting for compatibility with WebSphere Message Broker V6, or earlier versions. WebSphere Message Broker needs to read the same queues from which the queued publish/subscribe interface normally reads.

MQPSM_DISABLED
The publish/subscribe engine and the queued publish/subscribe interface are not running. It is therefore not possible to publish or subscribe using the application programming interface. Any publish/subscribe messages that are put to the queues that are monitored by the queued publish/subscribe interface are not acted on.

MQPSM_ENABLED
The publish/subscribe engine and the queued publish/subscribe interface are running. It is therefore possible to publish or subscribe by using the application programming interface and the queues that are monitored by the queued publish/subscribe interface. This value is the initial default value of the queue manager.

***PubSubNPInputMsg*(MQCFIN)**
Whether to discard (or keep) an undelivered input message (parameter identifier: MQIA_PUBSUB_NP_MSG).

The value can be:

MQUNDELIVERED_DISCARD
Non-persistent input messages are discarded if they cannot be processed.

MQUNDELIVERED_KEEP
Non-persistent input messages are not discarded if they cannot be processed. In this situation, the queued publish/subscribe interface continues to try the process again at appropriate intervals and does not continue processing subsequent messages.

***PubSubNPResponse*(MQCFIN)**
Controls the behavior of undelivered response messages (parameter identifier: MQIA_PUBSUB_NP_RESP).

The value can be:

MQUNDELIVERED_NORMAL
Non-persistent responses that cannot be placed on the reply queue are put on the dead letter queue. If they cannot be placed on the dead letter queue they are discarded.

MQUNDELIVERED_SAFE
Non-persistent responses that cannot be placed on the reply queue are put on the dead letter queue. If the response cannot be sent and cannot be placed on the dead letter queue the queued publish/subscribe interface rolls back the current operation. The operation is tried again at appropriate intervals and does not continue processing subsequent messages.

MQUNDELIVERED_DISCARD
Non-persistent responses that are not placed on the reply queue are discarded.

MQUNDELIVERED_KEEP
Non-persistent responses are not placed on the dead letter queue or discarded. Instead, the queued publish/subscribe interface backs out the current operation and then try it again at appropriate intervals.

***PubSubSyncPoint*(MQCFIN)**
Whether only persistent (or all) messages must be processed under sync point (parameter identifier: MQIA_PUBSUB_SYNC_PT).

The value can be:

MQSYNCPOINT_IFPER
This value makes the queued publish/subscribe interface receive non-persistent messages outside sync point. If the interface receives a publication outside sync point, the interface forwards the publication to subscribers known to it outside sync point.

MQSYNCPOINT_YES
This value makes the queued publish/subscribe interface receive all messages under sync point.

***QMgrDesc*(MQCFST)**
Queue manager description (parameter identifier: MQCA_Q_MGR_DESC).

This parameter is text that briefly describes the object.

The maximum length of the string is MQ_Q_MGR_DESC_LENGTH.

Use characters from the character set identified by the coded character set identifier (CCSID) for the queue manager on which the command is executing. Using this character set ensures that the text is translated correctly.

***QueueAccounting*(MQCFIN)**
Controls the collection of accounting (thread-level and queue-level accounting) data for queues (parameter identifier: MQIA_ACCOUNTING_Q).

The value can be:

MQMON_NONE
Accounting data collection for queues is disabled. This value must not be overridden by the value of the *QueueAccounting* parameter on the queue.

MQMON_OFF
Accounting data collection is disabled for queues specifying a value of MQMON_Q_MGR in the *QueueAccounting* parameter.

MQMON_ON
Accounting data collection is enabled for queues specifying a value of MQMON_Q_MGR in the *QueueAccounting* parameter.

***QueueMonitoring*(MQCFIN)**
Default setting for online monitoring for queues (parameter identifier: MQIA_MONITORING_Q).

If the *QueueMonitoring* queue attribute is set to MQMON_Q_MGR, this attribute specifies the value which is assumed by the channel. The value can be:

MQMON_OFF
Online monitoring data collection is turned off. This value is the initial default value of the queue manager.

MQMON_NONE
Online monitoring data collection is turned off for queues regardless of the setting of their *QueueMonitoring* attribute.

MQMON_LOW
Online monitoring data collection is turned on, with a low ratio of data collection.

MQMON_MEDIUM
Online monitoring data collection is turned on, with a moderate ratio of data collection.

MQMON_HIGH
Online monitoring data collection is turned on, with a high ratio of data collection.

***QueueStatistics*(MQCFIN)**
Controls whether statistics data is to be collected for queues (parameter identifier: MQIA_STATISTICS_Q).

The value can be:

MQMON_NONE
Statistics data collection is turned off for queues regardless of the setting of their *QueueStatistics* parameter. This value is the initial default value of the queue manager.

MQMON_OFF
Statistics data collection is turned off for queues specifying a value of MQMON_Q_MGR in their *QueueStatistics* parameter.

MQMON_ON
Statistics data collection is turned on for queues specifying a value of MQMON_Q_MGR in their *QueueStatistics* parameter.

This parameter is valid only on IBM i, UNIX, Linux, and Windows systems.

***ReceiveTimeout*(MQCFIN)**
How long a TCP/IP channel waits to receive data from its partner (parameter identifier: MQIA_RECEIVE_TIMEOUT).

The approximate length of time that a TCP/IP channel waits to receive data, including heartbeats, from its partner before returning to the inactive state.

This parameter applies to z/OS only. It applies to message channels, and not to MQI channels. This number can be qualified as follows:

- This number is a multiplier to be applied to the negotiated *HeartBeatInterval* value to determine how long a channel is to wait. Set *ReceiveTimeoutType* to MQRCVTIME_MULTIPLY. Specify a value of zero or in the range 2 - 99. If you specify zero, the channel waits indefinitely to receive data from its partner.
- This number is a value, in seconds, to be added to the negotiated *HeartBeatInterval* value to determine how long a channel is to wait. Set *ReceiveTimeoutType* to MQRCVTIME_ADD. Specify a value in the range 1 - 999,999.
- Tthis number is a value, in seconds, that the channel is to wait, set *ReceiveTimeoutType* to MQRCVTIME_EQUAL. Specify a value in the range 0 - 999,999. If you specify 0, the channel waits indefinitely to receive data from its partner.

The initial default value of the queue manager is zero.

***ReceiveTimeoutMin*(MQCFIN)**
The minimum length of time that a TCP/IP channel waits to receive data from its partner (parameter identifier: MQIA_RECEIVE_TIMEOUT_MIN).

The minimum length of time that a TCP/IP channel waits to receive data, including heartbeats, from its partner before returning to the inactive state. This parameter applies to z/OS only.

Specify a value in the range 0 - 999,999.

***ReceiveTimeoutType*(MQCFIN)**
The qualifier to apply to *ReceiveTimeout* (parameter identifier: MQIA_RECEIVE_TIMEOUT_TYPE).

The qualifier to apply to *ReceiveTimeoutType* to calculate how long a TCP/IP channel waits to receive data, including heartbeats, from its partner. It waits to receive data before returning to the inactive state. This parameter applies to z/OS only.

The value can be:

MQRCVTIME_MULTIPLY
The *ReceiveTimeout* value is a multiplier to be applied to the negotiated value of *HeartbeatInterval* to determine how long a channel waits. This value is the initial default value of the queue manager.

MQRCVTIME_ADD
ReceiveTimeout is a value, in seconds, to be added to the negotiated value of *HeartbeatInterval* to determine how long a channel waits.

MQRCVTIME_EQUAL
ReceiveTimeout is a value, in seconds, representing how long a channel waits.

***RemoteEvent*(MQCFIN)**
Controls whether remote error events are generated (parameter identifier: MQIA_REMOTE_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

***RepositoryName*(MQCFST)**
Cluster name (parameter identifier: MQCA_REPOSITORY_NAME).

The name of a cluster for which this queue manager provides a repository manager service.

The maximum length of the string is MQ_OBJECT_NAME_LENGTH.

No more than one of the resultant values of *RepositoryName* can be nonblank.

***RepositoryNamelist*(MQCFST)**
Repository namelist (parameter identifier: MQCA_REPOSITORY_NAMELIST).

The name, of a namelist of clusters, for which this queue manager provides a repository manager service.

This queue manager does not have a full repository, but can be a client of other repository services that are defined in the cluster, if

- Both *RepositoryName* and *RepositoryNamelist* are blank, or
- *RepositoryName* is blank and the namelist specified by *RepositoryNamelist* is empty.

No more than one of the resultant values of *RepositoryNameList* can be nonblank.

***SecurityCase*(MQCFIN)**
Security case supported (parameter identifier: MQIA_SECURITY_CASE).

Specifies whether the queue manager supports security profile names in mixed case, or in uppercase only. The value is activated when a Refresh Security command is run with *SecurityType(MQSECTYPE_CLASSES)* specified. This parameter is valid only on z/OS.

The value can be:

MQSCYC_UPPER
Security profile names must be in uppercase.

MQSCYC_MIXED
Security profile names can be in uppercase or in mixed case.

***SharedQQmgrName*(MQCFIN)**
Shared-queue queue manager name (parameter identifier: MQIA_SHARED_Q_Q_MGR_NAME).

A queue manager makes an MQOPEN call for a shared queue. The queue manager that is specified in the *ObjectQmgrName* parameter of the MQOPEN call is in the same queue-sharing group as the processing queue manager. The SQQMNAME attribute specifies whether the *ObjectQmgrName* is used or whether the processing queue manager opens the shared queue directly. This parameter is valid only on z/OS.

The value can be:

MQSQQM_USE
ObjectQmgrName is used and the appropriate transmission queue is opened.

MQSQQM_IGNORE
The processing queue manager opens the shared queue directly. This value can reduce the traffic in your queue manager network.

***SSLCRLNamelist*(MQCFST)**
The SSL namelist (parameter identifier: MQCA_SSL_CRL_NAMELIST).

The length of the string is MQ_NAMELIST_NAME_LENGTH.

Indicates the name of a namelist of authentication information objects which are used to provide certificate revocation locations to allow enhanced TLS/SSL certificate checking.

If *SSLCRLNamelist* is blank, certificate revocation checking is not invoked.

Changes to *SSLCRLNamelist*, or to the names in a previously specified namelist, or to previously referenced authentication information objects become effective:

- On IBM i, UNIX, Linux, and Windows systems when a new channel process is started.
- For channels that run as threads of the channel initiator on IBM i, UNIX, Linux, and Windows systems, when the channel initiator is restarted.
- For channels that run as threads of the listener on IBM i, UNIX, Linux, and Windows systems, when the listener is restarted.
- On z/OS, when the channel initiator is restarted.
- When a **REFRESH SECURITY TYPE(SSL)** command is issued.
- On IBM i queue managers, this parameter is ignored. However, it is used to determine which authentication information objects are written to the AMQCLCHL.TAB file.

***SSLCryptoHardware*(MQCFST)**
The SSL cryptographic hardware (parameter identifier: MQCA_SSL_CRYPTO_HARDWARE).

The length of the string is MQ_SSL_CRYPTO_HARDWARE_LENGTH.

Sets the name of the parameter string required to configure the cryptographic hardware present on the system.

This parameter is supported on UNIX, Linux, and Windows systems only.

All supported cryptographic hardware supports the PKCS #11 interface. Specify a string of the following format:

```
GSK_PKCS11=<the PKCS #11 driver path and file name>>;<the PKCS #11 token label>;
<the PKCS #11 token password>;<symmetric cipher setting>;
```

The PKCS #11 driver path is an absolute path to the shared library providing support for the PKCS #11 card. The PKCS #11 driver file name is the name of the shared library. An example of the value required for the PKCS #11 driver path and file name is /usr/lib/pkcs11/PKCS11_API.so

To access symmetric cipher operations through GSKit, specify the symmetric cipher setting parameter. The value of this parameter is either:

SYMMETRIC_CIPHER_OFF
Do not access symmetric cipher operations.

SYMMETRIC_CIPHER_ON
Access symmetric cipher operations.

If the symmetric cipher setting is not specified, this value has the same effect as specifying SYMMETRIC_CIPHER_OFF.

The maximum length of the string is 256 characters. The default value is blank.

If you specify a string in the wrong format, you get an error.

When the SSLCryptoHardware value is changed, the cryptographic hardware parameters specified become the ones used for new SSL connection environments. The new information becomes effective:

- When a new channel process is started.
- For channels that run as threads of the channel initiator, when the channel initiator is restarted.
- For channels that run as threads of the listener, when the listener is restarted.
- When a Refresh Security command is issued to refresh the contents of the SSL key repository.

***SSLEvent*(MQCFIN)**
Controls whether SSL events are generated (parameter identifier: MQIA_SSL_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

***SSLFipsRequired*(MQCFIN)**
SSLFIPS specifies whether only FIPS-certified algorithms are to be used if cryptography is carried out in WebSphere MQ, rather than in cryptographic hardware (parameter identifier: MQIA_SSL_FIPS_REQUIRED).

If cryptographic hardware is configured, the cryptographic modules used are those modules provided by the hardware product. These modules might, or might not, be FIPS-certified to a particular level depending on the hardware product in use. This parameter applies to z/OS, UNIX, Linux, and Windows platforms only.

The value can be:

MQSSL_FIPS_NO
WebSphere MQ provides an implementation of SSL cryptography which supplies some FIPS-certified modules on some platforms. If you set *SSLFIPSRequired* to MQSSL_FIPS_NO, any CipherSpec supported on a particular platform can be used. This value is the initial default value of the queue manager.

If the queue manager runs without using cryptographic hardware, refer to the CipherSpecs listed in Specifying CipherSpecs employing FIPS 140-2 certified cryptography:

MQSSL_FIPS_YES
Specifies that only FIPS-certified algorithms are to be used in the CipherSpecs allowed on all SSL connections from and to this queue manager.

For a listing of appropriate FIPS 140-2 certified CipherSpecs; see Specifying CipherSpecs.

Changes to SSLFIPS become effective either:

- On UNIX, Linux, and Windows systems, when a new channel process is started.
- For channels that run as threads of the channel initiator on UNIX, Linux, and Windows systems, when the channel initiator is restarted.
- For channels that run as threads of the listener on UNIX, Linux, and Windows systems, when the listener is restarted.
- For channels that run as threads of a process pooling process, when the process pooling process is started or restarted and first runs an SSL channel. If the process pooling process has already run an SSL channel, and you want the change to become effective immediately, run the MQSC command **REFRESH SECURITY TYPE(SSL)**. The process pooling process is **amqrmppa** on UNIX, Linux, and Windows systems.
- On z/OS, when the channel initiator is restarted.
- When a **REFRESH SECURITY TYPE(SSL)** command is issued, except on z/OS.

***SSLKeyRepository*(MQCFST)**
The SSL key repository (parameter identifier: MQCA_SSL_KEY_REPOSITORY).

The length of the string is MQ_SSL_KEY_REPOSITORY_LENGTH.

Indicates the name of the Secure Sockets Layer key repository.

The format of the name depends on the environment:

- On z/OS, it is the name of a key ring.
- On IBM i, it is of the form *pathname*/*keyfile*, where *keyfile* is specified without the suffix (.kdb), and identifies a GSKit key database file. The default value is /QIBM/UserData/ICSS/Cert/Server/Default.

If you specify *SYSTEM, WebSphere MQ uses the system certificate store as the key repository for the queue manager. As a result, the queue manager is registered as a server application in Digital

Certificate Manager (DCM). You can assign any server/client certificate in the system store to this application.

If you change the SSLKEYR parameter to a value other than *SYSTEM, WebSphere MQ unregisters the queue manager as an application with DCM.

- On UNIX, it is of the form *pathname*/*keyfile* and on Windows *pathname**keyfile*, where *keyfile* is specified without the suffix (.kdb), and identifies a GSKit key database file. The default value for UNIX platforms is /var/mqm/qmgrs/QMGR/ssl/key, and on Windows it is C:\Program Files\IBM\WebSphere MQ\qmgrs\QMGR\ssl\key, where QMGR is replaced by the queue manager name (on UNIX, Linux, and Windows).

On IBM i, UNIX, Linux, and Windows systems, the syntax of this parameter is validated to ensure that it contains a valid, absolute, directory path.

If SSLKEYR is blank, or is a value that does not correspond to a key ring or key database file, channels using SSL fail to start.

Changes to SSLKeyRepository become effective:

- On IBM i, UNIX, Linux, and Windows platforms, when a new channel process is started.
- For channels that run as threads of the channel initiator on IBM i, UNIX, Linux, and Windows platforms, when the channel initiator is restarted.
- For channels that run as threads of the listener on IBM i, UNIX, Linux, and Windows platforms, when the listener is restarted.
- On z/OS, when the channel initiator is restarted.

***SSLKeyResetCount*(MQCFIN)**
SSL key reset count (parameter identifier: MQIA_SSL_RESET_COUNT).

Specifies when SSL channel MCAs that initiate communication reset the secret key used for encryption on the channel. The value of this parameter represents the total number of unencrypted bytes that are sent and received on the channel before the secret key is renegotiated. This number of bytes includes control information sent by the MCA.

The secret key is renegotiated when (whichever occurs first):

- The total number of unencrypted bytes sent and received by the initiating channel MCA exceeds the specified value, or,
- If channel heartbeats are enabled, before data is sent or received following a channel heartbeat.

Specify a value in the range 0 - 999,999,999. A value of zero, the initial default value of the queue manager, signifies that secret keys are never renegotiated. If you specify an SSL/TLS secret key reset count between 1 byte through 32 KB, SSL/TLS channels use a secret key reset count of 32Kb. This count is to avoid the performance effect of excessive key resets which would occur for small SSL/TLS secret key reset values.

***SSLTasks*(MQCFIN)**
Number of server subtasks to use for processing SSL calls (parameter identifier: MQIA_SSL_TASKS). This parameter applies to z/OS only.

The number of server subtasks to use for processing SSL calls. To use SSL channels, you must have at least two of these tasks running.

Specify a value in the range 0 - 9999. However, to avoid problems with storage allocation, do not set this parameter to a value greater than 50.

***StartStopEvent*(MQCFIN)**
Controls whether start and stop events are generated (parameter identifier: MQIA_START_STOP_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

***StatisticsInterval*(MQCFIN)**
The time interval, in seconds, at which statistics monitoring data is written to the monitoring queue (parameter identifier: MQIA_STATISTICS_INTERVAL).

Specify a value in the range 1 - 604,000.

This parameter is valid only on IBM i, UNIX, Linux, and Windows.

***TCPChannels*(MQCFIN)**
The maximum number of channels that can be current, or clients that can be connected, that use the TCP/IP transmission protocol (parameter identifier: MQIA_TCP_CHANNELS).

Specify a value in the range 0 - 9999. The initial default value of the queue manager is 200.

Sharing conversations do not contribute to the total for this parameter.

This parameter applies to z/OS only.

***TCPKeepAlive*(MQCFIN)**
Specifies whether the TCP KEEPALIVE facility is to be used to check whether the other end of a connection is still available (parameter identifier: MQIA_TCP_KEEP_ALIVE).

The value can be:

MQTCPKEEP_YES
The TCP KEEPALIVE facility is to be used as specified in the TCP profile configuration data set. The interval is specified in the *KeepAliveInterval* channel attribute.

MQTCPKEEP_NO
The TCP KEEPALIVE facility is not to be used. This value is the initial default value of the queue manager.

This parameter applies to z/OS only.

***TCPName*(MQCFST)**
The name of the TCP/IP system that you are using (parameter identifier: MQIA_TCP_NAME).

The maximum length of the string is MQ_TCP_NAME_LENGTH.

This parameter applies to z/OS only.

***TCPStackType*(MQCFIN)**
Specifies whether the channel initiator can use only the TCP/IP address space specified in *TCPName*, or can optionally bind to any selected TCP/IP address (parameter identifier: MQIA_TCP_STACK_TYPE).

The value can be:

MQTCPSTACK_SINGLE
The channel initiator uses the TCP/IP address space that is specified in *TCPName*. This value is the initial default value of the queue manager.

MQTCPSTACK_MULTIPLE
The channel initiator can use any TCP/IP address space available to it. It defaults to the one specified in *TCPName* if no other is specified for a channel or listener.

This parameter applies to z/OS only.

***TraceRouteRecording*(MQCFIN)**
Specifies whether trace-route information can be recorded and a reply message generated (parameter identifier: MQIA_TRACE_ROUTE_RECORDING).

The value can be:

MQRECORDING_DISABLED
Trace-route information cannot be recorded.

MQRECORDING_MSG
Trace-route information can be recorded and replies sent to the destination specified by the originator of the message causing the trace-route record.

MQRECORDING_Q
Trace-route information can be recorded and replies sent to SYSTEM.ADMIN.TRACE.ROUTE.QUEUE.

If participation in route tracing is enabled using this queue manager attribute, the value of the attribute is only important if a reply is generated. Route tracing is enabled by not setting *TraceRouteRecording* to MQRECORDING_DISABLED. The reply must go either to SYSTEM.ADMIN.TRACE.ROUTE.QUEUE, or to the destination specified by the message itself. Provided the attribute is not disabled then messages not yet at the final destination might have information added to them. For more information about trace-route records, see Controlling trace-route messaging.

***TreeLifeTime*(MQCFIN)**
The lifetime, in seconds, of non-administrative topics (parameter identifier: MQIA_TREE_LIFE_TIME).

Non-administrative topics are those topics created when an application publishes to, or subscribes as, a topic string that does not exist as an administrative node. When this non-administrative node no longer has any active subscriptions, this parameter determines how long the queue manager waits before removing that node. Only non-administrative topics that are in use by a durable subscription remain after the queue manager is recycled.

Specify a value in the range 0 - 604,000. A value of 0 means that non-administrative topics are not removed by the queue manager. The initial default value of the queue manager is 1800.

***TriggerInterval*(MQCFIN)**
Trigger interval (parameter identifier: MQIA_TRIGGER_INTERVAL).

Specifies the trigger time interval, expressed in milliseconds, for use only with queues where *TriggerType* has a value of MQTT_FIRST.

In this case, trigger messages are normally generated only when a suitable message arrives on the queue, and the queue was previously empty. Under certain circumstances, however, an additional trigger message can be generated with MQTT_FIRST triggering, even if the queue was not empty. These additional trigger messages are not generated more often than every *TriggerInterval* milliseconds.

Specify a value in the range 0 - 999,999 999.

Error codes (Change Queue Manager)

This command might return the following errors in the response format header, in addition to the values shown on page "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_CHAD_ERROR
Channel automatic definition error.

MQRCCF_CHAD_EVENT_ERROR
Channel automatic definition event error.

MQRCCF_CHAD_EVENT_WRONG_TYPE
Channel automatic definition event parameter not allowed for this channel type.

MQRCCF_CHAD_EXIT_ERROR
Channel automatic definition exit name error.

MQRCCF_CHAD_EXIT_WRONG_TYPE
Channel automatic definition exit parameter not allowed for this channel type.

MQRCCF_CHAD_WRONG_TYPE
Channel automatic definition parameter not allowed for this channel type.

MQRCCF_FORCE_VALUE_ERROR
Force value not valid.

MQRCCF_PATH_NOT_VALID
Path not valid.

MQRCCF_PWD_LENGTH_ERROR
Password length error.

MQRCCF_PSCLUS_DISABLED_TOPDEF
Administrator or application attempted to define a cluster topic when **PubSubClub** is set to MQPSCLUS_DISABLED.

MQRCCF_PSCLUS_TOPIC_EXSITS
Administrator tried to set **PubSubClub** to MQPSCLUS_DISABLED when a cluster topic definition exists.

MQRCCF_Q_MGR_CCSID_ERROR
Coded character set value not valid.

MQRCCF_REPOS_NAME_CONFLICT
Repository names not valid.

MQRCCF_UNKNOWN_Q_MGR
Queue manager not known.

Related concepts
Channel states
Related tasks
Specifying that only FIPS-certified CipherSpecs are used at run time on the MQI client
Related reference
Federal Information Processing Standards (FIPS) for UNIX, Linux and Windows

Change, Copy, and Create Service

The Change Service command changes existing service definitions. The Copy and Create service commands create new service definitions - the Copy command uses attribute values of an existing service definition.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

The Change Service (MQCMD_CHANGE_SERVICE) command changes the specified attributes of an existing WebSphere MQ service definition. For any optional parameters that are omitted, the value does not change.

The Copy Service (MQCMD_COPY_SERVICE) command creates a WebSphere MQ service definition, using, for attributes not specified in the command, the attribute values of an existing service definition.

The Create Service (MQCMD_CREATE_SERVICE) command creates a WebSphere MQ service definition. Any attributes that are not defined explicitly are set to the default values on the destination queue manager.

Required parameter (Change and Create Service)

***ServiceName* (MQCFST)**
The name of the service definition to be changed or created (parameter identifier: MQCA_SERVICE_NAME).

The maximum length of the string is MQ_OBJECT_NAME_LENGTH.

Required parameters (Copy Service)

***FromServiceName* (MQCFST)**
The name of the service definition to be copied from (parameter identifier: MQCACF_FROM_SERVICE_NAME).

This parameter specifies the name of the existing service definition that contains values for the attributes not specified in this command.

The maximum length of the string is MQ_OBJECT_NAME_LENGTH.

***ToServiceName* (MQCFST)**
To service name (parameter identifier: MQCACF_TO_SERVICE_NAME).

This parameter specifies the name of the new service definition. If a service definition with this name exists, *Replace* must be specified as MQRP_YES.

The maximum length of the string is MQ_OBJECT_NAME_LENGTH.

Optional parameters (Change, Copy, and Create Service)

***Replace* (MQCFIN)**
Replace attributes (parameter identifier: MQIACF_REPLACE).

If a namelist definition with the same name as *ToServiceName* exists, this specifies parameter whether it is to be replaced. The value can be:

MQRP_YES
Replace existing definition.

MQRP_NO
Do not replace existing definition.

***ServiceDesc* (MQCFST)**
Description of service definition (parameter identifier: MQCA_SERVICE_DESC).

This parameter is a plain-text comment that provides descriptive information about the service definition. It must contain only displayable characters.

If characters are used that are not in the coded character set identifier (CCSID) for the queue manager on which the command is executing, they might be translated incorrectly.

The maximum length of the string is MQ_SERVICE_DESC_LENGTH.

***ServiceType* (MQCFIN)**
The mode in which the service is to run (parameter identifier: MQIA_SERVICE_TYPE).

Specify either:

MQSVC_TYPE_SERVER
Only one instance of the service can be executed at a time, with the status of the service made available by the Inquire Service Status command.

MQSVC_TYPE_COMMAND
Multiple instances of the service can be started.

***StartArguments* (MQCFST)**
Arguments to be passed to the program on startup (parameter identifier: MQCA_SERVICE_START_ARGS).

Specify each argument within the string as you would on a command line, with a space to separate each argument to the program.

The maximum length of the string is MQ_SERVICE_ARGS_LENGTH.

***StartCommand* (MQCFST)**
Service program name (parameter identifier: MQCA_SERVICE_START_COMMAND).

Specifies the name of the program which is to run. You must specify a fully qualified path name to the executable program.

The maximum length of the string is MQ_SERVICE_COMMAND_LENGTH.

***StartMode* (MQCFIN)**
Service mode (parameter identifier: MQIA_SERVICE_CONTROL).

Specifies how the service is to be started and stopped. The value can be:

MQSVC_CONTROL_MANUAL
The service is not to be started automatically or stopped automatically. It is to be controlled by user command. This value is the default value.

MQSVC_CONTROL_Q_MGR
The service being defined is to be started and stopped at the same time as the queue manager is started and stopped.

MQSVC_CONTROL_Q_MGR_START
The service is to be started at the same time as the queue manager is started, but is not requested to stop when the queue manager is stopped.

***StderrDestination* (MQCFST)**
Specifies the path to a file to which the standard error (stderr) of the service program must be redirected (parameter identifier: MQCA_STDERR_DESTINATION).

If the file does not exist when the service program is started, the file is created.

The maximum length of the string is MQ_SERVICE_PATH_LENGTH.

***StdoutDestination* (MQCFST)**
Specifies the path to a file to which the standard output (stdout) of the service program must be redirected (parameter identifier: MQCA_STDOUT_DESTINATION).

If the file does not exist when the service program is started, the file is created.

The maximum length of the string is MQ_SERVICE_PATH_LENGTH.

***StopArguments* (MQCFST)**
Specifies the arguments to be passed to the stop program when instructed to stop the service (parameter identifier: MQCA_SERVICE_STOP_ARGS).

Specify each argument within the string as you would on a command line, with a space to separate each argument to the program.

The maximum length of the string is MQ_SERVICE_ARGS_LENGTH.

***StopCommand* (MQCFST)**
Service program stop command (parameter identifier: MQCA_SERVICE_STOP_COMMAND).

This parameter is the name of the program that is to run when the service is requested to stop. You must specify a fully qualified path name to the executable program.

The maximum length of the string is MQ_SERVICE_COMMAND_LENGTH.

Change, Copy, and Create Subscription

The Change Subscription command changes existing subscription definitions. The Copy and Create Subscription commands create new subscription definitions - the Copy command uses attribute values of an existing subscription definition.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

The Change Subscription (MQCMD_CHANGE_SUBSCRIPTION) command changes the specified attributes of an existing WebSphere MQ subscription. For any optional parameters that are omitted, the value does not change.

The Copy Subscription (MQCMD_COPY_SUBSCRIPTION) command creates a WebSphere MQ subscription, using, for attributes not specified in the command, the attribute values of an existing subscription.

The Create Subscription (MQCMD_CREATE_SUBSCRIPTION) command creates a WebSphere MQ administrative subscription so that existing applications can participate in publish/subscribe application.

Required parameters (Change Subscription)

***SubName* (MQCFST)**
The name of the subscription definition to be changed (parameter identifier: MQCACF_SUB_NAME).

The maximum length of the string is MQ_SUB_NAME_LENGTH.

or

***SubId* (MQCFBS)**
The unique identifier of the subscription definition to be changed (parameter identifier: MQBACF_SUB_ID).

The maximum length of the string is MQ_CORREL_ID_LENGTH.

Required parameters (Copy Subscription)

***ToSubscriptionName* (MQCFBS)**
The name of the subscription to copy to (parameter identifier: MQCACF_TO_SUB_NAME).

The maximum length of the string is MQ_SUBSCRIPTION_NAME_LENGTH.

You require at least one of *FromSubscriptionName* or *SubId*.

***FromSubscriptionName* (MQCFST)**
The name of the subscription definition to be copied from (parameter identifier: MQCACF_FROM_SUB_NAME).

On z/OS, the queue manager searches for an object with the name you specify and a disposition of MQQSGD_Q_MGR or MQQSGD_COPY to copy from. This parameter is ignored if a value of MQQSGD_COPY is specified for *QSGDisposition*. In this case, an object with the name specified by *ToSubscriptionName* and the disposition MQQSGD_GROUP is used.

The maximum length of the string is MQ_SUBSCRIPTION_NAME_LENGTH.

***SubId* (MQCFBS)**
The unique identifier of the subscription definition to be changed (parameter identifier: MQBACF_SUB_ID).

The maximum length of the string is MQ_CORREL_ID_LENGTH.

Required parameters (Create Subscription)

You must provide the *SubName*.

***SubName* (MQCFST)**
The name of the subscription definition to be changed (parameter identifier: MQCACF_SUB_NAME).

The maximum length of the string is MQ_SUB_NAME_LENGTH.

You require at least one of *TopicObject* or *TopicString*.

***TopicObject* (MQCFST)**
The name of a previously defined topic object from which is obtained the topic name for the subscription (parameter identifier: MQCA_TOPIC_NAME). Although the parameter is accepted, the value specified cannot be different from the original value for Change Subscription.

The maximum length of the string is MQ_TOPIC_NAME_LENGTH.

***TopicString* (MQCFST)**
The resolved topic string (parameter identifier: MQCA_TOPIC_STRING). .

The maximum length of the string is MQ_TOPIC_STR_LENGTH.

Optional parameters (Change, Copy, and Create Subscription)

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is processed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is processed on the queue manager on which it was entered.
- a queue manager name. The command is processed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is processed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***Destination* (MQCFST)**
Destination (parameter identifier: MQCACF_DESTINATION).

Specifies the name of the alias, local, remote, or cluster queue to which messages for this subscription are put.

***DestinationClass* (MQCFIN)**
Destination class (parameter identifier: MQIACF_DESTINATION_CLASS).

Specifies whether the destination is managed.

Specify either:

MQDC_MANAGED
The destination is managed.

MQDC_PROVIDED
The destination queue is as specified in the *Destination* field.

Although the parameter is accepted, the value specified cannot be different from the original value for Change Subscription.

***DestinationCorrelId* (MQCFBS)**
Destination correlation identifier (parameter identifier: MQBACF_DESTINATION_CORREL_ID).

Provides a correlation identifier that is placed in the *CorrelId* field of the message descriptor for all the messages sent to this subscription.

The maximum length is MQ_CORREL_ID_LENGTH.

***DestinationQueueManager* (MQCFST)**
Destination queue manager (parameter identifier: MQCACF_DESTINATION_Q_MGR).

Specifies the name of the destination queue manager, either local or remote, to which messages for the subscription are forwarded.

The maximum length of the string is MQ_Q_MGR_NAME_LENGTH.

***Expiry* (MQCFIN)**
The time, in tenths of a second, at which a subscription expires after its creation date and time (parameter identifier: MQIACF_EXPIRY).

The default value of unlimited means that the subscription never expires.

After a subscription has expired it becomes eligible to be discarded by the queue manager and receives no further publications.

***PublishedAccountingToken* (MQCFBS)**
Value of the accounting token used in the *AccountingToken* field of the message descriptor (parameter identifier: MQBACF_ACCOUNTING_TOKEN).

The maximum length of the string is MQ_ACCOUNTING_TOKEN_LENGTH.

***PublishedApplicationIdentifier* (MQCFST)**
Value of the application identity data used in the *ApplIdentityData* field of the message descriptor (parameter identifier: MQCACF_APPL_IDENTITY_DATA.

The maximum length of the string is MQ_APPL_IDENTITY_DATA_LENGTH.

***PublishPriority* (MQCFIN)**
The priority of the message sent to this subscription (parameter identifier: MQIACF_PUB_PRIORITY).

The value can be:

MQPRI_PRIORITY_AS_PUBLISHED
Priority of messages sent to this subscription is taken from the priority supplied to the published message. This value is the supplied default value.

MQPRI_PRIORITY_AS_QDEF
Priority of messages sent to this subscription is determined by the default priority of the queue defined as a destination.

0-9
An integer value providing an explicit priority for messages sent to this subscription.

***PublishSubscribeProperties* (MQCFIN)**
Specifies how publish/suscribe related message properties are added to messages sent to this subscription (parameter identifier: MQIACF_PUBSUB_PROPERTIES).

The value can be:

MQPSPROP_COMPAT
If the original publication is a PCF message, then the publish/subscribe properties are added as PCF attributes. Otherwise, publish/subscribe properties are added within an MQRFH version 1 header. This method is compatible with applications coded for use with previous versions of WebSphere MQ.

MQPSPROP_NONE
Do not add publish/suscribe properties to the messages. This value is the supplied default value.

MQPSPROP_RFH2
Publish/suscribe properties are added within an MQRFH version 2 header. This method is compatible with applications coded for use with WebSphere Message Brokers.

***Selector* (MQCFST)**
Specifies the selector applied to messages published to the topic (parameter identifier: MQCACF_SUB_SELECTOR). Although the parameter is accepted, the value specified cannot be different from the original value for Change Subscription.

Only those messages that satisfy the selection criteria are put to the destination specified by this subscription.

The maximum length of the string is MQ_SELECTOR_LENGTH.

***SubscriptionLevel* (MQCFIN)**
The level within the subscription interception hierarchy at which this subscription is made (parameter identifier: MQIACF_SUB_LEVEL). To ensure that an intercepting application receives messages before any other subscribers, make sure that it has the highest subscription level of all subscribers.

The value can be:

0 - 9
An integer in the range 0-9. The default value is 1. Subscribers with a subscription level of 9 intercept publications before they reach subscribers with lower subscription levels.

***SubscriptionScope* (MQCFIN)**
Determines whether this subscription is passed to other queue managers in the network (parameter identifier: MQIACF_SUBSCRIPTION_SCOPE). Although the parameter is accepted, the value specified cannot be different from the original value for Change Subscription.

The value can be:

MQTSCOPE_ALL
The subscription is forwarded to all queue managers directly connected through a publish/subscribe collective or hierarchy. This value is the supplied default value.

MQTSCOPE_QMGR
The subscription only forwards messages published on the topic within this queue manager.

***SubscriptionUser* (MQCFST)**
The userid that 'owns' this subscription. This parameter is either the userid associated with the creator of the subscription, or, if subscription takeover is permitted, the userid which last took over the subscription. (parameter identifier: MQCACF_SUB_USER_ID).

The maximum length of the string is MQ_USER_ID_LENGTH.

***TopicString* (MQCFST)**
The resolved topic string (parameter identifier: MQCA_TOPIC_STRING). Although the parameter is accepted, the value specified cannot be different from the original value for Change Subscription.

The maximum length of the string is MQ_TOPIC_STR_LENGTH.

***Userdata* (MQCFST)**
User data (parameter identifier: MQCACF_SUB_USER_DATA).

Specifies the user data associated with the subscription

The maximum length of the string is MQ_USER_DATA_LENGTH.

***VariableUser* (MQCFST)**
Specifies whether a user other than the one who created the subscription, that is, the user shown in *SubscriptionUser* can take over the ownership of the subscription (parameter identifier: MQIACF_VARIABLE_USER_ID).

The value can be:

MQVU_ANY_USER
Any user can take over the ownership. This value is the supplied default value.

MQVU_FIXED_USER
No other user can take over the ownership.

***WildcardSchema* (MQCFIN)**
Specifies the schema to be used when interpreting any wildcard characters contained in the *TopicString* (parameter identifier: MQIACF_WILDCARD_SCHEMA). Although the parameter is accepted, the value specified cannot be different from the original value for Change Subscription.

The value can be:

MQWS_CHAR
Wildcard characters represent portions of strings for compatibility with WebSphere MQ V6.0 broker.

MQWS_TOPIC
Wildcard characters represent portions of the topic hierarchy for compatibility with WebSphere Message Brokers. This value is the supplied default value.

Change, Copy, and Create Topic

The Change Topic command changes existing topic definitions. The Copy and Create Topic commands create new topic definitions - the Copy command uses attribute values of an existing topic definition.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

The Change Topic (MQCMD_CHANGE_TOPIC) command changes the specified attributes of an existing WebSphere MQ administrative topic definition. For any optional parameters that are omitted, the value does not change.

The Copy Topic (MQCMD_COPY_TOPIC) command creates a WebSphere MQ administrative topic definition by using, for attributes not specified in the command, the attribute values of an existing topic definition.

The Create Topic (MQCMD_CREATE_TOPIC) command creates an IBM WebSphere MQ administrative topic definition. Any attributes that are not defined explicitly are set to the default values on the destination queue manager.

Required parameter (Change Topic)

***TopicName* (MQCFST)**
The name of the administrative topic definition to be changed (parameter identifier: MQCA_TOPIC_NAME).

The maximum length of the string is MQ_TOPIC_NAME_LENGTH.

Required parameters (Copy Topic)

***FromTopicName* (MQCFST)**
The name of the administrative topic object definition to be copied from (parameter identifier: MQCACF_FROM_TOPIC_NAME).

On z/OS, the queue manager searches for an object with the name you specify and a disposition of MQQSGD_Q_MGR or MQQSGD_COPY to copy from. This parameter is ignored if a value of MQQSGD_COPY is specified for *QSGDisposition*. In this case, an object with the name specified by *ToTopicName* and the disposition MQQSGD_GROUP is searched for to copy from.

The maximum length of the string is MQ_TOPIC_NAME_LENGTH.

***TopicString* (MQCFST)**
The topic string (parameter identifier: MQCA_TOPIC_STRING). This string uses the forward slash (/) character as a delimiter for elements within the topic tree.

The maximum length of the string is MQ_TOPIC_STR_LENGTH.

***ToTopicName* (MQCFST)**
The name of the administrative topic definition to copy to (parameter identifier: MQCACF_TO_TOPIC_NAME).

The maximum length of the string is MQ_TOPIC_NAME_LENGTH.

Required parameters (Create Topic)

***TopicName* (MQCFST)**
The name of the administrative topic definition to be created (parameter identifier: MQCA_TOPIC_NAME).

The maximum length of the string is MQ_TOPIC_NAME_LENGTH.

***TopicString* (MQCFST)**
The topic string (parameter identifier: MQCA_TOPIC_STRING).

This parameter is required and cannot contain the empty string. The "/" character within this string has a special meaning. It delimits the elements in the topic tree. A topic string can start with the "/" character but is not required to. A string starting with the "/" character is not the same as a string that does not start with the "/" character. A topic string cannot end with the "/" character.

The maximum length of the string is MQ_TOPIC_STR_LENGTH.

Optional parameters (Change, Copy, and Create Topic)

***ClusterName* (MQCFST)**
The name of the cluster to which this topic belongs (parameter identifier: MQCA_CLUSTER_NAME). The maximum length of the string is MQ_CLUSTER_NAME_LENGTH.

The value can be:

Blank
This topic does not belong to a cluster. Publications and subscriptions for this topic are not propagated to publish/subscribe cluster-connected queue managers.

This value is the default value for this parameter if no value is specified.

String
This topic belongs to the indicated cluster.

Additionally, if PublicationScope or SubscriptionScope are set to MQSCOPE_ALL, this value is the cluster to be used for the propagation of publications and subscriptions, for this topic, to publish/subscribe cluster-connected queue managers.

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***CommunicationInformation* (MQCFST)**
The Multicast communication information object (parameter identifier: MQCA_COMM_INFO_NAME).

The maximum length of the string is MQ_COMM_INFO_NAME_LENGTH.

***Custom* (MQCFST)**
Custom attribute for new features (parameter identifier: MQCA_CUSTOM).

This attribute is reserved for the configuration of new features before separate attributes have been introduced. It can contain the values of zero or more attributes as pairs of attribute name and value, separated by at least one space. The attribute name and value pairs have the form `NAME(VALUE)`. Single quotes must be escaped with another single quote.

This description will be updated when features using this attribute are introduced. At the moment there are no possible values for *Custom*.

***DefPersistence* (MQCFIN)**
Default persistence (parameter identifier: MQIA_TOPIC_DEF_PERSISTENCE).

Specifies the default for message-persistence of messages published to the topic. Message persistence determines whether messages are preserved across restarts of the queue manager.

The value can be:

MQPER_PERSISTENCE_AS_PARENT
The default persistence is based on the setting of the closest parent administrative topic object in the topic tree.

MQPER_PERSISTENT
Message is persistent.

MQPER_NOT_PERSISTENT
Message is not persistent.

***DefPriority* (MQCFIN)**
Default priority (parameter identifier: MQIA_DEF_PRIORITY).

Specifies the default priority of messages published to the topic.

Specify either:

integer
The default priority to be used, in the range zero through to the maximum priority value that is supported (9).

MQPRI_PRIORITY_AS_PARENT
The default priority is based on the setting of the closest parent administrative topic object in the topic tree.

***DefPutResponse* (MQCFIN)**
Default put response (parameter identifier: MQIA_DEF_PUT_RESPONSE_TYPE).

The value can be:

MQPRT_ASYNC_RESPONSE
The put operation is issued asynchronously, returning a subset of MQMD fields.

MQPRT_RESPONSE_AS_PARENT
The default put response is based on the setting of the closest parent administrative topic object in the topic tree.

MQPRT_SYNC_RESPONSE
The put operation is issued synchronously, returning a response.

***DurableModelQName* (MQCFST)**
Name of the model queue to be used for durable subscriptions (parameter identifier: MQCA_MODEL_DURABLE_Q).

The maximum length of the string is MQ_Q_NAME_LENGTH.

***DurableSubscriptions* (MQCFIN)**
Whether applications are permitted to make durable subscriptions (parameter identifier: MQIA_DURABLE_SUB).

The value can be:

MQSUB_DURABLE_AS_PARENT
Whether durable subscriptions are permitted is based on the setting of the closest parent administrative topic object in the topic tree.

MQSUB_DURABLE_ALLOWED
Durable subscriptions are permitted.

MQSUB_DURABLE_INHIBITED
Durable subscriptions are not permitted.

***InhibitPublications* (MQCFIN)**
Whether publications are allowed for this topic (parameter identifier: MQIA_INHIBIT_PUB).

The value can be:

MQTA_PUB_AS_PARENT
Whether messages can be published to this topic is based on the setting of the closest parent administrative topic object in the topic tree.

MQTA_PUB_INHIBITED
Publications are inhibited for this topic.

MQTA_PUB_ALLOWED
Publications are allowed for this topic.

***InhibitSubscriptions* (MQCFIN)**
Whether subscriptions are allowed for this topic (parameter identifier: MQIA_INHIBIT_SUB).

The value can be:

MQTA_SUB_AS_PARENT
Whether applications can subscribe to this topic is based on the setting of the closest parent administrative topic object in the topic tree.

MQTA_SUB_INHIBITED
Subscriptions are inhibited for this topic.

MQTA_SUB_ALLOWED
Subscriptions are allowed for this topic.

***Multicast* (MQCFIN)**
Whether multicast is allowable in the topic tree (parameter identifier: MQIA_MULTICAST).

The value can be:

MQMC_AS_PARENT
Whether multicast is allowed on this topic is based on the setting of the closest parent administrative topic object in the topic tree.

MQMC_ENABLED
Multicast is allowed on this topic.

MQMC_DISABLED
Multicast is not allowed on this topic.

MQMC_ONLY
Only subscriptions and publications made using multicast are allowed on this topic.

***NonDurableModelQName* (MQCFST)**
Name of the model queue to be used for non-durable subscriptions (parameter identifier: MQCA_MODEL_NON_DURABLE_Q).

The maximum length of the string is MQ_Q_NAME_LENGTH.

***NonPersistentMsgDelivery* (MQCFIN)**
The delivery mechanism for non-persistent messages published to this topic (parameter identifier: MQIA_NPM_DELIVERY).

The value can be:

MQDLV_AS_PARENT
The delivery mechanism used is based on the setting of the first parent administrative node found in the topic tree relating to this topic.

MQDLV_ALL
Non-persistent messages must be delivered to all subscribers, irrespective of durability for the MQPUT call to report success. If a delivery failure to any subscriber occurs, no other subscribers receive the message and the MQPUT fails.

MQDLV_ALL_DUR
Non-persistent messages must be delivered to all durable subscribers. Failure to deliver a non-persistent message to any non-durable subscribers does not return an error to the MQPUT call. If a delivery failure to a durable subscriber occurs, no other subscribers receive the message and the MQPUT fails.

MQDLV_ALL_AVAIL
Non-persistent messages are delivered to all subscribers that can accept the message. Failure to deliver the message to any subscriber does not prevent other subscribers from receiving the message.

***PersistentMsgDelivery* (MQCFIN)**
The delivery mechanism for persistent messages published to this topic (parameter identifier: MQIA_PM_DELIVERY).

The value can be:

MQDLV_AS_PARENT
The delivery mechanism used is based on the setting of the first parent administrative node found in the topic tree relating to this topic.

MQDLV_ALL
Persistent messages must be delivered to all subscribers, irrespective of durability for the MQPUT call to report success. If a delivery failure to any subscriber occurs, no other subscribers receive the message and the MQPUT fails.

MQDLV_ALL_DUR
Persistent messages must be delivered to all durable subscribers. Failure to deliver a persistent message to any non-durable subscribers does not return an error to the MQPUT call. If a delivery failure to a durable subscriber occurs, no other subscribers receive the message and the MQPUT fails.

MQDLV_ALL_AVAIL
Persistent messages are delivered to all subscribers that can accept the message. Failure to deliver the message to any subscriber does not prevent other subscribers from receiving the message.

***ProxySubscriptions* (MQCFIN)**
Whether a proxy subscription is to be sent for this topic to directly connected queue managers, even if no local subscriptions exist (parameter identifier: MQIA_PROXY_SUB).

The value can be:

MQTA_PROXY_SUB_FORCE
A proxy subscription is sent to connected queue managers even if no local subscriptions exist.

Note: The proxy subscription is sent when this value is set on Create or Change of the topic.

MQTA_PROXY_SUB_FIRSTUSE
For each unique topic string at or below this topic object, a proxy subscription is asynchronously sent to all neighboring queue managers in the following scenarios:

- When a local subscription is created.
- When a proxy subscription is received that must be propagated to further directly connected queue managers.

This value is the default value for this parameter if no value is specified.

***PublicationScope* (MQCFIN)**
Whether this queue manager propagates publications for this topic, to queue managers as part of a hierarchy or as part of a publish/subscribe cluster (parameter identifier: MQIA_PUB_SCOPE).

The value can be:

MQSCOPE_AS_PARENT
Whether this queue manager propagates publications, for this topic, to queue managers as part of a hierarchy or as part of a publish/subscribe cluster is based on the setting of the first parent administrative node found in the topic tree relating to this topic.

This value is the default value for this parameter if no value is specified.

MQSCOPE_QMGR
Publications for this topic are not propagated to other queue managers.

MQSCOPE_ALL
Publications for this topic are propagated to hierarchically connected queue managers and to publish/subscribe cluster-connected queue managers.

Note: This behavior can be over-ridden on a publication-by-publication basis, by using MQPMO_SCOPE_QMGR on the Put Message Options.

QSGDisposition **(MQCFIN)**
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves). The value can be:

QSGDisposition	Change	Copy, Create
MQQSGD_COPY	The object definition resides on the page set of the queue manager that executes the command. The object was defined by using a command that had the parameter MQQSGD_COPY. Any object residing in the shared repository, or any object defined by using a command that had the parameters MQQSGD_Q_MGR, is not affected by this command.	The object is defined on the page set of the queue manager that executes the command by using the MQQSGD_GROUP object of the same name as the *ToTopicName* object (for Copy) or *TopicName* object (for Create).

MQQSGD_GROUP	The object definition resides in the shared repository. The object was defined by using a command that had the parameter MQQSGD_GROUP. Any object residing on the page set of the queue manager that executes the command (except a local copy of the object) is not affected by this command.
	If the command is successful, the following MQSC command is generated and sent to all active queue managers in the queue-sharing group so that they refresh local copies on page set zero:
	`DEFINE TOPIC(name)`
	`REPLACE QSGDISP(COPY)`
	The Change for the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.
		The object definition resides in the shared repository. This definition is allowed only if the queue manager is in a queue-sharing group.
		If the definition is successful, the following MQSC command is generated and sent to all active queue managers in the queue-sharing group so that they make or refresh local copies on page set zero:
		`DEFINE TOPIC(name)`
		`REPLACE QSGDISP(COPY)`
		The Copy or Create for the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.

QSGDisposition	Change	Copy, Create
MQQSGD_PRIVATE	The object resides on the page set of the queue manager that executes the command, and was defined with MQQSGD_Q_MGR or MQQSGD_COPY. Any object residing in the shared repository is unaffected.	Not permitted.
MQQSGD_Q_MGR	The object definition resides on the page set of the queue manager that executes the command. The object was defined using a command that had the parameter MQQSGD_Q_MGR. Any object residing in the shared repository, or any local copy of such an object, is not affected by this command. This value is the default value.	The object is defined on the page set of the queue manager that executes the command. This value is the default value.

***Replace* (MQCFIN)**
Replace attributes (parameter identifier: MQIACF_REPLACE).

If a topic definition with the same name as *ToTopicName* exists, this parameter specifies whether it is to be replaced. The value can be as follows:

MQRP_YES
Replace existing definition.

MQRP_NO
Do not replace existing definition.

***SubscriptionScope* (MQCFIN)**
Whether this queue manager propagates subscriptions for this topic, to queue managers as part of a hierarchy or as part of a publish/subscribe cluster (parameter identifier: MQIA_SUB_SCOPE).

The value can be:

MQSCOPE_AS_PARENT
Whether this queue manager propagates subscriptions, for this topic, to queue managers as part of a hierarchy or as part of a publish/subscribe-cluster is based on the setting of the first parent administrative node found in the topic tree relating to this topic.

This value is the default value for this parameter if no value is specified.

MQSCOPE_QMGR
Subscriptions for this topic are not propagated to other queue managers.

MQSCOPE_ALL
Subscriptions for this topic are propagated to hierarchically connected queue managers and to publish/subscribe cluster-connected queue managers.

Note: This behavior can be over-ridden on a subscription-by-subcription basis, by using MQSO_SCOPE_QMGR on the Subscription Descriptor or SUBSCOPE(QMGR) on DEFINE SUB.

***TopicDesc* (MQCFST)**
Topic description (parameter identifier: MQCA_TOPIC_DESC).

Text that briefly describes the object

The maximum length is MQ_TOPIC_DESC_LENGTH.

Use characters from the character set identified by the coded character set identifier (CCSID) for the message queue manager on which the command is executing to ensure that the text is translated correctly if it is sent to another queue manager.

***TopicType* (MQCFIN)**
Topic type (parameter identifier: MQIA_TOPIC_TYPE).

The value specified must match the type of the topic being changed. The value can be:

MQTOPT_LOCAL
Local topic object

***UseDLQ* (MQCFIN)**
Determines whether the dead-letter queue is used when publication messages cannot be delivered to their correct subscriber queue (parameter identifier: MQIA_USE_DEAD_LETTER_Q).

The value can be:

MQUSEDLQ_AS_PARENT
Determines whether to use the dead-letter queue using the setting of the closest administrative topic object in the topic tree. This value is the default supplied with IBM WebSphere MQ, but your installation might have changed it.

MQUSEDLQ_NO
Publication messages that cannot be delivered to their correct subscriber queue are treated as a failure to put the message. The MQPUT of an application to a topic fails in accordance with the settings of MQIA_NPM_DELIVERY and MQIA_PM_DELIVERY.

MQUSEDLQ_YES
If the DEADQ queue manager attribute provides the name of a dead-letter queue then it is used, otherwise the behavior is as for MQUSEDLQ_NO.

***WildcardOperation* (MQCFIN)**
Behavior of subscriptions including wildcards made to this topic (parameter identifier: MQIA_WILDCARD_OPERATION).

The value can be:

MQTA_PASSTHRU
A less specific wildcard subscription is a subscription made by using wildcard topic names that are less specific than the topic string at this topic object. MQTA_PASSTHRU lets less specific wildcard subscriptions receive publications made to this topic and to topic strings more specific than this topic. This value is the default supplied with WebSphere MQ.

MQTA_BLOCK
A less specific wildcard subscription is a subscription made by using wildcard topic names that are less specific than the topic string at this topic object. MQTA_BLOCK stops less specific wildcard subscriptions receiving publications made to this topic or to topic strings more specific than this topic.

This value of this attribute is used when subscriptions are defined. If you alter this attribute, the set of topics covered by existing subscriptions is not affected by the modification. This value applies also, if the topology is changed when topic objects are created or deleted; the set of topics matching subscriptions created following the modification of the *WildcardOperation* attribute is created by using the modified topology. If you want to force the matching set of topics to be re-evaluated for existing subscriptions, you must restart the queue manager.

Clear Queue

The Clear Queue (MQCMD_CLEAR_Q) command deletes all the messages from a local queue.

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X	X	X

The command fails if the queue contains uncommitted messages.

Required parameters

***QName* (MQCFST)**
Queue name (parameter identifier: MQCA_Q_NAME).

The name of the local queue to be cleared. The maximum length of the string is MQ_Q_NAME_LENGTH.

Note: The target queue must be type local.

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***QSGDisposition* (MQCFIN)**
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves). The value can be:

MQQSGD_PRIVATE
Clear the private queue named in *QName*. The queue is private if it was created using a command with the attributes MQQSGD_PRIVATE or MQQSGD_Q_MGR. This value is the default value.

MQQSGD_SHARED
Clear the shared queue named in *QName*. The queue is shared if it was created using a command with the attribute MQQSGD_SHARED. This value applies only to local queues.

Error codes

This command might return the following error codes in the response format header, in addition to the values shown on page “Error codes applicable to all commands” on page 687.

***Reason* (MQLONG)**
The value can be:

MQRC_Q_NOT_EMPTY
(2055, X'807') Queue contains one or more messages or uncommitted put or get requests.

This reason occurs only if there are uncommitted updates.

MQRCCF_Q_WRONG_TYPE
Action not valid for the queue of specified type.

Clear Topic String

The Clear Topic String (MQCMD_CLEAR_TOPIC_STRING) command clears the retained message which is stored for the specified topic.

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	X	X

Required parameters

***TopicString* (MQCFST)**
Topic String (parameter identifier: MQCA_TOPIC_STRING).

The topic string to be cleared The maximum length of the string is MQ_TOPIC_STR_LENGTH.

***ClearType* (MQCFIN)**
Clear type (parameter identifier: MQIACF_CLEAR_TYPE).

Specifies the type of clear command being issued. The value must be:

MQCLRT_RETAINED Remove the retained publication from the specified topic string.

Optional parameters

***Scope* (MQCFIN)**
Scope of clearance (parameter identifier: MQIACF_CLEAR_SCOPE).

Whether the topic string is to be cleared locally or globally. The value can be:

MQCLRS_LOCAL
The retained message is removed from the specified topic string at the local queue manager only.

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

Delete Authentication Information Object

The Delete authentication information (MQCMD_DELETE_AUTH_INFO) command deletes the specified authentication information object.

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X	X	X

Required parameters

***AuthInfoName* (MQCFST)**
Authentication information object name (parameter identifier: MQCA_AUTH_INFO_NAME).

The maximum length of the string is MQ_AUTH_INFO_NAME_LENGTH.

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***QSGDisposition* (MQCFIN)**
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves). The value can be:

MQQSGD_COPY
The object definition resides on the page set of the queue manager which executes this command. The object was defined by a command using the parameter MQQSGD_COPY. Any object in the shared repository, or any object defined by a command using the parameter MQQSGD_Q_MGR, is not affected by this command.

MQQSGD_GROUP
The object definition resides in the shared repository. The object was defined by a command using the parameter MQQSGD_GROUP. Any object residing on the page set of the queue manager that executes the command (except a local copy of the object) is not affected by this command.

If the command is successful, the following MQSC command is generated and sent to all active queue managers in the queue-sharing group to delete local copies on page set zero:

```
DELETE AUTHINFO(name) QSGDISP(COPY)
```

The deletion of the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.

MQQSGD_Q_MGR
The object definition resides on the page set of the queue manager that executes the command. The object was defined by a command using the parameter MQQSGD_Q_MGR. Any object residing in the shared repository, or any local copy of such an object, is not affected by this command.

MQQSGD_Q_MGR is the default value.

Delete Authority Record

The Delete Authority Record (MQCMD_DELETE_AUTH_REC) command deletes an authority record. The authorizations associated with the profile no longer apply to WebSphere MQ objects with names that match the profile name specified.

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	X	X

Required parameters

***ObjectType* (MQCFIN)**
The type of object for which to delete authorizations (parameter identifier: MQIACF_OBJECT_TYPE).

The value can be:

MQOT_AUTH_INFO
Authentication information.

MQOT_CHANNEL
Channel object.

MQOT_CLNTCONN_CHANNEL
Client-connection channel object.

MQOT_COMM_INFO
Communication information object

MQOT_LISTENER
Listener object.

MQOT_NAMELIST
Namelist.

MQOT_PROCESS
Process.

MQOT_Q
Queue, or queues, that match the object name parameter.

MQOT_Q_MGR
Queue manager.

MQOT_REMOTE_Q_MGR_NAME
Remote queue manager.

MQOT_SERVICE
Service object.

MQOT_TOPIC
Topic object.

***ProfileName* (MQCFST)**
Name of the profile to be deleted (parameter identifier: MQCACF_AUTH_PROFILE_NAME).

If you have defined a generic profile then you can specify it here, using wildcard characters to specify a named generic profile to be removed. If you specify an explicit profile name, the object must exist.

The maximum length of the string is MQ_AUTH_PROFILE_NAME_LENGTH.

Optional parameters

***GroupNames* (MQCFSL)**
Group names (parameter identifier: MQCACF_GROUP_ENTITY_NAMES).

The names of groups having a profile deleted. At least one group name or principal name must be specified. An error occurs if neither are specified.

Each member in this list can be a maximum length of MQ_ENTITY_NAME_LENGTH.

***PrincipalNames* (MQCFSL)**
Principal names (parameter identifier: MQCACF_PRINCIPAL_ENTITY_NAMES).

The names of principals having a profile deleted. At least one group name or principal name must be specified. An error occurs if neither are specified.

Each member in this list can be a maximum length of MQ_ENTITY_NAME_LENGTH.

Error codes (Delete Authority Record)

This command might return the following error codes in the response format header, in addition to the values shown on page "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRC_OBJECT_TYPE_ERROR
Invalid object type.

MQRC_UNKNOWN_ENTITY
Userid not authorized, or unknown.

MQRCCF_ENTITY_NAME_MISSING
Entity name missing.

MQRCCF_OBJECT_TYPE_MISSING
Object type missing.

MQRCCF_PROFILE_NAME_ERROR
Invalid profile name.

Delete Channel

The Delete Channel (MQCMD_DELETE_CHANNEL) command deletes the specified channel definition.

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X	X	X

Required parameters

***ChannelName* (MQCFST)**
Channel name (parameter identifier: MQCACH_CHANNEL_NAME).

The name of the channel definition to be deleted. The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

Optional parameters

None of the following attributes are applicable to MQTT channels unless specifically mentioned in the parameter description.

***ChannelType* (MQCFIN)**
The type of channel (parameter identifier: MQIACH_CHANNEL_TYPE). This parameter is currently only used with MQTT Telemetry channels, and is required when deleting a Telemetry channel. The only value that can currently be given to the parameter is **MQCHT_MQTT**.

***ChannelTable* (MQCFIN)**
Channel table (parameter identifier: MQIACH_CHANNEL_TABLE).

Specifies the ownership of the channel definition table that contains the specified channel definition.

The value can be:

MQCHTAB_Q_MGR
Queue-manager table.

MQCHTAB_Q_MGR is the default. This table contains channel definitions for channels of all types except MQCHT_CLNTCONN.

MQCHTAB_CLNTCONN
Client-connection table.

This table only contains channel definitions for channels of type MQCHT_CLNTCONN.

This parameter is not applicable to IBM WebSphere MQ Telemetry.

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***QSGDisposition* (MQCFIN)**
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves). The value can be:

MQQSGD_COPY
The object definition resides on the page set of the queue manager that executes the command. The object was defined by a command using the parameter MQQSGD_COPY. Any object residing in the shared repository, or any object defined by a command using the parameter MQQSGD_Q_MGR, is not affected by this command.

MQQSGD_GROUP
The object definition resides in the shared repository. The object was defined by a command using the parameters MQQSGD_GROUP. Any object residing on the page set of the queue manager that executes the command (except a local copy of the object) is not affected by this command.

If the command is successful, the following MQSC command is generated and sent to all active queue managers in the queue-sharing group to delete local copies on page set zero:

```
DELETE CHANNEL(name) QSGDISP(COPY)
```

The deletion of the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.

MQQSGD_Q_MGR
The object definition resides on the page set of the queue manager that executes the command. The object was defined by a command using the parameter MQQSGD_Q_MGR. Any object residing in the shared repository, or any local copy of such an object, is not affected by this command.

MQQSGD_Q_MGR is the default value.

This command might return the following error codes in the response format header, in addition to the values shown on page "Error codes applicable to all commands" on page 687.

Error codes

***Reason* (MQLONG)**
The value can be:

MQRCCF_CHANNEL_NOT_FOUND
Channel not found.

MQRCCF_CHANNEL_TABLE_ERROR
Channel table value not valid.

Delete Channel (MQTT)

The Delete Telemetry Channel (MQCMD_DELETE_CHANNEL) command deletes the specified channel definition.

Required parameters

***ChannelName* (MQCFST)**
Channel name (parameter identifier: MQCACH_CHANNEL_NAME).

The name of the channel definition to be deleted. The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

***ChannelType* (MQCFIN)**
The type of channel (parameter identifier: MQIACH_CHANNEL_TYPE). Required when deleting a Telemetry channel. The only value that can currently be given to the parameter is **MQCHT_MQTT**.

Optional parameters

None of the following attributes are applicable to MQTT channels unless specifically mentioned in the parameter description.

***ChannelTable* (MQCFIN)**
Channel table (parameter identifier: MQIACH_CHANNEL_TABLE).

Specifies the ownership of the channel definition table that contains the specified channel definition.

The value can be:

MQCHTAB_Q_MGR
Queue-manager table.

MQCHTAB_Q_MGR is the default. This table contains channel definitions for channels of all types except MQCHT_CLNTCONN.

MQCHTAB_CLNTCONN
Client-connection table.

This table only contains channel definitions for channels of type MQCHT_CLNTCONN.

This parameter is not applicable to IBM WebSphere MQ Telemetry.

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.

- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***QSGDisposition* (MQCFIN)**
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves). The value can be:

MQQSGD_COPY
The object definition resides on the page set of the queue manager that executes the command. The object was defined by a command using the parameter MQQSGD_COPY. Any object residing in the shared repository, or any object defined by a command using the parameter MQQSGD_Q_MGR, is not affected by this command.

MQQSGD_GROUP
The object definition resides in the shared repository. The object was defined by a command using the parameters MQQSGD_GROUP. Any object residing on the page set of the queue manager that executes the command (except a local copy of the object) is not affected by this command.

If the command is successful, the following MQSC command is generated and sent to all active queue managers in the queue-sharing group to delete local copies on page set zero:

```
DELETE CHANNEL(name) QSGDISP(COPY)
```

The deletion of the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.

MQQSGD_Q_MGR
The object definition resides on the page set of the queue manager that executes the command. The object was defined by a command using the parameter MQQSGD_Q_MGR. Any object residing in the shared repository, or any local copy of such an object, is not affected by this command.

MQQSGD_Q_MGR is the default value.

This command might return the following error codes in the response format header, in addition to the values shown on page “Error codes applicable to all commands” on page 687.

Error codes

***Reason* (MQLONG)**
The value can be:

MQRCCF_CHANNEL_NOT_FOUND
Channel not found.

MQRCCF_CHANNEL_TABLE_ERROR
Channel table value not valid.

Delete Channel Listener

The Delete Channel Listener (MQCMD_DELETE_LISTENER) command deletes an existing channel listener definition.

HP Integrity NonStop Server	UNIX and Linux systems	Windows
	X	X

Required parameters

***ListenerName* (MQCFST)**
Listener name (parameter identifier: MQCACH_LISTENER_NAME).

This parameter is the name of the listener definition to be deleted. The maximum length of the string is MQ_LISTENER_NAME_LENGTH.

Delete Communication Information Object

The Delete Communication Information Object (MQCMD_DELETE_COMM_INFO) command deletes the specified communication information object.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

Required parameter

***CominfoName* (MQCFST)**
The name of the communication information definition to be deleted (parameter identifier: MQCA_COMM_INFO_NAME).

Delete Namelist

The Delete Namelist (MQCMD_DELETE_NAMELIST) command deletes an existing namelist definition.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

Required parameters

***NamelistName* (MQCFST)**
Namelist name (parameter identifier: MQCA_NAMELIST_NAME).

This parameter is the name of the namelist definition to be deleted. The maximum length of the string is MQ_NAMELIST_NAME_LENGTH.

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.

- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***QSGDisposition* (MQCFIN)**
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves). The value can be:

MQQSGD_COPY
The object definition resides on the page set of the queue manager that executes the command. The object was defined by a command using the parameter MQQSGD_COPY. Any object residing in the shared repository, or any object defined using a command that had the parameters MQQSGD_Q_MGR, is not affected by this command.

MQQSGD_GROUP
The object definition resides in the shared repository. The object was defined by a command using the parameter MQQSGD_GROUP. Any object residing on the page set of the queue manager that executes the command (except a local copy of the object) is not affected by this command.

If the command is successful, the following MQSC command is generated and sent to all active queue managers in the queue-sharing group to delete local copies on page set zero:

```
DELETE NAMELIST(name) QSGDISP(COPY)
```

The deletion of the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.

MQQSGD_Q_MGR
The object definition resides on the page set of the queue manager that executes the command. The object was defined by a command using the parameter MQQSGD_Q_MGR. Any object residing in the shared repository, or any local copy of such an object, is not affected by this command.

MQQSGD_Q_MGR is the default value.

Delete Process

The Delete Process (MQCMD_DELETE_PROCESS) command deletes an existing process definition.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

Required parameters

***ProcessName* (MQCFST)**
Process name (parameter identifier: MQCA_PROCESS_NAME).

The process definition to be deleted. The maximum length of the string is MQ_PROCESS_NAME_LENGTH.

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***QSGDisposition* (MQCFIN)**
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves). The value can be:

MQQSGD_COPY
The object definition resides on the page set of the queue manager that executes the command. The object was defined by a command using the parameter MQQSGD_COPY. Any object residing in the shared repository, or any object defined using a command that had the parameters MQQSGD_Q_MGR, is not affected by this command.

MQQSGD_GROUP
The object definition resides in the shared repository. The object was defined by a command using the parameter MQQSGD_GROUP. Any object residing on the page set of the queue manager that executes the command (except a local copy of the object) is not affected by this command.

If the command is successful, the following MQSC command is generated and sent to all active queue managers in the queue-sharing group to delete local copies on page set zero:

```
DELETE PROCESS(name) QSGDISP(COPY)
```

The deletion of the group object takes effect regardless of whether the generated command with QSGDISP(COPY) fails.

MQQSGD_Q_MGR
The object definition resides on the page set of the queue manager that executes the command. The object was defined by a command using the parameter MQQSGD_Q_MGR. Any object residing in the shared repository, or any local copy of such an object, is not affected by this command.

MQQSGD_Q_MGR is the default value.

Delete Queue

The Delete Queue (MQCMD_DELETE_Q) command deletes a queue.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

Required parameters

***QName* (MQCFST)**
Queue name (parameter identifier: MQCA_Q_NAME).

The name of the queue to be deleted.

If the *Scope* attribute of the queue is MQSCO_CELL, the entry for the queue is deleted from the cell directory.

The maximum length of the string is MQ_Q_NAME_LENGTH.

Optional parameters

***Authrec* (MQCFIN)**
Authrec (parameter identifier: MQIACF_REMOVE_AUTHREC).

Specifies whether the associated authority record is also deleted.

This parameter does not apply to z/OS.

The value can be:

MQRAR_YES
The authority record associated with the object is deleted. This is the default.

MQRAR_NO
The authority record associated with the object is not deleted.

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***Purge* (MQCFIN)**
Purge queue (parameter identifier: MQIACF_PURGE).

If there are messages on the queue MQPO_YES must be specified, otherwise the command fails. If this parameter is not present the queue is not purged.

Valid only for queue of type local.

The value can be:

MQPO_YES
Purge the queue.

MQPO_NO
Do not purge the queue.

***QSGDisposition* (MQCFIN)**
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves). The value can be:

MQQSGD_COPY
The object definition resides on the page set of the queue manager that executes the command. The object was defined by a command using the parameter MQQSGD_COPY. Any object residing in the shared repository, or any object defined using a command that had the parameters MQQSGD_Q_MGR, is not affected by this command.

MQQSGD_GROUP
The object definition resides in the shared repository. The object was defined by a command using the parameter MQQSGD_GROUP. Any object residing on the page set of the queue manager that executes the command (except a local copy of the object) is not affected by this command.

If the deletion is successful, the following MQSC command is generated and sent to all active queue managers in the queue-sharing group to delete local copies on page set zero:

```
DELETE queue(q-name) QSGDISP(COPY)
```

or, for a local queue only:

```
DELETE QLOCAL(q-name) NOPURGE QSGDISP(COPY)
```

The deletion of the group object takes effect even if the generated command with QSGDISP(COPY) fails.

Note: You always get the NOPURGE option even if you specify MQPO_YES for *Purge*. To delete messages on local copies of the queues, you must explicitly issue, for each copy, the Delete Queue command with a *QSGDisposition* value of MQQSGD_COPY and a *Purge* value of MQPO_YES.

MQQSGD_Q_MGR
The object definition resides on the page set of the queue manager that executes the command. The object was defined by a command using the parameter MQQSGD_Q_MGR. Any object residing in the shared repository, or any local copy of such an object, is not affected by this command.

MQQSGD_Q_MGR is the default value.

MQQSGD_SHARED
Valid only for queue of type local.

The object resides in the shared repository. The object was defined by a command using the parameter MQQSGD_SHARED. Any object residing on the page set of the queue manager that executes the command, or any object defined by a command using the parameter MQQSGD_GROUP, is not affected by this command.

***QType* (MQCFIN)**
Queue type (parameter identifier: MQIA_Q_TYPE).

If this parameter is present, the queue must be of the specified type.

The value can be:

MQQT_ALIAS
Alias queue definition.

MQQT_LOCAL
Local queue.

MQQT_REMOTE
Local definition of a remote queue.

MQQT_MODEL
Model queue definition.

Error codes (Delete Queue)

This command might return the following error codes in the response format header, in addition to the values shown in “Error codes applicable to all commands” on page 687.

***Reason* (MQLONG)**
The value can be:

MQRC_Q_NOT_EMPTY
(2055, X'807') Queue contains one or more messages or uncommitted put or get requests.

Delete Service

The Delete Service (MQCMD_DELETE_SERVICE) command deletes an existing service definition.

HP Integrity NonStop Server	UNIX and Linux systems	Windows
	X	X

Required parameters

***ServiceName* (MQCFST)**
Service name (parameter identifier: MQCA_SERVICE_NAME).

This parameter is the name of the service definition to be deleted.

The maximum length of the string is MQ_OBJECT_NAME_LENGTH.

Delete Subscription

The Delete Subscription (MQCMD_DELETE_SUBSCRIPTION) command deletes a subscription.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

Required parameters

***SubName* (MQCFST)**
Subscription name (parameter identifier: MQCACF_SUB_NAME).

Specifies the unique subscription name. The subscription name, if provided, must be fully specified; a wildcard is not acceptable.

The subscription name must refer to a durable subscription.

If *SubName* is not provided, *SubId* must be specified to identify the subscription to be deleted.

The maximum length of the string is MQ_SUB_NAME_LENGTH.

***SubId* (MQCFBS)**
Subscription identifier (parameter identifier: MQBACF_SUB_ID).

Specifies the unique internal subscription identifier.

You must supply a value for *SubId* if you have not supplied a value for *SubName*.

The maximum length of the string is MQ_CORREL_ID_LENGTH.

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is processed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- Blank (or omit the parameter altogether). The command is processed on the queue manager on which it was entered.
- A queue manager name. The command is processed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.

- An asterisk (*). The command is processed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

You cannot use *CommandScope* as a parameter on which to filter.

Delete Topic

The Delete Topic (MQCMD_DELETE_TOPIC) command deletes the specified administrative topic object.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

Required parameters

***TopicName* (MQCFST)**
The name of the administrative topic definition to be deleted (parameter identifier: MQCA_TOPIC_NAME).

The maximum length of the string is MQ_TOPIC_NAME_LENGTH.

Optional parameters

***Authrec* (MQCFIN)**
Authrec (parameter identifier: MQIACF_REMOVE_AUTHREC).

Specifies whether the associated authority record is also deleted.

This parameter does not apply to z/OS.

The value can be:

MQRAR_YES
The authority record associated with the object is deleted. This is the default.

MQRAR_NO
The authority record associated with the object is not deleted.

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***QSGDisposition* (MQCFIN)**
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object to which you are applying the command (that is, where it is defined and how it behaves). The value can be:

MQQSGD_COPY
The object definition resides on the page set of the queue manager that executes the command. The object was defined by a command using the parameter MQQSGD_COPY. Any object residing in the shared repository, or any object defined using a command that had the parameters MQQSGD_Q_MGR, is not affected by this command.

MQQSGD_GROUP
The object definition resides in the shared repository. The object was defined by a command using the parameter MQQSGD_GROUP. Any object residing on the page set of the queue manager that executes the command (except a local copy of the object) is not affected by this command.

If the deletion is successful, the following MQSC command is generated and sent to all active queue managers in the queue-sharing group to make, or delete, local copies on page set zero:

```
DELETE TOPIC(name) QSGDISP(COPY)
```

The deletion of the group object takes effect even if the generated command with QSGDISP(COPY) fails.

MQQSGD_Q_MGR
The object definition resides on the page set of the queue manager that executes the command. The object was defined by a command using the parameter MQQSGD_Q_MGR. Any object residing in the shared repository, or any local copy of such an object, is not affected by this command.

MQQSGD_Q_MGR is the default value.

Escape

The Escape (MQCMD_ESCAPE) command conveys any WebSphere MQ command (MQSC) to a remote queue manager.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

Use the Escape command when the queue manager (or application) sending the command does not support the particular WebSphere MQ command, and so does not recognize it and cannot construct the required PCF command.

The Escape command can also be used to send a command for which no Programmable Command Format has been defined.

The only type of command that can be carried is one that is identified as an MQSC, that is recognized at the receiving queue manager.

Required parameters

***EscapeType* (MQCFIN)**
Escape type (parameter identifier: MQIACF_ESCAPE_TYPE).

The only value supported is:

MQET_MQSC
WebSphere MQ command.

***EscapeText* (MQCFST)**
Escape text (parameter identifier: MQCACF_ESCAPE_TEXT).

A string to hold a command. The length of the string is limited only by the size of the message.

Error codes

This command might return the following error code in the response format header, in addition to the values shown in "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_ESCAPE_TYPE_ERROR
Escape type not valid.

Escape (Response)

The response to the Escape (MQCMD_ESCAPE) command consists of the response header followed by two parameter structures, one containing the escape type, and the other containing the text response. More than one such message might be issued, depending upon the command contained in the Escape request.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

The *Command* field in the response header MQCFH contains the MQCMD_* command identifier of the text command contained in the *EscapeText* parameter in the original Escape command. For example, if *EscapeText* in the original Escape command specified `PING QMGR`, *Command* in the response has the value MQCMD_PING_Q_MGR.

If it is possible to determine the outcome of the command, the *CompCode* in the response header identifies whether the command was successful. The success or otherwise can therefore be determined without the recipient of the response having to parse the text of the response.

If it is not possible to determine the outcome of the command, *CompCode* in the response header has the value MQCC_UNKNOWN, and *Reason* is MQRC_NONE.

Parameters

***EscapeType* (MQCFIN)**
Escape type (parameter identifier: MQIACF_ESCAPE_TYPE).

The only value supported is:

MQET_MQSC
WebSphere MQ command.

***EscapeText* (MQCFST)**
Escape text (parameter identifier: MQCACF_ESCAPE_TEXT).

A string holding the response to the original command.

Inquire Authentication Information Object

The Inquire authentication information object (MQCMD_INQUIRE_AUTH_INFO) command inquires about the attributes of authentication information objects.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

Required parameters

***AuthInfoName* (MQCFST)**
Authentication information object name (parameter identifier: MQCA_AUTH_INFO_NAME).

Specifies the name of the authentication information object about which information is to be returned.

Generic authentication information object names are supported. A generic name is a character string followed by an asterisk (*), for example ABC*, and it selects all authentication information objects having names that start with the selected character string. An asterisk on its own matches all possible names.

The maximum length of the string is MQ_AUTH_INFO_NAME_LENGTH.

Optional parameters

AuthInfoAttrs (MQCFIL)
Authentication information object attributes (parameter identifier: MQIACF_AUTH_INFO_ATTRS).

The attribute list can specify the following value - the default value if the parameter is not specified):

MQIACF_ALL
All attributes.

or a combination of the following:

MQCA_ALTERATION_DATE
Date on which the definition was last altered.

MQCA_ALTERATION_TIME
Time at which the definition was last altered.

MQCA_AUTH_INFO_DESC
Description of the authentication information object.

MQCA_AUTH_INFO_NAME
Name of the authentication information object.

MQIA_AUTH_INFO_TYPE
Type of authentication information object.

MQCA_AUTH_INFO_CONN_NAME
Connection name of the authentication information object.

MQCA_LDAP_USER_NAME
LDAP user name in the authentication information object.

MQCA_LDAP_PASSWORD
LDAP password in the authentication information object.

MQCA_AUTH_INFO_OCSP_URL
The URL of the OCSP responder used to check for certificate revocation.

AuthInfoType (MQCFIN)
Type of authentication information object. The following values are accepted:

MQAIT_CRL_LDAP
Authentication information objects specifying Certificate Revocation Lists held on LDAP servers.

MQAIT_OCSP
Authentication information objects specifying certificate revocation checking using OCSP.

MQAIT_ALL
Authentication information objects of any type.

CommandScope (MQCFST)
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue

manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.

- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

You cannot use *CommandScope* as a parameter to filter on.

IntegerFilterCommand (MQCFIF)
Integer filter command descriptor. The parameter identifier must be any integer type parameter allowed in *AuthInfoAttrs*, except MQIACF_ALL. Use this parameter to restrict the output from the command by specifying a filter condition. See "MQCFIF - PCF integer filter parameter" on page 1092 for information about using this filter condition.

If you specify an integer filter, you cannot also specify a string filter using the *StringFilterCommand* parameter.

QSGDisposition (MQCFIN)
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object for which information is to be returned (that is, where it is defined and how it behaves). The value can be:

MQQSGD_LIVE
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY. This value is the default value if the parameter is not specified.

MQQSGD_ALL
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY.

If there is a shared queue manager environment, and the command is being executed on the queue manager where it was issued, this option also displays information for objects defined with MQQSGD_GROUP.

If MQQSGD_LIVE is specified or defaulted, or if MQQSGD_ALL is specified in a shared queue manager environment, the command might give duplicated names (with different dispositions).

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_GROUP
The object is defined as MQQSGD_GROUP. This value is permitted only in a shared queue environment.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

MQQSGD_PRIVATE
The object is defined as either MQQSGD_Q_MGR or MQQSGD_COPY. MQQSGD_PRIVATE returns the same information as MQQSGD_LIVE.

You cannot use *QSGDisposition* as a parameter to filter on.

StringFilterCommand (MQCFSF)
String filter command descriptor. The parameter identifier must be any string type parameter allowed in *AuthInfoAttrs*, except MQCA_AUTH_INFO_NAME. Use this parameter to restrict the output from the command by specifying a filter condition. See "MQCFSF - PCF string filter parameter" on page 1099 for information about using this filter condition.

If you specify a string filter, you cannot also specify an integer filter using the *IntegerFilterCommand* parameter.

Inquire Authentication Information Object (Response)

The response of the Inquire authentication information (MQCMD_INQUIRE_AUTH_INFO) command consists of the response header followed by the *AuthInfoName* structure (and on z/OS only, the *QSGDisposition* structure), and the requested combination of attribute parameter structures (where applicable).

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

Always returned:
AuthInfoName, *QSGDisposition*

Returned if requested:
AlterationDate, *AlterationTime*, *AuthInfoConnName*, *AuthInfoDesc*, *AuthInfoType*, *LDAPPassword*, *LDAPUserName*

Response data

AlterationDate (MQCFST)
Alteration date of the authentication information object, in the form `yyyy-mm-dd` (parameter identifier: MQCA_ALTERATION_DATE).

AlterationTime (MQCFST)
Alteration time of the authentication information object, in the form `hh.mm.ss` (parameter identifier: MQCA_ALTERATION_TIME).

AuthInfoConnName (MQCFST)
The connection name of the authentication information object (parameter identifier: MQCA_AUTH_INFO_CONN_NAME).

The maximum length of the string is MQ_AUTH_INFO_CONN_NAME_LENGTH. On z/OS, it is MQ_LOCAL_ADDRESS_LENGTH.

AuthInfoDesc (MQCFST)
The description of the authentication information object (parameter identifier: MQCA_AUTH_INFO_DESC).

The maximum length is MQ_AUTH_INFO_DESC_LENGTH.

AuthInfoName (MQCFST)
Authentication information object name (parameter identifier: MQCA_AUTH_INFO_NAME).

The maximum length of the string is MQ_AUTH_INFO_NAME_LENGTH.

AuthInfoType (MQCFIN)
The type of authentication information object (parameter identifier: MQIA_AUTH_INFO_TYPE).

The value can be:

MQAIT_CRL_LDAP
This authentication information object specifies Certificate Revocation Lists that are held on LDAP servers.

MQAIT_OCSP
This authentication information object specifies certificate revocation checking using OCSP.

See Security for more information.

LDAPPassword (MQCFST)
The LDAP password (parameter identifier: MQCA_LDAP_PASSWORD).

The maximum length is MQ_LDAP_PASSWORD_LENGTH.

LDAPUserName (MQCFST)
The LDAP user name (parameter identifier: MQCA_LDAP_USER_NAME).

The Distinguished Name of the user who is binding to the directory.

The maximum length is MQ_DISTINGUISHED_NAME_LENGTH. On z/OS, it is MQ_SHORT_DNAME_LENGTH.

OCSPResponderURL (MQCFST)
The URL of the OCSP responder used to check for certificate revocation.

QSGDisposition (MQCFIN)
QSG disposition (parameter identifier: MQIA_QSG_DISP).

Specifies the disposition of the object (that is, where it is defined and how it behaves). This parameter is valid on z/OS only. The value can be:

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_GROUP
The object is defined as MQQSGD_GROUP.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

Inquire Authentication Information Object Names

The Inquire authentication information names (MQCMD_INQUIRE_AUTH_INFO_NAMES) command asks for a list of authentication information names that match the generic authentication information name specified.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

Required parameters

***AuthInfoName* (MQCFST)**
Authentication information object name (parameter identifier: MQCA_AUTH_INFO_NAME).

Specifies the name of the authentication information object about which information is to be returned.

Generic authentication information object names are supported. A generic name is a character string followed by an asterisk (*), for example ABC*, and it selects all authentication information objects having names that start with the selected character string. An asterisk on its own matches all possible names.

The maximum length of the string is MQ_AUTH_INFO_NAME_LENGTH.

Optional parameters

AuthInfoType (MQCFIN)
Type of authentication information object. The following values are accepted:

MQAIT_CRL_LDAP
Authentication information objects specifying Certificate Revocation Lists held on LDAP servers.

MQAIT_OCSP
Authentication information objects specifying certificate revocation checking using OCSP.

MQAIT_ALL
Authentication information objects of any type. MQAIT_ALL is the default value

CommandScope (MQCFST)
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

QSGDisposition (MQCFIN)
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object for which information is to be returned (that is, where it is defined and how it behaves). The value can be:

MQQSGD_LIVE
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY. MQQSGD_LIVE is the default value if the parameter is not specified.

MQQSGD_ALL
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY.

If there is a shared queue manager environment, and the command is being executed on the queue manager where it was issued, this option also displays information for objects defined with MQQSGD_GROUP.

If MQQSGD_LIVE is specified or defaulted, or if MQQSGD_ALL is specified in a shared queue manager environment, the command might give duplicated names (with different dispositions).

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_GROUP
The object is defined as MQQSGD_GROUP. MQQSGD_GROUP is permitted only in a shared queue environment.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

MQQSGD_PRIVATE
The object is defined as either MQQSGD_Q_MGR or MQQSGD_COPY. MQQSGD_PRIVATE returns the same information as MQQSGD_LIVE.

Inquire Authentication Information Object Names (Response)

The response to the inquire authentication information names (MQCMD_INQUIRE_AUTH_INFO_NAMES) command consists of the response header followed by a parameter structure giving zero or more names that match the specified authentication information name.

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X	X	X

Additionally, on z/OS only, a parameter structure, *QSGDispositions* (with the same number of entries as the *AuthInfoNames* structure), is returned. Each entry in this structure indicates the disposition of the object with the corresponding entry in the *AuthInfoNames* structure.

Always returned:
AuthInfoNames, *QSGDispositions*

Returned if requested:
None

Response data

***AuthInfoNames* (MQCFSL)**
List of authentication information object names (parameter identifier: MQCACF_AUTH_INFO_NAMES).

***QSGDispositions* (MQCFIL)**
List of QSG dispositions (parameter identifier: MQIACF_QSG_DISPS).

Specifies the disposition of the object (that is, where it is defined and how it behaves). This parameter is valid on z/OS only. The value can be:

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_GROUP
The object is defined as MQQSGD_GROUP.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

Inquire Authority Records

The Inquire Authority Records (MQCMD_INQUIRE_AUTH_RECS) command retrieves authority records associated with a profile name.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

Required parameters

***Options* (MQCFIN)**
Options to control the set of authority records that is returned (parameter identifier: MQIACF_AUTH_OPTIONS).

This parameter is required and you must include one of the following two values:

MQAUTHOPT_NAME_ALL_MATCHING
Return all profiles the names of which match the specified *ProfileName*. This means that a *ProfileName* of ABCD results in the profiles ABCD, ABC*, and AB* being returned (if ABC* and AB* have been defined as profiles).

MQAUTHOPT_NAME_EXPLICIT
Return only those profiles the names of which exactly match the *ProfileName*. No matching generic profiles are returned unless the *ProfileName* is, itself, a generic profile. You cannot specify this value and MQAUTHOPT_ENTITY_SET.

and one of the following two values:

MQAUTHOPT_ENTITY_EXPLICIT
Return all profiles the entity fields of which match the specified *EntityName*. No profiles are returned for any group in which *EntityName* is a member; only the profile defined for the specified *EntityName*.

MQAUTHOPT_ENTITY_SET
Return the profile the entity field of which matches the specified *EntityName* and the profiles pertaining to any groups in which *EntityName* is a member that contribute to the cumulative authority for the specified entity. You cannot specify this value and MQAUTHOPT_NAME_EXPLICIT.

You can also optionally specify:

MQAUTHOPT_NAME_AS_WILDCARD
Interpret *ProfileName* as a filter on the profile name of the authority records. If you do not specify this attribute and *ProfileName* contains wildcard characters, it is interpreted as a generic profile and only those authority records where the generic profile names match the value of *ProfileName* are returned.

You cannot specify MQAUTHOPT_NAME_AS_WILDCARD if you also specify MQAUTHOPT_ENTITY_SET.

***ProfileName* (MQCFST)**
Profile name (parameter identifier: MQCACF_AUTH_PROFILE_NAME).

This parameter is the name of the profile for which to retrieve authorizations. Generic profile names are supported. A generic name is a character string followed by an asterisk (*), for example ABC*, and it selects all profiles having names that start with the selected character string. An asterisk on its own matches all possible names.

If you have defined a generic profile, you can return information about it by not setting MQAUTHOPT_NAME_AS_WILDCARD in *Options*.

If you set *Options* to MQAUTHOPT_NAME_AS_WILDCARD, the only valid value for *ProfileName* is a single asterisk (*). This means that all authority records that satisfy the values specified in the other parameters are returned.

Do not specify *ProfileName* if the value of *ObjectType* is MQOT_Q_MGR.

The profile name is always returned regardless of the attributes requested.

The maximum length of the string is MQ_AUTH_PROFILE_NAME_LENGTH.

***ObjectType* (MQCFIN)**
The type of object referred to by the profile (parameter identifier: MQIACF_OBJECT_TYPE).

The value can be:

MQOT_ALL
All object types. MQOT_ALL is the default if you do not specify a value for *ObjectType*.

MQOT_AUTH_INFO
Authentication information.

MQOT_CHANNEL
Channel object.

MQOT_CLNTCONN_CHANNEL
Client-connection channel object.

MQOT_COMM_INFO
Communication information object

MQOT_LISTENER
Listener object.

MQOT_NAMELIST
Namelist.

MQOT_PROCESS
Process.

MQOT_Q
Queue, or queues, that match the object name parameter.

MQOT_Q_MGR
Queue manager.

MQOT_REMOTE_Q_MGR_NAME
Remote queue manager.

MQOT_SERVICE
Service object.

MQOT_TOPIC
Topic object.

Optional parameters

***EntityName* (MQCFST)**
Entity name (parameter identifier: MQCACF_ENTITY_NAME).

Depending on the value of *EntityType*, this parameter is either:

- A principal name. This name is the name of a user for whom to retrieve authorizations to the specified object. On WebSphere MQ for Windows, the name of the principal can optionally include a domain name, specified in this format: `user@domain`.
- A group name. This name is the name of the user group on which to make the inquiry. You can specify one name only and this name must be the name of an existing user group.

  For IBM WebSphere MQ for Windows only, the group name can optionally include a domain name, specified in the following formats:

  ```
  GroupName@domain
  domain\GroupName
  ```

The maximum length of the string is MQ_ENTITY_NAME_LENGTH.

***EntityType* (MQCFIN)**
Entity type (parameter identifier: MQIACF_ENTITY_TYPE).

The value can be:

MQZAET_GROUP
The value of the *EntityName* parameter refers to a group name.

MQZAET_PRINCIPAL
The value of the *EntityName* parameter refers to a principal name.

***ProfileAttrs* (MQCFIL)**
Profile attributes (parameter identifier: MQIACF_AUTH_PROFILE_ATTRS).

The attribute list might specify the following value on its own - the default value if the parameter is not specified:

MQIACF_ALL
All attributes.

or a combination of the following:

MQCACF_ENTITY_NAME
Entity name.

MQIACF_AUTHORIZATION_LIST
Authorization list.

MQIACF_ENTITY_TYPE
Entity type.

Note: If an entity is specified by using the parameters MQCACF_ENTITY_NAME and MQIACF_ENTITY_TYPE, then all the required parameters must be passed in first, in the following order:

1. MQIACF_AUTH_OPTIONS

2. MQIACF_OBJECT_TYPE
3. MQIACF_ENTITY_TYPE
4. MQCACF_ENTITY_NAME

***ServiceComponent* (MQCFST)**
Service component (parameter identifier: MQCACF_SERVICE_COMPONENT).

If installable authorization services are supported, this parameter specifies the name of the authorization service from which to retrieve authorization.

If you omit this parameter, the authorization inquiry is made to the first installable component for the service.

The maximum length of the string is MQ_SERVICE_COMPONENT_LENGTH.

Error codes

This command might return the following error codes in the response format header, in addition to the values shown in "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRC_OBJECT_TYPE_ERROR
Invalid object type.

MQRC_UNKNOWN_ENTITY
User ID not authorized, or unknown.

MQRCCF_CFST_CONFLICTING_PARM
Conflicting parameters.

MQRCCF_PROFILE_NAME_ERROR
Invalid profile name.

MQRCCF_ENTITY_NAME_MISSING
Entity name missing.

MQRCCF_OBJECT_TYPE_MISSING
Object type missing.

MQRCCF_PROFILE_NAME_MISSING
Profile name missing.

Inquire Authority Records (Response)

The response to the Inquire Authority Records (MQCMD_INQUIRE_AUTH_RECS) command consists of the response header followed by the *QMgrName*, *Options*, *ProfileName*, and *ObjectType* structures and the requested combination of attribute parameter structures.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

One PCF message is returned for each authority record that is found the profile name of which matches the options specified in the Inquire Authority Records request.

Always returned:
ObjectType, *Options*, *ProfileName*, *QMgrName*

Returned if requested:
AuthorizationList, *EntityName*, *EntityType*

Response data

***AuthorizationList* (MQCFIL)**
Authorization list (parameter identifier: MQIACF_AUTHORIZATION_LIST).

This list can contain zero or more authorization values. Each returned authorization value means that any user ID in the specified group or principal has the authority to perform the operation defined by that value. The value can be:

MQAUTH_NONE
The entity has authority set to 'none'.

MQAUTH_ALT_USER_AUTHORITY
Specify an alternate user ID on an MQI call.

MQAUTH_BROWSE
Retrieve a message from a queue by issuing an MQGET call with the BROWSE option.

MQAUTH_CHANGE
Change the attributes of the specified object, using the appropriate command set.

MQAUTH_CLEAR
Clear a queue.

MQAUTH_CONNECT
Connect the application to the specified queue manager by issuing an MQCONN call.

MQAUTH_CREATE
Create objects of the specified type using the appropriate command set.

MQAUTH_DELETE
Delete the specified object using the appropriate command set.

MQAUTH_DISPLAY
Display the attributes of the specified object using the appropriate command set.

MQAUTH_INPUT
Retrieve a message from a queue by issuing an MQGET call.

MQAUTH_INQUIRE
Make an inquiry on a specific queue by issuing an MQINQ call.

MQAUTH_OUTPUT
Put a message on a specific queue by issuing an MQPUT call.

MQAUTH_PASS_ALL_CONTEXT
Pass all context.

MQAUTH_PASS_IDENTITY_CONTEXT
Pass the identity context.

MQAUTH_SET
Set attributes on a queue from the MQI by issuing an MQSET call.

MQAUTH_SET_ALL_CONTEXT
Set all context on a queue.

MQAUTH_SET_IDENTITY_CONTEXT
Set the identity context on a queue.

MQAUTH_CONTROL
For listeners and services, start and stop the specified channel, listener, or service.

For channels, start, stop, and ping the specified channel.

For topics, define, alter, or delete subscriptions.

MQAUTH_CONTROL_EXTENDED
Reset or resolve the specified channel.

MQAUTH_PUBLISH
Publish to the specified topic.

MQAUTH_SUBSCRIBE
Subscribe to the specified topic.

MQAUTH_RESUME
Resume a subscription to the specified topic.

MQAUTH_SYSTEM
Use queue manager for internal system operations.

MQAUTH_ALL
Use all operations applicable to the object.

MQAUTH_ALL_ADMIN
Use all operations applicable to the object.

MQAUTH_ALL_MQI
Use all MQI calls applicable to the object.

Use the *Count* field in the MQCFIL structure to determine how many values are returned.

***EntityName* (MQCFST)**
Entity name (parameter identifier: MQCACF_ENTITY_NAME).

This parameter can either be a principal name or a group name.

The maximum length of the string is MQ_ENTITY_NAME_LENGTH.

***EntityType* (MQCFIN)**
Entity type (parameter identifier: MQIACF_ENTITY_TYPE).

The value can be:

MQZAET_GROUP
The value of the *EntityName* parameter refers to a group name.

MQZAET_PRINCIPAL
The value of the *EntityName* parameter refers to a principal name.

MQZAET_UNKNOWN
On Windows, an authority record still exists from a previous queue manager which did not originally contain entity type information.

***ObjectType* (MQCFIN)**
Object type (parameter identifier: MQIACF_OBJECT_TYPE).

The value can be:

MQOT_AUTH_INFO
Authentication information.

MQOT_CHANNEL
Channel object.

MQOT_CLNTCONN_CHANNEL
Client-connection channel object.

MQOT_COMM_INFO
Communication information object

MQOT_LISTENER
Listener object.

MQOT_NAMELIST
Namelist.

MQOT_PROCESS
Process.

MQOT_Q
Queue, or queues, that match the object name parameter.

MQOT_Q_MGR
Queue manager.

MQOT_REMOTE_Q_MGR_NAME
Remote queue manager.

MQOT_SERVICE
Service object.

MQOT_TOPIC
Topic object.

Options **(MQCFIN)**
Options used to indicate the level of information that is returned (parameter identifier: MQIACF_AUTH_OPTIONS).

ProfileName **(MQCFST)**
Profile name (parameter identifier: MQCACF_AUTH_PROFILE_NAME).

The maximum length of the string is MQ_AUTH_PROFILE_NAME_LENGTH.

QMgrName **(MQCFST)**
Name of the queue manager on which the Inquire command is issued (parameter identifier: MQCA_Q_MGR_NAME).

The maximum length of the string is MQ_Q_MGR_NAME_LENGTH.

Inquire Authority Service

The Inquire Authority Service (MQCMD_INQUIRE_AUTH_SERVICE) command retrieves information about the level of function supported by installed authority managers.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

Required parameters

AuthServiceAttrs **(MQCFIL)**
Authority service attributes (parameter identifier: MQIACF_AUTH_SERVICE_ATTRS).

The attribute list might specify the following value on its own - default value if the parameter is not specified:

MQIACF_ALL
All attributes.

or a combination of the following:

MQIACF_INTERFACE_VERSION
Current interface version of the authority service.

MQIACF_USER_ID_SUPPORT
Whether the authority service supports user IDs.

Optional parameters

ServiceComponent **(MQCFST)**
Name of authorization service (parameter identifier: MQCACF_SERVICE_COMPONENT).

The name of the authorization service which is to handle the Inquire Authority Service command.

If this parameter is omitted, or specified as a blank or null string, the inquire function is called in each installed authorization service in reverse order to the order in which the services have been installed, until all authorization services have been called or until one returns a value of MQZCI_STOP in the Continuation field.

The maximum length of the string is MQ_SERVICE_COMPONENT_LENGTH.

Error codes

This command might return the following error codes in the response format header, in addition to the values shown in "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRC_SELECTOR_ERROR
Attribute selector not valid.

MQRC_UNKNOWN_COMPONENT_NAME
Unknown service component name.

Inquire Authority Service (Response)

The response to the Inquire Authority Service (MQCMD_INQUIRE_AUTH_SERVICE) command consists of the response header followed by the *ServiceComponent* structure and the requested combination of attribute parameter structures.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

Always returned:
ServiceComponent

Returned if requested:
InterfaceVersion, *UserIDSupport*

Response data

***InterfaceVersion* (MQCFIN)**
Interface version (parameter identifier: MQIACF_INTERFACE_VERSION).

This parameter is the current interface version of the OAM.

***ServiceComponent* (MQCFSL)**
Name of authorization service (parameter identifier: MQCACF_SERVICE_COMPONENT).

If you included a specific value for *ServiceComponent* on the Inquire Authority Service command, this field contains the name of the authorization service that handled the command. If you did not include a specific value for *ServiceComponent* on the Inquire Authority Service command, the list contains the names of all the installed authorization services.

If there is no OAM or if the OAM requested in the ServiceComponent does not exist this field is blank.

The maximum length of each element in the list is MQ_SERVICE_COMPONENT_LENGTH.

***UserIDSupport* (MQCFIN)**
User ID support (parameter identifier: MQIACF_USER_ID_SUPPORT).

The value can be:

MQUIDSUPP_YES
The authority service supports user IDs.

MQUIDSUPP_NO
The authority service does not support user IDs.

Inquire Channel

The Inquire Channel (MQCMD_INQUIRE_CHANNEL) command inquires about the attributes of IBM WebSphere MQ channel definitions.

HP Integrity NonStop Server	UNIX and Linux	Windows
✓	✓	✓

Required parameters

***ChannelName* (MQCFST)**

Channel name (parameter identifier: MQCACH_CHANNEL_NAME).

Generic channel names are supported. A generic name is a character string followed by an asterisk (*), for example ABC*, and it selects all channels having names that start with the selected character string. An asterisk on its own matches all possible names.

The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

Optional parameters

***ChannelAttrs* (MQCFIL)**

Channel attributes (parameter identifier: MQIACF_CHANNEL_ATTRS).

The attribute list can specify the following value on its own - default value used if the parameter is not specified:

MQIACF_ALL
All attributes.

or a combination of the parameters in the following table:

Parameter	Sender	Server	Receiver	Requester	Client conn	Server conn	Cluster sender	Cluster receiver
MQCA_ALTERATION_DATE Date on which the definition was last altered	✓	✓	✓	✓	✓	✓	✓	✓
MQCA_ALTERATION_TIME Time at which the definition was last altered	✓	✓	✓	✓	✓	✓	✓	✓
MQCA_CLUSTER_NAME Name of local queue manager							✓	✓
MQCA_CLUSTER_NAMELIST Name of local queue manager							✓	✓
MQCA_Q_MGR_NAME Name of local queue manager					✓			
MQCACH_CHANNEL_NAME Channel name. You cannot use this attribute as a filter keyword.	✓	✓	✓	✓	✓	✓	✓	✓

Parameter	Sender	Server	Receiver	Requester	Client conn	Server conn	Cluster sender	Cluster receiver
MQCACH_CONNECTION_NAME Connection name	✓	✓		✓	✓		✓	✓
MQCACH_DESC Description	✓	✓	✓	✓	✓	✓	✓	✓
MQCACH_LOCAL_ADDRESS Local communications address for the channel	✓	✓		✓	✓		✓	✓
MQCACH_MCA_NAME Message channel agent name	✓	✓		✓			✓	
MQCACH_MCA_USER_ID MCA user identifier	✓	✓	✓	✓		✓	✓	✓
MQCACH_MODE_NAME Mode name	✓	✓		✓	✓		✓	✓
MQCACH_MR_EXIT_NAME Message-retry exit name			✓	✓				✓
MQCACH_MR_EXIT_USER_DATA Message-retry exit name			✓	✓				✓
MQCACH_MSG_EXIT_NAME Message exit name	✓	✓	✓	✓			✓	✓
MQCACH_MSG_EXIT_USER_DATA Message exit user data	✓	✓	✓	✓			✓	✓
MQCACH_PASSWORD Password	✓	✓		✓	✓		✓	
MQCACH_RCV_EXIT_NAME Receive exit name	✓	✓	✓	✓	✓	✓	✓	✓
MQCACH_RCV_EXIT_USER_DATA Receive exit user data	✓	✓	✓	✓	✓	✓	✓	✓
MQCACH_SEC_EXIT_NAME Security exit name	✓	✓	✓	✓	✓	✓	✓	✓
MQCACH_SEC_EXIT_USER_DATA Security exit user data	✓	✓	✓	✓	✓	✓	✓	✓
MQCACH_SEND_EXIT_NAME Send exit name	✓	✓	✓	✓	✓	✓	✓	✓

Parameter	Sender	Server	Receiver	Requester	Client conn	Server conn	Cluster sender	Cluster receiver
MQCACH_SEND_EXIT_USER_DATA Send exit user data	✓	✓	✓	✓	✓	✓	✓	✓
MQCACH_SSL_CIPHER_SPEC SSL cipher spec	✓	✓	✓	✓	✓	✓	✓	✓
MQCACH_SSL_PEER_NAME SSL peer name	✓	✓	✓	✓	✓	✓	✓	✓
MQCACH_TP_NAME Transaction program name	✓	✓		✓	✓	✓	✓	✓
MQCACH_USER_ID User identifier	✓	✓		✓	✓		✓	
MQCACH_XMIT_Q_NAME Transmission queue name	✓	✓						
MQIA_MONITORING_CHANNEL Online monitoring data collection	✓	✓	✓	✓		✓	✓	✓
MQIA_PROPERTY_CONTROL Property control attribute	✓	✓					✓	✓
MQIA_STATISTICS_CHANNEL Online statistics collection	✓	✓	✓	✓			✓	✓
MQIA_USE_DEAD_LETTER_Q Determines whether the dead-letter queue is used when messages cannot be delivered by channels.	✓	✓	✓	✓			✓	✓
MQIACH_BATCH_HB Value to use for batch heartbeating	✓	✓					✓	✓
MQIACH_BATCH_INTERVAL Batch wait interval (seconds)	✓	✓					✓	✓
MQIACH_BATCH_DATA_LIMIT Batch data limit (kilobytes)	✓	✓					✓	✓
MQIACH_BATCH_SIZE Batch size	✓	✓	✓	✓			✓	✓
MQIACH_CHANNEL_TYPE Channel type	✓	✓	✓	✓	✓	✓	✓	✓

Parameter	Sender	Server	Receiver	Requester	Client conn	Server conn	Cluster sender	Cluster receiver
MQIACH_CLIENT_CHANNEL_WEIGHT Client Channel Weight					✓			
MQIACH_CLWL_CHANNEL_ PRIORITY Cluster workload channel priority							✓	✓
MQIACH_CLWL_CHANNEL_RANK Cluster workload channel rank							✓	✓
MQIACH_CLWL_CHANNEL_WEIGHT Cluster workload channel weight							✓	✓
MQIACH_CONNECTION_ AFFINITY Connection Affinity					✓			
MQIACH_DATA_CONVERSION Whether sender must convert application data	✓	✓					✓	✓
MQIACH_DEF_RECONNECT Default reconnection option					✓			
MQIACH_DISC_INTERVAL Disconnection interval	✓	✓				✓	✓	✓
MQIACH_HB_INTERVAL Heartbeat interval (seconds)	✓	✓	✓	✓	✓	✓	✓	✓
MQIACH_HDR_COMPRESSION List of header data compression techniques supported by the channel	✓	✓	✓	✓	✓	✓	✓	✓
MQIACH_KEEP_ALIVE_INTERVAL KeepAlive interval	✓	✓	✓	✓	✓	✓	✓	✓
MQIACH_LONG_RETRY Long retry count	✓	✓					✓	✓
MQIACH_LONG_TIMER Long timer	✓	✓					✓	✓
MQIACH_MAX_INSTANCES Maximum number of simultaneous instances of a server-connection channel that can be started.						✓		

Parameter	Sender	Server	Receiver	Requester	Client conn	Server conn	Cluster sender	Cluster receiver
MQIACH_MAX_INSTS_PER_ CLIENT Maximum number of simultaneous instances of a server-connection channel that can be started from a single client.						✓		
MQIACH_MAX_MSG_LENGTH Maximum message length	✓	✓	✓	✓	✓	✓	✓	✓
MQIACH_MCA_TYPE MCA type	✓	✓		✓			✓	✓
MQIACH_MR_COUNT Message retry count			✓	✓				✓
MQIACH_MSG_COMPRESSION List of message data compression techniques supported by the channel	✓	✓	✓	✓	✓	✓	✓	✓
MQIACH_MR_INTERVAL Message retry interval (milliseconds)			✓	✓				✓
MQIACH_NPM_SPEED Speed of nonpersistent messages	✓	✓	✓	✓			✓	✓
MQIACH_PUT_AUTHORITY Put authority			✓	✓		✓		✓
MQIACH_RESET_REQUESTED Sequence number of outstanding request when a RESET CHANNEL command is used	✓	✓	✓	✓			✓	✓
MQIACH_SEQUENCE_NUMBER_ WRAP Sequence number wrap	✓	✓	✓	✓			✓	✓
MQIACH_SHARING_CONVERSATIONS Value of Sharing Conversations						✓		
MQIACH_SHORT_RETRY Short retry count	✓	✓					✓	✓
MQIACH_SHORT_TIMER Short timer	✓	✓					✓	✓
MQIACH_SSL_CLIENT_AUTH SSL client authentication	✓	✓	✓	✓		✓		✓

Parameter	Sender	Server	Receiver	Requester	Client conn	Server conn	Cluster sender	Cluster receiver
MQIACH_XMIT_PROTOCOL_TYPE Transport (transmission protocol) type	✓	✓	✓	✓	✓	✓	✓	✓

Note:

1. Only one of the following parameters can be specified:
   - MQCACH_JAAS_CONFIG
   - MQCACH_MCA_USER_ID
   - MQIACH_USE_CLIENT_ID

If none of these parameters are specified, no authentication is performed. If MQCACH_JAAS_CONFIG is specified, the client flows a user name and password, in all other cases the flowed user name is ignored.

***ChannelType* (MQCFIN)**
Channel type (parameter identifier: MQIACH_CHANNEL_TYPE).

If this parameter is present, eligible channels are limited to the specified type. Any attribute selector specified in the *ChannelAttrs* list which is only valid for channels of a different type or types is ignored; no error is raised.

If this parameter is not present (or if MQCHT_ALL is specified), channels of all types other than MQCHT_MQTT are eligible. Each attribute specified must be a valid channel attribute selector (that is, it must be one from the following list), but it might not be applicable to all (or any) of the channels returned. Channel attribute selectors that are valid but not applicable to the channel are ignored, no error messages occur, and no attribute is returned.

The value can be:

MQCHT_SENDER
Sender.

MQCHT_SERVER
Server.

MQCHT_RECEIVER
Receiver.

MQCHT_REQUESTER
Requester.

MQCHT_SVRCONN
Server-connection (for use by clients).

MQCHT_CLNTCONN
Client connection.

MQCHT_CLUSRCVR
Cluster-receiver.

MQCHT_CLUSSDR
Cluster-sender.

MQCHT_MQTT
Telemetry channel.

MQCHT_ALL
All types other than MQCHT_MQTT.

The default value if this parameter is not specified is MQCHT_ALL.

Note: If this parameter is present, it must occur immediately after the *ChannelName* parameter on platforms other than z/OS otherwise resulting in a MQRCCF_MSG_LENGTH_ERROR error message.

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

You cannot use *CommandScope* as a parameter to filter on.

***DefaultChannelDisposition* (MQCFIN)**
Default channel disposition (parameter identifier: MQIACH_CHANNEL_DISP).

This parameter is not allowed for client-connection (CLNTCONN) channels.

This parameter applies to z/OS only.

Specifies the disposition of the channels for which information is to be returned. If this parameter is not present (or if MQCHLD_ALL is specified), channels of all channel dispositions are eligible. The value can be:

MQCHLD_ALL
Returns requested information for all eligible channels.

MQCHLD_PRIVATE
Returns requested information for PRIVATE channels.

MQCHLD_SHARED
Returns requested information for channels with channel disposition that is defined as either MQCHLD_SHARED or MQCHLD_FIXSHARED.

***DefReconnect* (MQCFIN)**
Client channel default reconnection option (parameter identifier: MQIACH_DEF_RECONNECT).

The default automatic client reconnection option. You can configure a IBM WebSphere MQ MQI client to automatically reconnect a client application. The IBM WebSphere MQ MQI client tries to reconnect to a queue manager after a connection failure. It tries to reconnect without the application client issuing an MQCONN or MQCONNX MQI call.

***IntegerFilterCommand* (MQCFIF)**
Integer filter command descriptor. The parameter identifier must be any integer type parameter allowed in *ChannelAttrs* except MQIACF_ALL. Use this parameter to restrict the output from the command by specifying a filter condition. See “MQCFIF - PCF integer filter parameter” on page 1092 for information about using this filter condition.

If you specify an integer filter for channel type, you cannot also specify the *ChannelType* parameter.

If you specify an integer filter, you cannot also specify a string filter using the *StringFilterCommand* parameter.

***QSGDisposition* (MQCFIN)**
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object for which information is to be returned (that is, where it is defined and how it behaves). The value can be:

MQQSGD_LIVE
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY. MQQSGD_LIVE is the default value if the parameter is not specified.

MQQSGD_ALL
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY.

If there is a shared queue manager environment, and the command is being executed on the queue manager where it was issued, this option also displays information for objects defined with MQQSGD_GROUP.

If MQQSGD_LIVE is specified or defaulted, or if MQQSGD_ALL is specified in a shared queue manager environment, the command might give duplicated names (with different dispositions).

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_GROUP
The object is defined as MQQSGD_GROUP. MQQSGD_GROUP is permitted only in a shared queue environment.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

MQQSGD_PRIVATE
The object is defined as either MQQSGD_Q_MGR or MQQSGD_COPY. MQQSGD_PRIVATE returns the same information as MQQSGD_LIVE.

You cannot use *QSGDisposition* as a parameter to filter on.

***StringFilterCommand* (MQCFSF)**
String filter command descriptor. The parameter identifier must be any string type parameter allowed in *ChannelAttrs* except MQCACH_CHANNEL_NAME and MQCACH_MCA_NAME. Use this parameter to restrict the output from the command by specifying a filter condition. See "MQCFSF - PCF string filter parameter" on page 1099 for information about using this filter condition.

If you specify a string filter, you cannot also specify an integer filter using the *IntegerFilterCommand* parameter.

Error codes

This command might return the following error codes in the response format header, in addition to the values shown in "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_CHANNEL_NAME_ERROR
Channel name error.

MQRCCF_CHANNEL_NOT_FOUND
Channel not found.

MQRCCF_CHANNEL_TYPE_ERROR
Channel type not valid.

Inquire Channel (MQTT)

The Inquire Channel (MQCMD_INQUIRE_CHANNEL) command inquires about the attributes of IBM WebSphere MQ channel definitions.

Required parameters

***ChannelName* (MQCFST)**
Channel name (parameter identifier: MQCACH_CHANNEL_NAME).

Generic channel names are supported. A generic name is a character string followed by an asterisk (*), for example ABC*, and it selects all channels having names that start with the selected character string. An asterisk on its own matches all possible names.

The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

***ChannelType* (MQCFIN)**
Channel type (parameter identifier: MQIACH_CHANNEL_TYPE).

If this parameter is present, eligible channels are limited to the specified type. Any attribute selector specified in the *ChannelAttrs* list which is only valid for channels of a different type or types is ignored; no error is raised.

If this parameter is not present (or if MQCHT_ALL is specified), channels of all types are eligible. Each attribute specified must be a valid channel attribute selector (that is, it must be one from the following list), but it might not be applicable to all (or any) of the channels returned. Channel attribute selectors that are valid but not applicable to the channel are ignored, no error messages occur, and no attribute is returned.

The value must be:

MQCHT_MQTT
Telemetry channel.

Optional parameters

***ChannelAttrs* (MQCFIL)**
Channel attributes (parameter identifier: MQIACF_CHANNEL_ATTRS).

The attribute list can specify the following value on its own - default value used if the parameter is not specified:

MQIACF_ALL
All attributes.

or a combination of the following parameters:

MQCA_SSL_KEY_REPOSITORY
SSL Key Repository

MQCACH_CHANNEL_NAME
Channel name. You cannot use this attribute as a filter keyword.

MQCACH_JAAS_CONFIG
The file path of the JAAS configuration

MQCACH_LOCAL_ADDRESS
Local communications address for the channel

MQCACH_MCA_USER_ID
MCA user identifier.

MQCACH_SSL_CIPHER_SPEC
SSL cipher spec.

MQCACH_SSL_KEY_PASSPHRASE
SSL key passphrase.

MQIACH_BACKLOG
The number of concurrent connection requests that the channel supports.

MQIACH_CHANNEL_TYPE
Channel type

MQIACH_PORT
Port number to use when *TransportType* is set to TCP.

MQIACH_SSL_CLIENT_AUTH
SSL client authentication.

MQIACH_USE_CLIENT_ID
Specify whether to use the *clientID* of a new connection as the *userID* for that connection

MQIACH_XMIT_PROTOCOL_TYPE
Transport (transmission protocol) type

Note:

1. Only one of the following parameters can be specified:
   - MQCACH_JAAS_CONFIG
   - MQCACH_MCA_USER_ID
   - MQIACH_USE_CLIENT_ID

If none of these parameters are specified, no authentication is performed. If MQCACH_JAAS_CONFIG is specified, the client flows a user name and password, in all other cases the flowed user name is ignored.

Error codes

This command might return the following error codes in the response format header, in addition to the values shown in "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_CHANNEL_NAME_ERROR
Channel name error.

MQRCCF_CHANNEL_NOT_FOUND
Channel not found.

MQRCCF_CHANNEL_TYPE_ERROR
Channel type not valid.

Inquire Channel (Response)

The response to the Inquire Channel (MQCMD_INQUIRE_CHANNEL) command consists of the response header followed by the *ChannelName* and *ChannelType* structures (and on z/OS only, the *DefaultChannelDisposition*, and *QSGDisposition* structure), and the requested combination of attribute parameter structures (where applicable).

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

If a generic channel name was specified, one such message is generated for each channel found.

Always returned:
ChannelName, *ChannelType*, *DefaultChannelDisposition*, *QSGDisposition*

Returned if requested:
AlterationDate, *AlterationTime*, *BatchHeartbeat*, *BatchInterval* , *BatchSize* , *ChannelDesc*, *ChannelMonitoring*, *ChannelStartTime*, *ChannelStartDate*, *ChannelStatistics* , *ClientChannelWeight* , *ClientIdentifier* , *ClusterName*, *ClusterNamelist*, *CLWLChannelPriority*, *CLWLChannelRank*, *CLWLChannelWeight* , *ConnectionAffinity* , *ConnectionName* , *DataConversion*, *DefReconnect*, *DiscInterval*, *HeaderCompression* , *HeartbeatInterval* , *InDoubtInbound* , *InDoubtOutbound*, *KeepAliveInterval*, *LastMsgTime*, *LocalAddress* , *LongRetryCount* , *LongRetryInterval* , *MaxMsgLength*, *MCAName*, *MCAType* , *MCAUserIdentifier* ,

MessageCompression, *ModeName*, *MsgExit*, *MsgRetryCount*, *MsgRetryExit*, *MsgRetryInterval*, *MsgRetryUserData*, *MsgsReceived*, *MsgsSent*, *MsgUserData*, *NetworkPriority*, *NonPersistentMsgSpeed*, *Password*, *PendingOutbound*, *PropertyControl*, *PutAuthority*, *QMgrName*, *ReceiveExit*, *ReceiveUserData*, *ResetSeq*, *SecurityExit*, *SecurityUserData*, *SendExit*, *SendUserData*, *SeqNumberWrap*, *SharingConversations*, *ShortRetryCount*, *ShortRetryInterval*, *SSLCipherSpec*, *SSLCipherSuite*, *SSLClientAuth*, *SSLPeerName*, *TpName*, *TransportType*, *UseDLQ*, *UserIdentifier*, *XmitQName*

Response data

AlterationDate **(MQCFST)**
Alteration date, in the form yyyy-mm-dd (parameter identifier: MQCA_ALTERATION_DATE).

The date when the information was last altered.

AlterationTime **(MQCFST)**
Alteration time, in the form hh.mm.ss (parameter identifier: MQCA_ALTERATION_TIME).

The time when the information was last altered.

BatchHeartbeat **(MQCFIN)**
The value being used for the batch heartbeating (parameter identifier: MQIACH_BATCH_HB).

The value can be 0 - 999999. A value of 0 indicates that heartbeating is not in use.

BatchInterval **(MQCFIN)**
Batch interval (parameter identifier: MQIACH_BATCH_INTERVAL).

BatchSize **(MQCFIN)**
Batch size (parameter identifier: MQIACH_BATCH_SIZE).

ChannelDesc **(MQCFST)**
Channel description (parameter identifier: MQCACH_DESC).

The maximum length of the string is MQ_CHANNEL_DESC_LENGTH.

ChannelMonitoring **(MQCFIN)**
Online monitoring data collection (parameter identifier: MQIA_MONITORING_CHANNEL).

The value can be:

MQMON_OFF
Online monitoring data collection is turned off for this channel.

MQMON_Q_MGR
The value of the queue manager's *ChannelMonitoring* parameter is inherited by the channel.

MQMON_LOW
Online monitoring data collection is turned on, with a low rate of data collection, for this channel unless the queue manager's *ChannelMonitoring* parameter is MQMON_NONE.

MQMON_MEDIUM
Online monitoring data collection is turned on, with a moderate rate of data collection, for this channel unless the queue manager's *ChannelMonitoring* parameter is MQMON_NONE.

MQMON_HIGH
Online monitoring data collection is turned on, with a high rate of data collection, for this channel unless the queue manager's *ChannelMonitoring* parameter is MQMON_NONE.

ChannelName **(MQCFST)**
Channel name (parameter identifier: MQCACH_CHANNEL_NAME).

The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

ChannelStartDate **(MQCFST)**
The date that the channel started (parameter identifier: MQCACH_CHANNEL_START_DATE). The length is specified by the value MQ_DATE_LENGTH.

***ChannelStartTime* (MQCFST)**
The time that the channel started (parameter identifier: MQCACH_CHANNEL_START_TIME). The length is specified by the value MQ_TIME_LENGTH.

***ChannelStatistics* (MQCFIN)**
Statistics data collection (parameter identifier: MQIA_STATISTICS_CHANNEL).

The value can be:

MQMON_OFF
Statistics data collection is turned off for this channel.

MQMON_Q_MGR
The value of the queue manager's *ChannelStatistics* parameter is inherited by the channel.

MQMON_LOW
Statistics data collection is turned on, with a low rate of data collection, for this channel unless the queue manager's *ChannelStatistics* parameter is MQMON_NONE.

MQMON_MEDIUM
Statistics data collection is turned on, with a moderate rate of data collection, for this channel unless the queue manager's *ChannelStatistics* parameter is MQMON_NONE.

MQMON_HIGH
Statistics data collection is turned on, with a high rate of data collection, for this channel unless the queue manager's *ChannelStatistics* parameter is MQMON_NONE.

This parameter is valid only on Windows, UNIX and Linux systems.

***ChannelType* (MQCFIN)**
Channel type (parameter identifier: MQIACH_CHANNEL_TYPE).

The value can be:

MQCHT_SENDER
Sender.

MQCHT_SERVER
Server.

MQCHT_RECEIVER
Receiver.

MQCHT_REQUESTER
Requester.

MQCHT_SVRCONN
Server-connection (for use by clients).

MQCHT_CLNTCONN
Client connection.

MQCHT_CLUSRCVR
Cluster-receiver.

MQCHT_CLUSSDR
Cluster-sender.

MQCHT_MQTT
Telemetry channel.

***ClientChannelWeight* (MQCFIN)**
Client Channel Weight (parameter identifier: MQIACH_CLIENT_CHANNEL_WEIGHT).

The client channel weighting attribute is used so client channel definitions can be selected at random, with the larger weightings having a higher probability of selection, when more than one suitable definition is available.

The value can be 0 - 99. The default is 0.

This parameter is only valid for channels with a ChannelType of MQCHT_CLNTCONN

***ClientIdentifier* (MQCFST)**
the clientId of the client (parameter identifier: MQCACH_CLIENT_ID).

***ClusterName* (MQCFST)**
Cluster name (parameter identifier: MQCA_CLUSTER_NAME).

***ClusterNamelist* (MQCFST)**
Cluster namelist (parameter identifier: MQCA_CLUSTER_NAMELIST).

***CLWLChannelPriority* (MQCFIN)**
Channel priority (parameter identifier: MQIACH_CLWL_CHANNEL_PRIORITY).

***CLWLChannelRank* (MQCFIN)**
Channel rank (parameter identifier: MQIACH_CLWL_CHANNEL_RANK).

***CLWLChannelWeight* (MQCFIN)**
Channel weighting (parameter identifier: MQIACH_CLWL_CHANNEL_WEIGHT).

***ConnectionAffinity* (MQCFIN)**
Channel Affinity (parameter identifier: MQIACH_CONNECTION_AFFINITY)

The channel affinity attribute specifies whether client applications that connect multiple times using the same queue manager name, use the same client channel. The value can be:

MQCAFTY_PREFERRED
The first connection in a process reading a client channel definition table (CCDT) creates a list of applicable definitions based on the weighting with any zero ClientChannelWeight definitions first in alphabetical order. Each connection in the process attempts to connect using the first definition in the list. If a connection is unsuccessful the next definition is used. Unsuccessful nonzero ClientChannelWeight definitions are moved to the end of the list. Zero ClientChannelWeight definitions remain at the start of the list and are selected first for each connection. For C, C++ and .NET (including fully managed .NET) clients the list is updated if the CCDT has been modified since the list was created. Each client process with the same host name creates the same list.

MQCAFTY_PREFERRED is the default value.

MQCAFTY_NONE
The first connection in a process reading a CCDT creates a list of applicable definitions. All connections in a process independently select an applicable definition based on the weighting with any applicable zero ClientChannelWeight definitions selected first in alphabetical order. For C, C++ and .NET (including fully managed .NET) clients the list is updated if the CCDT has been modified since the list was created.

This parameter is only valid for channels with a ChannelType of MQCHT_CLNTCONN.

***ConnectionName* (MQCFST)**
Connection name (parameter identifier: MQCACH_CONNECTION_NAME).

The maximum length of the string is MQ_CONN_NAME_LENGTH. On z/OS, it is MQ_LOCAL_ADDRESS_LENGTH.

The *ConnectionName* is a comma-separated list.

***DataConversion* (MQCFIN)**
Whether sender must convert application data (parameter identifier: MQIACH_DATA_CONVERSION).

The value can be:

MQCDC_NO_SENDER_CONVERSION
No conversion by sender.

MQCDC_SENDER_CONVERSION
Conversion by sender.

***DefaultChannelDisposition* (MQCFIN)**
Default channel disposition (parameter identifier: MQIACH_DEF_CHANNEL_DISP).

This parameter applies to z/OS only.

Specifies the intended disposition of the channel when active. The value can be:

MQCHLD_PRIVATE
The intended use of the object is as a private channel.

MQCHLD_FIXSHARED
The intended use of the object is as a shared channel linked to a specific queue manager.

MQCHLD_SHARED
The intended use of the object is as a shared channel.

DiscInterval **(MQCFIN)**
Disconnection interval (parameter identifier: MQIACH_DISC_INTERVAL).

DefReconnect **(MQCFIN)**
Client channel default reconnection option (parameter identifier: MQIACH_DEF_RECONNECT).

The returned values can be:

MQRCN_NO
MQRCN_NO is the default value.

Unless overridden by MQCONNX, the client is not reconnected automatically.

MQRCN_YES
Unless overridden by MQCONNX, the client reconnects automatically.

MQRCN_Q_MGR
Unless overridden by MQCONNX, the client reconnects automatically, but only to the same queue manager. The QMGR option has the same effect as MQCNO_RECONNECT_Q_MGR.

MQRCN_DISABLED
Reconnection is disabled, even if requested by the client program using the MQCONNX MQI call.

HeaderCompression **(MQCFIL)**
Header data compression techniques supported by the channel (parameter identifier: MQIACH_HDR_COMPRESSION). For sender, server, cluster-sender, cluster-receiver, and client-connection channels, the values specified are in order of preference.

The value can be one, or more, of

MQCOMPRESS_NONE
No header data compression is performed.

MQCOMPRESS_SYSTEM
Header data compression is performed.

HeartbeatInterval **(MQCFIN)**
Heartbeat interval (parameter identifier: MQIACH_HB_INTERVAL).

InDoubtInbound **(MQCFIN)**
Number of inbound messages to the client that are in doubt (Parameter identifier: MQIACH_IN_DOUBT_IN).

InDoubtOutbound **(MQCFIN)**
Number of outbound messages from the client that are in doubt (Parameter identifier: MQIACH_IN_DOUBT_OUT).

KeepAliveInterval **(MQCFIN)**
KeepAlive interval (parameter identifier: MQIACH_KEEP_ALIVE_INTERVAL).

LastMsgTime **(MQCFST)**
The time that the last message was sent or received (parameter identifier: MQCACH_LAST_MSG_TIME).

The maximum length of the string is MQ_TIME_LENGTH.

LocalAddress **(MQCFST)**
Local communications address for the channel (parameter identifier: MQCACH_LOCAL_ADDRESS).

The maximum length of the string is MQ_LOCAL_ADDRESS_LENGTH.

***LongRetryCount* (MQCFIN)**
Long retry count (parameter identifier: MQIACH_LONG_RETRY).

***LongRetryInterval* (MQCFIN)**
Long timer (parameter identifier: MQIACH_LONG_TIMER).

***MaxInstances* (MQCFIN)**
Maximum number of simultaneous instances of a server-connection channel (parameter identifier: MQIACH_MAX_INSTANCES).

This parameter is returned only for server-connection channels in response to an Inquire Channel call with ChannelAttrs including MQIACF_ALL or MQIACH_MAX_INSTANCES.

***MaxInstancesPerClient* (MQCFIN)**
Maximum number of simultaneous instances of a server-connection channel that can be started from a single client (parameter identifier: MQIACH_MAX_INSTS_PER_CLIENT).

This parameter is returned only for server-connection channels in response to an Inquire Channel call with ChannelAttrs including MQIACF_ALL or MQIACH_MAX_INSTS_PER_CLIENT.

***MaxMsgLength* (MQCFIN)**
Maximum message length (parameter identifier: MQIACH_MAX_MSG_LENGTH).

***MCAName* (MQCFST)**
Message channel agent name (parameter identifier: MQCACH_MCA_NAME).

The maximum length of the string is MQ_MCA_NAME_LENGTH.

***MCAType* (MQCFIN)**
Message channel agent type (parameter identifier: MQIACH_MCA_TYPE).

The value can be:

MQMCAT_PROCESS
Process.

MQMCAT_THREAD
Thread (Windows only).

***MCAUserIdentifier* (MQCFST)**
Message channel agent user identifier (parameter identifier: MQCACH_MCA_USER_ID).

Note: An alternative way of providing a user ID for a channel to run under is to use channel authentication records. With channel authentication records, different connections can use the same channel while using different credentials. If both MCAUSER on the channel is set and channel authentication records are used to apply to the same channel, the channel authentication records take precedence. The MCAUSER on the channel definition is only used if the channel authentication record uses USERSRC(CHANNEL). For more details, see Channel authentication records

The maximum length of the MCA user identifier depends on the environment in which the MCA is running. MQ_MCA_USER_ID_LENGTH gives the maximum length for the environment for which your application is running. MQ_MAX_MCA_USER_ID_LENGTH gives the maximum for all supported environments.

On Windows, the user identifier might be qualified with the domain name in the following format:

```
user@domain
```

***MessageCompression* (MQCFIL)**
Message data compression techniques supported by the channel (parameter identifier: MQIACH_MSG_COMPRESSION). For sender, server, cluster-sender, cluster-receiver, and client-connection channels, the values specified are in order of preference.

The value can be one, or more, of:

MQCOMPRESS_NONE
No message data compression is performed.

MQCOMPRESS_RLE
Message data compression is performed using run-length encoding.

MQCOMPRESS_ZLIBFAST
Message data compression is performed using ZLIB encoding with speed prioritized.

MQCOMPRESS_ZLIBHIGH
Message data compression is performed using ZLIB encoding with compression prioritized.

MQCOMPRESS_ANY
Any compression technique supported by the queue manager can be used. MQCOMPRESS_ANY is only valid for receiver, requester, and server-connection channels.

ModeName **(MQCFST)**
Mode name (parameter identifier: MQCACH_MODE_NAME).

The maximum length of the string is MQ_MODE_NAME_LENGTH.

MsgExit **(MQCFST)**
Message exit name (parameter identifier: MQCACH_MSG_EXIT_NAME).

The maximum length of the exit name depends on the environment in which the exit is running. MQ_EXIT_NAME_LENGTH gives the maximum length for the environment in which your application is running. MQ_MAX_EXIT_NAME_LENGTH gives the maximum for all supported environments.

In the following environments, if more than one message exit has been defined for the channel, the list of names is returned in an MQCFSL structure instead of an MQCFST structure: IBM i, Windows, UNIX and Linux. An MQCFSL structure is always used on z/OS.

MsgsReceived **(MQCFIN64)**
The number of messages received by the client since it last connected (parameter identifier: MQIACH_MSGS_RECEIVED / MQIACH_MSGS_RCVD).

MsgRetryCount **(MQCFIN)**
Message retry count (parameter identifier: MQIACH_MR_COUNT).

MsgRetryExit **(MQCFST)**
Message retry exit name (parameter identifier: MQCACH_MR_EXIT_NAME).

The maximum length of the exit name depends on the environment in which the exit is running. MQ_EXIT_NAME_LENGTH gives the maximum length for the environment in which your application is running. MQ_MAX_EXIT_NAME_LENGTH gives the maximum for all supported environments.

MsgRetryInterval **(MQCFIN)**
Message retry interval (parameter identifier: MQIACH_MR_INTERVAL).

MsgRetryUserData **(MQCFST)**
Message retry exit user data (parameter identifier: MQCACH_MR_EXIT_USER_DATA).

The maximum length of the string is MQ_EXIT_DATA_LENGTH.

MsgsSent **(MQCFIN64)**
The number of messages sent by the client since it last connected (parameter identifier: MQIACH_MSGS_SENT).

MsgUserData **(MQCFST)**
Message exit user data (parameter identifier: MQCACH_MSG_EXIT_USER_DATA).

The maximum length of the string is MQ_EXIT_DATA_LENGTH.

In the following environments, if more than one message exit user data string has been defined for the channel, the list of strings is returned in an MQCFSL structure instead of an MQCFST structure: IBM i, Windows, UNIX and Linux. An MQCFSL structure is always used on z/OS.

NetworkPriority **(MQCFIN)**
Network priority (parameter identifier: MQIACH_NETWORK_PRIORITY).

NonPersistentMsgSpeed **(MQCFIN)**
Speed at which non-persistent messages are to be sent (parameter identifier: MQIACH_NPM_SPEED).

The value can be:

MQNPMS_NORMAL
Normal speed.

MQNPMS_FAST
Fast speed.

***Password* (MQCFST)**
Password (parameter identifier: MQCACH_PASSWORD).

If a nonblank password is defined, it is returned as asterisks. Otherwise, it is returned as blanks.

The maximum length of the string is MQ_PASSWORD_LENGTH. However, only the first 10 characters are used.

***PropertyControl* (MQCFIN)**
Property control attribute (parameter identifier MQIA_PROPERTY_CONTROL).

Specifies what happens to properties of messages when the message is about to be sent to a V6 or prior queue manager (a queue manager that does not understand the concept of a property descriptor). The value can be:

MQPROP_COMPATIBILITY

Message properties	Result
The message contains a property with a prefix of **mcd.**, **jms.**, **usr.** or **mqext.**	All optional message properties (where the **Support** value is MQPD_SUPPORT_OPTIONAL), except those properties in the message descriptor or extension, are placed in one or more MQRFH2 headers in the message data before the message it sent to the remote queue manager.
The message does not contain a property with a prefix of **mcd.**, **jms.**, **usr.** or **mqext.**	All message properties, except those properties in the message descriptor or extension, are removed from the message before the message is sent to the remote queue manager.
The message contains a property where the **Support** field of the property descriptor is not set to MQPD_SUPPORT_OPTIONAL	The message is rejected with reason MQRC_UNSUPPORTED_PROPERTY and treated in accordance with its report options.
The message contains one or more properties where the **Support** field of the property descriptor is set to MQPD_SUPPORT_OPTIONAL but other fields of the property descriptor are set to non-default values	The properties with non-default values are removed from the message before the message is sent to the remote queue manager.
The MQRFH2 folder that would contain the message property needs to be assigned with the *content='properties'* attribute	The properties are removed to prevent MQRFH2 headers with unsupported syntax flowing to a V6 or prior queue manager.

MQPROP_NONE
All properties of the message, except those properties in the message descriptor or extension, are removed from the message before the message is sent to the remote queue manager.

If the message contains a property where the **Support** field of the property descriptor is not set to MQPD_SUPPORT_OPTIONAL then the message is rejected with reason MQRC_UNSUPPORTED_PROPERTY and treated in accordance with its report options.

MQPROP_ALL
All properties of the message are included with the message when it is sent to the remote queue manager. The properties, except those properties in the message descriptor (or extension), are placed in one or more MQRFH2 headers in the message data.

This attribute is applicable to Sender, Server, Cluster Sender, and Cluster Receiver channels.

***PutAuthority* (MQCFIN)**
Put authority (parameter identifier: MQIACH_PUT_AUTHORITY).

The value can be:

MQPA_DEFAULT
Default user identifier is used.

MQPA_CONTEXT
Context user identifier is used.

***QMgrName* (MQCFST)**
Queue manager name (parameter identifier: MQCA_Q_MGR_NAME).

The maximum length of the string is MQ_Q_MGR_NAME_LENGTH.

***QSGDisposition* (MQCFIN)**
QSG disposition (parameter identifier: MQIA_QSG_DISP).

Specifies the disposition of the object (that is, where it is defined and how it behaves). This parameter is valid only on z/OS. The value can be:

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_GROUP
The object is defined as MQQSGD_GROUP.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

***ReceiveExit* (MQCFST)**
Receive exit name (parameter identifier: MQCACH_RCV_EXIT_NAME).

The maximum length of the exit name depends on the environment in which the exit is running. MQ_EXIT_NAME_LENGTH gives the maximum length for the environment in which your application is running. MQ_MAX_EXIT_NAME_LENGTH gives the maximum for all supported environments.

In the following environments, if more than one receive exit has been defined for the channel, the list of names is returned in an MQCFSL structure instead of an MQCFST structure: IBM i, Windows, UNIX and Linux. An MQCFSL structure is always used on z/OS.

***ReceiveUserData* (MQCFST)**
Receive exit user data (parameter identifier: MQCACH_RCV_EXIT_USER_DATA).

The maximum length of the string is MQ_EXIT_DATA_LENGTH.

In the following environments, if more than one receive exit user data string has been defined for the channel, the list of strings is returned in an MQCFSL structure instead of an MQCFST structure: IBM i, Windows, UNIX and Linux. An MQCFSL structure is always used on z/OS.

***ResetSeq* (MQCFIN)**

Pending reset sequence number.

This is the sequence number from an outstanding request and it indicates a user Reset Channel command request is outstanding.

A value of zero indicates that there is no outstanding Reset Channel. The value can be in the range 1 - 999999999.

Possible return values include MQCHRR_RESET_NOT_REQUESTED.

This parameter is not applicable on z/OS.

***SecurityExit* (MQCFST)**
Security exit name (parameter identifier: MQCACH_SEC_EXIT_NAME).

The maximum length of the exit name depends on the environment in which the exit is running. MQ_EXIT_NAME_LENGTH gives the maximum length for the environment in which your application is running. MQ_MAX_EXIT_NAME_LENGTH gives the maximum for all supported environments.

***SecurityUserData* (MQCFST)**
Security exit user data (parameter identifier: MQCACH_SEC_EXIT_USER_DATA).

The maximum length of the string is MQ_EXIT_DATA_LENGTH.

***SendExit* (MQCFST)**
Send exit name (parameter identifier: MQCACH_SEND_EXIT_NAME).

The maximum length of the exit name depends on the environment in which the exit is running. MQ_EXIT_NAME_LENGTH gives the maximum length for the environment in which your application is running. MQ_MAX_EXIT_NAME_LENGTH gives the maximum for all supported environments.

In the following environments, if more than one send exit has been defined for the channel, the list of names is returned in an MQCFSL structure instead of an MQCFST structure: IBM i, Windows, UNIX and Linux. An MQCFSL structure is always used on z/OS.

***SendUserData* (MQCFST)**
Send exit user data (parameter identifier: MQCACH_SEND_EXIT_USER_DATA).

The maximum length of the string is MQ_EXIT_DATA_LENGTH.

In the following environments, if more than one send exit user data string has been defined for the channel, the list of strings is returned in an MQCFSL structure instead of an MQCFST structure: IBM i, Windows, UNIX and Linux. An MQCFSL structure is always used on z/OS.

***SeqNumberWrap* (MQCFIN)**
Sequence wrap number (parameter identifier: MQIACH_SEQUENCE_NUMBER_WRAP).

***SharingConversations* (MQCFIN)**
Number of sharing conversations (parameter identifier: MQIACH_SHARING_CONVERSATIONS).

This parameter is returned only for TCP/IP client-connection and server-connection channels.

***ShortRetryCount* (MQCFIN)**
Short retry count (parameter identifier: MQIACH_SHORT_RETRY).

***ShortRetryInterval* (MQCFIN)**
Short timer (parameter identifier: MQIACH_SHORT_TIMER).

***SSLCipherSpec* (MQCFST)**
CipherSpec (parameter identifier: MQCACH_SSL_CIPHER_SPEC).

The length of the string is MQ_SSL_CIPHER_SPEC_LENGTH.

***SSLCipherSuite* (MQCFST)**
CipherSuite (parameter identifier: MQCACH_SSL_CIPHER_SUITE).

The length of the string is MQ_SSL_CIPHER_SUITE_LENGTH.

***SSLClientAuth* (MQCFIN)**
Client authentication (parameter identifier: MQIACH_SSL_CLIENT_AUTH).

The value can be

MQSCA_REQUIRED
Client authentication required

MQSCA_OPTIONAL
Client authentication is optional.

Defines whether IBM WebSphere MQ requires a certificate from the SSL client.

***SSLPeerName* (MQCFST)**
Peer name (parameter identifier: MQCACH_SSL_PEER_NAME).

Note: An alternative way of restricting connections into channels by matching against the SSL or TLS Subject Distinguished Name, is to use channel authentication records. With channel authentication records, different SSL or TLS Subject Distinguished Name patterns can be applied to the same channel. If both SSLPEER on the channel and a channel authentication record are used to apply to the same channel, the inbound certificate must match both patterns in order to connect. For more information, see Channel authentication records .

The length of the string is MQ_SSL_PEER_NAME_LENGTH. On z/OS, it is MQ_SSL_SHORT_PEER_NAME_LENGTH.

Specifies the filter to use to compare with the Distinguished Name of the certificate from the peer queue manager or client at the other end of the channel. (A Distinguished Name is the identifier of the SSL certificate.) If the Distinguished Name in the certificate received from the peer does not match the SSLPEER filter, the channel does not start.

***TpName* (MQCFST)**
Transaction program name (parameter identifier: MQCACH_TP_NAME).

The maximum length of the string is MQ_TP_NAME_LENGTH.

***TransportType* (MQCFIN)**
Transmission protocol type (parameter identifier: MQIACH_XMIT_PROTOCOL_TYPE).

The value might be:

MQXPT_LU62
LU 6.2.

MQXPT_TCP
TCP.

MQXPT_NETBIOS
NetBIOS.

MQXPT_SPX
SPX.

MQXPT_DECNET
DECnet.

***UseDLQ* (MQCFIN)**
Whether the dead-letter queue (or undelivered message queue) should be used when messages cannot be delivered by channels (parameter identifier: MQIA_USE_DEAD_LETTER_Q).

The value might be:

MQUSEDLQ_NO
Messages that cannot be delivered by a channel will be treated as a failure and either the channel will discard them, or the channel will end, in accordance with the setting of NPMSPEED.

MQUSEDLQ_YES
If the queue manager DEADQ attribute provides the name of a dead-letter queue then it will be used, otherwise the behvaiour will be as for MQUSEDLQ_NO.

***UserIdentifier* (MQCFST)**
Task user identifier (parameter identifier: MQCACH_USER_ID).

The maximum length of the string is MQ_USER_ID_LENGTH. However, only the first 10 characters are used.

***XmitQName* (MQCFST)**
Transmission queue name (parameter identifier: MQCACH_XMIT_Q_NAME).

The maximum length of the string is MQ_Q_NAME_LENGTH.

Inquire Channel Authentication Records

The Inquire Channel Authentication Records (MQCMD_INQUIRE_CHLAUTH_RECS) command retrieves the allowed partner details and mappings to MCAUSER for a channel or set of channels.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

Required parameters

***generic-channel-name*(MQCFST)**
The name of the channel or set of channels on which you are inquiring (parameter identifier: MQCACH_CHANNEL_NAME).

You can use the asterisk (*) as a wildcard to specify a set of channels, unless you set Match to MQMATCH_RUNCHECK. If you set Type to BLOCKADDR, you must set the generic channel name to a single asterisk, which matches all channel names.

Optional parameters

***Address*(MQCFST)**
The IP address to be mapped (parameter identifier: MQCACH_CONNECTION_NAME).

This parameter is valid only when **Match** is MQMATCH_RUNCHECK and must not be generic.

***ByteStringFilterCommand* (MQCFBF)**
Byte string filter command descriptor. Use this parameter to restrict the output from the command by specifying a filter condition. See "MQCFBF - PCF byte string filter parameter" on page 1087 for information about using this filter condition.

If you specify a byte string filter, you cannot also specify an integer filter using the **IntegerFilterCommand** parameter, or a string filter using the **StringFilterCommand** parameter.

***ChannelAuthAttrs*(MQCFIL)**
Authority record attributes (parameter identifier: MQIACF_CHLAUTH_ATTRS).

You can specify the following value in the attribute list on its own. This is the default value if the parameter is not specified.

MQIACF_ALL
All attributes.

If MQIACF_ALL is not specified, specify a combination of the following values:

MQCA_ALTERATION_DATE
Alteration Date.

MQCA_ALTERATION_TIME
Alteration Time.

MQCA_CHLAUTH_DESC
Description.

MQCA_CUSTOM
Custom.

MQCACH_CONNECTION_NAME
IP address filter.

MQCACH_MCA_USER_ID
MCA User ID mapped on the record.

MQIACH_USER_SOURCE
The source of the user ID for this record.

MQIACH_WARNING
Warning mode.

***ClntUser*(MQCFST)**
The client asserted user ID to be matched (parameter identifier: MQCACH_CLIENT_USER_ID).

This parameter is valid only when **Match** is MQMATCH_RUNCHECK.

***CommandScope*(MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following values:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which the command was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

***IntegerFilterCommand*(MQCFIF)**
Integer filter command descriptor. Use this parameter to restrict the output from the command by specifying a filter condition. See "MQCFIF - PCF integer filter parameter" on page 1092 for information about using this filter condition.

If you specify an integer filter, you cannot also specify a byte string filter using the **ByteStringFilterCommand** parameter or a string filter using the **StringFilterCommand** parameter.

***Match*(MQCFIN)**
Indicates the type of matching to be applied (parameter identifier MQIACH_MATCH). You can specify any one of the following values:

MQMATCH_RUNCHECK
A specific match is made against the supplied channel name and optionally supplied **Address**, **SSLPeer** , **QMName**, and **ClntUser** attributes to find the channel authentication record that will be matched by the channel at runtime if it connects into this queue manager. If the record discovered has **Warn** set to MQWARN_YES, a second record might also be displayed to show the actual record the channel will use at runtime. The channel name supplied in this case cannot be generic. This option must be combined with **Type** MQCAUT_ALL.

MQMATCH_EXACT
Return only those records which exactly match the channel profile name supplied. If there are no asterisks in the channel profile name, this option returns the same output as MQMATCH_GENERIC.

MQMATCH_GENERIC
Any asterisks in the channel profile name are treated as wild cards. If there are no asterisks in the channel profile name, this returns the same output as MQMATCH_EXACT. For example, a profile of ABC* could result in records for ABC, ABC*, and ABCD being returned.

MQMATCH_ALL
Return all possible records that match the channel profile name supplied. If the channel name is generic in this case, all records that match the channel name are returned even if more specific matches exist. For example, a profile of SYSTEM.*.SVRCONN could result in records for SYSTEM.*, SYSTEM.DEF.*, SYSTEM.DEF.SVRCONN, and SYSTEM.ADMIN.SVRCONN being returned.

***QMName*(MQCFST)**
The name of the remote partner queue manager to be matched (parameter identifier: MQCA_REMOTE_Q_MGR_NAME).

This parameter is valid only when **Match** is MQMATCH_RUNCHECK . The value cannot be generic.

***SSLPeer*(MQCFST)**

The Distinguished Name of the certificate to be matched (parameter identifier: MQCACH_SSL_PEER_NAME).

This parameter is valid only when **Match** is MQMATCH_RUNCHECK .

The **SSLPeer** value is specified in the standard form used to specify a Distinguished Name and cannot be a generic value.

The maximum length of the parameter is MQ_SSL_PEER_NAME_LENGTH .

***StringFilterCommand* (MQCFSF)**

String filter command descriptor. Use this parameter to restrict the output from the command by specifying a filter condition. See "MQCFSF - PCF string filter parameter" on page 1099 for information about using this filter condition.

If you specify a string filter, you cannot also specify a byte string filter using the **ByteStringFilterCommand** parameter or an integer filter using the **IntegerFilterCommand** parameter.

***Type*(MQCFIN)**

The type of channel authentication record for which to set allowed partner details or mappings to MCAUSER (parameter identifier: MQIACF_CHLAUTH_TYPE). The following values are valid:

MQCAUT_BLOCKUSER
This channel authentication record prevents a specified user or users from connecting.

MQCAUT_BLOCKADDR
This channel authentication record prevents connections from a specified IP address or addresses.

MQCAUT_SSLPEERMAP
This channel authentication record maps SSL Distinguished Names (DNs) to MCAUSER values.

MQCAUT_ADDRESSMAP
This channel authentication record maps IP addresses to MCAUSER values.

MQCAUT_USERMAP
This channel authentication record maps asserted user IDs to MCAUSER values.

MQCAUT_QMGRMAP
This channel authentication record maps remote queue manager names to MCAUSER values.

MQCAUT_ALL
Inquire on all types of record. This is the default value.

Related concepts

Channel authentication records

Inquire Channel Authentication Records (Response)

The response to the Inquire Channel Authentication Records (MQCMD_INQUIRE_CHLAUTH_RECS) command consists of the response header followed by the requested combination of attribute parameter structures.

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	X	X

Always returned:
ChlAuth, *Type*, *Warn(yes)*

Always returned if type is MQCAUT_BLOCKUSER:
UserList

Always returned if type is MQCAUT_BLOCKADDR:
AddrList

Always returned if type is MQCAUT_SSLPEERMAP:
Address (unless blanks), *MCAUser (unless blanks)*, *SSLPeer*, *UserSrc*

Always returned if type is MQCAUT_ADDRESSMAP:
Address (unless blanks), *MCAUser (unless blanks)*, *UserSrc*

Always returned if type is MQCAUT_USERMAP:
Address (unless blanks), *ClntUser*, *MCAUser (unless blanks)*, *UserSrc*

Always returned if type is MQCAUT_QMGRMAP:
Address (unless blanks), *MCAUser (unless blanks)*, *QMName*, *UserSrc*

Returned if requested:
Address, *AlterationDate*, *AlterationTime* , *Custom* , *Description*, *MCAUser*, *SSLPeer* , *UserSrc* , *Warn*

Response data

***AlterationDate* (MQCFST)**
Alteration date (parameter identifier: MQCA_ALTERATION_DATE).

The date when the information was last altered, in the form yyyy-mm-dd.

***AlterationTime* (MQCFST)**
Alteration time (parameter identifier: MQCA_ALTERATION_TIME).

The time when the information was last altered, in the form hh.mm.ss.

***Address* (MQCFST)**
The filter used to compare with the IP address of the partner queue manager or client at the other end of the channel (parameter identifier: MQCACH_CONNECTION_NAME).

***AddrList* (MQCFSL)**
A list of up to 100 IP address patterns which are banned from accessing this queue manager on any channel (parameter identifier: MQCACH_CONNECTION_NAME_LIST).

***Chlauth* (MQCFST)**
The name of the channel, or pattern that matches a set of channels, to which the channel authentication record applies (parameter identifier: MQCACH_CHANNEL_NAME).

***Description* (MQCFST)**
Descriptive information about the channel authentication record (parameter identifier: MQCA_CHLAUTH_DESC).

***ClntUser* (MQCFST)**
The client asserted user ID to be mapped to a new user ID, allowed through unchanged, or blocked (parameter identifier: MQCACH_CLIENT_USER_ID).

***MCAUser* (MQCFST)**
The user identifier to be used when the inbound connection matches the SSL DN, IP address, client asserted user ID or remote queue manager name supplied (parameter identifier: MQCACH_MCA_USER_ID).

***QMName* (MQCFST)**
The name of the remote partner queue manager to be mapped to a user ID, allowed through unchanged, or blocked (parameter identifier: MQCA_REMOTE_Q_MGR_NAME).

***SSLPeer* (MQCFST)**
The filter to use to compare with the Distinguished Name of the certificate from the peer queue manager or client at the other end of the channel (parameter identifier: MQCACH_SSL_PEER_NAME).

***Type* (MQCFIN)**
The type of channel authentication record for which to set allowed partner details or mappings to MCAUSER (parameter identifier: MQIACF_CHLAUTH_TYPE). The following values can be returned:

MQCAUT_BLOCKUSER
This channel authentication record prevents a specified user or users from connecting.

MQCAUT_BLOCKADDR
This channel authentication record prevents connections from a specified IP address or addresses.

MQCAUT_SSLPEERMAP
This channel authentication record maps SSL Distinguished Names (DNs) to MCAUSER values.

MQCAUT_ADDRESSMAP
This channel authentication record maps IP addresses to MCAUSER values.

MQCAUT_USERMAP
This channel authentication record maps asserted user IDs to MCAUSER values.

MQCAUT_QMGRMAP
This channel authentication record maps remote queue manager names to MCAUSER values.

***UserList* (MQCFSL)**
A list of up to 100 user IDs which are banned from use of this channel or set of channels (parameter identifier: MQCACH_MCA_USER_ID_LIST). Use the special value *MQADMIN to mean privileged or administrative users. The definition of this value depends on the operating system, as follows:

- On Windows, all members of the mqm group, the Administrators group and SYSTEM.
- On UNIX and Linux, all members of the mqm group.
- On IBM i, the profiles (users) qmqm and qmqmadm and all members of the qmqmadm group, and any user defined with the *ALLOBJ special setting.
- On z/OS, the user ID that the channel initiator and queue manager address spaces are running under.

***UserSrc* (MQCFIN)**
The source of the user ID to be used for MCAUSER at run time (parameter identifier: MQIACH_USER_SOURCE).

The following values can be returned:

MQUSRC_MAP
Inbound connections that match this mapping use the user ID specified in the **MCAUser** attribute.

MQUSRC_NOACCESS
Inbound connections that match this mapping have no access to the queue manager and the channel ends immediately.

MQUSRC_CHANNEL
Inbound connections that match this mapping use the flowed user ID or any user defined on the channel object in the MCAUSER field.

***Warn* (MQCFIN)**
Indicates whether this record operates in warning mode (parameter identifier: MQIACH_WARNING).

MQWARN_NO
This record does not operate in warning mode. Any inbound connection that matches this record is blocked. This is the default value.

MQWARN_YES
This record operates in warning mode. Any inbound connection that matches this record and would therefore be blocked is allowed access. An error message is written and, if events are configured, an event message is created showing the details of what would have been blocked. The connection is allowed to continue.

Inquire Channel Listener

The Inquire Channel Listener (MQCMD_INQUIRE_LISTENER) command inquires about the attributes of existing WebSphere MQ listeners.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

Required parameters

***ListenerName* (MQCFST)**
Listener name (parameter identifier: MQCACH_LISTENER_NAME).

This parameter is the name of the listener with attributes that are required. Generic listener names are supported. A generic name is a character string followed by an asterisk (*), for example ABC*, and it selects all listeners having names that start with the selected character string. An asterisk on its own matches all possible names.

The listener name is always returned regardless of the attributes requested.

The maximum length of the string is MQ_LISTENER_NAME_LENGTH.

Optional parameters

***IntegerFilterCommand* (MQCFIF)**
Integer filter command descriptor. The parameter identifier must be any integer type parameter allowed in *ListenerAttrs* except MQIACF_ALL. Use this parameter to restrict the output from the command by specifying a filter condition. See “MQCFIF - PCF integer filter parameter” on page 1092 for information about using this filter condition.

If you specify an integer filter, you cannot also specify a string filter using the *StringFilterCommand* parameter.

***ListenerAttrs* (MQCFIL)**
Listener attributes (parameter identifier: MQIACF_LISTENER_ATTRS).

The attribute list might specify the following value on its own- default value if the parameter is not specified:

MQIACF_ALL
All attributes.

or a combination of the following:

MQCA_ALTERATION_DATE
Date on which the definition was last altered.

MQCA_ALTERATION_TIME
Time at which the definition was last altered.

MQCACH_IP_ADDRESS
IP address for the listener.

MQCACH_LISTENER_DESC
Description of listener definition.

MQCACH_LISTENER_NAME
Name of listener definition.

MQCACH_LOCAL_NAME
NetBIOS local name that the listener uses. MQCACH_LOCAL_NAME is valid only on Windows.

MQCACH_TP_NAME
The LU 6.2 transaction program name. MQCACH_TP_NAME is valid only on Windows.

MQIACH_ADAPTER
Adapter number on which NetBIOS listens. MQIACH_ADAPTER is valid only on Windows.

MQIACH_BACKLOG
Number of concurrent connection requests that the listener supports.

MQIACH_COMMAND_COUNT
Number of commands that the listener can use. MQIACH_COMMAND_COUNT is valid only on Windows.

MQIACH_LISTENER_CONTROL
Specifies when the queue manager starts and stops the listener.

MQIACH_NAME_COUNT
Number of names that the listener can use. MQIACH_NAME_COUNT is valid only on Windows.

MQIACH_PORT
Port number.

MQIACH_SESSION_COUNT
Number of sessions that the listener can use. MQIACH_SESSION_COUNT is valid only on Windows.

MQIACH_SOCKET
SPX socket on which to listen. MQIACH_SOCKET is valid only on Windows.

***StringFilterCommand* (MQCFSF)**
String filter command descriptor. The parameter identifier must be any string type parameter allowed in *ListenerAttrs* except MQCACH_LISTENER_NAME. Use this parameter to restrict the output from the command by specifying a filter condition. See "MQCFSF - PCF string filter parameter" on page 1099 for information about using this filter condition.

If you specify a string filter, you cannot also specify an integer filter using the *IntegerFilterCommand* parameter.

***TransportType* (MQCFIN)**
Transport protocol type (parameter identifier: MQIACH_XMIT_PROTOCOL_TYPE).

If you specify this parameter, information is returned relating only to those listeners defined with the specified transport protocol type. If you specify an attribute in the *ListenerAttrs* list which is valid only for listeners of a different transport protocol type, it is ignored and no error is raised. If you specify this parameter, it must occur immediately after the *ListenerName* parameter.

If you do not specify this parameter, or if you specify it with a value of MQXPT_ALL, information about all listeners is returned. Valid attributes in the *ListenerAttrs* list which are not applicable to the listener are ignored, and no error messages are issued. The value can be:

MQXPT_ALL
All transport types.

MQXPT_LU62
SNA LU 6.2. MQXPT_LU62 is valid only on Windows.

MQXPT_NETBIOS
NetBIOS. MQXPT_NETBIOS is valid only on Windows.

MQXPT_SPX
SPX. MQXPT_SPX is valid only on Windows.

MQXPT_TCP
Transmission Control Protocol/Internet Protocol (TCP/IP).

Inquire Channel Listener (Response)

The response to the Inquire Channel Listener (MQCMD_INQUIRE_LISTENER) command consists of the response header followed by the *ListenerName* structure and the requested combination of attribute parameter structures.

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	X	X

If a generic listener name was specified, one such message is generated for each listener found.

Always returned:
ListenerName

Returned if requested:
Adapter, *AlterationDate*, *AlterationTime*, *Backlog*, *Commands*, *IPAddress*, *ListenerDesc*, *LocalName*, *NetbiosNames*, *Port*, *Sessions*, *Socket*, *StartMode*, *TPname*, *TransportType*

Response data

***AlterationDate* (MQCFST)**
Alteration date (parameter identifier: MQCA_ALTERATION_DATE).

The date, in the form yyyy-mm-dd, on which the information was last altered.

***AlterationTime* (MQCFST)**
Alteration time (parameter identifier: MQCA_ALTERATION_TIME).

The time, in the form hh.mm.ss, at which the information was last altered.

***Adapter* (MQCFIN)**
Adapter number (parameter identifier: MQIACH_ADAPTER).

The adapter number on which NetBIOS listens. This parameter is valid only on Windows.

***Backlog* (MQCFIN)**
Backlog (parameter identifier: MQIACH_BACKLOG).

The number of concurrent connection requests that the listener supports.

***Commands* (MQCFIN)**
Adapter number (parameter identifier: MQIACH_COMMAND_COUNT).

The number of commands that the listener can use. This parameter is valid only on Windows.

***IPAddress* (MQCFST)**
IP address (parameter identifier: MQCACH_IP_ADDRESS).

IP address for the listener specified in IPv4 dotted decimal, IPv6 hexadecimal notation, or alphanumeric host name form.

The maximum length of the string is MQ_CONN_NAME_LENGTH

***ListenerDesc* (MQCFST)**
Description of listener definition (parameter identifier: MQCACH_LISTENER_DESC).

The maximum length of the string is MQ_LISTENER_DESC_LENGTH.

***ListenerName* (MQCFST)**
Name of listener definition (parameter identifier: MQCACH_LISTENER_NAME).

The maximum length of the string is MQ_LISTENER_NAME_LENGTH.

***LocalName* (MQCFST)**
NetBIOS local name (parameter identifier: MQCACH_LOCAL_NAME).

The NetBIOS local name that the listener uses. This parameter is valid only on Windows.

The maximum length of the string is MQ_CONN_NAME_LENGTH

***NetbiosNames* (MQCFIN)**
NetBIOS names (parameter identifier: MQIACH_NAME_COUNT).

The number of names that the listener supports. This parameter is valid only on Windows.

***Port* (MQCFIN)**
Port number (parameter identifier: MQIACH_PORT).

The port number for TCP/IP. This parameter is valid only if the value of *TransportType* is MQXPT_TCP.

***Sessions* (MQCFIN)**
NetBIOS sessions (parameter identifier: MQIACH_SESSION_COUNT).

The number of sessions that the listener can use. This parameter is valid only on Windows.

***Socket* (MQCFIN)**
SPX socket number (parameter identifier: MQIACH_SOCKET).

The SPX socket on which to listen. This parameter is valid only if the value of *TransportType* is MQXPT_SPX.

***StartMode* (MQCFIN)**
Service mode (parameter identifier: MQIACH_LISTENER_CONTROL).

Specifies how the listener is to be started and stopped. The value can be:

MQSVC_CONTROL_MANUAL
The listener is not to be started automatically or stopped automatically. It is to be controlled by user command. MQSVC_CONTROL_MANUAL is the default value.

MQSVC_CONTROL_Q_MGR
The listener being defined is to be started and stopped at the same time as the queue manager is started and stopped.

MQSVC_CONTROL_Q_MGR_START
The listener is to be started at the same time as the queue manager is started, but is not request to stop when the queue manager is stopped.

***TPName* (MQCFST)**
Transaction program name (parameter identifier: MQCACH_TP_NAME).

The LU 6.2 transaction program name. This parameter is valid only on Windows.

The maximum length of the string is MQ_TP_NAME_LENGTH

***TransportType* (MQCFIN)**
Transmission protocol (parameter identifier: MQIACH_XMIT_PROTOCOL_TYPE).

The value can be:

MQXPT_TCP
TCP.

MQXPT_LU62
LU 6.2. MQXPT_LU62 is valid only on Windows.

MQXPT_NETBIOS
NetBIOS. MQXPT_NETBIOS is valid only on Windows.

MQXPT_SPX
SPX. MQXPT_SPX is valid only on Windows.

Inquire Channel Listener Status

The Inquire Channel Listener Status (MQCMD_INQUIRE_LISTENER_STATUS) command inquires about the status of one or more WebSphere MQ listener instances.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

You must specify the name of a listener for which you want to receive status information. You can specify a listener by using either a specific listener name or a generic listener name. By using a generic listener name, you can display either:

- Status information for all listener definitions, by using a single asterisk (*), or

- Status information for one or more listeners that match the specified name.

Required parameters

***ListenerName* (MQCFST)**
Listener name (parameter identifier: MQCACH_LISTENER_NAME).

Generic listener names are supported. A generic name is a character string followed by an asterisk (*), for example ABC*, and it selects all listeners having names that start with the selected character string. An asterisk on its own matches all possible names.

The listener name is always returned, regardless of the attributes requested.

The maximum length of the string is MQ_LISTENER_NAME_LENGTH.

Optional parameters

***IntegerFilterCommand* (MQCFIF)**
Integer filter command descriptor. The parameter identifier must be any integer type parameter allowed in *ListenerStatusAttrs* except MQIACF_ALL. Use this parameter to restrict the output from the command by specifying a filter condition. See “MQCFIF - PCF integer filter parameter” on page 1092 for information about using this filter condition.

If you specify an integer filter, you cannot also specify a string filter using the *StringFilterCommand* parameter.

***ListenerStatusAttrs* (MQCFIL)**
Listener status attributes (parameter identifier: MQIACF_LISTENER_STATUS_ATTRS).

The attribute list can specify the following value on its own - default value used if the parameter is not specified:

MQIACF_ALL
All attributes.

or a combination of the following:

MQCACH_IP_ADDRESS
IP address of the listener.

MQCACH_LISTENER_DESC
Description of listener definition.

MQCACH_LISTENER_NAME
Name of listener definition.

MQCACH_LISTENER_START_DATE
The date on which the listener was started.

MQCACH_LISTENER_START_TIME
The time at which the listener was started.

MQCACH_LOCAL_NAME
NetBIOS local name that the listener uses. MQCACH_LOCAL_NAME is valid only on Windows.

MQCACH_TP_NAME
LU6.2 transaction program name. MQCACH_TP_NAME is valid only on Windows.

MQIACF_PROCESS_ID
Operating system process identifier associated with the listener.

MQIACH_ADAPTER
Adapter number on which NetBIOS listens. MQIACH_ADAPTER is valid only on Windows.

MQIACH_BACKLOG
Number of concurrent connection requests that the listener supports.

MQIACH_COMMAND_COUNT
Number of commands that the listener can use. MQIACH_COMMAND_COUNT is valid only on Windows.

MQIACH_LISTENER_CONTROL
How the listener is to be started and stopped.

MQIACH_LISTENER_STATUS
Status of the listener.

MQIACH_NAME_COUNT
Number of names that the listener can use. MQIACH_NAME_COUNT is valid only on Windows.

MQIACH_PORT
Port number for TCP/IP.

MQIACH_SESSION_COUNT
Number of sessions that the listener can use. MQIACH_SESSION_COUNT is valid only on Windows.

MQIACH_SOCKET
SPX socket. MQIACH_SOCKET is valid only on Windows.

MQIACH_XMIT_PROTOCOL_TYPE
Transport type.

***StringFilterCommand* (MQCFSF)**
String filter command descriptor. The parameter identifier must be any string type parameter allowed in *ListenerStatusAttrs* except MQCACH_LISTENER_NAME. Use this parameter to restrict the output from the command by specifying a filter condition. See "MQCFSF - PCF string filter parameter" on page 1099 for information about using this filter condition.

If you specify a string filter, you cannot also specify an integer filter using the *IntegerFilterCommand* parameter.

Error code

This command might return the following error code in the response format header, in addition to the values shown in "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_LSTR_STATUS_NOT_FOUND
Listener status not found.

Inquire Channel Listener Status (Response)

The response to the Inquire Channel Listener Status (MQCMD_INQUIRE_LISTENER_STATUS) command consists of the response header followed by the *ListenerName* structure and the requested combination of attribute parameter structures.

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	X	X

If a generic listener name was specified, one such message is generated for each listener found.

Always returned:
ListenerName

Returned if requested:
Adapter, *Backlog*, *ChannelCount*, *Commands*, *IPAddress*, *ListenerDesc*, *LocalName*, *NetbiosNames*, *Port*, *ProcessId*, *Sessions*, *Socket*, *StartDate*, *StartMode*, *StartTime*, *Status*, *TPname*, *TransportType*

Response data

Adapter **(MQCFIN)**
Adapter number (parameter identifier: MQIACH_ADAPTER).

The adapter number on which NetBIOS listens.

Backlog **(MQCFIN)**
Backlog (parameter identifier: MQIACH_BACKLOG).

The number of concurrent connection requests that the listener supports.

Commands **(MQCFIN)**
Adapter number (parameter identifier: MQIACH_COMMAND_COUNT).

The number of commands that the listener can use.

IPAddress **(MQCFST)**
IP address (parameter identifier: MQCACH_IP_ADDRESS).

IP address for the listener specified in IPv4 dotted decimal, IPv6 hexadecimal notation, or alphanumeric host name form.

The maximum length of the string is MQ_CONN_NAME_LENGTH

ListenerDesc **(MQCFST)**
Description of listener definition (parameter identifier: MQCACH_LISTENER_DESC).

The maximum length of the string is MQ_LISTENER_DESC_LENGTH.

ListenerName **(MQCFST)**
Name of listener definition (parameter identifier: MQCACH_LISTENER_NAME).

The maximum length of the string is MQ_LISTENER_NAME_LENGTH.

LocalName **(MQCFST)**
NetBIOS local name (parameter identifier: MQCACH_LOCAL_NAME).

The NetBIOS local name that the listener uses.

The maximum length of the string is MQ_CONN_NAME_LENGTH

NetbiosNames **(MQCFIN)**
NetBIOS names (parameter identifier: MQIACH_NAME_COUNT).

The number of names that the listener supports.

Port **(MQCFIN)**
Port number (parameter identifier: MQIACH_PORT).

The port number for TCP/IP.

ProcessId **(MQCFIN)**
Process identifier (parameter identifier: MQIACF_PROCESS_ID).

The operating system process identifier associated with the listener.

Sessions **(MQCFIN)**
NetBIOS sessions (parameter identifier: MQIACH_SESSION_COUNT).

The number of sessions that the listener can use.

Socket **(MQCFIN)**
SPX socket number (parameter identifier: MQIACH_SOCKET).

The SPX socket on which the listener is to listen.

StartDate **(MQCFST)**
Start date (parameter identifier: MQCACH_LISTENER_START_DATE).

The date, in the form `yyyy-mm-dd`, on which the listener was started.

The maximum length of the string is MQ_DATE_LENGTH

***StartMode* (MQCFIN)**
Service mode (parameter identifier: MQIACH_LISTENER_CONTROL).

Specifies how the listener is to be started and stopped. The value can be:

MQSVC_CONTROL_MANUAL
The listener is not to be started automatically or stopped automatically. It is to be controlled by user command. MQSVC_CONTROL_MANUAL is the default value.

MQSVC_CONTROL_Q_MGR
The listener being defined is to be started and stopped at the same time as the queue manager is started and stopped.

MQSVC_CONTROL_Q_MGR_START
The listener is to be started at the same time as the queue manager is started, but is not request to stop when the queue manager is stopped.

***StartTime* (MQCFST)**
Start date (parameter identifier: MQCACH_LISTENER_START_TIME).

The time, in the form `hh.mm.ss`, at which the listener was started.

The maximum length of the string is MQ_TIME_LENGTH

***Status* (MQCFIN)**
Listener status (parameter identifier: MQIACH_LISTENER_STATUS).

The status of the listener. The value can be:

MQSVC_STATUS_STARTING
The listener is in the process of initializing.

MQSVC_STATUS_RUNNING
The listener is running.

MQSVC_STATUS_STOPPING
The listener is stopping.

***TPName* (MQCFST)**
Transaction program name (parameter identifier: MQCACH_TP_NAME).

The LU 6.2 transaction program name.

The maximum length of the string is MQ_TP_NAME_LENGTH

***TransportType* (MQCFIN)**
Transmission protocol (parameter identifier: MQIACH_XMIT_PROTOCOL_TYPE).

The value can be:

MQXPT_TCP
TCP.

MQXPT_LU62
LU 6.2. MQXPT_LU62 is valid only on Windows.

MQXPT_NETBIOS
NetBIOS. MQXPT_NETBIOS is valid only on Windows.

MQXPT_SPX
SPX. MQXPT_SPX is valid only on Windows.

Inquire Channel Names

The Inquire Channel Names (MQCMD_INQUIRE_CHANNEL_NAMES) command inquires a list of WebSphere MQ channel names that match the generic channel name, and the optional channel type specified.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

Required parameters

***ChannelName* (MQCFST)**
Channel name (parameter identifier: MQCACH_CHANNEL_NAME).

Generic channel names are supported. A generic name is a character string followed by an asterisk (*), for example ABC*, and it selects all objects having names that start with the selected character string. An asterisk on its own matches all possible names.

The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

Optional parameters

***ChannelType* (MQCFIN)**
Channel type (parameter identifier: MQIACH_CHANNEL_TYPE).

If present, this parameter limits the channel names returned to channels of the specified type.

The value can be:

MQCHT_SENDER
Sender.

MQCHT_SERVER
Server.

MQCHT_RECEIVER
Receiver.

MQCHT_REQUESTER
Requester.

MQCHT_SVRCONN
Server-connection (for use by clients).

MQCHT_CLNTCONN
Client connection.

MQCHT_CLUSRCVR
Cluster-receiver.

MQCHT_CLUSSDR
Cluster-sender.

MQCHT_ALL
All types.

The default value if this parameter is not specified is MQCHT_ALL, which means that channels of all types except MQCHT_CLNTCONN are eligible.

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***QSGDisposition* (MQCFIN)**
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object for which information is to be returned (that is, where it is defined and how it behaves). The value can be:

MQQSGD_LIVE
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY. MQQSGD_LIVE is the default value if the parameter is not specified.

MQQSGD_ALL
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY.

If there is a shared queue manager environment, and the command is being executed on the queue manager where it was issued, this option also displays information for objects defined with MQQSGD_GROUP.

If MQQSGD_LIVE is specified or defaulted, or if MQQSGD_ALL is specified in a shared queue manager environment, the command might give duplicated names (with different dispositions).

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_GROUP
The object is defined as MQQSGD_GROUP. MQQSGD_GROUP is permitted only in a shared queue environment.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

MQQSGD_PRIVATE
The object is defined with either MQQSGD_Q_MGR or MQQSGD_COPY. MQQSGD_PRIVATE returns the same information as MQQSGD_LIVE.

Error code

This command might return the following error code in the response format header, in addition to the values shown in “Error codes applicable to all commands” on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_CHANNEL_NAME_ERROR
Channel name error.

MQRCCF_CHANNEL_TYPE_ERROR
Channel type not valid.

Inquire Channel Names (Response)

The response to the Inquire Channel Names (MQCMD_INQUIRE_CHANNEL_NAMES) command consists of one response per client connection channel (except for SYSTEM.DEF.CLNTCONN), and a final message with all the remaining channels.

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X	X	X

Always returned:
ChannelNames, *ChannelTypes*

Returned if requested:
None

On z/OS only, one additional parameter structure (with the same number of entries as the *ChannelNames* structure), is returned. Each entry in the structure, *QSGDispositions*, indicates the disposition of the object with the corresponding entry in the *ChannelNames* structure.

Response data

***ChannelNames* (MQCFSL)**
List of channel names (parameter identifier: MQCACH_CHANNEL_NAMES).

***ChannelTypes* (MQCFIL)**
List of channel types (parameter identifier: MQIACH_CHANNEL_TYPES). Possible values for fields in this structure are those values permitted for the *ChannelType* parameter, except MQCHT_ALL.

***QSGDispositions* (MQCFIL)**
List of QSG dispositions (parameter identifier: MQIACF_QSG_DISPS). This parameter is valid only on z/OS. The value can be:

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_GROUP
The object is defined as MQQSGD_GROUP. MQQSGD_GROUP is permitted only in a shared queue environment.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

Inquire Channel Status

The Inquire Channel Status (MQCMD_INQUIRE_CHANNEL_STATUS) command inquires about the status of one or more channel instances.

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X	X	X

You must specify the name of the channel for which you want to inquire status information. This name can be a specific channel name or a generic channel name. By using a generic channel name, you can inquire either:

- Status information for all channels, or
- Status information for one or more channels that match the specified name.

You must also specify whether you want:

- The status data (of current channels only), or

- The saved status data of all channels, or
- On z/OS only, the short status data of the channel.

  Status for all channels that meet the selection criteria is returned, whether the channels were defined manually or automatically.

distributed This command includes a check on the current depth of the transmission queue for the channel, if the channel is a CLUSSDR channel. To issue this command, you must be authorized to inquire the queue depth, and to do this requires *+inq* authority on the transmission queue. Note that another name for this authority is MQZAO_INQUIRE.

distributed Without this authority this command fails with a reason code of MQRC_NOT_AUTHORIZED.

There are three classes of data available for channel status. These classes are **saved**, **current**, and **short**. The status fields available for saved data are a subset of the fields available for current data and are called **common** status fields. Although the common data *fields* are the same, the data *values* might be different for saved and current status. The rest of the fields available for current data are called **current-only** status fields.

- **Saved** data consists of the common status fields. This data is reset at the following times:
  - For all channels:
    - When the channel enters or leaves STOPPED or RETRY state
  - For a sending channel:
    - Before requesting confirmation that a batch of messages has been received
    - When confirmation has been received
  - For a receiving channel:
    - Just before confirming that a batch of messages has been received
  - For a server connection channel:
    - No data is saved

  Therefore, a channel which has never been current does not have any saved status.
- **Current** data consists of the common status fields and current-only status fields. The data fields are continually updated as messages are sent or received.
- **Short** data consists of the queue manager name that owns the channel instance. This class of data is available only on z/OS.

This method of operation has the following consequences:

- An inactive channel might not have any saved status if it has never been current or has not yet reached a point where saved status is reset.
- The "common" data fields might have different values for saved and current status.
- A current channel always has current status and might have saved status.

Channels can be current or inactive:

Current channels
These are channels that have been started, or on which a client has connected, and that have not finished or disconnected normally. They might not yet have reached the point of transferring messages, or data, or even of establishing contact with the partner. Current channels have **current** status and can also have **saved** or **short** status.

The term **Active** is used to describe the set of current channels which are not stopped.

Inactive channels
These are channels that have either not been started or on which a client has not connected, or that have finished or disconnected normally. (If a channel is stopped, it is not yet considered to have

finished normally and is, therefore, still current.) Inactive channels have either **saved** status or no status at all.

There can be more than one instance of a receiver, requester, cluster-sender, cluster-receiver, or server-connection channel current at the same time (the requester is acting as a receiver). This situation occurs if several senders, at different queue managers, each initiate a session with this receiver, using the same channel name. For channels of other types, there can only be one instance current at any time.

For all channel types, however, there can be more than one set of saved status information available for a particular channel name. At most one of these sets relates to a current instance of the channel, the rest relate to previously current instances. Multiple instances arise if different transmission queue names or connection names have been used with the same channel. This situation can happen in the following cases:

- At a sender or server:
  - If the same channel has been connected to by different requesters (servers only),
  - If the transmission queue name has been changed in the definition, or
  - If the connection name has been changed in the definition.
- At a receiver or requester:
  - If the same channel has been connected to by different senders or servers, or
  - If the connection name has been changed in the definition (for requester channels initiating connection).

The number of sets returned for a particular channel can be limited by using the *XmitQName*, *ConnectionName* and *ChannelInstanceType* parameters.

Required parameters

***ChannelName* (MQCFST)**
Channel name (parameter identifier: MQCACH_CHANNEL_NAME).

Generic channel names are supported. A generic name is a character string followed by an asterisk (*), for example ABC*, and it selects all objects having names that start with the selected character string. An asterisk on its own matches all possible names.

The channel name is always returned, regardless of the instance attributes requested.

The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

***MaxResponses* (MQCFIN)**
The maximum number of clients to return status for. This parameter is optional for all channels.

***ResponseRestartPoint* (MQCFIN)**
The first client to return status for. The combination of this parameter with **MaxResponses** enables the range of clients to be specified. This parameter is optional for all other channels.

Optional parameters

***ChannelDisposition* (MQCFIN)**
Channel disposition (parameter identifier: MQIACH_CHANNEL_DISP). This parameter applies to z/OS only.

Specifies the disposition of the channels for which information is to be returned. The value can be:

MQCHLD_ALL
Returns requested status information for private channels.

In a shared queue environment where the command is being executed on the queue manager where it was issued, or if *ChannelInstanceType* has a value of MQOT_CURRENT_CHANNEL, this option also displays the requested status information for shared channels.

MQCHLD_PRIVATE
Returns requested status information for private channels.

MQCHLD_SHARED
Returns requested status information for shared channels.

The status information that is returned for various combinations of *ChannelDisposition*, *CommandScope*, and status type, is summarized in Table 63 on page 872, Table 64 on page 872, and Table 65 on page 873.

Table 63. ChannelDisposition and CommandScope for Inquire Channel Status, Current

ChannelDisposition	***CommandScope* blank or local queue manager**	***CommandScope(qmgr-name)***	***CommandScope(*)***
MQCHLD_PRIVATE	Common and current-only status for current private channels on the local queue manager	Common and current-only status for current private channels on the named queue manager	Common and current-only status for current private channels on all queue managers
MQCHLD_SHARED	Common and current-only status for current shared channels on the local queue manager	Common and current-only status for current shared channels on the named queue manager	Common and current-only status for current shared channels on all queue managers
MQCHLD_ALL	Common and current-only status for current private and shared channels on the local queue manager	Common and current-only status for current private and shared channels on the named queue manager	Common and current-only status for current private and shared channels on all active queue managers

Table 64. ChannelDisposition and CommandScope for Inquire Channel Status, Short

ChannelDisposition	***CommandScope* blank or local queue manager**	***CommandScope(qmgr-name)***	***CommandScope(*)***
MQCHLD_PRIVATE	*ChannelStatus* and short status for current private channels on the local queue manager	*ChannelStatus* and short status for current private channels on the named queue manager	*ChannelStatus* and short status for current private channels on all active queue managers
MQCHLD_SHARED	*ChannelStatus* and short status for current shared channels on all active queue managers in the queue-sharing group	Not permitted	Not permitted
MQCHLD_ALL	*ChannelStatus* and short status for current private channels on the local queue manager and current shared channels in the queue-sharing group(“1” on page 872)	*ChannelStatus* and short status for current private channels on the named queue manager	*ChannelStatus* and short status for current private, and shared, channels on all active queue managers in the queue-sharing group(“1” on page 872)

Note:

1. In this case you get two separate sets of responses to the command on the queue manager where it was entered; one for MQCHLD_PRIVATE and one for MQCHLD_SHARED.

Table 65. ChannelDisposition and CommandScope for Inquire Channel Status, Saved			
ChannelDisposition	***CommandScope* blank or local queue manager**	***CommandScope(qmgr-name)***	***CommandScope(*)***
MQCHLD_PRIVATE	Common status for saved private channels on the local queue manager	Common status for saved private channels on the named queue manager	Common status for saved private channels on all active queue managers
MQCHLD_SHARED	Common status for saved shared channels on all active queue managers in the queue-sharing group	Not permitted	Not permitted
MQCHLD_ALL	Common status for saved private channels on the local queue manager and saved shared channels in the queue-sharing group	Common status for saved private channels on the named queue manager	Common status for saved private, and shared, channels on all active queue managers in the queue-sharing group

You cannot use this parameter as a filter keyword.

***ClientIdentifer* (MQCFST)**
The ClientId of the client.

***MaxResponses* (MQCFIN)**
The maximum number of clients to return status for.

***ResponseRestartPoint* (MQCFIN)**
The first client to return status for. The combination of this parameter with **MaxResponses** enables the range of clients to be specified.

***ChannelInstanceAttrs* (MQCFIL)**
Channel instance attributes (parameter identifier: MQIACH_CHANNEL_INSTANCE_ATTRS).

If status information is requested which is not relevant for the particular channel type, it is not an error. Similarly, it is not an error to request status information that is applicable only to active channels for saved channel instances. In both of these cases, no structure is returned in the response for the information concerned.

For a saved channel instance, the MQCACH_CURRENT_LUWID, MQIACH_CURRENT_MSGS, and MQIACH_CURRENT_SEQ_NUMBER attributes have meaningful information only if the channel instance is in doubt. However, the attribute values are still returned when requested, even if the channel instance is not in-doubt.

The attribute list might specify the following value on its own:

MQIACF_ALL
All attributes.

MQIACF_ALL is the default value used if the parameter is not specified or it can specify a combination of the following:

- Relevant for common status:

  The following information applies to all sets of channel status, whether the set is current.

  MQCACH_CHANNEL_NAME
  Channel name.

  MQCACH_CONNECTION_NAME
  Connection name.

  MQCACH_CURRENT_LUWID
  Logical unit of work identifier for current batch.

MQCACH_LAST_LUWID
Logical unit of work identifier for last committed batch.

MQCACH_XMIT_Q_NAME
Transmission queue name.

MQIACH_CHANNEL_INSTANCE_TYPE
Channel instance type.

MQIACH_CHANNEL_TYPE
Channel type.

MQIACH_CURRENT_MSGS
Number of messages sent or received in current batch.

MQIACH_CURRENT_SEQ_NUMBER
Sequence number of last message sent or received.

MQIACH_INDOUBT_STATUS
Whether the channel is currently in-doubt.

MQIACH_LAST_SEQ_NUMBER
Sequence number of last message in last committed batch.

MQCACH_CURRENT_LUWID, MQCACH_LAST_LUWID, MQIACH_CURRENT_MSGS, MQIACH_CURRENT_SEQ_NUMBER, MQIACH_INDOUBT_STATUS and MQIACH_LAST_SEQ_NUMBER do not apply to server-connection channels, and no values are returned. If specified on the command, they are ignored.

- Relevant for current-only status:

  The following information applies only to current channel instances. The information applies to all channel types, except where stated.

  MQCA_Q_MGR_NAME
  Name of the queue manager that owns the channel instance. This parameter is valid only on z/OS.

  MQCA_REMOTE_Q_MGR_NAME
  Queue manager name, or queue-sharing group name of the remote system. The remote queue manager name is always returned regardless of the instance attributes requested.

  MQCACH_CHANNEL_START_DATE
  Date channel was started.

  MQCACH_CHANNEL_START_TIME
  Time channel was started.

  MQCACH_LAST_MSG_DATE
  Date last message was sent, or MQI call was handled.

  MQCACH_LAST_MSG_TIME
  Time last message was sent, or MQI call was handled.

  MQCACH_LOCAL_ADDRESS
  Local communications address for the channel.

  MQCACH_MCA_JOB_NAME
  Name of MCA job.

  This parameter is not valid on z/OS.

  You cannot use MQCACH_MCA_JOB_NAME as a parameter to filter on.

  MQCACH_MCA_USER_ID
  The user ID used by the MCA.

  MQCACH_REMOTE_APPL_TAG
  Remote partner application name. MQCACH_REMOTE_APPL_TAG is the name of the client application at the remote end of the channel. This parameter applies only to server-connection channels.

MQCACH_REMOTE_PRODUCT
Remote partner product identifier. This is the product identifier of the IBM WebSphere MQ code running at the remote end of the channel.

MQCACH_REMOTE_VERSION
Remote partner version. This is the version of the IBM WebSphere MQ code running at the remote end of the channel.

MQCACH_SSL_SHORT_PEER_NAME
SSL short peer name.

MQCACH_SSL_CERT_ISSUER_NAME
The full Distinguished Name of the issuer of the remote certificate.

MQCACH_SSL_CERT_USER_ID
User ID associated with the remote certificate. MQCACH_SSL_CERT_USER_ID is valid on z/OS only.

MQIA_MONITORING_CHANNEL
The level of monitoring data collection.

MQIACF_MONITORING
All channel status monitoring attributes. These attributes are:

MQIA_MONITORING_CHANNEL
The level of monitoring data collection.

MQIACH_BATCH_SIZE_INDICATOR
Batch size.

MQIACH_COMPRESSION_RATE
The compression rate achieved displayed to the nearest percentage.

MQIACH_COMPRESSION_TIME
The amount of time per message, displayed in microseconds, spent during compression or decompression.

MQIACH_EXIT_TIME_INDICATOR
Exit time.

MQIACH_NETWORK_TIME_INDICATOR
Network time.

MQIACH_XMITQ_MSGS_AVAILABLE
Number of messages available to the channel on the transmission queue.

MQIACH_XMITQ_TIME_INDICATOR
Time on transmission queue.

You cannot use MQIACF_MONITORING as a parameter to filter on.

MQIACH_BATCH_SIZE_INDICATOR
Batch size.

You cannot use MQIACH_BATCH_SIZE_INDICATOR as a parameter to filter on.

MQIACH_BATCHES
Number of completed batches.

MQIACH_BUFFERS_RCVD
Number of buffers received.

MQIACH_BUFFERS_SENT
Number of buffers sent.

MQIACH_BYTES_RCVD
Number of bytes received.

MQIACH_BYTES_SENT
Number of bytes sent.

MQIACH_CHANNEL_SUBSTATE
The channel substate.

MQIACH_COMPRESSION_RATE
The compression rate achieved displayed to the nearest percentage.

You cannot use MQIACH_COMPRESSION_RATE as a parameter to filter on.

MQIACH_COMPRESSION_TIME
The amount of time per message, displayed in microseconds, spent during compression or decompression.

You cannot use MQIACH_COMPRESSION_TIME as a parameter to filter on.

MQIACH_CURRENT_SHARING_CONVS
Requests information about the current number of conversations on this channel instance.

This attribute applies only to TCP/IP server-connection channels.

MQIACH_EXIT_TIME_INDICATOR
Exit time.

You cannot use MQIACH_EXIT_TIME_INDICATOR as a parameter to filter on.

MQIACH_HDR_COMPRESSION
Technique used to compress the header data sent by the channel.

MQIACH_KEEP_ALIVE_INTERVAL
The KeepAlive interval in use for this session. This parameter is significant only for z/OS.

MQIACH_LONG_RETRIES_LEFT
Number of long retry attempts remaining.

MQIACH_MAX_MSG_LENGTH
Maximum message length. MQIACH_MAX_MSG_LENGTH is valid only on z/OS.

MQIACH_MAX_SHARING_CONVS
Requests information about the maximum number of conversations on this channel instance.

This attribute applies only to TCP/IP server-connection channels.

MQIACH_MCA_STATUS
MCA status.

You cannot use MQIACH_MCA_STATUS as a parameter to filter on.

MQIACH_MSG_COMPRESSION
Technique used to compress the message data sent by the channel.

MQIACH_MSGS
Number of messages sent or received, or number of MQI calls handled.

MQIACH_NETWORK_TIME_INDICATOR
Network time.

You cannot use MQIACH_NETWORK_TIME_INDICATOR as a parameter on which to filter.

MQIACH_SHORT_RETRIES_LEFT
Number of short retry attempts remaining.

MQIACH_SSL_KEY_RESETS
Number of successful SSL key resets.

MQIACH_SSL_RESET_DATE
Date of previous successful SSL secret key reset.

MQIACH_SSL_RESET_TIME
Time of previous successful SSL secret key reset.

MQIACH_STOP_REQUESTED
Whether user stop request has been received.

MQIACH_XMITQ_MSGS_AVAILABLE
Number of messages available to the channel on the transmission queue.

MQIACH_XMITQ_TIME_INDICATOR
Time on transmission queue.

You cannot use MQIACH_XMITQ_TIME_INDICATOR as a parameter to filter on.

The following value is supported on all platforms:

MQIACH_BATCH_SIZE
Batch size.

The following value is supported on all platforms:

MQIACH_HB_INTERVAL
Heartbeat interval (seconds).

MQIACH_NPM_SPEED
Speed of nonpersistent messages.

The following attributes do not apply to server-connection channels, and no values are returned. If specified on the command they are ignored:

- MQIACH_BATCH_SIZE_INDICATOR
- MQIACH_BATCH_SIZE
- MQIACH_BATCHES
- MQIACH_LONG_RETRIES_LEFT
- MQIACH_NETWORK_TIME
- MQIACH_NPM_SPEED
- MQCA_REMOTE_Q_MGR_NAME
- MQIACH_SHORT_RETRIES_LEFT
- MQIACH_XMITQ_MSGS_AVAILABLE
- MQIACH_XMITQ_TIME_INDICATOR

The following attributes apply only to server-connection channels. If specified on the command for other types of channel the attribute is ignored and no value is returned:

- MQIACH_CURRENT_SHARING_CONVS
- MQIACH_MAX_SHARING_CONVS

- Relevant for short status:

  The following parameter applies to current channels on z/OS:

  MQCACH_Q_MGR_NAME
  Name of the queue manager that owns the channel instance.

***ChannelInstanceType* (MQCFIN)**
Channel instance type (parameter identifier: MQIACH_CHANNEL_INSTANCE_TYPE).

It is always returned regardless of the channel instance attributes requested.

The value can be:

MQOT_CURRENT_CHANNEL
The channel status.

MQOT_CURRENT_CHANNEL is the default, and indicates that only current status information for active channels is to be returned.

Both common status information and active-only status information can be requested for current channels.

MQOT_SAVED_CHANNEL
Saved channel status.

Specify MQOT_SAVED_CHANNEL to cause saved status information for both active and inactive channels to be returned.

Only common status information can be returned. Active-only status information is not returned for active channels if this keyword is specified.

MQOT_SHORT_CHANNEL
Short channel status (valid on z/OS only).

Specify MQOT_SHORT_CHANNEL to cause short status information for current channels to be returned.

Other common status and current-only status information are not returned for current channels if this keyword is specified.

You cannot use MQIACH_CHANNEL_INSTANCE_TYPE as a parameter to filter on.

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

You cannot use *CommandScope* as a parameter to filter on.

***ConnectionName* (MQCFST)**
Connection name (parameter identifier: MQCACH_CONNECTION_NAME).

If this parameter is present, eligible channel instances are limited to those using this connection name. If it is not specified, eligible channel instances are not limited in this way.

The connection name is always returned, regardless of the instance attributes requested.

The value returned for *ConnectionName* might not be the same as in the channel definition, and might differ between the current channel status and the saved channel status. (Using *ConnectionName* for limiting the number of sets of status is therefore not recommended.)

For example, when using TCP, if *ConnectionName* in the channel definition:

- Is blank or is in *host name* format, the channel status value has the resolved IP address.
- Includes the port number, the current channel status value includes the port number (except on z/OS), but the saved channel status value does not.

The maximum length of the string is MQ_CONN_NAME_LENGTH.

***IntegerFilterCommand* (MQCFIF)**
Integer filter command descriptor. The parameter identifier must be any integer type parameter allowed in *ChannelInstanceAttrs* except MQIACF_ALL and others as noted. Use this parameter to restrict the output from the command by specifying a filter condition. See "MQCFIF - PCF integer filter parameter" on page 1092 for information about using this filter condition.

If you specify an integer filter, you cannot also specify a string filter using the *StringFilterCommand* parameter.

***StringFilterCommand* (MQCFSF)**
String filter command descriptor. The parameter identifier must be any string type parameter allowed in *ChannelInstanceAttrs* except MQCACH_CHANNEL_NAME and others as noted. Use this parameter to restrict the output from the command by specifying a filter condition. See "MQCFSF - PCF string filter parameter" on page 1099 for information about using this filter condition.

If you specify a string filter for *ConnectionName* or *XmitQName*, you cannot also specify the *ConnectionName* or *XmitQName* parameter.

If you specify a string filter, you cannot also specify an integer filter using the *IntegerFilterCommand* parameter.

***XmitQName* (MQCFST)**
Transmission queue name (parameter identifier: MQCACH_XMIT_Q_NAME).

If this parameter is present, eligible channel instances are limited to those using this transmission queue. If it is not specified, eligible channel instances are not limited in this way.

The transmission queue name is always returned, regardless of the instance attributes requested.

The maximum length of the string is MQ_Q_NAME_LENGTH.

Error code

This command might return the following error code in the response format header, in addition to the values shown in "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_CHANNEL_NAME_ERROR
Channel name error.

MQRCCF_CHANNEL_NOT_FOUND
Channel not found.

MQRCCF_CHL_INST_TYPE_ERROR
Channel instance type not valid.

MQRCCF_CHL_STATUS_NOT_FOUND
Channel status not found.

MQRCCF_XMIT_Q_NAME_ERROR
Transmission queue name error.

Inquire Channel Status (MQTT)

The Inquire Channel Status (MQCMD_INQUIRE_CHANNEL_STATUS) (MQTT) command inquires about the status of one or more Telemetry channel instances.

You must specify the name of the channel for which you want to inquire status information. This name can be a specific channel name or a generic channel name. By using a generic channel name, you can inquire either:

- Status information for all channels, or
- Status information for one or more channels that match the specified name.

Note: The **`Inquire Channel Status`** command for IBM WebSphere MQ Telemetry has the potential to return a far larger number of responses than if the command was run for an IBM WebSphere MQ channel. For this reason, the IBM WebSphere MQ Telemetry server does not return more responses than fit on the reply-to queue. The number of responses is limited to the value of MAXDEPTH parameter of the SYSTEM.MQSC.REPLY.QUEUE queue. When a IBM WebSphere MQ Telemetry command is truncated by the IBM WebSphere MQ Telemetry server, the AMQ8492 message is displayed specifying how many responses are returned based on the size of MAXDEPTH.

If the **ClientIdentifier** parameter is not specified, the output of the **Inquire Channel Status** command is a summary of statuses of all clients connected to the channel. One PCF response message is returned per channel.

If the **ClientIdentifier** parameter is specified, separate PCF response messages are returned for each client connection. The **ClientIdentifier** parameter may be a wildcard, in which the status for all clients that match the **ClientIdentifier** string is returned (within the limits of **MaxResponses** and **ResponseRestartPoint** if they are set).

Required parameters

***ChannelName* (MQCFST)**
Channel name (parameter identifier: MQCACH_CHANNEL_NAME).

Generic channel names are supported. A generic name is a character string followed by an asterisk (*), for example ABC*, and it selects all objects which have names that start with the selected character string. An asterisk on its own matches all possible names.

This parameter is allowed for only when the **ResponseType** parameter is set to MQRESP_TOTAL.

The channel name is always returned, regardless of the instance attributes requested.

The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

***ChannelType* (MQCFIN)**
Channel type (parameter identifier: MQIACH_CHANNEL_TYPE).

The value must be:

MQCHT_MQTT
Telemetry.

Optional parameters

***ClientIdentifer* (MQCFST)**
The ClientId of the client (parameter identifier: MQCACH_CLIENT_ID).

***MaxResponses* (MQCFIN)**
The maximum number of clients to return status for (parameter identifier: MQIA_MAX_RESPONSES).

This parameter is only allowed when the **ClientIdentifier** parameter is specified.

***ResponseRestartPoint* (MQCFIN)**
The first client to return status for (parameter identifier: MQIA_RESPONSE_RESTART_POINT). The combination of this parameter with **MaxResponses** enables the range of clients to be specified.

This parameter is only allowed when the **ClientIdentifier** parameter is specified.

Client details mode

STATUS
The current status of the client (parameter identifier: MQIACH_CHANNEL_STATUS).

CONNAME
The name of the remote connection (ip address) (parameter identifier: MQCACH_CONNECTION_NAME).

KAINT
The keep alive interval of the client (parameter identifier: MQIACH_KEEP_ALIVE_INTERVAL).

MCANAME
Message channel agent name (parameter identifier: MQCACH_MCA_USER_ID).

MSGSNT
Number of messages sent by the client since it last connected (parameter identifier: MQIACH_MSGS_SENT).

MSGRCVD
Number of messages received by the client since it last connected (parameter identifier: MQIACH_MSGS_RECEIVED / MQIACH_MSGS_RCVD).

INDOUBTIN
Number of in doubt, inbound messages to the client (parameter identifier: MQIACH_IN_DOUBT_IN).

INDOUBTOUT
Number of in doubt, outbound messages to the client (parameter identifier: MQIACH_IN_DOUBT_OUT).

PENDING
Number of outbound pending messages (parameter identifier: MQIACH_PENDING_OUT).

LMSGDATE
Date last message was received or sent (parameter identifier: MQCACH_LAST_MSG_DATE).

LMSGTIME
Time last message was received or sent (parameter identifier: MQCACH_LAST_MSG_TIME).

CHLSDATE
Date channel started (parameter identifier: MQCACH_CHANNEL_START_DATE).

CHLSTIME
Time channel was started (parameter identifier: MQCACH_CHANNEL_START_TIME).

Error code

This command might return the following error code in the response format header, in addition to the values shown in "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_CHANNEL_NAME_ERROR
Channel name error.

MQRCCF_CHANNEL_NOT_FOUND
Channel not found.

MQRCCF_CHL_INST_TYPE_ERROR
Channel instance type not valid.

MQRCCF_CHL_STATUS_NOT_FOUND
Channel status not found.

MQRCCF_XMIT_Q_NAME_ERROR
Transmission queue name error.

Inquire Channel Status (Response)

The response to the Inquire Channel Status (MQCMD_INQUIRE_CHANNEL_STATUS) command consists of the response header followed by several structures.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

These structures are

- The *ChannelName* structure,
- The *ChannelDisposition* structure (on z/OS only),
- The *ChannelInstanceType* structure
- The *ChannelStatus* structure (except on z/OS channels whose *ChannelInstanceType* parameter has a value of MQOT_SAVED_CHANNEL.
- The *ChannelType* structure

- The *ConnectionName* structure
- The *RemoteApplTag* structure
- The *RemoteQMgrName* structure
- The *StopRequested* structure
- The *XmitQName* structure

which are then followed by the requested combination of status attribute parameter structures. One such message is generated for each channel instance found that matches the criteria specified on the command.

On z/OS, if the value for any of these parameters exceeds 999999999, it is returned as 999999999:

- *Batches*
- *BuffersReceived*
- *BuffersSent*
- *BytesReceived*
- *BytesSent*
- *CompressionTime*
- *CurrentMsgs*
- *ExitTime*
- *Msgs*
- *NetTime*
- *SSLKeyResets*
- *XQTime*

Always returned:
ChannelDisposition, *ChannelInstanceType*, *ChannelName*, *ChannelStatus*, *ChannelType*, *ConnectionName*, *RemoteApplTag*, *RemoteQMgrName*, *StopRequested*, *SubState*, *XmitQName*

Returned if requested:
Batches, *BatchSize*, *BatchSizeIndicator*, *BuffersReceived*, *BuffersSent*, *BytesReceived*, *BytesSent*, *ChannelMonitoring*, *ChannelStartDate*, *ChannelStartTime*, *ClientIdentifier*, *CompressionRate*, *CompressionTime*, *CurrentLUWID*, *CurrentMsgs*, *CurrentSequenceNumber*, *CurrentSharingConversations*, *ExitTime*, *HeaderCompression*, *HeartbeatInterval*, *InDoubtInbound*, *InDoubtStatus*, *InDoubtOutbound*, *KeepAliveInterval*, *LastLUWID*, *LastMsgDate*, *LastMsgTime*, *LastSequenceNumber*, *LocalAddress*, *LongRetriesLeft*, *MaxMsgLength*, *MaxSharingConversations*, *MCAJobName*, *MCAStatus*, *MCAUserIdentifier*, *MessageCompression*, *Msgs*, *MsgsAvailable*, *MsgsReceived*, *MsgsSent*, *NetTime*, *NonPersistentMsgSpeed*, *PendingOutbound*, *QMgrName*, *ResponseType*, *RemoteVersion*, *RemoteProduct*, *ShortRetriesLeft*, *SSLCertRemoteIssuerName*, *SSLCertUserId*, *SSLKeyResetDate*, *SSLKeyResets*, *SSLKeyResetTime*, *SSLShortPeerName*, *XQTime*

Response data

***Batches* (MQCFIN)**
Number of completed batches (parameter identifier: MQIACH_BATCHES).

***BatchSize* (MQCFIN)**
Negotiated batch size (parameter identifier: MQIACH_BATCH_SIZE).

***BatchSizeIndicator* (MQCFIL)**
Indicator of the number of messages in a batch (parameter identifier: MQIACH_BATCH_SIZE_INDICATOR). Two values are returned:

- A value based on recent activity over a short period.

- A value based on activity over a longer period.

Where no measurement is available, the value MQMON_NOT_AVAILABLE is returned.

***BuffersReceived* (MQCFIN)**
Number of buffers received (parameter identifier: MQIACH_BUFFERS_RCVD).

***BuffersSent* (MQCFIN)**
Number of buffers sent (parameter identifier: MQIACH_BUFFERS_SENT).

***BytesReceived* (MQCFIN)**
Number of bytes received (parameter identifier: MQIACH_BYTES_RCVD).

***BytesSent* (MQCFIN)**
Number of bytes sent (parameter identifier: MQIACH_BYTES_SENT).

***ChannelDisposition* (MQCFIN)**
Channel disposition (parameter identifier: MQIACH_CHANNEL_DISP). This parameter is valid only on z/OS.

The value can be any of the following values:

MQCHLD_PRIVATE
Status information for a private channel.

MQCHLD_SHARED
Status information for a shared channel.

MQCHLD_FIXSHARED
Status information for a shared channel, tied to a specific queue manager.

***ChannelInstanceType* (MQCFIN)**
Channel instance type (parameter identifier: MQIACH_CHANNEL_INSTANCE_TYPE).

The value can be:

MQOT_CURRENT_CHANNEL
Current channel status.

MQOT_SAVED_CHANNEL
Saved channel status.

MQOT_SHORT_CHANNEL
Short channel status, only on z/OS.

***ChannelMonitoring* (MQCFIN)**
Current level of monitoring data collection for the channel (parameter identifier: MQIA_MONITORING_CHANNEL).

The value can be:

MQMON_OFF
Monitoring for the channel is switched off.

MQMON_LOW
Low rate of data collection.

MQMON_MEDIUM
Medium rate of data collection.

MQMON_HIGH
High rate of data collection.

***ChannelName* (MQCFST)**
Channel name (parameter identifier: MQCACH_CHANNEL_NAME).

The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

***ChannelStartDate* (MQCFST)**
Date channel started, in the form `yyyy-mm-dd` (parameter identifier: MQCACH_CHANNEL_START_DATE).

The maximum length of the string is MQ_CHANNEL_DATE_LENGTH.

***ChannelStartTime* (MQCFST)**
Time channel started, in the form hh.mm.ss (parameter identifier: MQCACH_CHANNEL_START_TIME).

The maximum length of the string is MQ_CHANNEL_TIME_LENGTH.

***ChannelStatus* (MQCFIN)**
Channel status (parameter identifier: MQIACH_CHANNEL_STATUS).

Channel status has the following values defined:

MQCHS_BINDING
Channel is negotiating with the partner.

MQCHS_STARTING
Channel is waiting to become active.

MQCHS_RUNNING
Channel is transferring or waiting for messages.

MQCHS_PAUSED
Channel is paused.

MQCHS_STOPPING
Channel is in process of stopping.

MQCHS_RETRYING
Channel is reattempting to establish connection.

MQCHS_STOPPED
Channel is stopped.

MQCHS_REQUESTING
Requester channel is requesting connection.

MQCHS_SWITCHING
Channel is switching transmission queues.

MQCHS_INITIALIZING
Channel is initializing.

***ChannelType* (MQCFIN)**
Channel type (parameter identifier: MQIACH_CHANNEL_TYPE).

The value can be:

MQCHT_SENDER
Sender.

MQCHT_SERVER
Server.

MQCHT_RECEIVER
Receiver.

MQCHT_REQUESTER
Requester.

MQCHT_SVRCONN
Server-connection (for use by clients).

MQCHT_CLNTCONN
Client connection.

MQCHT_CLUSRCVR
Cluster-receiver.

MQCHT_CLUSSDR
Cluster-sender.

***CompressionRate* (MQCFIL)**
The compression rate achieved displayed to the nearest percentage (parameter identifier: MQIACH_COMPRESSION_RATE). Two values are returned:

- A value based on recent activity over a short period.
- A value based on activity over a longer period.

Where no measurement is available, the value MQMON_NOT_AVAILABLE is returned.

***CompressionTime* (MQCFIL)**
The amount of time per message, displayed in microseconds, spent during compression or decompression (parameter identifier: MQIACH_COMPRESSION_TIME). Two values are returned:

- A value based on recent activity over a short period.
- A value based on activity over a longer period.

Where no measurement is available, the value MQMON_NOT_AVAILABLE is returned.

***ConnectionName* (MQCFST)**
Connection name (parameter identifier: MQCACH_CONNECTION_NAME).

The maximum length of the string is MQ_SHORT_CONN_NAME_LENGTH.

***CurrentLUWID* (MQCFST)**
Logical unit of work identifier for in-doubt batch (parameter identifier: MQCACH_CURRENT_LUWID).

The logical unit of work identifier associated with the current batch, for a sending or a receiving channel.

For a sending channel, when the channel is in-doubt it is the LUWID of the in-doubt batch.

It is updated with the LUWID of the next batch when it is known.

The maximum length is MQ_LUWID_LENGTH.

***CurrentMsgs* (MQCFIN)**
Number of messages in-doubt (parameter identifier: MQIACH_CURRENT_MSGS).

For a sending channel, this parameter is the number of messages that have been sent in the current batch. It is incremented as each message is sent, and when the channel becomes in-doubt it is the number of messages that are in-doubt.

For a receiving channel, it is the number of messages that have been received in the current batch. It is incremented as each message is received.

The value is reset to zero, for both sending and receiving channels, when the batch is committed.

***CurrentSequenceNumber* (MQCFIN)**
Sequence number of last message in in-doubt batch (parameter identifier: MQIACH_CURRENT_SEQ_NUMBER).

For a sending channel, this parameter is the message sequence number of the last message sent. It is updated as each message is sent, and when the channel becomes in-doubt it is the message sequence number of the last message in the in-doubt batch.

For a receiving channel, it is the message sequence number of the last message that was received. It is updated as each message is received.

***CurrentSharingConversations* (MQCFIN)**
Number of conversations currently active on this channel instance (parameter identifier: MQIACH_CURRENT_SHARING_CONVS).

This parameter is returned only for TCP/IP server-connection channels.

A value of zero indicates that the channel instance is running in a mode before IBM WebSphere MQ Version 7.0, regarding:

- Administrator stop-quiesce

- Heartbeating
- Read ahead
- Client asynchronous consumption

***ExitTime* (MQCFIL)**
Indicator of the time taken executing user exits per message (parameter identifier: MQIACH_EXIT_TIME_INDICATOR). Amount of time, in microseconds, spent processing user exits per message. Where more than one exit is executed per message, the value is the sum of all the user exit times for a single message. Two values are returned:

- A value based on recent activity over a short period.
- A value based on activity over a longer period.

Where no measurement is available, the value MQMON_NOT_AVAILABLE is returned.

***HeaderCompression* (MQCFIL)**
Whether the header data sent by the channel is compressed (parameter identifier: MQIACH_HDR_COMPRESSION). Two values are returned:

- The default header data compression value negotiated for this channel.
- The header data compression value used for the last message sent. The header data compression value can be altered in a sending channels message exit. If no message has been sent, the second value is MQCOMPRESS_NOT_AVAILABLE.

The values can be:

MQCOMPRESS_NONE
No header data compression is performed. MQCOMPRESS_NONE is the default value.

MQCOMPRESS_SYSTEM
Header data compression is performed.

MQCOMPRESS_NOT_AVAILABLE
No message has been sent by the channel.

***HeartbeatInterval* (MQCFIN)**
Heartbeat interval (parameter identifier: MQIACH_HB_INTERVAL).

***InDoubtStatus* (MQCFIN)**
Whether the channel is currently in doubt (parameter identifier: MQIACH_INDOUBT_STATUS).

A sending channel is only in doubt while the sending Message Channel Agent is waiting for an acknowledgment that a batch of messages, which it has sent, has been successfully received. It is not in doubt at all other times, including the period during which messages are being sent, but before an acknowledgment has been requested.

A receiving channel is never in doubt.

The value can be:

MQCHIDS_NOT_INDOUBT
Channel is not in-doubt.

MQCHIDS_INDOUBT
Channel is in-doubt.

***KeepAliveInterval* (MQCFIN)**
KeepAlive interval (parameter identifier: MQIACH_KEEP_ALIVE_INTERVAL). This parameter is valid only on z/OS.

***LastLUWID* (MQCFST)**
Logical unit of work identifier for last committed batch (parameter identifier: MQCACH_LAST_LUWID).

The maximum length is MQ_LUWID_LENGTH.

***LastMsgDate* (MQCFST)**
Date last message was sent, or MQI call was handled, in the form `yyyy-mm-dd` (parameter identifier: MQCACH_LAST_MSG_DATE).

The maximum length of the string is MQ_CHANNEL_DATE_LENGTH.

***LastMsgTime* (MQCFST)**
Time last message was sent, or MQI call was handled, in the form `hh.mm.ss` (parameter identifier: MQCACH_LAST_MSG_TIME).

The maximum length of the string is MQ_CHANNEL_TIME_LENGTH.

***LastSequenceNumber* (MQCFIN)**
Sequence number of last message in last committed batch (parameter identifier: MQIACH_LAST_SEQ_NUMBER).

***LocalAddress* (MQCFST)**
Local communications address for the channel (parameter identifier: MQCACH_LOCAL_ADDRESS).

The maximum length of the string is MQ_LOCAL_ADDRESS_LENGTH.

***LongRetriesLeft* (MQCFIN)**
Number of long retry attempts remaining (parameter identifier: MQIACH_LONG_RETRIES_LEFT).

***MaxMsgLength* (MQCFIN)**
Maximum message length (parameter identifier: MQIACH_MAX_MSG_LENGTH). This parameter is valid only on z/OS.

***MaxSharingConversations* (MQCFIN)**
Maximum number of conversations permitted on this channel instance. (parameter identifier: MQIACH_MAX_SHARING_CONVS)

This parameter is returned only for TCP/IP server-connection channels.

A value of zero indicates that the channel instance is running in a mode before IBM WebSphere MQ Version 7.0, regarding:

- Administrator stop-quiesce
- Heartbeating
- Read ahead
- Client asynchronous consumption

***MCAJobName* (MQCFST)**
Name of MCA job (parameter identifier: MQCACH_MCA_JOB_NAME).

The maximum length of the string is MQ_MCA_JOB_NAME_LENGTH.

***MCAStatus* (MQCFIN)**
MCA status (parameter identifier: MQIACH_MCA_STATUS).

The value can be:

MQMCAS_STOPPED
Message channel agent stopped.

MQMCAS_RUNNING
Message channel agent running.

***MCAUserIdentifier* (MQCFST)**
The user ID used by the MCA (parameter identifier: MQCACH_MCA_USER_ID).

This parameter applies only to server-connection, receiver, requester, and cluster-receiver channels.

The maximum length of the string is MQ_MCA_USER_ID_LENGTH.

***MessageCompression* (MQCFIL)**
Whether the header data sent by the channel is compressed (parameter identifier: MQIACH_MSG_COMPRESSION). Two values are returned:

- The default message data compression value negotiated for this channel.
- The message data compression value used for the last message sent. The message data compression value can be altered in a sending channels message exit. If no message has been sent, the second value is MQCOMPRESS_NOT_AVAILABLE.

The values can be:

MQCOMPRESS_NONE
No message data compression is performed. MQCOMPRESS_NONE is the default value.

MQCOMPRESS_RLE
Message data compression is performed using run-length encoding.

MQCOMPRESS_ZLIBFAST
Message data compression is performed using ZLIB encoding with speed prioritized.

MQCOMPRESS_ZLIBHIGH
Message data compression is performed using ZLIB encoding with compression prioritized.

MQCOMPRESS_NOT_AVAILABLE
No message has been sent by the channel.

Msgs **(MQCFIN)**
Number of messages sent or received, or number of MQI calls handled (parameter identifier: MQIACH_MSGS).

MsgsAvailable **(MQCFIN)**
Number of messages available (parameter identifier: MQIACH_XMITQ_MSGS_AVAILABLE). Number of messages queued on the transmission queue available to the channel for MQGETs.

Where no measurement is available, the value MQMON_NOT_AVAILABLE is returned.

This parameter applies to cluster sender channels only.

NetTime **(MQCFIL)**
Indicator of the time of a network operation (parameter identifier: MQIACH_NETWORK_TIME_INDICATOR). Amount of time, in microseconds, to send a request to the remote end of the channel and receive a response. This time only measures the network time for such an operation. Two values are returned:

- A value based on recent activity over a short period.
- A value based on activity over a longer period.

Where no measurement is available, the value MQMON_NOT_AVAILABLE is returned.

NonPersistentMsgSpeed **(MQCFIN)**
Speed at which nonpersistent messages are to be sent (parameter identifier: MQIACH_NPM_SPEED).

The value can be:

MQNPMS_NORMAL
Normal speed.

MQNPMS_FAST
Fast speed.

QMgrName **(MQCFST)**
Name of the queue manager that owns the channel instance (parameter identifier: MQCA_Q_MGR_NAME). This parameter is valid only on z/OS.

The maximum length of the string is MQ_Q_MGR_NAME_LENGTH.

RemoteApplTag **(MQCFST)**
The remote partner application name. This parameter is the name of the client application at the remote end of the channel. This parameter applies only to server-connection channels (parameter identifier: MQCACH_REMOTE_APPL_TAG).

***RemoteProduct* (MQCFST)**
The remote partner product identifier. This parameter is the product identifier of the IBM WebSphere MQ code running at the remote end of the channel (parameter identifier: MQCACH_REMOTE_PRODUCT).

The possible values are shown in the following table:

Table 66. Product Identifier values

Product Identifier	Description
MQMM	Queue Manager (non z/OS Platform)
MQMV	Queue Manager on z/OS
MQCC	WebSphere MQ C client
MQNM	WebSphere MQ .NET fully managed client
MQJB	WebSphere MQ Classes for JAVA
MQJM	WebSphere MQ Classes for JMS (normal mode)
MQJN	WebSphere MQ Classes for JMS (migration mode)
MQJU	Common Java interface to the MQI
MQXC	XMS client C/C++ (normal mode)
MQXD	XMS client C/C++ (migration mode)
MQXN	XMS client .NET (normal mode)
MQXM	XMS client .NET (migration mode)
MQXU	WebSphere MQ .NET XMS client (unmanaged/XA)
MQNU	WebSphere MQ .NET unmanaged client

***RemoteVersion* (MQCFST)**
The remote partner version. This parameter is the version of the IBM WebSphere MQ code running at the remote end of the channel (parameter identifier: MQCACH_REMOTE_VERSION).

The remote version is displayed as **VVRRMMFF**, where

VV
Version

RR
Release

MM
Maintenance level

FF
Fix level

***RemoteQMgrName* (MQCFST)**
Name of the remote queue manager, or queue-sharing group (parameter identifier: MQCA_REMOTE_Q_MGR_NAME).

***ShortRetriesLeft* (MQCFIN)**
Number of short retry attempts remaining (parameter identifier: MQIACH_SHORT_RETRIES_LEFT).

***SSLCertRemoteIssuerName* (MQCFST)**
The full Distinguished Name of the issuer of the remote certificate. The issuer is the certificate authority that issued the certificate (parameter identifier: MQCACH_SSL_CERT_ISSUER_NAME).

The maximum length of the string is MQ_SHORT_DNAME_LENGTH.

***SSLCertUserId* (MQCFST)**
The local user ID associated with the remote certificate (parameter identifier: MQCACH_SSL_CERT_USER_ID).

This parameter is valid only on z/OS.

The maximum length of the string is MQ_USER_ID_LENGTH.

***SSLKeyResetDate* (MQCFST)**
Date of the previous successful SSL secret key reset, in the form `yyyy-mm-dd` (parameter identifier: MQCACH_SSL_KEY_RESET_DATE).

The maximum length of the string is MQ_DATE_LENGTH.

***SSLKeyResets* (MQCFIN)**
SSL secret key resets (parameter identifier: MQIACH_SSL_KEY_RESETS).

The number of successful SSL secret key resets that have occurred for this channel instance since the channel started. If SSL secret key negotiation is enabled, the count is incremented whenever a secret key reset is performed.

***SSLKeyResetTime* (MQCFST)**
Time of the previous successful SSL secret key reset, in the form `hh.mm.ss` (parameter identifier: MQCACH_SSL_KEY_RESET_TIME).

The maximum length of the string is MQ_TIME_LENGTH.

***SSLShortPeerName* (MQCFST)**
Distinguished Name of the peer queue manager or client at the other end of the channel (parameter identifier: MQCACH_SSL_SHORT_PEER_NAME).

The maximum length is MQ_SHORT_DNAME_LENGTH. This limit might mean that exceptionally long Distinguished Names are truncated.

***StopRequested* (MQCFIN)**
Whether user stop request is outstanding (parameter identifier: MQIACH_STOP_REQUESTED).

The value can be:

MQCHSR_STOP_NOT_REQUESTED
User stop request has not been received.

MQCHSR_STOP_REQUESTED
User stop request has been received.

***SubState* (MQCFIN)**
Current action being performed by the channel (parameter identifier: MQIACH_CHANNEL_SUBSTATE).

The value can be:

MQCHSSTATE_CHADEXIT
Running channel auto-definition exit.

MQCHSSTATE_COMPRESSING
Compressing or decompressing data.

MQCHSSTATE_END_OF_BATCH
End of batch processing.

MQCHSSTATE_HANDSHAKING
SSL handshaking.

MQCHSSTATE_HEARTBEATING
Heartbeating with partner.

MQCHSSTATE_IN_MQGET
Performing MQGET.

MQCHSSTATE_IN_MQI_CALL
Executing an WebSphere MQ API call, other than an MQPUT or MQGET.

MQCHSSTATE_IN_MQPUT
Performing MQPUT.

MQCHSSTATE_MREXIT
Running retry exit.

MQCHSSTATE_MSGEXIT
Running message exit.

MQCHSSTATE_NAME_SERVER
Name server request.

MQCHSSTATE_NET_CONNECTING
Network connect.

MQCHSSTATE_OTHER
Undefined state.

MQCHSSTATE_RCVEXIT
Running receive exit.

MQCHSSTATE_RECEIVING
Network receive.

MQCHSSTATE_RESYNCHING
Resynching with partner.

MQCHSSTATE_SCYEXIT
Running security exit.

MQCHSSTATE_SENDEXIT
Running send exit.

MQCHSSTATE_SENDING
Network send.

MQCHSSTATE_SERIALIZING
Serialized on queue manager access.

***XmitQName* (MQCFST)**
Transmission queue name (parameter identifier: MQCACH_XMIT_Q_NAME).

The maximum length of the string is MQ_Q_NAME_LENGTH.

***XQTime* (MQCFIL)**
Transmission queue time indicator (parameter identifier: MQIACH_XMITQ_TIME_INDICATOR). The time, in microseconds, that messages remained on the transmission queue before being retrieved. The time is measured from when the message is put onto the transmission queue until it is retrieved to be sent on the channel and, therefore, includes any interval caused by a delay in the putting application.

Two values are returned:

- A value based on recent activity over a short period.
- A value based on activity over a longer period.

Where no measurement is available, the value MQMON_NOT_AVAILABLE is returned.

Inquire Channel Status (Response)

The response to the Inquire Channel Status (MQCMD_INQUIRE_CHANNEL_STATUS) command consists of the response header followed by the *ChannelName* structure and the requested combination of attribute parameter structures.

One such message is generated for each channel instance found that matches the criteria specified on the command.

Always returned:
ChannelName, *ChannelStatus*, *ChannelType*

Returned if requested:
ChannelStartDate, *ChannelStartTime*, *ClientIdentifier*, *ConnectionName*, *InDoubtInbound*, *InDoubtOutbound*, *KeepAliveInterval*, *LastMsgTime*, *MCAUserIdentifier*, *MsgsReceived*, *MsgsSent*, *PendingOutbound*, *ResponseType*

Response data

ChannelStartDate **(MQCFST)**
Date channel started, in the form yyyy-mm-dd (parameter identifier: MQCACH_CHANNEL_START_DATE).

The maximum length of the string is MQ_CHANNEL_DATE_LENGTH.

ChannelStartTime **(MQCFST)**
Time channel started, in the form hh.mm.ss (parameter identifier: MQCACH_CHANNEL_START_TIME).

The maximum length of the string is MQ_CHANNEL_TIME_LENGTH.

ChannelStatus **(MQCFIN)**
Channel status (parameter identifier: MQIACH_CHANNEL_STATUS).

The value can be:

MQCHS_DISCONNECTED
Channel is disconnected.

MQCHS_RUNNING
Channel is transferring or waiting for messages.

ChannelType **(MQCFIN)**
Channel type (parameter identifier: MQIACH_CHANNEL_TYPE).

The value must be:

MQCHT_MQTT
Telemetry.

ClientIdentifier **(MQCFST)**
The ClientID of the client (parameter identifier: MQCACH_CLIENT_ID).

The maximum length of the string is MQ_CLIENT_ID_LENGTH.

ConnectionName **(MQCFST)**
Connection name (parameter identifier: MQCACH_CONNECTION_NAME).

The maximum length of the string is MQ_CONN_NAME_LENGTH.

InDoubtInBound **(MQCFIN)**
The number of inbound messages to the client that are in doubt (parameter identifier: MQIACH_IN_DOUBT_IN).

InDoubtoutBound **(MQCFIN)**
The number of outbound messages from the client that are in doubt (parameter identifier: MQIACH_IN_DOUBT_OUT).

KeepAliveInterval **(MQCFIN)**
KeepAlive interval (parameter identifier: MQIACH_KEEP_ALIVE_INTERVAL).

The interval in milliseconds after which the client is disconnected because of inactivity. If the telemetry (MQXR) service does not receive any communication from the client within the keep alive interval, it disconnects from the client. This interval is calculated based on the MQTT keep alive time sent by the client when it connects. The maximum size is MQ_MQTT_MAX_KEEP_ALIVE.

***LastMsgTime* (MQCFST)**
Time last message was sent, or MQI call was handled, in the form hh.mm.ss (parameter identifier: MQCACH_LAST_MSG_TIME).

The maximum length of the string is MQ_CHANNEL_TIME_LENGTH.

***MsgsReceived* (MQCFIN64)**
Number of messages received by the client since it last connected (parameter identifier: MQIACH_MSGS_RECEIVED / MQIACH_MSGS_RCVD).

***MsgsSent* (MQCFIN64)**
Number of messages sent by the client since it last connected (parameter identifier: MQIACH_MSGS_SENT).

***PendingOutbound* (MQCFIN)**
The number of outbound messages pending (parameter identifier: MQIACH_PENDING_OUT).

***ResponseType* (MQCFIL)**
Response type (parameter identifier: MQIACF_RESPONSE_TYPE). This parameter is for MQTT channels only.

This MQTT channel parameter specifies the type of response that is required. The type of response is based on the one of the following three values:

- If **ResponseType** is set to MQRESP_NORMAL or if it is not specified, the following structures are returned:
  - The **ChannelName** structure.
  - The **ClientIdentifer** structure.
  - The **ChannelType** structure.

  All the remaining 'usual' structures and requested structures are returned as normal.
- If **ResponseType** is set to MQRESP_SUMMARY, the following structures are returned:
  - The **ChannelName** structure.
  - The **ChannelType** structure.

  the **ConversationCount** structure is also returned if it was requested.
- If **ResponseType** is set to MQRESP_TOTAL, only the **ConversationCount** structure is returned if it was requested.

Inquire Cluster Queue Manager

The Inquire Cluster Queue Manager (MQCMD_INQUIRE_CLUSTER_Q_MGR) command inquires about the attributes of WebSphere MQ queue managers in a cluster.

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Required parameters

***ClusterQMgrName* (MQCFST)**
Queue manager name (parameter identifier: MQCA_CLUSTER_Q_MGR_NAME).

Generic queue manager names are supported. A generic name is a character string followed by an asterisk "*", for example ABC*. It selects all queue managers having names that start with the selected character string. An asterisk on its own matches all possible names.

The queue manager name is always returned, regardless of the attributes requested.

The maximum length of the string is MQ_Q_MGR_NAME_LENGTH.

Optional parameters

***Channel* (MQCFST)**
Channel name (parameter identifier: MQCACH_CHANNEL_NAME).

Specifies that eligible cluster queue managers are limited to those having the specified channel name.

Generic channel names are supported. A generic name is a character string followed by an asterisk "*", for example ABC*. It selects all queue managers having names that start with the selected character string. An asterisk on its own matches all possible names.

The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

If you do not specify a value for this parameter, channel information about *all* queue managers in the cluster is returned.

***ClusterName* (MQCFST)**
Cluster name (parameter identifier: MQCA_CLUSTER_NAME).

Specifies that eligible cluster queue managers are limited to those having the specified cluster name.

Generic cluster names are supported. A generic name is a character string followed by an asterisk "*", for example ABC*. It selects all queue managers having names that start with the selected character string. An asterisk on its own matches all possible names.

The maximum length of the string is MQ_CLUSTER_NAME_LENGTH.

If you do not specify a value for this parameter, cluster information about *all* queue managers inquired is returned.

***ClusterQMgrAttrs* (MQCFIL)**
Attributes (parameter identifier: MQIACF_CLUSTER_Q_MGR_ATTRS).

Some parameters are relevant only for cluster channels of a particular type or types. Attributes that are not relevant for a particular type of channel cause no output, and do not cause an error. To check which attributes apply to which channel types; see Channel attributes and channel types.

The attribute list might specify the following value on its own. If the parameter is not specified, a default value is used.

MQIACF_ALL
All attributes.

Alternative, supply a combination of the following values:

MQCA_ALTERATION_DATE
The date on which the information was last altered.

MQCA_ALTERATION_TIME
The time at which the information was last altered.

MQCA_CLUSTER_DATE
The date on which the information became available to the local queue manager.

MQCA_CLUSTER_NAME
The name of the cluster to which the channel belongs.

MQCA_CLUSTER_Q_MGR_NAME
The name of the cluster to which the channel belongs.

MQCA_CLUSTER_TIME
The time at which the information became available to the local queue manager.

MQCA_Q_MGR_IDENTIFIER
The unique identifier of the queue manager.

MQCA_XMIT_Q_NAME
The cluster transmission queue used by the queue manager. The property is only available on platforms other than z/OS.

MQCACH_CONNECTION_NAME
Connection name.

MQCACH_DESCRIPTION
Description.

MQCACH_LOCAL_ADDRESS
Local communications address for the channel.

MQCACH_MCA_NAME
Message channel agent name.

You cannot use MQCACH_MCA_NAME as a parameter to filter on.

MQCACH_MCA_USER_ID
MCA user identifier.

MQCACH_MODE_NAME
Mode name.

MQCACH_MR_EXIT_NAME
Message-retry exit name.

MQCACH_MR_EXIT_USER_DATA
Message-retry exit user data.

MQCACH_MSG_EXIT_NAME
Message exit name.

MQCACH_MSG_EXIT_USER_DATA
Message exit user data.

MQCACH_PASSWORD
Password.

This parameter is not valid on z/OS.

MQCACH_RCV_EXIT_NAME
Receive exit name.

MQCACH_RCV_EXIT_USER_DATA
Receive exit user data.

MQCACH_SEC_EXIT_NAME
Security exit name.

MQCACH_SEC_EXIT_USER_DATA
Security exit user data.

MQCACH_SEND_EXIT_NAME
Send exit name.

MQCACH_SEND_EXIT_USER_DATA
Send exit user data.

MQCACH_SSL_CIPHER_SPEC
SSL cipher spec.

MQIACH_SSL_CLIENT_AUTH
SSL client authentication.

MQCACH_SSL_PEER_NAME
SSL peer name.

MQCACH_TP_NAME
Transaction program name.

MQCACH_USER_ID
User identifier.

This parameter is not valid on z/OS.

MQIA_MONITORING_CHANNEL
Online monitoring data collection.

MQIA_USE_DEAD_LETTER_Q
Determines whether the dead-letter queue is used when messages cannot be delivered by channels.

MQIACF_Q_MGR_DEFINITION_TYPE
How the cluster queue manager was defined.

MQIACF_Q_MGR_TYPE
The function of the queue manager in the cluster.

MQIACF_SUSPEND
Specifies whether the queue manager is suspended from the cluster.

MQIACH_BATCH_HB
The value being used for the batch heartbeat.

MQIACH_BATCH_INTERVAL
Batch wait interval (seconds).

MQIACH_BATCH_DATA_LIMIT
Batch data limit (kilobytes).

MQIACH_BATCH_SIZE
Batch size.

MQIACH_CHANNEL_STATUS
Channel status.

MQIACH_CLWL_CHANNEL_PRIORITY
Cluster workload channel priority.

MQIACH_CLWL_CHANNEL_RANK
Cluster workload channel rank.

MQIACH_CLWL_CHANNEL_WEIGHT
Cluster workload channel weight.

MQIACH_DATA_CONVERSION
Specifies whether sender must convert application data.

MQIACH_DISC_INTERVAL
Disconnection interval.

MQIACH_HB_INTERVAL
Heartbeat interval (seconds).

MQIACH_HDR_COMPRESSION
The list of header data compression techniques supported by the channel.

MQIACH_KEEP_ALIVE_INTERVAL
KeepAlive interval (valid on z/OS only).

MQIACH_LONG_RETRY
Count of long duration attempts.

MQIACH_LONG_TIMER
Long duration timer.

MQIACH_MAX_MSG_LENGTH
Maximum message length.

MQIACH_MCA_TYPE
MCA type.

MQIACH_MR_COUNT
Count of send message attempts.

MQIACH_MR_INTERVAL
Interval between attempting to resend a message in milliseconds.

MQIACH_MSG_COMPRESSION
List of message data compression techniques supported by the channel.

MQIACH_NETWORK_PRIORITY
Network priority.

MQIACH_NPM_SPEED
Speed of nonpersistent messages.

MQIACH_PUT_AUTHORITY
Put authority.

MQIACH_SEQUENCE_NUMBER_WRAP
Sequence number wrap.

MQIACH_SHORT_RETRY
Count of short duration attempts.

MQIACH_SHORT_TIMER
Short duration timer.

MQIACH_XMIT_PROTOCOL_TYPE
Transmission protocol type.

CommandScope **(MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following values:

- Blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- A queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment. The command server must be enabled.
- An asterisk "*". The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

You cannot use *CommandScope* as a parameter to filter on.

IntegerFilterCommand **(MQCFIF)**
Integer filter command descriptor. The parameter identifier must be any integer type parameter allowed in *ClusterQMgrAttrs* except MQIACF_ALL and others as noted. Use this parameter to restrict the output from the command by specifying a filter condition. See "MQCFIF - PCF integer filter parameter" on page 1092 for information about using this filter condition.

If you specify an integer filter, you cannot also specify a string filter using the *StringFilterCommand* parameter.

StringFilterCommand **(MQCFSF)**
String filter command descriptor. The parameter identifier must be any string type parameter allowed in *ClusterQMgrAttrs* except MQCA_CLUSTER_Q_MGR_NAME and others as noted. Use this parameter to restrict the output from the command by specifying a filter condition. See "MQCFSF - PCF string filter parameter" on page 1099 for information about using this filter condition.

If you specify a string filter for *Channel* or *ClusterName*, you cannot also specify the *Channel* or *ClusterName* parameter.

If you specify a string filter, you cannot also specify an integer filter using the *IntegerFilterCommand* parameter.

Inquire Cluster Queue Manager (Response)

The response to the Inquire Cluster Queue Manager (MQCMD_INQUIRE_CLUSTER_Q_MGR) command consists of three parts. The response header is followed by the *QMgrName* structure and the requested combination of attribute parameter structures.

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X	X	X

Always returned:
ChannelName, *ClusterName*, *QMgrName*,

Returned if requested:
AlterationDate, *AlterationTime*, *BatchHeartbeat*, *BatchInterval*, *BatchSize*, *ChannelDesc*, *ChannelMonitoring*, *ChannelStatus*, *ClusterDate*, *ClusterInfo*, *ClusterTime*, *CLWLChannelPriority*, *CLWLChannelRank*, *CLWLChannelWeight*, *ConnectionName*, *DataConversion*, *DiscInterval*, *HeaderCompression*, *HeartbeatInterval*, *KeepAliveInterval*, *LocalAddress*, *LongRetryCount*, *LongRetryInterval*, *MaxMsgLength*, *MCAName*, *MCAType*, *MCAUserIdentifier*,

MessageCompression, *ModeName*, *MsgExit*, *MsgRetryCount*, *MsgRetryExit*, *MsgRetryInterval*, *MsgRetryUserData*, *MsgUserData*, *NetworkPriority*, *NonPersistentMsgSpeed*, *Password*, *PutAuthority*, *QMgrDefinitionType*, *QMgrIdentifier*, *QMgrType*, *ReceiveExit*, *ReceiveUserData*, *SecurityExit*, *SecurityUserData*, *SendExit*, *SendUserData*, *SeqNumberWrap*, *ShortRetryCount*, *ShortRetryInterval*, *SSLCipherSpec*, *SSLClientAuth*, *SSLPeerName*, *Suspend*, *TpName* , *TransmissionQName*, *TransportType*, *UseDLQ*, *UserIdentifier*

Response data

***AlterationDate* (MQCFST)**
Alteration date, in the form yyyy-mm-dd (parameter identifier: MQCA_ALTERATION_DATE).

The date at which the information was last altered.

***AlterationTime* (MQCFST)**
Alteration time, in the form hh.mm.ss (parameter identifier: MQCA_ALTERATION_TIME).

The time at which the information was last altered.

***BatchHeartbeat* (MQCFIN)**
The value being used for the batch heartbeat (parameter identifier: MQIACH_BATCH_HB).

The value can be 0 - 999,999. A value of 0 indicates that the batch heartbeat is not being used.

***BatchInterval* (MQCFIN)**
Batch interval (parameter identifier: MQIACH_BATCH_INTERVAL).

***BatchSize* (MQCFIN)**
Batch size (parameter identifier: MQIACH_BATCH_SIZE).

***ChannelDesc* (MQCFST)**
Channel description (parameter identifier: MQCACH_DESC).

The maximum length of the string is MQ_CHANNEL_DESC_LENGTH.

***ChannelMonitoring* (MQCFIN)**
Online monitoring data collection (parameter identifier: MQIA_MONITORING_CHANNEL).

The value can be:

MQMON_OFF
Online monitoring data collection is turned off for this channel.

MQMON_Q_MGR
The value of the queue manager's *ChannelMonitoring* parameter is inherited by the channel. MQMON_Q_MGR is the default value.

MQMON_LOW
Online monitoring data collection is turned on, with a low rate of data collection, for this channel unless the queue manager's *ChannelMonitoring* parameter is MQMON_NONE.

MQMON_MEDIUM
Online monitoring data collection is turned on, with a moderate rate of data collection, for this channel unless the queue manager's *ChannelMonitoring* parameter is MQMON_NONE.

MQMON_HIGH
Online monitoring data collection is turned on, with a high rate of data collection, for this channel unless the queue manager's *ChannelMonitoring* parameter is MQMON_NONE.

***ChannelName* (MQCFST)**
Channel name (parameter identifier: MQCACH_CHANNEL_NAME).

The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

***ChannelStatus* (MQCFIN)**
Channel status (parameter identifier: MQIACH_CHANNEL_STATUS).

The value can be:

MQCHS_BINDING
Channel is negotiating with the partner.

MQCHS_INACTIVE
Channel is not active.

MQCHS_STARTING
Channel is waiting to become active.

MQCHS_RUNNING
Channel is transferring or waiting for messages.

MQCHS_PAUSED
Channel is paused.

MQCHS_STOPPING
Channel is in process of stopping.

MQCHS_RETRYING
Channel is reattempting to establish connection.

MQCHS_STOPPED
Channel is stopped.

MQCHS_REQUESTING
Requester channel is requesting connection.

MQCHS_INITIALIZING
Channel is initializing.

This parameter is returned if the channel is a cluster-sender channel (CLUSSDR) only.

***ClusterDate* (MQCFST)**
Cluster date, in the form yyyy-mm-dd (parameter identifier: MQCA_CLUSTER_DATE).

The date at which the information became available to the local queue manager.

***ClusterInfo* (MQCFIN)**
Cluster information (parameter identifier: MQIACF_CLUSTER_INFO).

The cluster information available to the local queue manager.

***ClusterName* (MQCFST)**
Cluster name (parameter identifier: MQCA_CLUSTER_NAME).

***ClusterTime* (MQCFST)**
Cluster time, in the form hh.mm.ss (parameter identifier: MQCA_CLUSTER_TIME).

The time at which the information became available to the local queue manager.

***CLWLChannelPriority* (MQCFIN)**
Channel priority (parameter identifier: MQIACH_CLWL_CHANNEL_PRIORITY).

***CLWLChannelRank* (MQCFIN)**
Channel rank (parameter identifier: MQIACH_CLWL_CHANNEL_RANK).

***CLWLChannelWeight* (MQCFIN)**
Channel weighting (parameter identifier: MQIACH_CLWL_CHANNEL_WEIGHT).

***ConnectionName* (MQCFST)**
Connection name (parameter identifier: MQCACH_CONNECTION_NAME).

The maximum length of the string is MQ_CONN_NAME_LENGTH. On z/OS, it is MQ_LOCAL_ADDRESS_LENGTH.

***DataConversion* (MQCFIN)**
Specifies whether sender must convert application data (parameter identifier: MQIACH_DATA_CONVERSION).

The value can be:

MQCDC_NO_SENDER_CONVERSION
No conversion by sender.

MQCDC_SENDER_CONVERSION
Conversion by sender.

***DiscInterval* (MQCFIN)**
Disconnection interval (parameter identifier: MQIACH_DISC_INTERVAL).

***HeaderCompression* (MQCFIL)**
Header data compression techniques supported by the channel (parameter identifier: MQIACH_HDR_COMPRESSION). The values specified are in order of preference.

The value can be one, or more, of

MQCOMPRESS_NONE
No header data compression is performed.

MQCOMPRESS_SYSTEM
Header data compression is performed.

***HeartbeatInterval* (MQCFIN)**
Heartbeat interval (parameter identifier: MQIACH_HB_INTERVAL).

***KeepAliveInterval* (MQCFIN)**
KeepAlive interval (parameter identifier: MQIACH_KEEP_ALIVE_INTERVAL). This parameter applies to z/OS only.

***LocalAddress* (MQCFST)**
Local communications address for the channel (parameter identifier: MQCACH_LOCAL_ADDRESS).

The maximum length of the string is MQ_LOCAL_ADDRESS_LENGTH.

***LongRetryCount* (MQCFIN)**
Long retry count (parameter identifier: MQIACH_LONG_RETRY).

***LongRetryInterval* (MQCFIN)**
Long timer (parameter identifier: MQIACH_LONG_TIMER).

***MaxMsgLength* (MQCFIN)**
Maximum message length (parameter identifier: MQIACH_MAX_MSG_LENGTH).

***MCAName* (MQCFST)**
Message channel agent name (parameter identifier: MQCACH_MCA_NAME).

The maximum length of the string is MQ_MCA_NAME_LENGTH.

***MCAType* (MQCFIN)**
Message channel agent type (parameter identifier: MQIACH_MCA_TYPE).

The value can be:

MQMCAT_PROCESS
Process.

MQMCAT_THREAD
Thread (Windows only).

***MCAUserIdentifier* (MQCFST)**
Message channel agent user identifier (parameter identifier: MQCACH_MCA_USER_ID).

The maximum length of the string is MQ_USER_ID_LENGTH.

***MessageCompression* (MQCFIL)**
Message data compression techniques supported by the channel (parameter identifier: MQIACH_MSG_COMPRESSION). The values specified are in order of preference.

The value can be one, or more, of:

MQCOMPRESS_NONE
No message data compression is performed.

MQCOMPRESS_RLE
Message data compression is performed using run-length encoding.

MQCOMPRESS_ZLIBFAST
Message data compression is performed using ZLIB encoding with speed prioritized.

MQCOMPRESS_ZLIBHIGH
Message data compression is performed using ZLIB encoding with compression prioritized.

***ModeName* (MQCFST)**
Mode name (parameter identifier: MQCACH_MODE_NAME).

The maximum length of the string is MQ_MODE_NAME_LENGTH.

***MsgExit* (MQCFST)**
Message exit name (parameter identifier: MQCACH_MSG_EXIT_NAME).

The maximum length of the string is MQ_EXIT_NAME_LENGTH.

In the following environments more than one message exit can be defined for a channel. If more than one message exit is defined, the list of names is returned in an MQCFSL structure instead of an (MQCFST) structure. The environments are: AIX, HP-UX, IBM i, Solaris, Linux, and Windows. An MQCFSL structure is always used on z/OS.

***MsgRetryCount* (MQCFIN)**
Message retry count (parameter identifier: MQIACH_MR_COUNT).

***MsgRetryExit* (MQCFST)**
Message retry exit name (parameter identifier: MQCACH_MR_EXIT_NAME).

The maximum length of the string is MQ_EXIT_NAME_LENGTH.

***MsgRetryInterval* (MQCFIN)**
Message retry interval (parameter identifier: MQIACH_MR_INTERVAL).

***MsgRetryUserData* (MQCFST)**
Message retry exit user data (parameter identifier: MQCACH_MR_EXIT_USER_DATA).

The maximum length of the string is MQ_EXIT_DATA_LENGTH.

***MsgUserData* (MQCFST)**
Message exit user data (parameter identifier: MQCACH_MSG_EXIT_USER_DATA).

The maximum length of the string is MQ_EXIT_DATA_LENGTH.

In the following environments, more than one message exit user data string can be defined for a channel. If more than one string is defined, the list of strings is returned in an MQCFSL structure instead of an (MQCFST) structure. The environments are: AIX, HP-UX, IBM i, Solaris, Linux, and Windows. An MQCFSL structure is always used on z/OS.

***NetworkPriority* (MQCFIN)**
Network priority (parameter identifier: MQIACH_NETWORK_PRIORITY).

***NonPersistentMsgSpeed* (MQCFIN)**
Speed at which non-persistent messages are to be sent (parameter identifier: MQIACH_NPM_SPEED).

The value can be:

MQNPMS_NORMAL
Normal speed.

MQNPMS_FAST
Fast speed.

***Password* (MQCFST)**
Password (parameter identifier: MQCACH_PASSWORD). This parameter is not available on z/OS.

If a nonblank password is defined, it is returned as asterisks. Otherwise, it is returned as blanks.

The maximum length of the string is MQ_PASSWORD_LENGTH. However, only the first 10 characters are used.

***PutAuthority* (MQCFIN)**
Put authority (parameter identifier: MQIACH_PUT_AUTHORITY).

The value can be:

MQPA_DEFAULT
Default user identifier is used.

MQPA_CONTEXT
Context user identifier is used.

MQPA_ALTERNATE_OR_MCA
The user identifier from the *UserIdentifier* field of the message descriptor is used. Any user ID received from the network is not used. This value is valid only on z/OS.

MQPA_ONLY_MCA
The default user identifier is used. Any user ID received from the network is not used. This value is valid only on z/OS.

***QMgrDefinitionType* (MQCFIN)**
Queue manager definition type (parameter identifier: MQIACF_Q_MGR_DEFINITION_TYPE).

The value can be:

MQQMDT_EXPLICIT_CLUSTER_SENDER
A cluster-sender channel from an explicit definition.

MQQMDT_AUTO_CLUSTER_SENDER
A cluster-sender channel by auto-definition.

MQQMDT_CLUSTER_RECEIVER
A cluster-receiver channel.

MQQMDT_AUTO_EXP_CLUSTER_SENDER
A cluster-sender channel, both from an explicit definition and by auto-definition.

***QMgrIdentifier* (MQCFST)**
Queue manager identifier (parameter identifier: MQCA_Q_MGR_IDENTIFIER).

The unique identifier of the queue manager.

***QMgrName* (MQCFST)**
Queue manager name (parameter identifier: MQCA_CLUSTER_Q_MGR_NAME).

The maximum length of the string is MQ_Q_MGR_NAME_LENGTH.

***QMgrType* (MQCFIN)**
Queue manager type (parameter identifier: MQIACF_Q_MGR_TYPE).

The value can be:

MQQMT_NORMAL
A normal queue manager.

MQQMT_REPOSITORY
A repository queue manager.

***ReceiveExit* (MQCFST)**
Receive exit name (parameter identifier: MQCACH_RCV_EXIT_NAME).

The maximum length of the string is MQ_EXIT_NAME_LENGTH.

In the following environments, more than one receive exit can be defined for a channel. If more than one receive exit is defined, the list of names is returned in an MQCFSL structure instead of an (MQCFST) structure. The environments are: AIX, HP-UX, IBM i, Solaris, Linux, and Windows. An MQCFSL structure is always used on z/OS.

***ReceiveUserData* (MQCFST)**
Receive exit user data (parameter identifier: MQCACH_RCV_EXIT_USER_DATA).

The maximum length of the string is MQ_EXIT_DATA_LENGTH.

In the following environments, more than one receive exit user data string can be defined for the channel. If more than one string is defined, the list of strings is returned in an MQCFSL structure instead of an (MQCFST) structure. The environments are: AIX, HP-UX, IBM i, Solaris, Linux, and Windows. An MQCFSL structure is always used on z/OS.

***SecurityExit* (MQCFST)**
Security exit name (parameter identifier: MQCACH_SEC_EXIT_NAME).

The maximum length of the string is MQ_EXIT_NAME_LENGTH.

***SecurityUserData* (MQCFST)**
Security exit user data (parameter identifier: MQCACH_SEC_EXIT_USER_DATA).

The maximum length of the string is MQ_EXIT_DATA_LENGTH.

***SendExit* (MQCFST)**
Send exit name (parameter identifier: MQCACH_SEND_EXIT_NAME).

The maximum length of the string is MQ_EXIT_NAME_LENGTH.

In the following environments, more than one send exit can be defined for a channel. If more than one send exit is defined, the list of names is returned in an MQCFSL structure instead of an (MQCFST) structure. The environments are: AIX, HP-UX, IBM i, Solaris, Linux, and Windows. An MQCFSL structure is always used on z/OS.

***SendUserData* (MQCFST)**
Send exit user data (parameter identifier: MQCACH_SEND_EXIT_USER_DATA).

The maximum length of the string is MQ_EXIT_DATA_LENGTH.

In the following environments, more than one send exit user data string can be defined for the channel. If more than one string is defined, the list of strings is returned in an MQCFSL structure instead of an (MQCFST) structure. The environments are: AIX, HP-UX, IBM i, Solaris, Linux, and Windows. An MQCFSL structure is always used on z/OS.

***SeqNumberWrap* (MQCFIN)**
Sequence wrap number (parameter identifier: MQIACH_SEQUENCE_NUMBER_WRAP).

***ShortRetryCount* (MQCFIN)**
Short retry count (parameter identifier: MQIACH_SHORT_RETRY).

***ShortRetryInterval* (MQCFIN)**
Short timer (parameter identifier: MQIACH_SHORT_TIMER).

***SSLCipherSpec* (MQCFST)**
CipherSpec (parameter identifier: MQCACH_SSL_CIPHER_SPEC).

The length of the string is MQ_SSL_CIPHER_SPEC_LENGTH.

***SSLClientAuth* (MQCFIN)**
Client authentication (parameter identifier: MQIACH_SSL_CLIENT_AUTH).

The value can be:

MQSCA_REQUIRED
Client authentication required

MQSCA_OPTIONAL
Client authentication is optional.

Defines whether WebSphere MQ requires a certificate from the SSL client.

***SSLPeerName* (MQCFST)**
Peer name (parameter identifier: MQCACH_SSL_PEER_NAME).

The length of the string is MQ_SSL_PEER_NAME_LENGTH. On z/OS, it is MQ_SHORT_PEER_NAME_LENGTH.

Specifies the filter to use to compare with the distinguished name of the certificate from the peer queue manager or client at the other end of the channel. (A distinguished name is the identifier of the SSL certificate.) If the distinguished name in the certificate received from the peer does not match the SSLPEER filter, the channel does not start.

***Suspend* (MQCFIN)**
Specifies whether the queue manager is suspended (parameter identifier: MQIACF_SUSPEND).

The value can be:

MQSUS_NO
The queue manager is not suspended from the cluster.

MQSUS_YES
The queue manager is suspended from the cluster.

***TpName* (MQCFST)**
Transaction program name (parameter identifier: MQCACH_TP_NAME).

The maximum length of the string is MQ_TP_NAME_LENGTH.

***TranmissionQName* (MQCFST)**
Transmission queue name (parameter identifier: MQCA_XMIT_Q_NAME). The cluster transmission queue used by the queue manager. The property is only available on platforms other than z/OS.

The maximum length of the string is MQ_Q_NAME_LENGTH.

***TransportType* (MQCFIN)**
Transmission protocol type (parameter identifier: MQIACH_XMIT_PROTOCOL_TYPE).

The value can be:

MQXPT_LU62
LU 6.2.

MQXPT_TCP
TCP.

MQXPT_NETBIOS
NetBIOS.

MQXPT_SPX
SPX.

MQXPT_DECNET
DECnet.

***UseDLQ* (MQCFIN)**
Determines whether the dead-letter queue is used when publication messages cannot be delivered to their correct subscriber queue (parameter identifier: MQIA_USE_DEAD_LETTER_Q).

***UserIdentifier* (MQCFST)**
Task user identifier (parameter identifier: MQCACH_USER_ID). This parameter is not available on z/OS.

The maximum length of the string is MQ_USER_ID_LENGTH. However, only the first 10 characters are used.

Inquire Communication Information Object

The Inquire Communication Information Object (MQCMD_INQUIRE_COMM_INFO) command inquires about the attributes of existing WebSphere MQ communication information objects.

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Required parameters:
CominfoName

Optional parameters:
CominfoAttrs, *IntegerFilterCommand*, *StringFilterCommand*

Required parameters

***CominfoName* (MQCFST)**
The name of the communication information definition about which information is to be returned (parameter identifier: MQCA_COMM_INFO_NAME).

The communication information name is always returned regardless of the attributes requested.

The maximum length of the string is MQ_COMM_INFO_NAME_LENGTH.

Optional parameters

***CominfoAttrs* (MQCFIL)**
Cominfo attributes (parameter identifier: MQIACF_COMM_INFO_ATTRS).

The attribute list might specify the following value on its own - default value if the parameter is not specified:

MQIACF_ALL
All attributes.

or a combination of the following:

MQIA_CODED_CHAR_SET_ID
CCSID for transmitted messages.

MQIA_COMM_EVENT
Cominfo event control.

MQIA_MCAST_BRIDGE
Multicast bridging.

MQIA_MONITOR_INTERVAL
Frequency of update for monitoring information.

MQIACF_ENCODING
Encoding for transmitted messages.

MQIACH_MC_HB_INTERVAL
Multicast heartbeat interval.

MQIACH_MSG_HISTORY
Amount of message history being kept.

MQIACH_MULTICAST_PROPERTIES
Multicast properties control.

MQIACH_NEW_SUBSCRIBER_HISTORY
New subscriber history.

MQIACH_PORT
Port Number.

MQCA_ALTERATION_DATE
The date on which the information was last altered.

MQCA_ALTERATION_TIME
The time at which the information was last altered.

MQCA_COMM_INFO_DESC
Comminfo description.

MQCA_COMM_INFO_TYPE
Comminfo type

MQCACH_GROUP_ADDRESS
Group Address.

***IntegerFilterCommand* (MQCFIF)**
Integer filter command descriptor. The parameter identifier must be any integer type parameter allowed in *CominfoAttrs* except MQIACF_ALL. Use this parameter to restrict the output from the command by specifying a filter condition. See "MQCFIF - PCF integer filter parameter" on page 1092 for information about using this filter condition.

If you specify an integer filter for *CominfoType* (MQIA_COMM_INFO_TYPE), you cannot also specify the *CominfoType* parameter.

If you specify an integer filter, you cannot also specify a string filter using the *StringFilterCommand* parameter.

***StringFilterCommand* (MQCFSF)**
String filter command descriptor. The parameter identifier must be any string type parameter allowed in *CominfoAttrs* except MQCA_COMM_INFO_NAME. Use this parameter to restrict the output from the command by specifying a filter condition. See "MQCFSF - PCF string filter parameter" on page 1099 for information about using this filter condition.

If you specify a string filter, you cannot also specify an integer filter using the *IntegerFilterCommand* parameter.

Inquire Communication Information Object (Response)

The response to the Inquire Communication Information Object (MQCMD_INQUIRE_COMM_INFO) command consists of the response header followed by the CominfoName structure, and the requested combination of attribute parameter structures (where applicable).

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If a generic communication information name was specified, one such message is generated for each object found.

Always returned:
CominfoName

Returned if requested:
AlterationDate, *AlterationTime*, *Bridge*, *CCSID*, *CommEvent*, *Description*, *Encoding*, *GrpAddress*, *MonitorInterval*, *MulticastHeartbeat*, *MulticastPropControl*, *MsgHistory*, *NewSubHistory*, *PortNumber*, *Type*

Response data

AlterationDate **(MQCFST)**
Alteration date (parameter identifier: MQCA_ALTERATION_DATE).

The date when the information was last altered, in the form yyyy-mm-dd.

AlterationTime **(MQCFST)**
Alteration time (parameter identifier: MQCA_ALTERATION_TIME).

The time when the information was last altered, in the form hh.mm.ss.

Bridge **(MQCFIN)**
Multicast Bridging (parameter identifier: MQIA_MCAST_BRIDGE).

Controls whether publications from applications not using Multicast are bridged to applications using multicast.

CCSID **(MQCFIN)**
CCSID that messages are trasmitted in (parameter identifier: MQIA_CODED_CHAR_SET_ID).

The coded character set identifier that messages are transmitted in.

CommEvent **(MQCFIN)**
Event Control (parameter identifier: MQIA_COMM_EVENT).

Controls whether event messages are generated for multicast handles that are created using this COMMINFO object. The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

MQEVR_EXCEPTION
Reporting of events for message reliability below the reliability threshold enabled.

CominfoName **(MQCFST)**
The name of the communication information definition (parameter identifier: MQCA_COMM_INFO_NAME).

The maximum length of the string is MQ_COMM_INFO_NAME_LENGTH.

Description **(MQCFST)**
Description of the communication information definition (parameter identifier: MQCA_COMM_INFO_DESC).

The maximum length of the string is MQ_COMM_INFO_DESC_LENGTH.

Encoding **(MQCFIN)**
Encoding that messages are transmitted in (parameter identifier: MQIACF_ENCODING).

The encoding that messages are transmitted in. The value can be:

MQENC_AS_PUBLISHED
Encoding taken from published message.

MQENC_NORMAL

MQENC_REVERSED

MQENC_S390

MQENC_TNS

GrpAddress **(MQCFST)**
The group IP address or DNS name (parameter identifier: MQCACH_GROUP_ADDRESS).

The maximum length of the string is MQ_GROUP_ADDRESS_LENGTH.

MonitorInterval **(MQCFIN)**
Frequency of monitoring (parameter identifier: MQIA_MONITOR_INTERVAL).

How frequently, in seconds, monitoring information is updated and event messages are generated.

MulticastHeartbeat **(MQCFIN)**
Heartbeat Interval for multicast (parameter identifier: MQIACH_MC_HB_INTERVAL).

The heartbeat interval, in milliseconds, for multicast transmitters.

MulticastPropControl **(MQCFIN)**
Multicast property control (parameter identifier: MQIACH_MULTICAST_PROPERTIES).

Control which MQMD properties and user properties flow with the message. The value can be:

MQMCP_ALL
All MQMD and user properties.

MQMAP_REPLY
Properties related to replying to messages.

MQMAP_USER
Only user properties.

MQMAP_NONE
No MQMD or user properties.

MQMAP_COMPAT
Properties are transmitted in a format compatible with previous Multicast clients.

MsgHistory **(MQCFIN)**
Message History (parameter identifier: MQIACH_MSG_HISTORY).

The amount of message history, in kilobytes, that is kept by the system to handle retransmissions in the case of NACKS.

NewSubHistory **(MQCFIN)**
New Subscriber History (parameter identifier: MQIACH_NEW_SUBSCRIBER_HISTORY).

Controls how much historical data a new subscriber receives. The value can be:

MQNSH_NONE
Only publications from the time of the subscription are sent.

MQNSH_ALL
As much history as is known is retransmitted.

PortNumber **(MQCFIN)**
Port Number (parameter identifier: MQIACH_PORT).

The port number to transmit on.

Type **(MQCFIN)**
The type of the communications information definition (parameter identifier: MQIA_COMM_INFO_TYPE).

The value can be:

MQCIT_MULTICAST
Multicast.

Inquire Connection

The Inquire connection (MQCMD_INQUIRE_CONNECTION) command inquires about the applications which are connected to the queue manager, the status of any transactions that those applications are running, and the objects which the application has open.

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Required parameters

***ConnectionId* (MQCFBS)**
Connection identifier (parameter identifier: MQBACF_CONNECTION_ID).

This parameter is the unique connection identifier associated with an application that is connected to the queue manager. Specify either this parameter **or** *GenericConnectionId*.

All connections are assigned a unique identifier by the queue manager regardless of how the connection is established.

If you need to specify a generic connection identifier, use the *GenericConnectionId* parameter instead.

The length of the string is MQ_CONNECTION_ID_LENGTH.

***GenericConnectionId* (MQCFBS)**
Generic specification of a connection identifier (parameter identifier: MQBACF_GENERIC_CONNECTION_ID).

Specify either this parameter **or** *ConnectionId*.

If you specify a byte string of zero length, or one which contains only null bytes, information about all connection identifiers is returned. This value is the only value permitted for *GenericConnectionId*.

The length of the string is MQ_CONNECTION_ID_LENGTH.

Optional parameters

***ByteStringFilterCommand* (MQCFBF)**
Byte string filter command descriptor. The parameter identifier must be MQBACF_EXTERNAL_UOW_ID, MQBACF_ORIGIN_UOW_ID, or MQBACF_Q_MGR_UOW_ID. Use this parameter to restrict the output from the command by specifying a filter condition. See "MQCFBF - PCF byte string filter parameter" on page 1087 for information about using this filter condition.

If you specify a byte string filter, you cannot also specify an integer filter using the *IntegerFilterCommand* parameter, or a string filter using the *StringFilterCommand* parameter.

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_Q_MGR_NAME_LENGTH.

You cannot use *CommandScope* as a parameter to filter on.

***ConnectionAttrs* (MQCFIL)**
Connection attributes (parameter identifier: MQIACF_CONNECTION_ATTRS).

The attribute list can specify the following value on its own - default value if the parameter is not specified:

MQIACF_ALL
All attributes of the selected *ConnInfoType*.

or, if you select a value of MQIACF_CONN_INFO_CONN for *ConnInfoType*, a combination of the following:

MQBACF_CONNECTION_ID
Connection identifier.

MQBACF_EXTERNAL_UOW_ID
External unit of recovery identifier associated with the connection.

MQBACF_ORIGIN_UOW_ID
Unit of recovery identifier assigned by the originator (valid on z/OS only).

MQBACF_Q_MGR_UOW_ID
Unit of recovery identifier assigned by the queue manager.

MQCACF_APPL_TAG
Name of an application that is connected to the queue manager.

MQCACF_ASID
The 4-character address-space identifier of the application identified in MQCACF_APPL_TAG (valid on z/OS only).

MQCACF_ORIGIN_NAME
Originator of the unit of recovery (valid on z/OS only).

MQCACF_PSB_NAME
The 8-character name of the program specification block (PSB) associated with the running IMS transaction (valid on z/OS only).

MQCACF_PST_ID
The 4-character IMS program specification table (PST) region identifier for the connected IMS region (valid on z/OS only).

MQCACF_TASK_NUMBER
A 7-digit CICS task number (valid on z/OS only).

MQCACF_TRANSACTION_ID
A 4-character CICS transaction identifier (valid on z/OS only).

MQCACF_UOW_LOG_EXTENT_NAME
Name of the first extent required to recover the transaction. MQCACF_UOW_LOG_EXTENT_NAME is not valid on z/OS.

MQCACF_UOW_LOG_START_DATE
Date on which the transaction associated with the current connection first wrote to the log.

MQCACF_UOW_LOG_START_TIME
Time at which the transaction associated with the current connection first wrote to the log.

MQCACF_UOW_START_DATE
Date on which the transaction associated with the current connection was started.

MQCACF_UOW_START_TIME
Time at which the transaction associated with the current connection was started.

MQCACF_USER_IDENTIFIER
User identifier of the application that is connected to the queue manager.

MQCACH_CHANNEL_NAME
Name of the channel associated with the connected application.

MQCACH_CONNECTION_NAME
Connection name of the channel associated with the application.

MQIA_APPL_TYPE
Type of the application that is connected to the queue manager.

MQIACF_CONNECT_OPTIONS
Connect options currently in force for this application connection.

You cannot use the value MQCNO_STANDARD_BINDING as a filter value.

MQIACF_PROCESS_ID
Process identifier of the application that is currently connected to the queue manager.

This parameter is not valid on z/OS.

MQIACF_THREAD_ID
Thread identifier of the application that is currently connected to the queue manager.

This parameter is not valid on z/OS.

MQIACF_UOW_STATE
State of the unit of work.

MQIACF_UOW_TYPE
Type of external unit of recovery identifier as understood by the queue manager.

or, if you select a value of MQIACF_CONN_INFO_HANDLE for *ConnInfoType*, a combination of the following:

MQCACF_OBJECT_NAME
Name of each object that the connection has open.

MQCACH_CONNECTION_NAME
Connection name of the channel associated with the application.

MQIA_QSG_DISP
Disposition of the object (valid on z/OS only).

You cannot use MQIA_QSG_DISP as a parameter to filter on.

MQIA_READ_AHEAD
The read ahead connection status.

MQIA_UR_DISP
The unit of recovery disposition associated with the connection (valid on z/OS only).

MQIACF_HANDLE_STATE
Whether an API call is in progress.

MQIACF_OBJECT_TYPE
Type of each object that the connection has open.

MQIACF_OPEN_OPTIONS
Options used by the connection to open each object.

or, if you select a value of MQIACF_CONN_INFO_ALL for *ConnInfoType*, any of the previous values.

***ConnInfoType* (MQCFIN)**
Type of connection information to be returned (parameter identifier: MQIACF_CONN_INFO_TYPE).

The value can be:

MQIACF_CONN_INFO_CONN
Connection information. On z/OS, MQIACF_CONN_INFO_CONN includes threads which might be logically or actually disassociated from a connection, together with those threads that are in-doubt and for which external intervention is needed to resolve them. MQIACF_CONN_INFO_CONN is the default value used if the parameter is not specified.

MQIACF_CONN_INFO_HANDLE
Information pertaining only to those objects opened by the specified connection.

MQIACF_CONN_INFO_ALL
Connection information and information about those objects that the connection has open.

You cannot use *ConnInfoType* as a parameter to filter on.

***IntegerFilterCommand* (MQCFIF)**
Integer filter command descriptor. The parameter identifier must be any integer type parameter allowed in *ConnectionAttrs* except as noted and MQIACF_ALL. Use this parameter to restrict the output from the command by specifying a filter condition. You cannot use the value MQCNO_STANDARD_BINDING on the MQIACF_CONNECT_OPTIONS parameter with either the MQCFOP_CONTAINS or MQCFOP_EXCLUDES operator. See "MQCFIF - PCF integer filter parameter" on page 1092 for information about using this filter condition.

If you filter on MQIACF_CONNECT_OPTIONS or MQIACF_OPEN_OPTIONS, in each case the filter value must have only 1 bit set.

If you specify an integer filter, you cannot also specify a byte string filter using the *ByteStringFilterCommand* parameter or a string filter using the *StringFilterCommand* parameter.

***StringFilterCommand* (MQCFSF)**
String filter command descriptor. The parameter identifier must be any string type parameter allowed in *ConnectionAttrs*. Use this parameter to restrict the output from the command by specifying a filter condition. See "MQCFSF - PCF string filter parameter" on page 1099 for information about using this filter condition.

If you specify a string filter, you cannot also specify a byte string filter using the *ByteStringFilterCommand* parameter or an integer filter using the *IntegerFilterCommand* parameter.

***URDisposition* (MQCFIN)**
The unit of recovery disposition associated with the connection (parameter identifier: MQI_UR_DISP). This parameter is valid only on z/OS.

The value can be:

MQQSGD_ALL
Specifies that all connections must be returned.

MQQSGD_GROUP
Specifies that only connections with a GROUP unit of recovery disposition must be returned.

MQQSGD_Q_MGR
Specifies that only connections with a QMGR unit of recovery disposition must be returned.

Error code

This command might return the following error code in the response format header, in addition to the values shown in "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_CONNECTION_ID_ERROR
Connection identifier not valid.

Inquire Connection (Response)

The response to the Inquire Connection (MQCMD_INQUIRE_CONNECTION) command consists of the response header followed by the *ConnectionId* structure and a set of attribute parameter structures determined by the value of *ConnInfoType* in the Inquire command.

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If the value of *ConnInfoType* was MQIACF_CONN_INFO_ALL, there is one message for each connection found with MQIACF_CONN_INFO_CONN, and *n* more messages per connection with MQIACF_CONN_INFO_HANDLE (where *n* is the number of objects that the connection has open).

Always returned:
ConnectionId, *ConnInfoType*

Always returned if *ConnInfoType* is MQIACF_CONN_INFO_HANDLE:
ObjectName, *ObjectType*, *QSGDisposition*

Returned if requested and *ConnInfoType* is MQIACF_CONN_INFO_CONN:
ApplDesc ,*ApplTag*, *ApplType*, *ASID*, *AsynchronousState*, *ChannelName*, *ConnectionName*, *ConnectionOptions*, *OriginName*, *OriginUOWId*, *ProcessId*, *PSBName*, *PSTId*, *QMgrUOWId*, *StartUOWLogExtent*, *TaskNumber*, *ThreadId*, *TransactionId*, *UOWIdentifier*, *UOWLogStartDate*, *UOWLogStartTime*, *UOWStartDate*, *UOWStartTime*, *UOWState*, *UOWType*, *URDisposition*, *UserId*

Returned if requested and *ConnInfoType* is MQIACF_CONN_INFO_HANDLE:
AsynchronousState, *Destination*, *DestinationQueueManager*, *HandleState*, *OpenOptions*, *ReadAhead*, *SubscriptionID*, *SubscriptionName*, *TopicString*

Response data

***ApplDesc* (MQCFST)**
Application description (parameter identifier: MQCACF_APPL_DESC).

The maximum length is MQ_APPL_DESC_LENGTH.

***ApplTag* (MQCFST)**
Application tag (parameter identifier: MQCACF_APPL_TAG).

The maximum length is MQ_APPL_TAG_LENGTH.

***ApplType* (MQCFIN)**
Application type (parameter identifier: MQIA_APPL_TYPE).

The value can be:

MQAT_QMGR
Queue manager process.

MQAT_CHANNEL_INITIATOR
Channel initiator.

MQAT_USER
User application.

MQAT_BATCH
Application using a batch connection (only on z/OS).

MQAT_RRS_BATCH
RRS-coordinated application using a batch connection (only on z/OS).

MQAT_CICS
CICS transaction (only on z/OS).

MQAT_IMS
IMS transaction (only on z/OS).

MQAT_SYSTEM_EXTENSION
Application performing an extension of function that is provided by the queue manager.

ASID **(MQCFST)**
Address space identifier (parameter identifier: MQCACF_ASID).

The four character address-space identifier of the application identified by *ApplTag*. It distinguishes duplicate values of *ApplTag*.

This parameter is valid only on z/OS.

The length of the string is MQ_ASID_LENGTH.

AsynchronousState **(MQCFIN)**
The state of asynchronous consumption on this handle (parameter identifier: MQIACF_ASYNC_STATE).

The value can be:

MQAS_NONE
If *ConnInfoType* is MQIACF_CONN_INFO_CONN, an MQCTL call has not been issued against the handle. Asynchronous message consumption cannot currently proceed on this connection. If *ConnInfoType* is MQIACF_CONN_INFO_HANDLE, an MQCB call has not been issued against this handle, so no asynchronous message consumption is configured on this handle.

MQAS_SUSPENDED
The asynchronous consumption callback has been suspended so that asynchronous message consumption cannot currently proceed on this handle. This situation can be either because an MQCB or MQCTL call with *Operation* MQOP_SUSPEND has been issued against this object handle by the application, or because it has been suspended by the system. If it has been suspended by the system, as part of the process of suspending asynchronous message consumption the callback function is called with the reason code that describes the problem resulting in suspension. This reason code is reported in the *Reason* field in the MQCBC structure passed to the callback. In order for asynchronous message consumption to proceed, the application must issue an MQCB or MQCTL call with *Operation* MQOP_RESUME. This reason code can be returned if *ConnInfoType* is MQIACF_CONN_INFO_CONN or MQIACF_CONN_INFO_HANDLE.

MQAS_SUSPENDED_TEMPORARY
The asynchronous consumption callback has been temporarily suspended by the system so that asynchronous message consumption cannot currently proceed on this object handle. As part of the process of suspending asynchronous message consumption, the callback function is called with the reason code that describes the problem resulting in suspension. MQAS_SUSPENDED_TEMPORARY is reported in the *Reason* field in the MQCBC structure passed to the callback. The callback function is called again when asynchronous message consumption is resumed by the system when the temporary condition has been resolved. MQAS_SUSPENDED_TEMPORARY is returned only if ConnInfoType is MQIACF_CONN_INFO_HANDLE.

MQAS_STARTED
An MQCTL call with *Operation* MQOP_START has been issued against the connection handle so that asynchronous message consumption can proceed on this connection. MQAS_STARTED is returned only if *ConnInfoType* is MQIACF_CONN_INFO_CONN.

MQAS_START_WAIT
An MQCTL call with *Operation* MQOP_START_WAIT has been issued against the connection handle so that asynchronous message consumption can proceed on this connection. MQAS_START_WAIT is returned only if *ConnInfoType* is MQIACF_CONN_INFO_CONN.

MQAS_STOPPED
An MQCTL call with *Operation* MQOP_STOP has been issued against the connection handle so that asynchronous message consumption cannot currently proceed on this connection. MQAS_STOPPED is returned only if *ConnInfoType* is MQIACF_CONN_INFO_CONN.

MQAS_ACTIVE
An MQCB call has set up a function to call back to process messages asynchronously and the connection handle has been started so that asynchronous message consumption can proceed. MQAS_ACTIVE is returned only if *ConnInfoType* is MQIACF_CONN_INFO_HANDLE.

MQAS_INACTIVE
An MQCB call has set up a function to call back to process messages asynchronously but the connection handle has not yet been started, or has been stopped or suspended, so that asynchronous message consumption cannot currently proceed. MQAS_INACTIVE is returned only if ConnInfoType is MQIACF_CONN_INFO_HANDLE.

***ChannelName* (MQCFST)**
Channel name (parameter identifier: MQCACH_CHANNEL_NAME).

The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

***ConnectionId* (MQCFBS)**
Connection identifier (parameter identifier: MQBACF_CONNECTION_ID).

The length of the string is MQ_CONNECTION_ID_LENGTH.

***ConnectionName* (MQCFST)**
Connection name (parameter identifier: MQCACH_CONNECTION_NAME).

The maximum length of the string is MQ_CONN_NAME_LENGTH.

***ConnectionOptions* (MQCFIL)**
Connect options currently in force for the connection (parameter identifier: MQIACF_CONNECT_OPTIONS).

***ConnInfoType* (MQCFIN)**
Type of information returned (parameter identifier: MQIACF_CONN_INFO_TYPE).

The value can be:

MQIACF_CONN_INFO_CONN
Generic information for the specified connection.

MQIACF_CONN_INFO_HANDLE
Information pertinent only to those objects opened by the specified connection.

***Destination* (MQCFST)**
The destination queue for messages published to this subscription (parameter identifier MQCACF_DESTINATION).

This parameter is relevant only for handles of subscriptions to topics.

***DestinationQueueManager* (MQCFST)**
The destination queue manager for messages published to this subscription (parameter identifier MQCACF_DESTINATION_Q_MGR).

This parameter is relevant only for handles of subscriptions to topics. If *Destination* is a queue hosted on the local queue manager, this parameter contains the local queue manager name. If *Destination* is a queue hosted on a remote queue manager, this parameter contains the name of the remote queue manager.

***HandleState* (MQCFIN)**
State of the handle (parameter identifier: MQIACF_HANDLE_STATE).

The value can be:

MQHSTATE_ACTIVE
An API call from this connection is currently in progress for this object. If the object is a queue, this condition can arise when an MQGET WAIT call is in progress.

If there is an MQGET SIGNAL outstanding, then this situation does not mean, by itself, that the handle is active.

MQHSTATE_INACTIVE
No API call from this connection is currently in progress for this object. If the object is a queue, this condition can arise when no MQGET WAIT call is in progress.

***ObjectName* (MQCFST)**
Object name (parameter identifier: MQCACF_OBJECT_NAME).

The maximum length of the string is MQ_OBJECT_NAME_LENGTH.

***ObjectType* (MQCFIN)**
Object type (parameter identifier: MQIACF_OBJECT_TYPE).

If this parameter is a handle of a subscription to a topic, the SUBID parameter identifies the subscription and can be used with the Inquire Subscription command to find all the details about the subscription.

The value can be:

MQOT_Q
Queue.

MQOT_NAMELIST
Namelist.

MQOT_PROCESS
Process.

MQOT_Q_MGR
Queue manager.

MQOT_CHANNEL
Channel.

MQOT_AUTH_INFO
Authentication information object.

MQOT_TOPIC
Topic.

***OpenOptions* (MQCFIN)**
Open options currently in force for the object for connection (parameter identifier: MQIACF_OPEN_OPTIONS).

This parameter is not relevant for a subscription. Use the SUBID field of the DISPLAY SUB command to find all the details about the subscription.

***OriginName* (MQCFST)**
Origin name (parameter identifier: MQCACF_ORIGIN_NAME).

Identifies the originator of the unit of recovery, except where *ApplType* is MQAT_RRS_BATCH when it is omitted.

This parameter is valid only on z/OS.

The length of the string is MQ_ORIGIN_NAME_LENGTH.

***OriginUOWId* (MQCFBS)**
Origin UOW identifier (parameter identifier: MQBACF_ORIGIN_UOW_ID).

The unit of recovery identifier assigned by the originator. It is an 8-byte value.

This parameter is valid only on z/OS.

The length of the string is MQ_UOW_ID_LENGTH.

***ProcessId* (MQCFIN)**
Process identifier (parameter identifier: MQIACF_PROCESS_ID).

***PSBName* (MQCFST)**
Program specification block name (parameter identifier: MQCACF_PSB_NAME).

The 8-character name of the program specification block (PSB) associated with the running IMS transaction.

This parameter is valid only on z/OS.

The length of the string is MQ_PSB_NAME_LENGTH.

***PSTId* (MQCFST)**
Program specification table identifier (parameter identifier: MQCACF_PST_ID).

The 4-character IMS program specification table (PST) region identifier for the connected IMS region.

This parameter is valid only on z/OS.

The length of the string is MQ_PST_ID_LENGTH.

***QMgrUOWId* (MQCFBS)**
Unit of recovery identifier assigned by the queue manager (parameter identifier: MQBACF_Q_MGR_UOW_ID).

On z/OS platforms, this parameter is returned as a 6-byte RBA. On platforms other than z/OS, this parameter is an 8-byte transaction identifier.

The maximum length of the string is MQ_UOW_ID_LENGTH.

***QSGDispositon* (MQCFIN)**
QSG disposition (parameter identifier: MQIA_QSG_DISP).

Specifies the disposition of the object (that is, where it is defined and how it behaves). This parameter is valid only on z/OS. The value can be:

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

MQQSGD_SHARED
The object is defined as MQQSGD_SHARED.

***ReadAhead* (MQCFIN)**
The read ahead connection status (parameter identifier: MQIA_READ_AHEAD).

The value can be:

MQREADA_NO
Read ahead for browsing messages, or of non-persistent messages is not enabled for the object that the connection has open.

MQREADA_YES
Read ahead for browsing messages, or of non-persistent messages is enabled for the object that the connection has open and is being used efficiently.

MQREADA_BACKLOG
Read ahead for browsing messages, or of non-persistent messages is enabled for this object. Read ahead is not being used efficiently because the client has been sent many messages which are not being consumed.

MQREADA_INHIBITED
Read ahead was requested by the application but has been inhibited because of incompatible options specified on the first MQGET call.

***StartUOWLogExtent* (MQCFST)**
Name of the first extent needed to recover the transaction (parameter identifier: MQCACF_UOW_LOG_EXTENT_NAME).

The 8-character name of the program specification block (PSB) associated with the running IMS transaction.

This parameter is not valid on z/OS.

The maximum length of the string is MQ_LOG_EXTENT_NAME_LENGTH.

SubscriptionID **(MQCFBS)**
The internal, all time unique identifier of the subscription (parameter identifier MQBACF_SUB_ID).

This parameter is relevant only for handles of subscriptions to topics.

Not all subscriptions can be seen using Inquire Connection; only those subscriptions that have current handles open to the subscriptions can be seen. Use the Inquire Subscription command to see all subscriptions.

SubscriptionName **(MQCFST)**
The unique subscription name of the application associated with the handle (parameter identifier MQCACF_SUB_NAME).

This parameter is relevant only for handles of subscriptions to topics. Not all subscriptions have a subscription name.

ThreadId **(MQCFIN)**
Thread identifier (parameter identifier: MQIACF_THREAD_ID).

TopicString **(MQCFST)**
Resolved topic string (parameter identifier: MQCA_TOPIC_STRING).

This parameter is relevant for handles with an ObjectType of MQOT_TOPIC. For any other object type, this parameter is blank.

TransactionId **(MQCFST)**
Transaction identifier (parameter identifier: MQCACF_TRANSACTION_ID).

The 4-character CICS transaction identifier.

This parameter is valid only on z/OS.

The maximum length of the string is MQ_TRANSACTION_ID_LENGTH.

UOWIdentifier **(MQCFBS)**
External unit of recovery identifier associated with the connection (parameter identifier: MQBACF_EXTERNAL UOW_ID).

This parameter is the recovery identifier for the unit of recovery. The value of *UOWType* determines its format.

The maximum length of the byte string is MQ_UOW_ID_LENGTH.

UOWLogStartDate **(MQCFST)**
Logged unit of work start date, in the form `yyyy-mm-dd` (parameter identifier: MQCACF_UOW_LOG_START_DATE).

The maximum length of the string is MQ_DATE_LENGTH.

UOWLogStartTime **(MQCFST)**
Logged unit of work start time, in the form `hh.mm.ss` (parameter identifier: MQCACF_UOW_LOG_START_TIME).

The maximum length of the string is MQ_TIME_LENGTH.

UOWStartDate **(MQCFST)**
Unit of work creation date (parameter identifier: MQCACF_UOW_START_DATE).

The maximum length of the string is MQ_DATE_LENGTH.

UOWStartTime **(MQCFST)**
Unit of work creation time (parameter identifier: MQCACF_UOW_START_TIME).

The maximum length of the string is MQ_TIME_LENGTH.

UOWState **(MQCFIN)**
State of the unit of work (parameter identifier: MQIACF_UOW_STATE).

The value can be:

MQUOWST_NONE
There is no unit of work.

MQUOWST_ACTIVE
The unit of work is active.

MQUOWST_PREPARED
The unit of work is in the process of being committed.

MQUOWST_UNRESOLVED
The unit of work is in the second phase of a two-phase commit operation. WebSphere MQ holds resources on behalf of the unit of work and external intervention is required to resolve it. It might be as simple as starting the recovery coordinator (such as CICS, IMS, or RRS) or it might involve a more complex operation such as using the RESOLVE INDOUBT command. This value can occur only on z/OS.

***UOWType* (MQCFIN)**
Type of external unit of recovery identifier as perceived by the queue manager (parameter identifier: MQIACF_UOW_TYPE).

The value can be:

MQUOWT_Q_MGR

MQUOWT_CICS

MQUOWT_RRS

MQUOWT_IMS

MQUOWT_XA

***URDisposition* (MQCFIN)**
The unit of recovery disposition associated with the connection.

This parameter is valid only on z/OS.

The value can be:

MQQSGD_GROUP
This connection has a GROUP unit of recovery disposition.

MQQSGD_Q_MGR
This connection has a QMGR unit of recovery disposition.

***UserId* (MQCFST)**
User identifier (parameter identifier: MQCACF_USER_IDENTIFIER).

The maximum length of the string is MQ_MAX_USER_ID_LENGTH.

Inquire Entity Authority

The Inquire Entity Authority (MQCMD_INQUIRE_ENTITY_AUTH) command inquires about authorizations of an entity to a specified object.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

Required parameters

The required parameters must all be passed in the following order: *Options*, *ObjectType*, *EntityType*, *EntityName*.

***Options* (MQCFIN)**
Options to control the set of authority records that is returned (parameter identifier: MQIACF_AUTH_OPTIONS).

This parameter is required and you must set it to the value MQAUTHOPT_CUMULATIVE. It returns a set of authorities representing the cumulative authority that an entity has to a specified object.

If a user ID is a member of more than one group, this command displays the combined authorizations of all groups.

***ObjectType* (MQCFIN)**
The type of object referred to by the profile (parameter identifier: MQIACF_OBJECT_TYPE).

The value can be:

MQOT_AUTH_INFO
Authentication information.

MQOT_CHANNEL
Channel object.

MQOT_CLNTCONN_CHANNEL
Client-connection channel object.

MQOT_COMM_INFO
Communication information object

MQOT_LISTENER
Listener object.

MQOT_NAMELIST
Namelist.

MQOT_PROCESS
Process.

MQOT_Q
Queue, or queues, that match the object name parameter.

MQOT_Q_MGR
Queue manager.

MQOT_REMOTE_Q_MGR_NAME
Remote queue manager.

MQOT_SERVICE
Service object.

MQOT_TOPIC
Topic object.

***EntityType* (MQCFIN)**
Entity type (parameter identifier: MQIACF_ENTITY_TYPE).

The value can be:

MQZAET_GROUP
The value of the *EntityName* parameter refers to a group name.

MQZAET_PRINCIPAL
The value of the *EntityName* parameter refers to a principal name.

***EntityName* (MQCFST)**
Entity name (parameter identifier: MQCACF_ENTITY_NAME).

Depending on the value of *EntityType*, this parameter is either:

- A principal name. This name is the name of a user for whom to retrieve authorizations to the specified object. On WebSphere MQ for Windows, the name of the principal can optionally include a domain name, specified in this format: `user@domain`.
- A group name. This name is the name of the user group on which to make the inquiry. You can specify one name only and this name must be the name of an existing user group.

For IBM WebSphere MQ for Windows only, the group name can optionally include a domain name, specified in the following formats:

```
GroupName@domain
domain\GroupName
```

The maximum length of the string is MQ_ENTITY_NAME_LENGTH.

Optional parameters

***ObjectName* (MQCFST)**
Object name (parameter identifier: MQCACF_OBJECT_NAME).

The name of the queue manager, queue, process definition, or generic profile on which to make the inquiry.

You must include a parameter if the *ObjectType* is not MQOT_Q_MGR. If you do not include this parameter, it is assumed that you are making an inquiry on the queue manager.

You cannot specify a generic object name although you can specify the name of a generic profile.

The maximum length of the string is MQ_OBJECT_NAME_LENGTH.

***ProfileAttrs* (MQCFIL)**
Profile attributes (parameter identifier: MQIACF_AUTH_PROFILE_ATTRS).

The attribute list might specify the following value on its own - default value if the parameter is not specified:

MQIACF_ALL
All attributes.

or a combination of the following:

MQCACF_ENTITY_NAME
Entity name.

MQIACF_AUTHORIZATION_LIST
Authorization list.

MQIACF_ENTITY_TYPE
Entity type.

MQIACF_OBJECT_TYPE
Object type.

***ServiceComponent* (MQCFST)**
Service component (parameter identifier: MQCACF_SERVICE_COMPONENT).

If installable authorization services are supported, this parameter specifies the name of the authorization service to which the authorizations apply.

If you omit this parameter, the authorization inquiry is made to the first installable component for the service.

The maximum length of the string is MQ_SERVICE_COMPONENT_LENGTH.

Error codes

This command might return the following error codes in the response format header, in addition to the values shown in “Error codes applicable to all commands” on page 687.

***Reason* (MQLONG)**
The value can be:

MQRC_UNKNOWN_ENTITY
User ID not authorized, or unknown.

MQRCCF_OBJECT_TYPE_MISSING
Object type missing.

Inquire Entity Authority (Response)

Each response to the Inquire Entity Authority (MQCMD_INQUIRE_AUTH_RECS) command consists of the response header followed by the *QMgrName*, *Options*, and *ObjectName* structures and the requested combination of attribute parameter structures.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

Always returned:
ObjectName, *Options*, *QMgrName*

Returned if requested:
AuthorizationList, *EntityName*, *EntityType*, *ObjectType*

Response data

***AuthorizationList* (MQCFIL)**
Authorization list(parameter identifier: MQIACF_AUTHORIZATION_LIST).

This list can contain zero or more authorization values. Each returned authorization value means that any user ID in the specified group or principal has the authority to perform the operation defined by that value. The value can be:

MQAUTH_NONE
The entity has authority set to 'none'.

MQAUTH_ALT_USER_AUTHORITY
Specify an alternate user ID on an MQI call.

MQAUTH_BROWSE
Retrieve a message from a queue by issuing an MQGET call with the BROWSE option.

MQAUTH_CHANGE
Change the attributes of the specified object, using the appropriate command set.

MQAUTH_CLEAR
Clear a queue.

MQAUTH_CONNECT
Connect the application to the specified queue manager by issuing an MQCONN call.

MQAUTH_CREATE
Create objects of the specified type using the appropriate command set.

MQAUTH_DELETE
Delete the specified object using the appropriate command set.

MQAUTH_DISPLAY
Display the attributes of the specified object using the appropriate command set.

MQAUTH_INPUT
Retrieve a message from a queue by issuing an MQGET call.

MQAUTH_INQUIRE
Make an inquiry on a specific queue by issuing an MQINQ call.

MQAUTH_OUTPUT
Put a message on a specific queue by issuing an MQPUT call.

MQAUTH_PASS_ALL_CONTEXT
Pass all context.

MQAUTH_PASS_IDENTITY_CONTEXT
Pass the identity context.

MQAUTH_SET
Set attributes on a queue from the MQI by issuing an MQSET call.

MQAUTH_SET_ALL_CONTEXT
Set all context on a queue.

MQAUTH_SET_IDENTITY_CONTEXT
Set the identity context on a queue.

MQAUTH_CONTROL
For listeners and services, start and stop the specified channel, listener, or service.

For channels, start, stop, and ping the specified channel.

For topics, define, alter, or delete subscriptions.

MQAUTH_CONTROL_EXTENDED
Reset or resolve the specified channel.

MQAUTH_PUBLISH
Publish to the specified topic.

MQAUTH_SUBSCRIBE
Subscribe to the specified topic.

MQAUTH_RESUME
Resume a subscription to the specified topic.

MQAUTH_SYSTEM
Use queue manager for internal system operations.

MQAUTH_ALL
Use all operations applicable to the object.

MQAUTH_ALL_ADMIN
Use all administration operations applicable to the object.

MQAUTH_ALL_MQI
Use all MQI calls applicable to the object.

Use the *Count* field in the MQCFIL structure to determine how many values are returned.

***EntityName* (MQCFST)**
Entity name (parameter identifier: MQCACF_ENTITY_NAME).

This parameter can either be a principal name or a group name.

The maximum length of the string is MQ_ENTITY_NAME_LENGTH.

***EntityType* (MQCFIN)**
Entity type (parameter identifier: MQIACF_ENTITY_TYPE).

The value can be:

MQZAET_GROUP
The value of the *EntityName* parameter refers to a group name.

MQZAET_PRINCIPAL
The value of the *EntityName* parameter refers to a principal name.

MQZAET_UNKNOWN
On Windows, an authority record still exists from a previous queue manager which did not originally contain entity type information.

***ObjectName* (MQCFST)**
Object name (parameter identifier: MQCACF_OBJECT_NAME).

The name of the queue manager, queue, process definition, or generic profile on which the inquiry is made.

The maximum length of the string is MQ_OBJECT_NAME_LENGTH.

***ObjectType* (MQCFIN)**
Object type (parameter identifier: MQIACF_OBJECT_TYPE).

The value can be:

MQOT_AUTH_INFO
Authentication information.

MQOT_CHANNEL
Channel object.

MQOT_CLNTCONN_CHANNEL
Client-connection channel object.

MQOT_COMM_INFO
Communication information object

MQOT_LISTENER
Listener object.

MQOT_NAMELIST
Namelist.

MQOT_PROCESS
Process.

MQOT_Q
Queue, or queues, that match the object name parameter.

MQOT_Q_MGR
Queue manager.

MQOT_REMOTE_Q_MGR_NAME
Remote queue manager.

MQOT_SERVICE
Service object.

***QMgrName* (MQCFST)**
Name of the queue manager on which the Inquire command is issued (parameter identifier: MQCA_Q_MGR_NAME).

The maximum length of the string is MQ_Q_MGR_NAME_LENGTH.

Inquire Namelist

The Inquire Namelist (MQCMD_INQUIRE_NAMELIST) command inquires about the attributes of existing WebSphere MQ namelists.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

Required parameters:
NamelistName

Optional parameters:
CommandScope, *IntegerFilterCommand*, *NamelistAttrs*, *QSGDisposition*, *StringFilterCommand*

Required parameters

***NamelistName* (MQCFST)**
Namelist name (parameter identifier: MQCA_NAMELIST_NAME).

This parameter is the name of the namelist with attributes that are required. Generic namelist names are supported. A generic name is a character string followed by an asterisk (*), for example ABC*, and

it selects all namelists having names that start with the selected character string. An asterisk on its own matches all possible names.

The namelist name is always returned regardless of the attributes requested.

The maximum length of the string is MQ_NAMELIST_NAME_LENGTH.

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

You cannot use *CommandScope* as a parameter to filter on.

***IntegerFilterCommand* (MQCFIF)**
Integer filter command descriptor. The parameter identifier must be any integer type parameter allowed in *NamelistAttrs* except MQIACF_ALL. Use this parameter to restrict the output from the command by specifying a filter condition. See “MQCFIF - PCF integer filter parameter” on page 1092 for information about using this filter condition.

If you specify an integer filter for *NamelistType* (MQIA_NAMELIST_TYPE), you cannot also specify the *NamelistType* parameter.

If you specify an integer filter, you cannot also specify a string filter using the *StringFilterCommand* parameter.

***NamelistAttrs* (MQCFIL)**
Namelist attributes (parameter identifier: MQIACF_NAMELIST_ATTRS).

The attribute list might specify the following value on its own - default value if the parameter is not specified:

MQIACF_ALL
All attributes.

or a combination of the following:

MQCA_NAMELIST_NAME
Name of namelist object.

MQCA_NAMELIST_DESC
Namelist description.

MQCA_NAMES
Names in the namelist.

MQCA_ALTERATION_DATE
The date on which the information was last altered.

MQCA_ALTERATION_TIME
The time at which the information was last altered.

MQIA_NAME_COUNT
Number of names in the namelist.

MQIA_NAMELIST_TYPE
Namelist type (valid only on z/OS)

***NamelistType* (MQCFIN)**
Namelist attributes (parameter identifier: MQIA_NAMELIST_TYPE). This parameter applies to z/OS only.

Specifies the type of names in the namelist. The value can be:

MQNT_NONE
The names are of no particular type.

MQNT_Q
A namelist that holds a list of queue names.

MQNT_CLUSTER
A namelist that is associated with clustering, containing a list of the cluster names.

MQNT_AUTH_INFO
The namelist is associated with SSL, and contains a list of authentication information object names.

***QSGDisposition* (MQCFIN)**
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object for which information is to be returned (that is, where it is defined and how it behaves). The value can be:

MQQSGD_LIVE
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY. MQQSGD_LIVE is the default value if the parameter is not specified.

MQQSGD_ALL
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY.

If there is a shared queue manager environment, and the command is being executed on the queue manager where it was issued, this option also displays information for objects defined with MQQSGD_GROUP.

If MQQSGD_LIVE is specified or defaulted, or if MQQSGD_ALL is specified in a shared queue manager environment, the command might give duplicated names (with different dispositions).

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_GROUP
The object is defined as MQQSGD_GROUP. MQQSGD_GROUP is permitted only in a shared queue environment.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

MQQSGD_PRIVATE
The object is defined as either MQQSGD_Q_MGR or MQQSGD_COPY. MQQSGD_PRIVATE returns the same information as MQQSGD_LIVE.

You cannot use *QSGDisposition* as a parameter to filter on.

***StringFilterCommand* (MQCFSF)**
String filter command descriptor. The parameter identifier must be any string type parameter allowed in *NamelistAttrs* except MQCA_NAMELIST_NAME. Use this parameter to restrict the output from the command by specifying a filter condition. See “MQCFSF - PCF string filter parameter” on page 1099 for information about using this filter condition.

If you specify a string filter, you cannot also specify an integer filter using the *IntegerFilterCommand* parameter.

Inquire Namelist (Response)

The response to the Inquire Namelist (MQCMD_INQUIRE_NAMELIST) command consists of the response header followed by the *NamelistName* structure and the requested combination of attribute parameter structures.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

If a generic namelist name was specified, one such message is generated for each namelist found.

Always returned:
NamelistName, *QSGDisposition*

Returned if requested:
AlterationDate, *AlterationTime*, *NameCount*, *NamelistDesc*, *NamelistType*, *Names*

Response data

***AlterationDate* (MQCFST)**
Alteration date (parameter identifier: MQCA_ALTERATION_DATE).

The date when the information was last altered, in the form `yyyy-mm-dd`.

***AlterationTime* (MQCFST)**
Alteration time (parameter identifier: MQCA_ALTERATION_TIME).

The time when the information was last altered, in the form `hh.mm.ss`.

***NameCount* (MQCFIN)**
Number of names in the namelist (parameter identifier: MQIA_NAME_COUNT).

The number of names contained in the namelist.

***NamelistDesc* (MQCFST)**
Description of namelist definition (parameter identifier: MQCA_NAMELIST_DESC).

The maximum length of the string is MQ_NAMELIST_DESC_LENGTH.

***NamelistName* (MQCFST)**
The name of the namelist definition (parameter identifier: MQCA_NAMELIST_NAME).

The maximum length of the string is MQ_NAMELIST_NAME_LENGTH.

***NamelistType* (MQCFIN)**
Type of names in the namelist (parameter identifier: MQIA_NAMELIST_TYPE). This parameter applies to z/OS only.

Specifies the type of names in the namelist. The value can be:

MQNT_NONE
The names are of no particular type.

MQNT_Q
A namelist that holds a list of queue names.

MQNT_CLUSTER
A namelist that is associated with clustering, containing a list of the cluster names.

MQNT_AUTH_INFO
The namelist is associated with SSL, and contains a list of authentication information object names.

***Names* (MQCFSL)**
A list of the names contained in the namelist (parameter identifier: MQCA_NAMES).

The number of names in the list is given by the *Count* field in the MQCFSL structure. The length of each name is given by the *StringLength* field in that structure. The maximum length of a name is MQ_OBJECT_NAME_LENGTH.

***QSGDisposition* (MQCFIN)**
QSG disposition (parameter identifier: MQIA_QSG_DISP).

Specifies the disposition of the object (that is, where it is defined and how it behaves). This parameter applies only to z/OS. The value can be:

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_GROUP
The object is defined as MQQSGD_GROUP.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

Inquire Namelist Names

The Inquire Namelist Names (MQCMD_INQUIRE_NAMELIST_NAMES) command inquires for a list of namelist names that match the generic namelist name specified.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

Required parameters

***NamelistName* (MQCFST)**
Name of namelist (parameter identifier: MQCA_NAMELIST_NAME).

Generic namelist names are supported. A generic name is a character string followed by an asterisk (*), for example ABC*, and it selects all objects having names that start with the selected character string. An asterisk on its own matches all possible names.

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***QSGDisposition* (MQCFIN)**
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object for which information is to be returned (that is, where it is defined and how it behaves). The value can be:

MQQSGD_LIVE
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY. MQQSGD_LIVE is the default value if the parameter is not specified.

MQQSGD_ALL
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY.

If there is a shared queue manager environment, and the command is being executed on the queue manager where it was issued, this option also displays information for objects defined with MQQSGD_GROUP.

If MQQSGD_LIVE is specified or defaulted, or if MQQSGD_ALL is specified in a shared queue manager environment, the command might give duplicated names (with different dispositions).

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_GROUP
The object is defined as MQQSGD_GROUP. MQQSGD_GROUP is permitted only in a shared queue environment.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

MQQSGD_PRIVATE
The object is defined with either MQQSGD_Q_MGR or MQQSGD_COPY. MQQSGD_PRIVATE returns the same information as MQQSGD_LIVE.

Inquire Namelist Names (Response)

The response to the Inquire Namelist Names (MQCMD_INQUIRE_NAMELIST_NAMES) command consists of the response header followed by a single parameter structure giving zero or more names that match the specified namelist name.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

Additionally, on z/OS only, the *QSGDispositions* structure (with the same number of entries as the *NamelistNames* structure) is returned. Each entry in this structure indicates the disposition of the object with the corresponding entry in the *NamelistNames* structure.

Always returned:
NamelistNames, *QSGDispositions*

Returned if requested:
None

Response data

***NamelistNames* (MQCFSL)**
List of namelist names (parameter identifier: MQCACF_NAMELIST_NAMES).

***QSGDispositions* (MQCFIL)**
List of QSG dispositions (parameter identifier: MQIACF_QSG_DISPS). This parameter is valid only on z/OS. Possible values for fields in this structure are:

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_GROUP
The object is defined as MQQSGD_GROUP. MQQSGD_GROUP is permitted only in a shared queue environment.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

Inquire Process

The Inquire Process (MQCMD_INQUIRE_PROCESS) command inquires about the attributes of existing WebSphere MQ processes.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

Required parameters

***ProcessName* (MQCFST)**
Process name (parameter identifier: MQCA_PROCESS_NAME).

Generic process names are supported. A generic name is a character string followed by an asterisk (*), for example ABC*, and it selects all processes having names that start with the selected character string. An asterisk on its own matches all possible names.

The process name is always returned regardless of the attributes requested.

The maximum length of the string is MQ_PROCESS_NAME_LENGTH.

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

You cannot use *CommandScope* as a parameter to filter on.

***IntegerFilterCommand* (MQCFIF)**
Integer filter command descriptor. The parameter identifier must be any integer type parameter allowed in *ProcessAttrs* except MQIACF_ALL. Use this parameter to restrict the output from the command by specifying a filter condition. See “MQCFIF - PCF integer filter parameter” on page 1092 for information about using this filter condition.

If you specify an integer filter, you cannot also specify a string filter using the *StringFilterCommand* parameter.

***ProcessAttrs* (MQCFIL)**
Process attributes (parameter identifier: MQIACF_PROCESS_ATTRS).

The attribute list might specify the following value on its own - default value used if the parameter is not specified:

MQIACF_ALL
All attributes.

or a combination of the following:

MQCA_ALTERATION_DATE
The date at which the information was last altered.

MQCA_ALTERATION_TIME
The time at which the information was last altered.

MQCA_APPL_ID
Application identifier.

MQCA_ENV_DATA
Environment data.

MQCA_PROCESS_DESC
Description of process definition.

MQCA_PROCESS_NAME
Name of process definition.

MQCA_USER_DATA
User data.

MQIA_APPL_TYPE
Application type.

***QSGDisposition* (MQCFIN)**
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object for which information is to be returned (that is, where it is defined and how it behaves). The value can be:

MQQSGD_LIVE
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY. MQQSGD_LIVE is the default value if the parameter is not specified.

MQQSGD_ALL
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY.

If there is a shared queue manager environment, and the command is being executed on the queue manager where it was issued, this option also displays information for objects defined with MQQSGD_GROUP.

If MQQSGD_LIVE is specified or defaulted, or if MQQSGD_ALL is specified in a shared queue manager environment, the command might give duplicated names (with different dispositions).

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_GROUP
The object is defined as MQQSGD_GROUP. MQQSGD_GROUP is permitted only in a shared queue environment.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

MQQSGD_PRIVATE
The object is defined as either MQQSGD_Q_MGR or MQQSGD_COPY. MQQSGD_PRIVATE returns the same information as MQQSGD_LIVE.

You cannot use *QSGDisposition* as a parameter to filter on.

***StringFilterCommand* (MQCFSF)**
String filter command descriptor. The parameter identifier must be any string type parameter allowed in *ProcessAttrs* except MQCA_PROCESS_NAME. Use this parameter to restrict the output from the command by specifying a filter condition. See "MQCFSF - PCF string filter parameter" on page 1099 for information about using this filter condition.

If you specify a string filter, you cannot also specify an integer filter using the *IntegerFilterCommand* parameter.

Inquire Process (Response)

The response to the Inquire Process (MQCMD_INQUIRE_PROCESS) command consists of the response header followed by the *ProcessName* structure and the requested combination of attribute parameter structures.

HP Integrity NonStop Server	UNIX and Linux systems	Windows
X	X	X

If a generic process name was specified, one such message is generated for each process found.

Always returned:
ProcessName, *QSGDisposition*

Returned if requested:
AlterationDate, *AlterationTime*, *ApplId*, *ApplType*, *EnvData*, *ProcessDesc*, *UserData*

Response data

***AlterationDate* (MQCFST)**
Alteration date (parameter identifier: MQCA_ALTERATION_DATE).

The date when the information was last altered, in the form `yyyy-mm-dd`.

***AlterationTime* (MQCFST)**
Alteration time (parameter identifier: MQCA_ALTERATION_TIME).

The time when the information was last altered, in the form `hh.mm.ss`.

***ApplId* (MQCFST)**
Application identifier (parameter identifier: MQCA_APPL_ID).

The maximum length of the string is MQ_PROCESS_APPL_ID_LENGTH.

***ApplType* (MQCFIN)**
Application type (parameter identifier: MQIA_APPL_TYPE).

The value can be:

MQAT_AIX
AIX application (same value as MQAT_UNIX)

MQAT_CICS
CICS transaction

MQAT_DOS
DOS client application

MQAT_MVS
z/OS application

MQAT_OS400
IBM i application

MQAT_QMGR
Queue manager

MQAT_UNIX
UNIX application

MQAT_WINDOWS
16-bit Windows application

MQAT_WINDOWS_NT
32-bit Windows application

integer
System-defined application type in the range zero through 65 535 or a user-defined application type in the range 65 536 through 999 999 999

***EnvData* (MQCFST)**
Environment data (parameter identifier: MQCA_ENV_DATA).

The maximum length of the string is MQ_PROCESS_ENV_DATA_LENGTH.

***ProcessDesc* (MQCFST)**
Description of process definition (parameter identifier: MQCA_PROCESS_DESC).

The maximum length of the string is MQ_PROCESS_DESC_LENGTH.

***ProcessName* (MQCFST)**
The name of the process definition (parameter identifier: MQCA_PROCESS_NAME).

The maximum length of the string is MQ_PROCESS_NAME_LENGTH.

***QSGDisposition* (MQCFIN)**
QSG disposition (parameter identifier: MQIA_QSG_DISP).

Specifies the disposition of the object (that is, where it is defined and how it behaves). This parameter is valid on z/OS only. The value can be:

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_GROUP
The object is defined as MQQSGD_GROUP.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

***UserData* (MQCFST)**
User data (parameter identifier: MQCA_USER_DATA).

The maximum length of the string is MQ_PROCESS_USER_DATA_LENGTH.

Inquire Process Names

The Inquire Process Names (MQCMD_INQUIRE_PROCESS_NAMES) command inquires for a list of process names that match the generic process name specified.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

Required parameters

***ProcessName* (MQCFST)**
Name of process-definition for queue (parameter identifier: MQCA_PROCESS_NAME).

Generic process names are supported. A generic name is a character string followed by an asterisk (*), for example ABC*, and it selects all objects having names that start with the selected character string. An asterisk on its own matches all possible names.

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***QSGDisposition* (MQCFIN)**
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object for which information is to be returned (that is, where it is defined and how it behaves). The value can be:

MQQSGD_LIVE
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY. MQQSGD_LIVE is the default value if the parameter is not specified.

MQQSGD_ALL
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY.

If there is a shared queue manager environment, and the command is being executed on the queue manager where it was issued, this option also displays information for objects defined with MQQSGD_GROUP.

If MQQSGD_LIVE is specified or defaulted, or if MQQSGD_ALL is specified in a shared queue manager environment, the command might give duplicated names (with different dispositions).

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_GROUP
The object is defined as MQQSGD_GROUP. MQQSGD_GROUP is permitted only in a shared queue environment.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

MQQSGD_PRIVATE
The object is defined with either MQQSGD_Q_MGR or MQQSGD_COPY. MQQSGD_PRIVATE returns the same information as MQQSGD_LIVE.

Inquire Process Names (Response)

The response to the Inquire Process Names (MQCMD_INQUIRE_PROCESS_NAMES) command consists of the response header followed by a single parameter structure giving zero or more names that match the specified process name.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

Additionally, on z/OS only, a parameter structure, *QSGDispositions* (with the same number of entries as the *ProcessNames* structure) is returned. Each entry in this structure indicates the disposition of the object with the corresponding entry in the *ProcessNames* structure.

This response is not supported on Windows.

Always returned:
ProcessNames, *QSGDispositions*

Returned if requested:
None

Response data

***ProcessNames* (MQCFSL)**
List of process names (parameter identifier: MQCACF_PROCESS_NAMES).

***QSGDispositions* (MQCFIL)**
List of QSG dispositions (parameter identifier: MQIACF_QSG_DISPS). This parameter applies only to z/OS. Possible values for fields in this structure are:

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_GROUP
The object is defined as MQQSGD_GROUP.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

Inquire Pub/Sub Status

The Inquire Pub/Sub Status (MQCMD_INQUIRE_PUBSUB_STATUS) command inquires about the status of publish/subscribe connections.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE).

This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

blank (or omit the parameter altogether)
The command is executed on the queue manager on which it was entered.

a queue manager name
The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.

an asterisk (*)
The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

You cannot use CommandScope as a parameter to filter on.

***PubSubStatusAttrs* (MQCFIL)**
Publish/subscribe status attributes (parameter identifier: MQIACF_PUBSUB_STATUS_ATTRS).

The attribute list might specify the following value on its own - default value if the parameter is not specified:

MQIACF_ALL
All attributes.

or a combination of the following:

MQIACF_PUBSUB_STATUS
Hierarchy status.

MQIACF_PS_STATUS_TYPE
Hierarchy type.

***Type* (MQCFIN)**
Type (parameter identifier: MQIACF_PS_STATUS_TYPE).

The type can specify one of the following:

MQPSST_ALL
Return status of both parent and child connections. MQPSST_ALL is the default value if the parameter is not specified.

MQPSST_LOCAL
Return local status information.

MQPSST_PARENT
Return status of the parent connection.

MQPSST_CHILD
Return status of the child connections.

Inquire Pub/Sub Status (Response)

The response to the Inquire publish/subscribe Status (MQCMD_INQUIRE_PUBSUB_STATUS) command consists of the response header followed by the attribute structures.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

A group of parameters is returned containing the following attributes: *Type*, *QueueManagerName*, and *Status*.

Always returned:
QueueManagerName, *Status*, *Type*

Returned if requested:
None

Response data

***QueueManagerName* (MQCFST)**
Either the name of the local queue manager when TYPE is LOCAL, or the name of the hierarchically connected queue manager (parameter identifier: MQCA_Q_MGR_NAME).

***Type* (MQCFIN)**
Type of status that is being returned (parameter identifier: MQIACF_PS_ STATUS_TYPE).

The value can be:

MQPSST_CHILD
Publish/subscribe status for a child hierarchical connection.

MQPSST_LOCAL
Publish/subscribe status for the local queue manager.

MQPSST_PARENT
Publish/subscribe status for the parent hierarchical connection.

***Status* (MQCFIN)**
The status of the publish/subscribe engine or the hierarchical connection (parameter identifier: MQIACF_PUBSUB_STATUS).

When TYPE is LOCAL the following values can be returned:

MQPS_STATUS_ACTIVE
The publish/subscribe engine and the queued publish/subscribe interface are running. It is therefore possible to publish or subscribe using the application programming interface and the queues that are monitored by the queued publish/subscribe interface appropriately.

MQPS_STATUS_COMPAT
The publish/subscribe engine is running. It is therefore possible to publish or subscribe using the application programming interface. The queued publish/subscribe interface is not running. Therefore, any message that is put to the queues monitored by the queued publish/subscribe interface is not acted upon by WebSphere MQ.

MQPS_STATUS_ERROR
The publish/subscribe engine has failed. Check your error logs to determine the reason for the failure.

MQPS_STATUS_INACTIVE
The publish/subscribe engine and the queued publish/subscribe interface are not running. It is therefore not possible to publish or subscribe using the application programming interface. Any publish/subscribe messages that are put to the queues that are monitored by the queued publish/subscribe interface is not acted upon by WebSphere MQ.

If inactive and you want to start the publish/subscribe engine, on the Change Queue Manager command set PubSubMode to **MQPSM_ENABLED**.

MQPS_STATUS_STARTING
The publish/subscribe engine is initializing and is not yet operational.

MQPS_STATUS_STOPPING
The publish/subscribe engine is stopping.

When TYPE is PARENT, the following values can be returned:

MQPS_STATUS_ACTIVE
The connection with the parent queue manager is active.

MQPS_STATUS_ERROR
This queue manager is unable to initialize a connection with the parent queue manager because of a configuration error.

A message is produced in the queue manager logs to indicate the specific error. If you receive error message AMQ5821 or on z/OS systems CSQT821E, possible causes include:

- Transmit queue is full
- Transmit queue put disabled

If you receive error message AMQ5814 or on z/OS systems CSQT814E, take the following actions:

- Check that the parent queue manager is correctly specified.
- Ensure that broker is able to resolve the queue manager name of the parent broker.

To resolve the queue manager name, at least one of the following resources must be configured:

- A transmission queue with the same name as the parent queue manager name.

- A queue manager alias definition with the same name as the parent queue manager name.
- A cluster with the parent queue manager a member of the same cluster as this queue manager.
- A cluster queue manager alias definition with the same name as the parent queue manager name.
- A default transmission queue.

After you have set up the configuration correctly, modify the parent queue manager name to blank. Then set with the parent queue manager name.

MQPS_STATUS_REFUSED
The connection has been refused by the parent queue manager.

This situation might be caused by the parent queue manager already having another child queue manager of the same name as this queue manager.

Alternatively, the parent queue manager has used the RESET QMGR TYPE(PUBSUB) CHILD command to remove this queue manager as one of its children.

MQPS_STATUS_STARTING
The queue manager is attempting to request that another queue manager is its parent.

If the parent status remains in starting status without progressing to active status, take the following actions:

- Check that the sender channel to parent queue manager is running
- Check that the receiver channel from parent queue manager is running

MQPS_STATUS_STOPPING
The queue manager is disconnecting from its parent.

If the parent status remains in stopping status, take the following actions:

- Check that the sender channel to parent queue manager is running
- Check that the receiver channel from parent queue manager is running

When TYPE is CHILD, the following values can be returned:

MQPS_STATUS_ACTIVE
The connection with the parent queue manager is active.

MQPS_STATUS_ERROR
This queue manager is unable to initialize a connection with the parent queue manager because of a configuration error.

A message is produced in the queue manager logs to indicate the specific error. If you receive error message AMQ5821 or on z/OS systems CSQT821E, possible causes include:

- Transmit queue is full
- Transmit queue put disabled

If you receive error message AMQ5814 or on z/OS systems CSQT814E, take the following actions:

- Check that the child queue manager is correctly specified.
- Ensure that broker is able to resolve the queue manager name of the child broker.

To resolve the queue manager name, at least one of the following resources must be configured:

- A transmission queue with the same name as the child queue manager name.
- A queue manager alias definition with the same name as the child queue manager name.
- A cluster with the child queue manager a member of the same cluster as this queue manager.
- A cluster queue manager alias definition with the same name as the child queue manager name.
- A default transmission queue.

After you have set up the configuration correctly, modify the child queue manager name to blank. Then set with the child queue manager name.

MQPS_STATUS_STARTING
The queue manager is attempting to request that another queue manager is its parent.

If the child status remains in starting status without progressing to active status, take the following actions:

- Check that the sender channel to child queue manager is running
- Check that the receiver channel from child queue manager is running

MQPS_STATUS_STOPPING
The queue manager is disconnecting from its parent.

If the child status remains in stopping status, take the following actions:

- Check that the sender channel to child queue manager is running
- Check that the receiver channel from child queue manager is running

Inquire Queue

Use the Inquire Queue command MQCMD_INQUIRE_Q to query the attributes of IBM WebSphere MQ queues.

HP Integrity NonStop Server	UNIX and Linux	Windows
✓	✓	✓

Required parameters

***QName* (MQCFST)**
Queue name (parameter identifier: MQCA_Q_NAME).

Generic queue names are supported. A generic name is a character string followed by an asterisk *; for example ABC*. It selects all queues having names that start with the selected character string. An asterisk on its own matches all possible names.

The queue name is always returned, regardless of the attributes requested.

The maximum length of the string is MQ_Q_NAME_LENGTH.

Optional parameters

***CFStructure* (MQCFST)**
Storage class (parameter identifier: MQCA_CF_STRUC_NAME). Specifies the name of the storage class. This parameter is valid only on z/OS.

This parameter specifies that eligible queues are limited to those having the specified *CFStructure* value. If this parameter is not specified, then all queues are eligible.

Generic CF structure names are supported. A generic name is a character string followed by an asterisk *; for example ABC*. It selects all CF structures having names that start with the selected character string. An asterisk on its own matches all possible names.

The maximum length of the string is MQ_CF_STRUC_NAME_LENGTH.

***ClusterInfo* (MQCFIN)**
Cluster information (parameter identifier: MQIACF_CLUSTER_INFO).

This parameter requests that cluster information about these queues and other queues in the repository that match the selection criteria is displayed. The cluster information is displayed in addition to information about attributes of queues defined on this queue manager.

In this case, there might be multiple queues with the same name displayed. The cluster information is shown with a queue type of MQQT_CLUSTER.

You can set this parameter to any integer value, the value used does not affect the response to the command.

The cluster information is obtained locally from the queue manager.

***ClusterName* (MQCFST)**
Cluster name (parameter identifier: MQCA_CLUSTER_NAME).

This parameter specifies that eligible queues are limited to those having the specified *ClusterName* value. If this parameter is not specified, then all queues are eligible.

Generic cluster names are supported. A generic name is a character string followed by an asterisk *; for example ABC*. It selects all clusters having names that start with the selected character string. An asterisk on its own matches all possible names.

The maximum length of the string is MQ_CLUSTER_NAME_LENGTH.

***ClusterNamelist* (MQCFST)**
Cluster namelist (parameter identifier: MQCA_CLUSTER_NAMELIST).

This parameter specifies that eligible queues are limited to those having the specified *ClusterNameList* value. If this parameter is not specified, then all queues are eligible.

Generic cluster namelists are supported. A generic name is a character string followed by an asterisk *; for example ABC*. It selects all cluster namelists having names that start with the selected character string. An asterisk on its own matches all possible names.

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following values:

- Blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- A queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment. The command server must be enabled.
- An asterisk "*". The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

You cannot use *CommandScope* as a parameter to filter on.

***IntegerFilterCommand*(MQCFIF)**
Integer filter command descriptor. The parameter identifier must be any integer type parameter allowed in *QAttrs* except MQIACF_ALL. Use this parameter to restrict the output from the command by specifying a filter condition. See “MQCFIF - PCF integer filter parameter” on page 1092 for information about using this filter condition.

If you specify an integer filter for *Qtype* or *PageSetID*, you cannot also specify the *Qtype* or *PageSetID* parameter.

If you specify an integer filter, you cannot also specify a string filter using the *StringFilterCommand* parameter.

***PageSetID* (MQCFIN)**
Page set identifier (parameter identifier: MQIA_PAGESET_ID). This parameter applies to z/OS only.

This parameter specifies that eligible queues are limited to those having the specified *PageSetID* value. If this parameter is not specified, then all queues are eligible.

***QAttrs* (MQCFIL)**
Queue attributes (parameter identifier: MQIACF_Q_ATTRS).

The attribute list might specify the following value on its own. If the parameter is not specified, this value is the default:

MQIACF_ALL
All attributes.

You can also specify a combination of the parameters in the following table:

Table 67. Inquire Queue command, queue attributes

	Local queue	Model queue	Alias queue	Remote queue	Cluster queue
MQCA_ALTERATION_DATE The date on which the information was last altered	✓	✓	✓	✓	✓
MQCA_ALTERATION_TIME The time at which the information was last altered	✓	✓	✓	✓	✓
MQCA_BACKOUT_REQ_Q_NAME Excessive backout requeue name	✓	✓			
MQCA_BASE_NAME Name of queue that alias resolves to			✓		
MQCA_CF_STRUC_NAME Coupling facility structure name. This attribute is valid on z/OS only	✓	✓			
MQCA_CLUS_CHL_NAME The generic name of the cluster-sender channels that use this queue as a transmission queue.	✓	✓			
MQCA_CLUSTER_DATE Date when the definition became available to the local queue manager					✓
MQCA_CLUSTER_NAME Cluster name	✓		✓	✓	✓
MQCA_CLUSTER_NAMELIST Cluster namelist	✓		✓	✓	
MQCA_CLUSTER_Q_MGR_NAME Queue manager name that hosts the queue					✓

Table 67. Inquire Queue command, queue attributes (continued)					
	Local queue	**Model queue**	**Alias queue**	**Remote queue**	**Cluster queue**
MQCA_CLUSTER_TIME Time when the definition became available to the local queue manager					✓
MQCA_CREATION_DATE Queue creation date	✓	✓			
MQCA_CREATION_TIME Queue creation time	✓	✓			
MQCA_CUSTOM The custom attribute for new features	✓	✓	✓	✓	✓
MQCA_INITIATION_Q_NAME Initiation queue name	✓	✓			
MQCA_PROCESS_NAME Name of process definition	✓	✓			
MQCA_Q_DESC Queue description	✓	✓	✓	✓	✓
MQCA_Q_MGR_IDENTIFIER Internally generated queue manager name					✓
MQCA_Q_NAME Queue name	✓	✓	✓	✓	✓
MQCA_REMOTE_Q_MGR_NAME Name of remote queue manager				✓	
MQCA_REMOTE_Q_NAME Name of remote queue as known locally on the remote queue manager				✓	
MQCA_STORAGE_CLASS Storage class. MQCA_STORAGE_CLASS is valid on z/OS only	✓	✓			
MQCA_TPIPE_NAME The **TPIPE** name used for communication with OTMA using the WebSphere MQ IMS Bridge	✓				
MQCA_TRIGGER_DATA Trigger data	✓	✓			

Table 67. Inquire Queue command, queue attributes (continued)					
	Local queue	**Model queue**	**Alias queue**	**Remote queue**	**Cluster queue**
MQCA_XMIT_Q_NAME Transmission queue name				✓	
MQIA_ACCOUNTING_Q Accounting data collection	✓	✓			
MQIA_BACKOUT_THRESHOLD Backout threshold	✓	✓			
MQIA_BASE_TYPE Type of object	✓	✓	✓	✓	✓
MQIA_CLUSTER_Q_TYPE Cluster queue type					✓
MQIA_CLWL_Q_PRIORITY Cluster workload queue priority	✓		✓	✓	✓
MQIA_CLWL_Q_RANK Cluster workload queue rank	✓		✓	✓	✓
MQIA_CLWL_USEQ Cluster workload use remote setting	✓				
MQIA_CURRENT_Q_DEPTH Number of messages on queue	✓				
MQIA_DEF_BIND Default binding	✓		✓	✓	✓
MQIA_DEF_INPUT_OPEN_OPTION Default open-for-input option	✓	✓			
MQIA_DEF_PERSISTENCE Default message persistence	✓	✓	✓	✓	✓
MQIA_DEF_PRIORITY Default message priority	✓	✓	✓	✓	✓
MQIA_DEF_PUT_RESPONSE_TYPE Default put response type	✓	✓	✓	✓	✓
MQIA_DEF_READ_AHEAD Default put response type	✓	✓	✓	✓	✓
MQIA_DEFINITION_TYPE Queue definition type	✓	✓			

Table 67. Inquire Queue command, queue attributes (continued)

	Local queue	Model queue	Alias queue	Remote queue	Cluster queue
MQIA_DIST_LISTS Distribution list support. MQIA_DIST_LISTS is not valid on z/OS	✓	✓			
MQIA_HARDEN_GET_BACKOUT Whether to harden backout count	✓	✓			
MQIA_INDEX_TYPE Index type. This attribute is valid on z/OS only.	✓	✓			
MQIA_INHIBIT_GET Whether get operations are allowed	✓	✓	✓		
MQIA_INHIBIT_PUT Whether put operations are allowed	✓	✓	✓	✓	✓
MQIA_MAX_MSG_LENGTH Maximum message length	✓	✓			
MQIA_MAX_Q_DEPTH Maximum number of messages allowed on queue	✓	✓			
MQIA_MONITORING_Q Online monitoring data collection	✓	✓			
MQIA_MSG_DELIVERY_SEQUENCE Whether message priority is relevant	✓	✓			
MQIA_NPM_CLASS Level of reliability assigned to non-persistent messages that are put to the queue	✓	✓			
MQIA_OPEN_INPUT_COUNT Number of MQOPEN calls that have the queue open for input	✓				
MQIA_OPEN_OUTPUT_COUNT Number of MQOPEN calls that have the queue open for output	✓				
MQIA_PAGESET_ID Page set identifier	✓				
MQIA_PROPERTY_CONTROL Property control attribute	✓	✓	✓		

Table 67. Inquire Queue command, queue attributes (continued)

	Local queue	Model queue	Alias queue	Remote queue	Cluster queue
MQIA_Q_DEPTH_HIGH_EVENT Control attribute for queue depth high events. You cannot use MQIA_Q_DEPTH_HIGH_EVENT as a filter attribute.	✓	✓			
MQIA_Q_DEPTH_HIGH_LIMIT High limit for queue depth	✓	✓			
MQIA_Q_DEPTH_LOW_EVENT Control attribute for queue depth low events. You cannot use MQIA_Q_DEPTH_LOW_EVENT as a filter attribute.	✓	✓			
MQIA_Q_DEPTH_LOW_LIMIT Low limit for queue depth	✓	✓			
MQIA_Q_DEPTH_MAX_EVENT Control attribute for queue depth max events	✓	✓			
MQIA_Q_SERVICE_INTERVAL Limit for queue service interval	✓	✓			
MQIA_Q_SERVICE_INTERVAL_ EVENT Control attribute for queue service interval events	✓	✓			
MQIA_Q_TYPE Queue type	✓	✓	✓	✓	✓
MQIA_RETENTION_INTERVAL Queue retention interval	✓	✓			
MQIA_SCOPE Queue definition scope. MQIA_SCOPE is not valid on z/OS or IBM i	✓		✓	✓	
MQIA_SHAREABILITY Whether queue can be shared	✓	✓			

Table 67. Inquire Queue command, queue attributes (continued)					
	Local queue	**Model queue**	**Alias queue**	**Remote queue**	**Cluster queue**
MQIA_STATISTICS_Q Statistics data collection. MQIA_STATISTICS_Q is valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.	✓	✓			
MQIA_TRIGGER_CONTROL Trigger control	✓	✓			
MQIA_TRIGGER_DEPTH Trigger depth	✓	✓			
MQIA_TRIGGER_MSG_PRIORITY Threshold message priority for triggers	✓	✓			
MQIA_TRIGGER_MTYPE Trigger type	✓	✓			
MQIA_USAGE Usage	✓	✓			

***QSGDisposition* (MQCFIN)**
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object for which information is to be returned. The meaning of "the disposition of an object" is where the object is defined and how it behaves. The value can be:

MQQSGD_LIVE
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY. In a shared queue manager environment, if the command is run on the queue manager where it was issued, MQQSGD_LIVE also returns information for objects defined with MQQSGD_SHARED. MQQSGD_LIVE is the default value if the parameter is not specified.

MQQSGD_ALL
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY.

In a shared queue manager environment, if the command is run on the queue manager where it was issued, MQQSGD_ALL also displays information for objects defined with MQQSGD_GROUP or MQQSGD_SHARED.

If MQQSGD_LIVE is specified or defaulted, or if MQQSGD_ALL is specified in a shared queue manager environment, the command might give duplicated names, with different dispositions.

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_GROUP
The object is defined as MQQSGD_GROUP. MQQSGD_GROUP is permitted only in a shared queue environment.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

MQQSGD_PRIVATE
The object is defined with either MQQSGD_Q_MGR or MQQSGD_COPY.

MQQSGD_SHARED
The object is defined as MQQSGD_SHARED. MQQSGD_SHARED is permitted only in a shared queue environment.

You cannot use *QSGDisposition* as a parameter to filter on.

***QType* (MQCFIN)**
Queue type (parameter identifier: MQIA_Q_TYPE).

If this parameter is present, eligible queues are limited to the specified type. Any attribute selector specified in the *QAttrs* list which is valid only for queues of a different type or types is ignored; no error is raised.

If this parameter is not present, or if MQQT_ALL is specified, queues of all types are eligible. Each attribute specified must be a valid queue attribute selector. The attribute can apply to some of the queues returned. It does not have to apply to all the queues. Queue attribute selectors that are valid but not applicable to the queue are ignored, no error messages occur and no attribute is returned. The following lists contains the value of all valid queue attribute selectors:

MQQT_ALL
All queue types.

MQQT_LOCAL
Local queue.

MQQT_ALIAS
Alias queue definition.

MQQT_REMOTE
Local definition of a remote queue.

MQQT_CLUSTER
Cluster queue.

MQQT_MODEL
Model queue definition.

Note: On platforms other than z/OS, if this parameter is present, it must occur immediately after the *QName* parameter.

***StorageClass* (MQCFST)**
Storage class (parameter identifier: MQCA_STORAGE_CLASS). Specifies the name of the storage class. This parameter is valid only on z/OS.

This parameter specifies that eligible queues are limited to those having the specified *StorageClass* value. If this parameter is not specified, then all queues are eligible.

Generic names are supported. A generic name is a character string followed by an asterisk *; for example ABC*. It selects all storage classes having names that start with the selected character string. An asterisk on its own matches all possible names.

The maximum length of the string is MQ_STORAGE_CLASS_LENGTH.

***StringFilterCommand*(MQCFSF)**
String filter command descriptor. The parameter identifier must be any string type parameter allowed in *QAttrs* except MQCA_Q_NAME. Use this parameter to restrict the output from the command by specifying a filter condition. See "MQCFSF - PCF string filter parameter" on page 1099 for information about using this filter condition.

If you specify a string filter for *ClusterName*, *ClusterNameList*, *StorageClass*, or *CFStructure*, you cannot also specify that as a parameter.

If you specify a string filter, you cannot also specify an integer filter using the *IntegerFilterCommand* parameter.

Error codes

This command might return the following error code in the response format header, in addition to the values shown in "Error codes applicable to all commands" on page 687.

Reason **(MQLONG)**
The value can be:

MQRCCF_Q_TYPE_ERROR
Queue type not valid.

Inquire Queue (Response)

The response to the Inquire Queue command MQCMD_INQUIRE_Q consists of the response header followed by the *QName* structure. On z/OS only, response includes the *QSGDisposition* structure, and the requested combination of attribute parameter structures.

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✓	✓	✓

If a generic queue name was specified, or cluster queues requested, by setting either MQQT_CLUSTER or MQIACF_CLUSTER_INFO, one message is generated for each queue found.

Always returned:
QName, *QSGDisposition*, *QType*

Returned if requested:
AlterationDate, *AlterationTime*, *BackoutRequeueName*, *BackoutThreshold*, *BaseQName*, *CFStructure*, *ClusterChannelName*, *ClusterDate*, *ClusterName*, *ClusterNamelist*, *ClusterQType*, *ClusterTime*, *CLWLQueuePriority*, *CLWLQueueRank*, *CLWLUseQ*, *CreationDate*, *CreationTime*, *CurrentQDepth*, *Custom*, *DefaultPutResponse*, *DefBind*, *DefinitionType*, *DefInputOpenOption*, *DefPersistence*, *DefPriority*, *DefReadAhead*, *DistLists*, *HardenGetBackout*, *IndexType*, *InhibitGet*, *InhibitPut*, *InitiationQName*, *MaxMsgLength*, *MaxQDepth*, *MsgDeliverySequence*, *NonPersistentMessageClass*, *OpenInputCount*, *OpenOutputCount*, *PageSetID*, *ProcessName*, *PropertyControl*, *QDepthHighEvent*, *QDepthHighLimit*, *QDepthLowEvent*, *QDepthLowLimit*, *QDepthMaxEvent*, *QDesc*, *QMgrIdentifier*, *QMgrName*, *QServiceInterval*, *QServiceIntervalEvent*, *QueueAccounting*, *QueueMonitoring*, *QueueStatistics*, *RemoteQMgrName*, *RemoteQName*, *RetentionInterval*, *Scope*, *Shareability*, *StorageClass*, *TpipeNames*, *TriggerControl*, *TriggerData*, *TriggerDepth*, *TriggerMsgPriority*, *TriggerType*, *Usage*, *XmitQName*

Response data

AlterationDate **(MQCFST)**
Alteration date (parameter identifier: MQCA_ALTERATION_DATE).

The date when the information was last altered, in the form yyyy-mm-dd.

AlterationTime **(MQCFST)**
Alteration time (parameter identifier: MQCA_ALTERATION_TIME).

The time when the information was last altered, in the form hh.mm.ss.

BackoutRequeueName **(MQCFST)**
Excessive backout requeue name (parameter identifier: MQCA_BACKOUT_REQ_Q_NAME).

The maximum length of the string is MQ_Q_NAME_LENGTH.

BackoutThreshold **(MQCFIN)**
Backout threshold (parameter identifier: MQIA_BACKOUT_THRESHOLD).

BaseQName **(MQCFST)**
Queue name to which the alias resolves (parameter identifier: MQCA_BASE_Q_NAME).

The name of a queue that is defined to the local queue manager.

The maximum length of the string is MQ_Q_NAME_LENGTH.

***CFStructure* (MQCFST)**
Coupling facility structure name (parameter identifier: MQCA_CF_STRUC_NAME). This parameter applies to z/OS only.

Specifies the name of the coupling facility structure where you want to store messages when you use shared queues.

The maximum length of the string is MQ_CF_STRUC_NAME_LENGTH.

***ClusterChannelName* (MQCFST)**
Cluster-sender channel name (parameter identifier: MQCA_CLUS_CHL_NAME).

ClusterChannelName is the generic name of the cluster-sender channels that use this queue as a transmission queue.

The maximum length of the channel name is: MQ_CHANNEL_NAME_LENGTH.

***ClusterDate* (MQCFST)**
Cluster date (parameter identifier: MQCA_CLUSTER_DATE).

The date on which the information became available to the local queue manager, in the form yyyy-mm-dd.

***ClusterName* (MQCFST)**
Cluster name (parameter identifier: MQCA_CLUSTER_NAME).

***ClusterNamelist* (MQCFST)**
Cluster namelist (parameter identifier: MQCA_CLUSTER_NAMELIST).

***ClusterQType* (MQCFIN)**
Cluster queue type (parameter identifier: MQIA_CLUSTER_Q_TYPE).

The value can be:

MQCQT_LOCAL_Q
The cluster queue represents a local queue.

MQCQT_ALIAS_Q
The cluster queue represents an alias queue.

MQCQT_REMOTE_Q
The cluster queue represents a remote queue.

MQCQT_Q_MGR_ALIAS
The cluster queue represents a queue manager alias.

***ClusterTime* (MQCFST)**
Cluster time (parameter identifier: MQCA_CLUSTER_TIME).

The time at which the information became available to the local queue manager, in the form hh.mm.ss.

***CLWLQueuePriority* (MQCFIN)**
Cluster workload queue priority (parameter identifier: MQIA_CLWL_Q_PRIORITY).

Priority of the queue in cluster workload management. The value is in the range zero through 9, where zero is the lowest priority and 9 is the highest.

***CLWLQueueRank* (MQCFIN)**
Cluster workload queue rank (parameter identifier: MQIA_CLWL_Q_RANK).

Rank of the queue in cluster workload management. The value is in the range zero through 9, where zero is the lowest rank and 9 is the highest.

***CLWLUseQ* (MQCFIN)**
Cluster workload queue rank (parameter identifier: MQIA_CLWL_USEQ).

The value can be:

MQCLWL_USEQ_AS_Q_MGR
Use the value of the *CLWLUseQ* parameter on the queue manager's definition.

MQCLWL_USEQ_ANY
Use remote and local queues.

MQCLWL_USEQ_LOCAL
Do not use remote queues.

***CreationDate* (MQCFST)**
Queue creation date, in the form yyyy-mm-dd (parameter identifier: MQCA_CREATION_DATE).

The maximum length of the string is MQ_CREATION_DATE_LENGTH.

***CreationTime* (MQCFST)**
Creation time, in the form hh.mm.ss (parameter identifier: MQCA_CREATION_TIME).

The maximum length of the string is MQ_CREATION_TIME_LENGTH.

***CurrentQDepth* (MQCFIN)**
Current queue depth (parameter identifier: MQIA_CURRENT_Q_DEPTH).

***Custom* (MQCFST)**
Custom attribute for new features (parameter identifier: MQCA_CUSTOM).

This attribute is reserved for the configuration of new features before separate attributes are named. It can contain the values of zero or more attributes as pairs of attribute name and value, separated by at least one space. The attribute name and value pairs have the form NAME(VALUE).

This description is updated when features using this attribute are introduced.

***DefaultPutResponse* (MQCFIN)**
Default put response type definition (parameter identifier: MQIA_DEF_PUT_RESPONSE_TYPE).

The parameter specifies the type of response to be used for put operations to the queue when an application specifies MQPMO_RESPONSE_AS_Q_DEF. The value can be:

MQPRT_SYNC_RESPONSE
The put operation is issued synchronously, returning a response.

MQPRT_ASYNC_RESPONSE
The put operation is issued asynchronously, returning a subset of MQMD fields.

***DefBind* (MQCFIN)**
Default binding (parameter identifier: MQIA_DEF_BIND).

The value can be:

MQBND_BIND_ON_OPEN
Binding fixed by MQOPEN call.

MQBND_BIND_NOT_FIXED
Binding not fixed.

MQBND_BIND_ON_GROUP
Allows an application to request that a group of messages are all allocated to the same destination instance.

***DefinitionType* (MQCFIN)**
Queue definition type (parameter identifier: MQIA_DEFINITION_TYPE).

The value can be:

MQQDT_PREDEFINED
Predefined permanent queue.

MQQDT_PERMANENT_DYNAMIC
Dynamically defined permanent queue.

MQQDT_SHARED_DYNAMIC
Dynamically defined shared queue. This option is available on z/OS only.

MQQDT_TEMPORARY_DYNAMIC
Dynamically defined temporary queue.

***DefInputOpenOption* (MQCFIN)**
Default input open option for defining whether queues can be shared (parameter identifier: MQIA_DEF_INPUT_OPEN_OPTION).

The value can be:

MQOO_INPUT_EXCLUSIVE
Open queue to get messages with exclusive access.

MQOO_INPUT_SHARED
Open queue to get messages with shared access.

***DefPersistence* (MQCFIN)**
Default persistence (parameter identifier: MQIA_DEF_PERSISTENCE).

The value can be:

MQPER_PERSISTENT
Message is persistent.

MQPER_NOT_PERSISTENT
Message is not persistent.

***DefPriority* (MQCFIN)**
Default priority (parameter identifier: MQIA_DEF_PRIORITY).

***DefReadAhead* (MQCFIN)**
Default read ahead (parameter identifier: MQIA_DEF_READ_AHEAD).

Specifies the default read ahead behavior for non-persistent messages delivered to the client.

The value can be:

MQREADA_NO
Non-persistent messages are not sent ahead to the client before an application requests them. A maximum of one non-persistent message can be lost if the client ends abnormally.

MQREADA_YES
Non-persistent messages are sent ahead to the client before an application requests them. Non-persistent messages can be lost if the client ends abnormally or if the client does not consume all the messages it is sent.

MQREADA_DISABLED
Read ahead of non-persistent messages in not enabled for this queue. Messages are not sent ahead to the client regardless of whether read ahead is requested by the client application.

***DistLists* (MQCFIN)**
Distribution list support (parameter identifier: MQIA_DIST_LISTS).

The value can be:

MQDL_SUPPORTED
Distribution lists supported.

MQDL_NOT_SUPPORTED
Distribution lists not supported.

This parameter is supported in the following environments: AIX, HP-UX, IBM i, Solaris, Windows, and Linux.

***HardenGetBackout* (MQCFIN)**
Harden backout, or not: (parameter identifier: MQIA_HARDEN_GET_BACKOUT).

The value can be:

MQQA_BACKOUT_HARDENED
Backout count remembered.

MQQA_BACKOUT_NOT_HARDENED
Backout count may not be remembered.

***IndexType* (MQCFIN)**
Index type (parameter identifier: MQIA_INDEX_TYPE). This parameter applies to z/OS only.

Specifies the type of index maintained by the queue manager to expedite MQGET operations on the queue. The value can be:

MQIT_NONE
No index.

MQIT_MSG_ID
The queue is indexed using message identifiers.

MQIT_CORREL_ID
The queue is indexed using correlation identifiers.

MQIT_MSG_TOKEN
The queue is indexed using message tokens.

MQIT_GROUP_ID
The queue is indexed using group identifiers.

***InhibitGet* (MQCFIN)**
Get operations are allowed or inhibited: (parameter identifier: MQIA_INHIBIT_GET).

The value can be:

MQQA_GET_ALLOWED
Get operations are allowed.

MQQA_GET_INHIBITED
Get operations are inhibited.

***InhibitPut* (MQCFIN)**
Putt operations are allowed or inhibited: (parameter identifier: MQIA_INHIBIT_PUT).

The value can be:

MQQA_PUT_ALLOWED
Put operations are allowed.

MQQA_PUT_INHIBITED
Put operations are inhibited.

***InitiationQName* (MQCFST)**
Initiation queue name (parameter identifier: MQCA_INITIATION_Q_NAME).

The maximum length of the string is MQ_Q_NAME_LENGTH.

***MaxMsgLength* (MQCFIN)**
Maximum message length (parameter identifier: MQIA_MAX_MSG_LENGTH).

***MaxQDepth* (MQCFIN)**
Maximum queue depth (parameter identifier: MQIA_MAX_Q_DEPTH).

***MsgDeliverySequence* (MQCFIN)**
Messages ordered by priority or sequence: (parameter identifier: MQIA_MSG_DELIVERY_SEQUENCE).

The value can be:

MQMDS_PRIORITY
Messages are returned in priority order.

MQMDS_FIFO
Messages are returned in FIFO order (first in, first out).

***NonPersistentMessageClass* (MQCFIN)**
The level of reliability assigned to non-persistent messages that are put to the queue (parameter identifier: MQIA_NPM_CLASS).

Specifies the circumstances under which non-persistent messages put to the queue may be lost. The value can be:

MQNPM_CLASS_NORMAL
Non-persistent messages are limited to the lifetime of the queue manager session. They are discarded in the event of a queue manager restart. MQNPM_CLASS_NORMAL is the default value.

MQNPM_CLASS_HIGH
The queue manager attempts to retain non-persistent messages for the lifetime of the queue. Non-persistent messages may still be lost in the event of a failure.

***OpenInputCount* (MQCFIN)**
Number of MQOPEN calls that have the queue open for input (parameter identifier: MQIA_OPEN_INPUT_COUNT).

***OpenOutputCount* (MQCFIN)**
Number of MQOPEN calls that have the queue open for output (parameter identifier: MQIA_OPEN_OUTPUT_COUNT).

***PageSetID* (MQCFIN)**
Page set identifier (parameter identifier: MQIA_PAGESET_ID).

Specifies the identifier of the page set on which the queue resides.

This parameter applies to z/OS only when the queue is actively associated with a page set.

***ProcessName* (MQCFST)**
Name of process definition for queue (parameter identifier: MQCA_PROCESS_NAME).

The maximum length of the string is MQ_PROCESS_NAME_LENGTH.

***PropertyControl* (MQCFIN)**
Property control attribute (parameter identifier MQIA_PROPERTY_CONTROL).

Specifies how message properties are handled for messages that are retrieved from queues using the MQGET call with the MQGMO_PROPERTIES_AS_Q_DEF option. The value can be:

MQPROP_COMPATIBILITY
If the message contains a property with a prefix of **mcd.**, **jms.**, **usr.** or **mqext.**, all message properties are delivered to the application in an MQRFH2 header. Otherwise all properties of the message, except properties contained in the message descriptor (or extension), are discarded and are no longer accessible to the application.

MQPROP_COMPATIBILITY is the default value. It allows applications which expect JMS-related properties to be in an MQRFH2 header in the message data to continue to work unmodified.

MQPROP_NONE
All properties of the message are removed from the message before the message is sent to the remote queue manager. Properties in the message descriptor (or extension) are not removed.

MQPROP_ALL
All properties of the message are included with the message when it is sent to the remote queue manager. The properties are placed in one or more MQRFH2 headers in the message data. Properties in the message descriptor (or extension) are not placed in MQRFH2 headers.

MQPROP_FORCE_MQRFH2
Properties are always returned in the message data in an MQRFH2 header regardless of whether the application specifies a message handle.

A valid message handle supplied in the MsgHandle field of the MQGMO structure on the MQGETcall is ignored. Properties of the message are not accessible via the message handle.

This parameter is applicable to local, alias, and model queues.

***QDepthHighEvent* (MQCFIN)**
Controls whether Queue Depth High events are generated (parameter identifier: MQIA_Q_DEPTH_HIGH_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

***QDepthHighLimit* (MQCFIN)**
High limit for queue depth (parameter identifier: MQIA_Q_DEPTH_HIGH_LIMIT).

The threshold against which the queue depth is compared to generate a Queue Depth High event.

***QDepthLowEvent* (MQCFIN)**
Controls whether Queue Depth Low events are generated (parameter identifier: MQIA_Q_DEPTH_LOW_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

***QDepthLowLimit* (MQCFIN)**
Low limit for queue depth (parameter identifier: MQIA_Q_DEPTH_LOW_LIMIT).

The threshold against which the queue depth is compared to generate a Queue Depth Low event.

***QDepthMaxEvent* (MQCFIN)**
Controls whether Queue Full events are generated (parameter identifier: MQIA_Q_DEPTH_MAX_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

***QDesc* (MQCFST)**
Queue description (parameter identifier: MQCA_Q_DESC).

The maximum length of the string is MQ_Q_DESC_LENGTH.

***QMgrIdentifier* (MQCFST)**
Queue manager identifier (parameter identifier: MQCA_Q_MGR_IDENTIFIER).

The unique identifier of the queue manager.

***QMgrName* (MQCFST)**
Name of local queue manager (parameter identifier: MQCA_CLUSTER_Q_MGR_NAME).

The maximum length of the string is MQ_Q_MGR_NAME_LENGTH.

***QName* (MQCFST)**
Queue name (parameter identifier: MQCA_Q_NAME).

The maximum length of the string is MQ_Q_NAME_LENGTH.

***QServiceInterval* (MQCFIN)**
Target for queue service interval (parameter identifier: MQIA_Q_SERVICE_INTERVAL).

The service interval used for comparison to generate Queue Service Interval High and Queue Service Interval OK events.

***QServiceIntervalEvent* (MQCFIN)**
Controls whether Service Interval High or Service Interval OK events are generated (parameter identifier: MQIA_Q_SERVICE_INTERVAL_EVENT).

The value can be:

MQQSIE_HIGH
Queue Service Interval High events enabled.

MQQSIE_OK
Queue Service Interval OK events enabled.

MQQSIE_NONE
No queue service interval events enabled.

***QSGDisposition* (MQCFIN)**
QSG disposition (parameter identifier: MQIA_QSG_DISP).

Specifies the disposition of the object (that is, where it is defined and how it behaves). *QSGDisposition* is valid only on z/OS. The value can be:

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_GROUP
The object is defined as MQQSGD_GROUP.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

MQQSGD_SHARED
The object is defined as MQQSGD_SHARED.

***QType* (MQCFIN)**
Queue type (parameter identifier: MQIA_Q_TYPE).

The value can be:

MQQT_ALIAS
Alias queue definition.

MQQT_CLUSTER
Cluster queue definition.

MQQT_LOCAL
Local queue.

MQQT_REMOTE
Local definition of a remote queue.

MQQT_MODEL
Model queue definition.

***QueueAccounting* (MQCFIN)**
Controls the collection of accounting (thread-level and queue-level accounting) data (parameter identifier: MQIA_ACCOUNTING_Q).

The value can be:

MQMON_Q_MGR
The collection of accounting data for the queue is performed based upon the setting of the *QueueAccounting* parameter on the queue manager.

MQMON_OFF
Do not collect accounting data for the queue.

MQMON_ON
Collect accounting data for the queue.

***QueueMonitoring* (MQCFIN)**
Online monitoring data collection (parameter identifier: MQIA_MONITORING_Q).

The value can be:

MQMON_OFF
Online monitoring data collection is turned off for this queue.

MQMON_Q_MGR
The value of the queue manager's *QueueMonitoring* parameter is inherited by the queue.

MQMON_LOW
Online monitoring data collection is turned on, with a low rate of data collection, for this queue unless *QueueMonitoring* for the queue manager is MQMON_NONE.

MQMON_MEDIUM
Online monitoring data collection is turned on, with a moderate rate of data collection, for this queue unless *QueueMonitoring* for the queue manager is MQMON_NONE.

MQMON_HIGH
Online monitoring data collection is turned on, with a high rate of data collection, for this queue unless *QueueMonitoring* for the queue manager is MQMON_NONE.

***QueueStatistics* (MQCFIN)**
Controls the collection of statistics data (parameter identifier: MQIA_STATISTICS_Q).

The value can be:

MQMON_Q_MGR
The collection of statistics data for the queue is performed based upon the setting of the *QueueStatistics* parameter on the queue manager.

MQMON_OFF
Do not collect statistics data for the queue.

MQMON_ON
Collect statistics data for the queue unless *QueueStatistics* for the queue manager is MQMON_NONE.

This parameter is valid only on IBM i, UNIX systems, and Windows.

***RemoteQMgrName* (MQCFST)**
Name of remote queue manager (parameter identifier: MQCA_REMOTE_Q_MGR_NAME).

The maximum length of the string is MQ_Q_MGR_NAME_LENGTH.

***RemoteQName* (MQCFST)**
Name of remote queue as known locally on the remote queue manager (parameter identifier: MQCA_REMOTE_Q_NAME).

The maximum length of the string is MQ_Q_NAME_LENGTH.

***RetentionInterval* (MQCFIN)**
Retention interval (parameter identifier: MQIA_RETENTION_INTERVAL).

***Scope* (MQCFIN)**
Scope of the queue definition (parameter identifier: MQIA_SCOPE).

The value can be:

MQSCO_Q_MGR
Queue-manager scope.

MQSCO_CELL
Cell scope.

This parameter is not valid on IBM i or z/OS.

***Shareability* (MQCFIN)**
The queue can be shared, or not: (parameter identifier: MQIA_SHAREABILITY).

The value can be:

MQQA_SHAREABLE
Queue is shareable.

MQQA_NOT_SHAREABLE
Queue is not shareable.

***StorageClass* (MQCFST)**
Storage class (parameter identifier: MQCA_STORAGE_CLASS). This parameter applies to z/OS only.

Specifies the name of the storage class.

The maximum length of the string is MQ_STORAGE_CLASS_LENGTH.

***TpipeNames* (MQCFSL)**
TPIPE names (parameter identifier: MQCA_TPIPE_NAME). This parameter applies to local queues on z/OS only.

Specifies the TPIPE names used for communication with OTMA via the WebSphere MQ IMS bridge, if the bridge is active.

The maximum length of the string is MQ_TPIPE_NAME_LENGTH.

***TriggerControl* (MQCFIN)**
Trigger control (parameter identifier: MQIA_TRIGGER_CONTROL).

The value can be:

MQTC_OFF
Trigger messages not required.

MQTC_ON
Trigger messages required.

***TriggerData* (MQCFST)**
Trigger data (parameter identifier: MQCA_TRIGGER_DATA).

The maximum length of the string is MQ_TRIGGER_DATA_LENGTH.

***TriggerDepth* (MQCFIN)**
Trigger depth (parameter identifier: MQIA_TRIGGER_DEPTH).

***TriggerMsgPriority* (MQCFIN)**
Threshold message priority for triggers (parameter identifier: MQIA_TRIGGER_MSG_PRIORITY).

***TriggerType* (MQCFIN)**
Trigger type (parameter identifier: MQIA_TRIGGER_TYPE).

The value can be:

MQTT_NONE
No trigger messages.

MQTT_FIRST
Trigger message when queue depth goes from 0 to 1.

MQTT_EVERY
Trigger message for every message.

MQTT_DEPTH
Trigger message when depth threshold exceeded.

***Usage* (MQCFIN)**
Usage (parameter identifier: MQIA_USAGE).

The value can be:

MQUS_NORMAL
Normal usage.

MQUS_TRANSMISSION
Transmission queue.

***XmitQName* (MQCFST)**
Transmission queue name (parameter identifier: MQCA_XMIT_Q_NAME).

The maximum length of the string is MQ_Q_NAME_LENGTH.

Inquire Queue Manager

The Inquire Queue Manager (**MQCMD_INQUIRE_Q_MGR**) command inquires about the attributes of a queue manager.

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Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following values:

- Blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- A queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment. The command server must be enabled.
- An asterisk "*". The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

You cannot use *CommandScope* as a parameter to filter on.

***QMgrAttrs* (MQCFIL)**
Queue manager attributes (parameter identifier: MQIACF_Q_MGR_ATTRS).

The attribute list might specify the following value on its own - default value used if the parameter is not specified:

MQIACF_ALL
All attributes.

Or a combination of the following values:

MQCA_ALTERATION_DATE
Date at which the definition was last altered.

MQCA_ALTERATION_TIME
Time at which the definition was last altered.

MQCA_CHANNEL_AUTO_DEF_EXIT
Automatic channel definition exit name. MQCA_CHANNEL_AUTO_DEF_EXIT is not valid on z/OS.

MQCA_CLUSTER_WORKLOAD_DATA
Data passed to the cluster workload exit.

MQCA_CLUSTER_WORKLOAD_EXIT
Name of the cluster workload exit.

MQCA_COMMAND_INPUT_Q_NAME
System command input queue name.

MQCA_CUSTOM
The custom attribute for new features.

MQCA_DEAD_LETTER_Q_NAME
Name of dead-letter queue.

MQCA_DEF_XMIT_Q_NAME
Default transmission queue name.

MQCA_DNS_GROUP
The name of the group that the TCP listener handling inbound transmissions for the queue-sharing group must join when using Workload Manager for Dynamic Domain Name Services support (DDNS). MQCA_DNS_GROUP is valid on z/OS only.

MQCA_IGQ_USER_ID
Intra-group queuing user identifier. This parameter is valid on z/OS only.

MQCA_LU_GROUP_NAME
Generic LU name for the LU 6.2 listener. MQCA_LU_GROUP_NAME is valid on z/OS only.

MQCA_LU_NAME
LU name to use for outbound LU 6.2 transmissions. MQCA_LU_NAME is valid on z/OS only.

MQCA_LU62_ARM_SUFFIX
APPCPM suffix. MQCA_LU62_ARM_SUFFIX is valid on z/OS only.

MQCA_PARENT
The name of the hierarchically connected queue manager that is nominated as the parent of this queue manager.

MQCA_Q_MGR_DESC
Queue manager description.

MQCA_Q_MGR_IDENTIFIER
Internally generated unique queue manager name.

MQCA_Q_MGR_NAME
Name of local queue manager.

MQCA_QSG_NAME
Queue sharing group name. This parameter attribute is valid onz/OS only.

MQCA_REPOSITORY_NAME
Cluster name for the queue manager repository.

MQCA_REPOSITORY_NAMELIST
Name of the list of clusters for which the queue manager is providing a repository manager service.

MQCA_SSL_CRL_NAMELIST
SSL certificate revocation location namelist.

MQCA_SSL_CRYPTO_HARDWARE
Parameters to configure the SSL cryptographic hardware. This parameter is supported on UNIX, Linux, and Windows platforms only.

MQCA_SSL_KEY_REPOSITORY
Location and name of the SSL key repository.

MQCA_TCP_NAME
Name of the TCP/IP system that you are using. MQCA_TCP_NAME is valid on z/OS only.

MQCA_VERSION
The version of the IBM WebSphere MQ installation, the queue manager is associated with. The version has the format VVRRMMFF:

VV: Version

RR: Release

MM: Maintenance level

FF: Fix level

MQIA_ACCOUNTING_CONN_OVERRIDE
Specifies whether the settings of the *MQIAccounting* and *QueueAccounting* queue manager parameters can be overridden. MQIA_ACCOUNTING_CONN_OVERRIDE is valid only on AIX, HP-UX, IBM i, Linux, Solaris, and Windows.

MQIA_ACCOUNTING_INTERVAL
Intermediate accounting data collection interval. MQIA_ACCOUNTING_INTERVAL is valid only on AIX, HP-UX, IBM i, Linux, Solaris, and Windows.

MQIA_ACCOUNTING_MQI
Specifies whether accounting information is to be collected for MQI data. MQIA_ACCOUNTING_MQI is valid only on AIX, HP-UX, IBM i, Linux, Solaris, and Windows.

MQIA_ACCOUNTING_Q
Accounting data collection for queues.

MQIA_ACTIVE_CHANNELS
Maximum number of channels that can be active at any time. MQIA_ACTIVE_CHANNELS is valid on z/OS only.

MQIA_ACTIVITY_CONN_OVERRIDE
Specifies whether the value of application activity trace can be overridden.

MQIA_ACTIVITY_RECORDING
Specifies whether activity reports can be generated.

MQIA_ACTIVITY_TRACE
Specifies whether application activity trace reports can be generated.

MQIA_ADOPTNEWMCA_CHECK
Elements checked to determine whether an MCA must be adopted when a new inbound channel is detected with the same name as an MCA that is already active. MQIA_ADOPTNEWMCA_CHECK is valid on z/OS only.

MQIA_ADOPTNEWMCA_TYPE
Specifies whether an orphaned instance of an MCA must be restarted automatically when a new inbound channel request matching the *AdoptNewMCACheck* parameter is detected. MQIA_ADOPTNEWMCA_TYPE is valid on z/OS only.

MQIA_AUTHORITY_EVENT
Control attribute for authority events.

MQIA_BRIDGE_EVENT
Control attribute for IMS Bridge events. MQIA_BRIDGE_EVENT is valid only on z/OS.

MQIA_CERT_VAL_POLICY
Specifies which SSL/TLS certificate validation policy is used to validate digital certificates received from remote partner systems. This attribute controls how strictly the certificate chain validation conforms to industry security standards. MQIA_CERT_VAL_POLICY is valid on only UNIX, Linux, and Windows. For more information, see Certificate validation policies in WebSphere MQ.

MQIA_CHANNEL_AUTO_DEF
Control attribute for automatic channel definition. MQIA_CHANNEL_AUTO_DEF is not valid on z/OS.

MQIA_CHANNEL_AUTO_DEF_EVENT
Control attribute for automatic channel definition events. MQIA_CHANNEL_AUTO_DEF_EVENT is not valid on z/OS.

MQIA_CHANNEL_EVENT
Control attribute for channel events.

MQIA_CHINIT_ADAPTERS
Number of adapter subtasks to use for processing IBM WebSphere MQ calls. MQIA_CHINIT_ADAPTERS is valid on z/OS only.

MQIA_CHINIT_CONTROL
Start channel initiator automatically when queue manager starts.

MQIA_CHINIT_DISPATCHERS
Number of dispatchers to use for the channel initiator. MQIA_CHINIT_DISPATCHERS is valid on z/OS only.

MQIA_CHINIT_SERVICE_PARM
Reserved for use by IBM. MQIA_CHINIT_SERVICE_PARM is valid only on z/OS.

MQIA_CHINIT_TRACE_AUTO_START
Specifies whether the channel initiator trace must start automatically. MQIA_CHINIT_TRACE_AUTO_START is valid on z/OS only.

MQIA_CHINIT_TRACE_TABLE_SIZE
Size, in megabytes, of the trace data space of the channel initiator. MQIA_CHINIT_TRACE_TABLE_SIZE is valid on z/OS only.

MQIA_CHLAUTH_RECORDS
Control attribute for checking of channel authentication records.

MQIA_CLUSTER_WORKLOAD_LENGTH
Maximum length of the message passed to the cluster workload exit.

MQIA_CLWL_MRU_CHANNELS
Cluster workload most recently used channels.

MQIA_CLWL_USEQ
Cluster workload remote queue use.

MQIA_CMD_SERVER_CONTROL
Start command server automatically when queue manager starts.

MQIA_CODED_CHAR_SET_ID
Coded character set identifier.

MQIA_COMMAND_EVENT
Control attribute for command events.

MQIA_COMMAND_LEVEL
Command level supported by queue manager.

MQIA_CONFIGURATION_EVENT
Control attribute for configuration events.

MQIA_CPI_LEVEL
Reserved for use by IBM.

MQIA_DEF_CLUSTER_XMIT_Q_TYPE
Default transmission queue type to be used for cluster-sender channels. This parameter is not valid on z/OS.

MQIA_DIST_LISTS
Distribution list support. This parameter is not valid on z/OS.

MQIA_DNS_WLM
Specifies whether the TCP listener that handles inbound transmissions for the queue-sharing group must register with Workload Manager (WLM) for DDNS. MQIA_DNS_WLM is valid on z/OS only.

MQIA_EXPIRY_INTERVAL
Expiry interval. This parameter is valid on z/OS only.

MQIA_GROUP_UR
Control attribute for whether transactional applications can connect with a GROUP unit of recovery disposition. This parameter is valid only on z/OS.

MQIA_IGQ_PUT_AUTHORITY
Intra-group queuing put authority. This parameter is valid on z/OS only.

MQIA_INHIBIT_EVENT
Control attribute for inhibit events.

MQIA_INTRA_GROUP_QUEUING
Intra-group queuing support. This parameter is valid on z/OS only.

MQIA_IP_ADDRESS_VERSION
IP address version selector.

MQIA_LISTENER_TIMER
Listener restart interval. MQIA_LISTENER_TIMER is valid on z/OS only.

MQIA_LOCAL_EVENT
Control attribute for local events.

MQIA_LOGGER_EVENT
Control attribute for recovery log events.

MQIA_LU62_CHANNELS
Maximum number of LU 6.2 channels. MQIA_LU62_CHANNELS is valid on z/OS only.

MQIA_MSG_MARK_BROWSE_INTERVAL
Interval for which messages that were browsed, remain marked.

MQIA_MAX_CHANNELS
Maximum number of channels that can be current. MQIA_MAX_CHANNELS is valid on z/OS only.

MQIA_MAX_HANDLES
Maximum number of handles.

MQIA_MAX_MSG_LENGTH
Maximum message length.

MQIA_MAX_PRIORITY
Maximum priority.

MQIA_MAX_PROPERTIES_LENGTH
Maximum properties length.

MQIA_MAX_UNCOMMITTED_MSGS
Maximum number of uncommitted messages within a unit of work.

MQIA_MONITORING_AUTO_CLUSSDR
Default value of the *ChannelMonitoring* attribute of automatically defined cluster-sender channels.

MQIA_MONITORING_CHANNEL
Specifies whether channel monitoring is enabled.

MQIA_MONITORING_Q
Specifies whether queue monitoring is enabled.

MQIA_OUTBOUND_PORT_MAX
Maximum value in the range for the binding of outgoing channels. MQIA_OUTBOUND_PORT_MAX is valid on z/OS only.

MQIA_OUTBOUND_PORT_MIN
Minimum value in the range for the binding of outgoing channels. MQIA_OUTBOUND_PORT_MIN is valid on z/OS only.

MQIA_PERFORMANCE_EVENT
Control attribute for performance events.

MQIA_PLATFORM
Platform on which the queue manager resides.

MQIA_PUBSUB_CLUSTER
Controls whether this queue manager participates in the publish/subscribe clustering.

MQIA_PUBSUB_MAXMSG_RETRY_COUNT
The number of retries when processing (under sync point) a failed command message

MQIA_PUBSUB_MODE
Inquires if the publish/subscribe engine and the queued publish/subscribe interface are running, which allow applications to publish/subscribe by using the application programming interface and the queues that are being monitored by the queued publish/subscribe interface.

MQIA_PUBSUB_NP_MSG
Specifies whether to discard (or keep) an undelivered input message.

MQIA_PUBSUB_NP_RESP
The behavior of undelivered response messages.

MQIA_PUBSUB_SYNC_PT
Specifies whether only persistent (or all) messages must be processed under sync point.

MQIA_QMGR_CFCONLOS
Specifies action to be taken when the queue manager loses connectivity to the administration structure, or any CF structure with CFCONLOS set to ASQMGR. MQIA_QMGR_CFCONLOS is valid on z/OS only.

MQIA_RECEIVE_TIMEOUT
How long a TCP/IP channel waits to receive data from its partner. MQIA_RECEIVE_TIMEOUT is valid on z/OS only.

MQIA_RECEIVE_TIMEOUT_MIN
Minimum length of time that a TCP/IP channel waits to receive data from its partner. MQIA_RECEIVE_TIMEOUT_MIN is valid on z/OS only.

MQIA_RECEIVE_TIMEOUT_TYPE
Qualifier to apply to the *ReceiveTimeout* parameter. MQIA_RECEIVE_TIMEOUT_TYPE is valid on z/OS only.

MQIA_REMOTE_EVENT
Control attribute for remote events.

MQIA_SECURITY_CASE
Specifies whether the queue manager supports security profile names either in mixed case, or in uppercase only. MQIA_SECURITY_CASE is valid on z/OS only.

MQIA_SHARED_Q_Q_MGR_NAME
When a queue manager makes an MQOPEN call for a shared queue and the queue manager that is specified in the *ObjectQmgrName* parameter of the MQOPEN call is in the same queue-sharing group as the processing queue manager, the SQQMNAME attribute specifies whether the *ObjectQmgrName* is used or whether the processing queue manager opens the shared queue directly. MQIA_SHARED_Q_Q_MGR_NAME is valid on z/OS only.

MQIA_SSL_EVENT
Control attribute for SSL events.

MQIA_SSL_FIPS_REQUIRED
Specifies whether only FIPS-certified algorithms are to be used if cryptography is executed inIBM WebSphere MQ rather then in the cryptographic hardware itself.

MQIA_SSL_RESET_COUNT
SSL key reset count.

MQIA_SSL_TASKS
SSL tasks. This parameter is valid on z/OS only.

MQIA_START_STOP_EVENT
Control attribute for start stop events.

MQIA_STATISTICS_AUTO_CLUSSDR
Specifies whether statistics data is to be collected for auto-defined cluster-sender channels and, if so, the rate of data collection. MQIA_STATISTICS_AUTO_CLUSSDR is valid only on AIX, HP-UX, IBM i, Linux, Solaris, and Windows.

MQIA_STATISTICS_CHANNEL
Specifies whether statistics monitoring data is to be collected for channels and, if so, the rate of data collection. MQIA_STATISTICS_CHANNEL is valid only on AIX, HP-UX, IBM i, Linux, Solaris, and Windows.

MQIA_STATISTICS_INTERVAL
Statistics data collection interval. MQIA_STATISTICS_INTERVAL is valid only on AIX, HP-UX, IBM i, Linux, Solaris, and Windows.

MQIA_STATISTICS_MQI
Specifies whether statistics monitoring data is to be collected for the queue manager. MQIA_STATISTICS_MQI is valid only on AIX, HP-UX, IBM i, Linux, Solaris, and Windows.

MQIA_STATISTICS_Q
Specifies whether statistics monitoring data is to be collected for queues. MQIA_STATISTICS_Q is valid only on AIX, HP-UX, IBM i, Linux, Solaris, and Windows.

MQIA_SUITE_B_STRENGTH
Specifies whether Suite B-compliant cryptography is used and the level of strength employed. For more information about Suite B configuration and its effect on SSL and TLS channels, see NSA Suite B Cryptography in IBM WebSphere MQ .

MQIA_SYNCPOINT
Sync point availability.

MQIA_TCP_CHANNELS
Maximum number of channels that can be current, or clients that can be connected, that use the TCP/IP transmission protocol This is valid on z/OS only.

MQIA_TCP_KEEP_ALIVE
Specifies whether the TCP KEEPALIVE facility is to be used to check whether the other end of a connection is still available. MQIA_TCP_KEEP_ALIVE is valid on z/OS only.

MQIA_TCP_STACK_TYPE
Specifies whether the channel initiator can use only the TCP/IP address space specified in the *TCPName* parameter, or can optionally bind to any selected TCP/IP address. MQIA_TCP_STACK_TYPE is valid on z/OS only.

MQIA_TRACE_ROUTE_RECORDING
Specifies whether trace-route information can be recorded and reply messages generated.

MQIA_TREE_LIFE_TIME
The lifetime of non-administrative topics.

MQIA_TRIGGER_INTERVAL
Trigger interval.

MQIA_XR_CAPABILITY
Specifies whether telemetry commands are supported.

MQIACF_Q_MGR_CLUSTER
All clustering attributes. These attributes are:

- MQCA_CLUSTER_WORKLOAD_DATA
- MQCA_CLUSTER_WORKLOAD_EXIT
- MQCA_CHANNEL_AUTO_DEF_EXIT
- MQCA_REPOSITORY_NAME
- MQCA_REPOSITORY_NAMELIST
- MQIA_CLUSTER_WORKLOAD_LENGTH
- MQIA_CLWL_MRU_CHANNELS
- MQIA_CLWL_USEQ
- MQIA_MONITORING_AUTO_CLUSSDR
- MQCA_Q_MGR_IDENTIFIER

MQIACF_Q_MGR_DQM
All distributed queuing attributes. These attributes are:

- MQCA_CHANNEL_AUTO_DEF_EXIT
- MQCA_DEAD_LETTER_Q_NAME
- MQCA_DEF_XMIT_Q_NAME
- MQCA_DNS_GROUP

- MQCA_IGQ_USER_ID
- MQCA_LU_GROUP_NAME
- MQCA_LU_NAME
- MQCA_LU62_ARM_SUFFIX
- MQCA_Q_MGR_IDENTIFIER
- MQCA_SSL_CRL_NAMELIST
- MQCA_SSL_CRYPTO_HARDWARE
- MQCA_SSL_KEY_REPOSITORY
- MQCA_TCP_NAME
- MQIA_ACTIVE_CHANNELS
- MQIA_ADOPTNEWMCA_CHECK
- MQIA_ADOPTNEWMCA_TYPE
- MQIA_CHANNEL_AUTO_DEF
- MQIA_CHANNEL_AUTO_DEF_EVENT
- MQIA_CHANNEL_EVENT
- MQIA_CHINIT_ADAPTERS
- MQIA_CHINIT_CONTROL
- MQIA_CHINIT_DISPATCHERS
- MQIA_CHINIT_SERVICE_PARM
- MQIA_CHINIT_TRACE_AUTO_START
- MQIA_CHINIT_TRACE_TABLE_SIZE
- MQIA_CHLAUTH_RECORDS
- MQIA_INTRA_GROUP_QUEUING
- MQIA_IGQ_PUT_AUTHORITY
- MQIA_IP_ADDRESS_VERSION
- MQIA_LISTENER_TIMER
- MQIA_LU62_CHANNELS
- MQIA_MAX_CHANNELS
- MQIA_MONITORING_CHANNEL
- MQIA_OUTBOUND_PORT_MAX
- MQIA_OUTBOUND_PORT_MIN
- MQIA_RECEIVE_TIMEOUT
- MQIA_RECEIVE_TIMEOUT_MIN
- MQIA_RECEIVE_TIMEOUT_TYPE
- MQIA_SSL_EVENT
- MQIA_SSL_FIPS_REQUIRED
- MQIA_SSL_RESET_COUNT
- MQIA_SSL_TASKS
- MQIA_STATISTICS_AUTO_CLUSSDR
- MQIA_TCP_CHANNELS
- MQIA_TCP_KEEP_ALIVE
- MQIA_TCP_STACK_TYPE

MQIACF_Q_MGR_EVENT
All event control attributes. These attributes are:

- MQIA_AUTHORITY_EVENT
- MQIA_BRIDGE_EVENT
- MQIA_CHANNEL_EVENT
- MQIA_COMMAND_EVENT
- MQIA_CONFIGURATION_EVENT
- MQIA_INHIBIT_EVENT
- MQIA_LOCAL_EVENT
- MQIA_LOGGER_EVENT
- MQIA_PERFORMANCE_EVENT
- MQIA_REMOTE_EVENT
- MQIA_SSL_EVENT
- MQIA_START_STOP_EVENT

MQIACF_Q_MGR_PUBSUB
All queue manager publish/subscribe attributes. These attributes are:

- MQCA_PARENT
- MQIA_PUBSUB_MAXMSG_RETRY_COUNT
- MQIA_PUBSUB_MODE
- MQIA_PUBSUB_NP_MSG
- MQIA_PUBSUB_NP_RESP
- MQIA_PUBSUB_SYNC_PT
- MQIA_TREE_LIFE_TIME

MQIACF_Q_MGR_SYSTEM
All queue manager system attributes. These attributes are:

- MQCA_COMMAND_INPUT_Q_NAME
- MQCA_CUSTOM
- MQCA_DEAD_LETTER_Q_NAME
- MQCA_Q_MGR_NAME
- MQCA_QSG_NAME
- MQCA_VERSION
- MQIA_ACCOUNTING_CONN_OVERRIDE
- MQIA_ACCOUNTING_INTERVAL
- MQIA_ACCOUNTING_Q
- MQIA_ACTIVITY_CONN_OVERRIDE
- MQIA_ACTIVITY_RECORDING
- MQIA_ACTIVITY_TRACE
- MQCA_ALTERATION_DATE
- MQCA_ALTERATION_TIME
- MQIA_CMD_SERVER_CONTROL
- MQIA_CODED_CHAR_SET_ID
- MQIA_COMMAND_LEVEL
- MQIA_CPI_LEVEL

- MQIA_DIST_LISTS
- MQIA_EXPIRY_INTERVAL
- MQIA_MAX_HANDLES
- MQIA_MAX_MSG_LENGTH
- MQIA_MAX_PRIORITY
- MQIA_MAX_PROPERTIES_LENGTH
- MQIA_MAX_UNCOMMITTED_MSGS
- MQIA_MONITORING_Q
- MQIA_PLATFORM
- MQIA_SHARED_Q_Q_MGR_NAME
- MQIA_STATISTICS_INTERVAL
- MQIA_STATISTICS_MQI
- MQIA_STATISTICS_Q
- MQIA_SYNCPOINT
- MQIA_TRACE_ROUTE_RECORDING
- MQIA_TRIGGER_INTERVAL
- MQIA_XR_CAPABILITY

Inquire Queue Manager (Response)

The response to the Inquire Queue Manager (MQCMD_INQUIRE_Q_MGR) command consists of the response header followed by the *QMgrName* structure and the requested combination of attribute parameter structures.

HP Integrity NonStop Server	UNIX and Linux	Windows
✓	✓	✓

Always returned:
QMgrName

Returned if requested:
AccountingConnOverride, *AccountingInterval*, *ActivityConnOverride*, *ActivityRecording*, *ActivityTrace*, *AdoptNewMCACheck*, *AdoptNewMCAType*, *AlterationDate*, *AlterationTime*, *AuthorityEvent*, *BridgeEvent*, *CertificateValPolicy*, *CFConlos*, *ChannelAutoDef*, *ChannelAutoDefEvent*, *ChannelAutoDefExit*, *ChannelAuthenticationRecords*, *ChannelEvent*, *ChannelInitiatorControl*, *ChannelMonitoring*, *ChannelStatistics*, *ChinitAdapters*, *ChinitDispatchers*, *ChinitServiceParm*, *ChinitTraceAutoStart*, *ChinitTraceTableSize*, *ClusterSenderMonitoringDefault*, *ClusterSenderStatistics*, *ClusterWorkloadData*, *ClusterWorkloadExit*, *ClusterWorkloadLength*, *CLWLMRUChannels*, *CLWLUseQ*, *CodedCharSetId*, *CommandEvent*, *CommandInputQName*, *CommandLevel*, *CommandServerControl*, *ConfigurationEvent*, *CreationDate*, *CreationTime*, *Custom*, *DeadLetterQName*, *DefClusterXmitQueueType*, *DefXmitQName*, *DistLists*, *DNSGroup*, *DNSWLM*, *EncryptionPolicySuiteB*, *ExpiryInterval*, *GroupUR*, *IGQPutAuthority*, *IGQUserId*, *InhibitEvent*, *IntraGroupQueuing*, *IPAddressVersion*, *ListenerTimer*, *LocalEvent*, *LoggerEvent*, *LUGroupName*, *LUName*, *LU62ARMSuffix*, *LU62Channels*, *MaxChannels*, *MaxActiveChanels*, *MaxHandles*, *MaxMsgLength*, *MaxPriority*, *MaxPropertiesLength*, *MaxUncommittedMsgs*, *MQIAccounting*, *MQIStatisticsOutboundPortMax*, *OutboundPortMin*, *Parent*, *PerformanceEvent*, *Platform*, *PubSubClus*, *PubSubMaxMsgRetryCount*, *PubSubMode*, *QmgrDesc*, *QMgrIdentifier*, *QSGName*, *QueueAccounting*, *QueueMonitoring*, *QueueStatistics*, *ReceiveTimeout*, *ReceiveTimeoutMin*, *ReceiveTimeoutType*,

RemoteEvent, *RepositoryName*, *RepositoryNamelist*, *SecurityCase*, *SharedQQmgrName*, *Splcap*, *SSLCRLNamelist*, *SSLCryptoHardware*, *SSLEvent*, *SSLFIPSRequired*, *SSLKeyRepository*, *SSLKeyResetCount*, *SSLTasks*, *StartStopEvent*, *StatisticsInterval*, *SyncPoint*, *TCPChannels*, *TCPKeepAlive*, *TCPName*, *TCPStackType*, *TraceRouteRecording*, *TreeLifeTime*, *TriggerInterval*, *Version*

Response data

***AccountingConnOverride* (MQCFIN)**
Specifies whether applications can override the settings of the *QueueAccounting* and *MQIAccounting* queue manager parameters (parameter identifier: MQIA_ACCOUNTING_CONN_OVERRIDE).

The value can be:

MQMON_DISABLED
Applications cannot override the settings of the *QueueAccounting* and *MQIAccounting* parameters.

MQMON_ENABLED
Applications can override the settings of the *QueueAccounting* and *MQIAccounting* parameters by using the options field of the MQCNO structure of the MQCONNX API call.

This parameter applies only to AIX, HP-UX, IBM i, Linux, Solaris, and Windows.

***AccountingInterval* (MQCFIN)**
The time interval, in seconds, at which intermediate accounting records are written (parameter identifier: MQIA_ACCOUNTING_INTERVAL).

It is a value in the range 1 through 604 000.

This parameter applies only to AIX, HP-UX, IBM i, Linux, Solaris, and Windows.

***ActivityConnOverride* (MQCFIN)**
Specifies whether applications can override the setting of the ACTVTRC value in the queue manager attribute (parameter identifier: MQIA_ACTIVITY_CONN_OVERRIDE).

The value can be:

MQMON_DISABLED
Applications cannot override the setting of the ACTVTRC queue manager attribute using the Options field in the MQCNO structure on the MQCONNX call. This is the default value.

MQMON_ENABLED
Applications can override the ACTVTRC queue manager attribute using the Options field in the MQCNO structure.

Changes to this value are only effective for connections to the queue manager after the change to the attribute.

This parameter applies only to IBM i, Unix systems, and Windows.

***ActivityRecording* (MQCFIN)**
Whether activity reports can be generated (parameter identifier: MQIA_ACTIVITY_RECORDING).

The value can be:

MQRECORDING_DISABLED
Activity reports cannot be generated.

MQRECORDING_MSG
Activity reports can be generated and sent to the destination specified by the originator of the message causing the report.

MQRECORDING_Q
Activity reports can be generated and sent to SYSTEM.ADMIN.ACTIVITY.QUEUE.

***ActivityTrace* (MQCFIN)**
Whether activity reports can be generated (parameter identifier: MQIA_ACTIVITY_TRACE).

The value can be:

MQMON_OFF
Do not collect WebSphere MQ MQI application activity trace. This is the default value.

If you set the queue manager attribute ACTVCONO to ENABLED, this value might be overridden for individual connections using the Options field in the MQCNO structure.

MQMON_ON
Collect WebSphere MQ MQI application activity trace.

Changes to this value are only effective for connections to the queue manager after the change to the attribute.

This parameter applies only to IBM i, Unix systems, and Windows.

***AdoptNewMCACheck* (MQCFIN)**
The elements checked to determine whether an MCA must be adopted (restarted) when a new inbound channel is detected. It is adopted if it has the same name as a currently active MCA (parameter identifier: MQIA_ADOPTNEWMCA_CHECK).

The value can be:

MQADOPT_CHECK_Q_MGR_NAME
Check the queue manager name.

MQADOPT_CHECK_NET_ADDR
Check the network address.

MQADOPT_CHECK_ALL
Check the queue manager name and network address.

MQADOPT_CHECK_NONE
Do not check any elements.

This parameter is valid only on z/OS.

***AdoptNewMCAType* (MQCFIL)**
Adoption of orphaned channel instances (parameter identifier: MQIA_ADOPTNEWMCA_TYPE).

The value can be:

MQADOPT_TYPE_NO
Do not adopt orphaned channel instances.

MQADOPT_TYPE_ALL
Adopt all channel types.

This parameter is valid only on z/OS.

***AlterationDate* (MQCFST)**
Alteration date (parameter identifier: MQCA_ALTERATION_DATE).

The date, in the form yyyy-mm-dd, on which the information was last altered.

***AlterationTime* (MQCFST)**
Alteration time (parameter identifier: MQCA_ALTERATION_TIME).

The time, in the form hh.mm.ss, at which the information was last altered.

***AuthorityEvent* (MQCFIN)**
Controls whether authorization (Not Authorized) events are generated (parameter identifier: MQIA_AUTHORITY_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

***BridgeEvent* (MQCFIN)**
Controls whether IMS Bridge events are generated (parameter identifier: MQIA_BRIDGE_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

This parameter is valid only on z/OS.

***CertificateValPolicy* (MQCFIN)**
Specifies which SSL/TLS certificate validation policy is used to validate digital certificates received from remote partner systems (parameter identifier: MQIA_CERT_VAL_POLICY).

This attribute can be used to control how strictly the certificate chain validation conforms to industry security standards. This parameter is only valid on UNIX, Linux, and Windows. For more information, see Certificate validation policies in WebSphere MQ.

The value can be:

MQ_CERT_VAL_POLICY_ANY
Apply each of the certificate validation policies supported by the secure sockets library and accept the certificate chain if any of the policies considers the certificate chain valid. This setting can be used for maximum backwards compatibility with older digital certificates which do not comply with the modern certificate standards.

MQ_CERT_VAL_POLICY_RFC5280
Apply only the RFC 5280 compliant certificate validation policy. This setting provides stricter validation than the ANY setting, but rejects some older digital certificates.

***CFConlos* (MQCFIN)**
Specifies the action to be taken when the queue manager loses connectivity to the administration structure, or any CF structures with CFCONLOS set to ASQMGR (parameter identifier: MQIA_QMGR_CFCONLOS).

The value can be:

MQCFCONLOS_TERMINATE
The queue manager terminates when connectivity to CF structures is lost.

MQCFCONLOS_TOLERATE
The queue manager tolerates loss of connectivity to CF structures without terminating.

This parameter is valid only on z/OS.

***ChannelAutoDef* (MQCFIN)**
Controls whether receiver and server-connection channels can be auto-defined (parameter identifier: MQIA_CHANNEL_AUTO_DEF).

The value can be:

MQCHAD_DISABLED
Channel auto-definition disabled.

MQCHAD_ENABLED
Channel auto-definition enabled.

***ChannelAutoDefEvent* (MQCFIN)**
Controls whether channel auto-definition events are generated (parameter identifier: MQIA_CHANNEL_AUTO_DEF_EVENT), when a receiver, server-connection, or cluster-sender channel is auto-defined.

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

***ChannelAutoDefExit* (MQCFST)**
Channel auto-definition exit name (parameter identifier: MQCA_CHANNEL_AUTO_DEF_EXIT).

The maximum length of the exit name depends on the environment in which the exit is running. MQ_EXIT_NAME_LENGTH gives the maximum length for the environment in which your application is running. MQ_MAX_EXIT_NAME_LENGTH gives the maximum for all supported environments.

***ChannelAuthenticationRecords* (MQCFIN)**
Controls whether channel authentication records are checked (parameter identifier: MQIA_CHLAUTH_RECORDS).

The value can be:

MQCHLA_DISABLED
Channel authentication records are not checked.

MQCHLA_ENABLED
Channel authentication records are checked.

***ChannelEvent* (MQCFIN)**
Controls whether channel events are generated (parameter identifier: MQIA_CHANNEL_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

MQEVR_EXCEPTION
Reporting of exception channel events enabled.

***ChannelInitiatorControl* (MQCFIN)**
Start the channel initiator during queue manager start (parameter identifier: MQIA_CHINIT_CONTROL). This parameter is not available on z/OS.

The value can be:

MQSVC_CONTROL_MANUAL
The channel initiator is not to be started automatically when the queue manager starts.

MQSVC_CONTROL_Q_MGR
The channel initiator is to be started automatically when the queue manager starts.

***ChannelMonitoring* (MQCFIN)**
Default setting for online monitoring for channels (parameter identifier: MQIA_MONITORING_CHANNEL).

If the *ChannelMonitoring* channel attribute is set to MQMON_Q_MGR, this attribute specifies the value which is assumed by the channel. The value can be:

MQMON_OFF
Online monitoring data collection is turned off.

MQMON_NONE
Online monitoring data collection is turned off for channels regardless of the setting of their *ChannelMonitoring* attribute.

MQMON_LOW
Online monitoring data collection is turned on, with a low ratio of data collection.

MQMON_MEDIUM
Online monitoring data collection is turned on, with a moderate ratio of data collection.

MQMON_HIGH
Online monitoring data collection is turned on, with a high ratio of data collection.

***ChannelStatistics* (MQCFIN)**
Specifies whether statistics data is to be collected for channels (parameter identifier: MQIA_STATISTICS_CHANNEL).

The value can be:

MQMON_NONE
Statistics data collection is turned off for channels regardless of the setting of their *ChannelStatistics* parameter. MQMON_NONE is the initial default value of the queue manager.

MQMON_OFF
Statistics data collection is turned off for channels specifying a value of MQMON_Q_MGR in their *ChannelStatistics* parameter.

MQMON_LOW
Statistics data collection is turned on, with a low ratio of data collection, for channels specifying a value of MQMON_Q_MGR in their *ChannelStatistics* parameter.

MQMON_MEDIUM
Statistics data collection is turned on, with a moderate ratio of data collection, for channels specifying a value of MQMON_Q_MGR in their *ChannelStatistics* parameter.

MQMON_HIGH
Statistics data collection is turned on, with a high ratio of data collection, for channels specifying a value of MQMON_Q_MGR in their *ChannelStatistics* parameter.

This parameter applies only to AIX, HP-UX, IBM i, Linux, Solaris, and Windows.

***ChinitAdapters* (MQCFIN)**
Number of adapter subtasks (parameter identifier: MQIA_CHINIT_ADAPTERS).

The number of adapter subtasks to use for processing WebSphere MQ calls. This parameter is valid only on z/OS.

***ChinitDispatchers* (MQCFIN)**
Number of dispatchers (parameter identifier: MQIA_CHINIT_DISPATCHERS).

The number of dispatchers to use for the channel initiator. This parameter is valid only on z/OS.

***ChinitServiceParm* (MQCFST)**
Reserved for use by IBM (parameter identifier: MQCA_CHINIT_SERVICE_PARM).

***ChinitTraceAutoStart* (MQCFIN)**
Specifies whether the channel initiator trace must start automatically (parameter identifier: MQIA_CHINIT_TRACE_AUTO_START).

The value can be:

MQTRAXSTR_YES
Channel initiator trace is to start automatically.

MQTRAXSTR_NO
Channel initiator trace is not to start automatically.

This parameter is valid only on z/OS.

***ChinitTraceTableSize* (MQCFIN)**
The size, in megabytes, of the trace data space of the channel initiator (parameter identifier: MQIA_CHINIT_TRACE_TABLE_SIZE).

This parameter is valid only on z/OS.

***ClusterSenderMonitoringDefault* (MQCFIN)**
Setting for online monitoring for automatically defined cluster-sender channels (parameter identifier: MQIA_MONITORING_AUTO_CLUSSDR).

The value can be:

MQMON_Q_MGR
Collection of online monitoring data is inherited from the setting of the queue manager's *ChannelMonitoring* parameter.

MQMON_OFF
Monitoring for the channel is switched off.

MQMON_LOW
Specifies a low rate of data collection with a minimal effect on system performance unless *ChannelMonitoring* for the queue manager is MQMON_NONE. The data collected is not likely to be the most current.

MQMON_MEDIUM
Specifies a moderate rate of data collection with limited effect on system performance unless *ChannelMonitoring* for the queue manager is MQMON_NONE.

MQMON_HIGH
Specifies a high rate of data collection with a likely effect on system performance unless *ChannelMonitoring* for the queue manager is MQMON_NONE. The data collected is the most current available.

***ClusterSenderStatistics* (MQCFIN)**
Specifies whether statistics data is to be collected for auto-defined cluster-sender channels (parameter identifier: MQIA_STATISTICS_AUTO_CLUSSDR).

The value can be:

MQMON_Q_MGR
Collection of statistics data is inherited from the setting of the queue manager's *ChannelStatistics* parameter.

MQMON_OFF
Statistics data collection for the channel is switched off.

MQMON_LOW
Specifies a low rate of data collection with a minimal effect on system performance.

MQMON_MEDIUM
Specifies a moderate rate of data collection.

MQMON_HIGH
Specifies a high rate of data collection.

This parameter applies only to AIX, HP-UX, IBM i, Linux, Solaris, and Windows.

***ClusterWorkLoadData* (MQCFST)**
Data passed to the cluster workload exit (parameter identifier: MQCA_CLUSTER_WORKLOAD_DATA).

***ClusterWorkLoadExit* (MQCFST)**
Name of the cluster workload exit (parameter identifier: MQCA_CLUSTER_WORKLOAD_EXIT).

The maximum length of the exit name depends on the environment in which the exit is running. MQ_EXIT_NAME_LENGTH gives the maximum length for the environment in which your application is running. MQ_MAX_EXIT_NAME_LENGTH gives the maximum for all supported environments.

***ClusterWorkLoadLength* (MQCFIN)**
Cluster workload length (parameter identifier: MQIA_CLUSTER_WORKLOAD_LENGTH).

The maximum length of the message passed to the cluster workload exit.

***CLWLMRUChannels* (MQCFIN)**
Cluster workload most recently used (MRU) channels (parameter identifier: MQIA_CLWL_MRU_CHANNELS).

The maximum number of active most recently used outbound channels.

***CLWLUseQ* (MQCFIN)**
Use of remote queue (parameter identifier: MQIA_CLWL_USEQ).

Specifies whether a cluster queue manager is to use remote puts to other queues defined in other queue managers within the cluster during workload management.

The value can be:

MQCLWL_USEQ_ANY
Use remote queues.

MQCLWL_USEQ_LOCAL
Do not use remote queues.

***CodedCharSetId* (MQCFIN)**
Coded character set identifier (parameter identifier: MQIA_CODED_CHAR_SET_ID).

***CommandEvent* (MQCFIN)**
Controls whether command events are generated (parameter identifier: MQIA_COMMAND_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

MQEVR_NODISPLAY
Event reporting enabled for all successful commands except Inquire commands.

***CommandInputQName* (MQCFST)**
Command input queue name (parameter identifier: MQCA_COMMAND_INPUT_Q_NAME).

The maximum length of the string is MQ_Q_NAME_LENGTH.

***CommandLevel* (MQCFIN)**
Command level supported by queue manager (parameter identifier: MQIA_COMMAND_LEVEL).

The value can be:

MQCMDL_LEVEL_1
Level 1 of system control commands.

This value is returned by the following platforms:

- MQSeries® for AIX V2.2
- MQSeries for OS/400®:
  - V2R3
  - V3R1
  - V3R6
- MQSeries for Windows V2.0

MQCMDL_LEVEL_101
MQSeries for Windows V2.0.1

MQCMDL_LEVEL_110
MQSeries for Windows V2.1

MQCMDL_LEVEL_200
MQSeries for Windows NT V2.0

MQCMDL_LEVEL_220
Level 220 of system control commands.

This value is returned by the following platforms:

- MQSeries for AT&T GIS UNIX V2.2
- MQSeries for SINIX and DC/OSx V2.2

- MQSeries for Compaq NonStop Kernel V2.2.0.1

MQCMDL_LEVEL_221
Level 221 of system control commands.

This value is returned by the following platforms:

- MQSeries for AIX Version 2.2.1
- MQSeries for DIGITAL UNIX (Compaq Tru64 UNIX) V2.2.1

MQCMDL_LEVEL_320
MQSeries for OS/400 V3R2 and V3R7

MQCMDL_LEVEL_420
MQSeries for AS/400 V4R2 and R2.1

MQCMDL_LEVEL_500
Level 500 of system control commands.

This value is returned by the following platforms:

- MQSeries for AIX V5.0
- MQSeries for HP-UX V5.0
- MQSeries for Solaris V5.0
- MQSeries for Windows NT V5.0

MQCMDL_LEVEL_510
Level 510 of system control commands.

This value is returned by the following platforms:

- MQSeries for AIX V5.1
- MQSeries for AS/400 V5.1
- MQSeries for HP-UX V5.1
- MQSeries for Compaq Tru64 UNIX, V5.1
- IBM WebSphere MQ for HP Integrity NonStop Server v5.3
- MQSeries for Solaris V5.1
- MQSeries for Windows NT V5.1

MQCMDL_LEVEL_520
Level 520 of system control commands.

This value is returned by the following platforms:

- MQSeries for AIX V5.2
- MQSeries for AS/400 V5.2
- MQSeries for HP-UX V5.2
- MQSeries for Linux V5.2
- MQSeries for Solaris V5.2
- MQSeries for Windows NT V5.2
- MQSeries for Windows 2000 V5.2

MQCMDL_LEVEL_530
Level 530 of system control commands.

This value is returned by the following platforms:

- IBM WebSphere MQ for AIX, V5.3
- IBM WebSphere MQ for IBM i, V5.3
- IBM WebSphere MQ for HP-UX, V5.3

- IBM WebSphere MQ for Linux, V5.3
- IBM WebSphere MQ for Sun Solaris, Version 5.3
- IBM WebSphere MQ for Windows NT and Windows 2000, Version 5.3

MQCMDL_LEVEL_531
Level 531 of system control commands.

MQCMDL_LEVEL_600
Level 600 of system control commands.

MQCMDL_LEVEL_700
Level 700 of system control commands.

MQCMDL_LEVEL_701
Level 701 of system control commands.

MQCMDL_LEVEL_710
Level 710 of system control commands.

The set of system control commands that corresponds to a particular value of the *CommandLevel* attribute varies. It varies according to the value of the *Platform* attribute; both must be used to decide which system control commands are supported.

***CommandServerControl* (MQCFIN)**
Start the command server during queue manager start (parameter identifier: MQIA_CMD_SERVER_CONTROL). This parameter is not available on z/OS.

The value can be:

MQSVC_CONTROL_MANUAL
The command server is not to be started automatically when the queue manager starts.

MQSVC_CONTROL_Q_MGR
The command server is to be started automatically when the queue manager starts.

***ConfigurationEvent* (MQCFIN)**
Controls whether configuration events are generated (parameter identifier: MQIA_CONFIGURATION_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

***CreationDate* (MQCFST)**

Queue creation date, in the form yyyy-mm-dd (parameter identifier: MQCA_CREATION_DATE).

The maximum length of the string is MQ_CREATION_DATE_LENGTH.

***CreationTime* (MQCFST)**

Creation time, in the form hh.mm.ss (parameter identifier: MQCA_CREATION_TIME).

The maximum length of the string is MQ_CREATION_TIME_LENGTH.

***Custom* (MQCFST)**
Custom attribute for new features (parameter identifier: MQCA_CUSTOM).

This attribute is reserved for the configuration of new features before separate attributes are introduced. It can contain the values of zero or more attributes as pairs of attribute name and value, separated by at least one space. The attribute name and value pairs have the form NAME(VALUE).

This description is updated when features using this attribute are introduced.

***DeadLetterQName* (MQCFST)**
Dead letter (undelivered message) queue name (parameter identifier: MQCA_DEAD_LETTER_Q_NAME).

Specifies the name of the local queue that is to be used for undelivered messages. Messages are put on this queue if they cannot be routed to their correct destination.

The maximum length of the string is MQ_Q_NAME_LENGTH.

***DefClusterXmitQueueType* (MQCFIN)**
The DefClusterXmitQueueType attribute controls which transmission queue is selected by default by cluster-sender channels to get messages from, to send the messages to cluster-receiver channels. (Parameter identifier: MQIA_DEF_CLUSTER_XMIT_Q_TYPE.)

The values of DefClusterXmitQueueType are MQCLXQ_SCTQ or MQCLXQ_CHANNEL.

MQCLXQ_SCTQ

All cluster-sender channels send messages from SYSTEM.CLUSTER.TRANSMIT.QUEUE. The correlID of messages placed on the transmission queue identifies which cluster-sender channel the message is destined for.

SCTQ is set when a queue manager is defined. This behavior is implicit in versions of IBM WebSphere MQ, earlier than Version 7.5. In earlier versions, the queue manager attribute DefClusterXmitQueueType was not present.

MQCLXQ_CHANNEL
Each cluster-sender channel sends messages from a different transmission queue. Each transmission queue is created as a permanent dynamic queue from the model queue SYSTEM.CLUSTER.TRANSMIT.MODEL.QUEUE.

The attribute is not supported on z/OS.

***DefXmitQName* (MQCFST)**
Default transmission queue name (parameter identifier: MQCA_DEF_XMIT_Q_NAME).

The default transmission queue is used for the transmission of messages to remote queue managers. It is used if there is no other indication of which transmission queue to use.

The maximum length of the string is MQ_Q_NAME_LENGTH.

***DistLists* (MQCFIN)**
Distribution list support (parameter identifier: MQIA_DIST_LISTS).

The value can be:

MQDL_SUPPORTED
Distribution lists supported.

MQDL_NOT_SUPPORTED
Distribution lists not supported.

***DNSGroup* (MQCFST)**
DNS group name (parameter identifier: MQCA_DNS_GROUP).

The name of the group that the TCP listener handling inbound transmissions for the queue-sharing group joins. It must join this group when using Workload Manager for Dynamic Domain Name Services support (DDNS).

This parameter is valid only on z/OS.

***DNSWLM* (MQCFIN)**
Controls whether the TCP listener that handles inbound transmissions for the queue-sharing group must register with Workload Manager (WLM) for DDNS: (parameter identifier: MQIA_DNS_WLM).

The value can be:

MQDNSWLM_YES
The listener must register with WLM.

MQDNSWLM_NO
The listener is not to register with WLM. MQDNSWLM_NO is the initial default value of the queue manager.

This parameter is valid only on z/OS.

***EncryptionPolicySuiteB* (MQCFIL)**
Specifies whether Suite B-compliant cryptography is used and what level of strength is employed (parameter identifier: MQIA_SUITE_B_STRENGTH). For more information about Suite B configuration and its effect on SSL and TLS channels, see NSA Suite B Cryptography in IBM WebSphere MQ.

The value can be one, or more, of:

MQ_SUITE_B_NONE
Suite B-compliant cryptography is not used.

MQ_SUITE_B_128_BIT
Suite B 128-bit strength security is used.

MQ_SUITE_B_192_BIT
Suite B 192-bit strength security is used.

MQ_SUITE_B_128_BIT,MQ_SUITE_B_192_BIT
Suite B 128-bit and Suite B 192-bit strength security is used.

***ExpiryInterval* (MQCFIN)**
Interval between scans for expired messages (parameter identifier: MQIA_EXPIRY_INTERVAL).

Specifies the frequency with which the queue manager scans the queues looking for expired messages. This parameter is a time interval in seconds in the range 1 through 99 999 999, or the following special value:

MQEXPI_OFF
No scans for expired messages.

This parameter is valid only on z/OS.

***GroupUR* (MQCFIN)**
Identifies whether XA client applications can establish transactions with a GROUP unit of recovery disposition.

The value can be:

MQGUR_DISABLED
XA client applications must connect using a queue manager name.

MQGUR_ENABLED
XA client applications can establish transactions with a group unit of recovery disposition by specifying a QSG name when they connect.

This parameter is valid only on z/OS.

***IGQPutAuthority* (MQCFIN)**
Type of authority checking used by the intra-group queuing agent (parameter identifier: MQIA_IGQ_PUT_AUTHORITY).

The attribute indicates the type of authority checking that is performed by the local intra-group queuing agent (IGQ agent). The checking is performed when the IGQ agent removes a message from the shared transmission queue and places the message on a local queue. The value can be:

MQIGQPA_DEFAULT
Default user identifier is used.

MQIGQPA_CONTEXT
Context user identifier is used.

MQIGQPA_ONLY_IGQ
Only the IGQ user identifier is used.

MQIGQPA_ALTERNATE_OR_IGQ
Alternate user identifier or IGQ-agent user identifier is used.

This parameter is valid only on z/OS.

***IGQUserId* (MQCFST)**
User identifier used by the intra-group queuing agent (parameter identifier: MQCA_IGQ_USER_ID).

The maximum length of the string is MQ_USER_ID_LENGTH. This parameter is valid only on z/OS.

***InhibitEvent* (MQCFIN)**
Controls whether inhibit (Inhibit Get and Inhibit Put) events are generated (parameter identifier: MQIA_INHIBIT_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

***IntraGroupQueuing* (MQCFIN)**
Specifies whether intra-group queuing is used (parameter identifier: MQIA_INTRA_GROUP_QUEUING).

The value can be:

MQIGQ_DISABLED
Intra-group queuing is disabled. All messages destined for other queue managers in the queue-sharing group are transmitted using conventional channels.

MQIGQ_ENABLED
Intra-group queuing is enabled.

This parameter is valid only on z/OS.

***IPAddressVersion* (MQCFIN)**
IP address version selector (parameter identifier: MQIA_IP_ADDRESS_VERSION).

Specifies which IP address version, either IPv4 or IPv6, is used. The value can be:

MQIPADDR_IPV4
IPv4 is used.

MQIPADDR_IPV6
IPv6 is used.

***ListenerTimer* (MQCFIN)**
Listener restart interval (parameter identifier: MQIA_LISTENER_TIMER).

The time interval, in seconds, between attempts by WebSphere MQ to restart the listener after an APPC or TCP/IP failure.

***LocalEvent* (MQCFIN)**
Controls whether local error events are generated (parameter identifier: MQIA_LOCAL_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

This parameter is valid only on z/OS.

***LoggerEvent* (MQCFIN)**
Controls whether recovery log events are generated (parameter identifier: MQIA_LOGGER_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

This parameter applies only to AIX, HP-UX, IBM i, Linux, Solaris, and Windows.

***LUGroupName* (MQCFST)**
Generic LU name for the LU 6.2 listener (parameter identifier: MQCA_LU_GROUP_NAME).

The generic LU name to be used by the LU 6.2 listener that handles inbound transmissions for the queue-sharing group. This parameter is valid only on z/OS.

***LUName* (MQCFST)**
LU name to use for outbound LU 6.2 transmissions (parameter identifier: MQCA_LU_NAME).

The name of the LU to use for outbound LU 6.2 transmissions. This parameter is valid only on z/OS.

***LU62ARMSuffix* (MQCFST)**
APPCPM suffix (parameter identifier: MQCA_LU62_ARM_SUFFIX).

The suffix of the APPCPM member of SYS1.PARMLIB. This suffix nominates the LUADD for this channel initiator. This parameter is valid only on z/OS.

***LU62Channels* (MQCFIN)**
Maximum number of LU 6.2 channels (parameter identifier: MQIA_LU62_CHANNELS).

The maximum number of channels that can be current, or clients that can be connected, that use the LU 6.2 transmission protocol. This parameter is valid only on z/OS.

***MaxActiveChannels* (MQCFIN)**
Maximum number of channels (parameter identifier: MQIA_ACTIVE_CHANNELS).

The maximum number of channels that can be active at any time. This parameter is valid only on z/OS.

***MaxChannels* (MQCFIN)**
Maximum number of current channels (parameter identifier: MQIA_MAX_CHANNELS).

The maximum number of channels that can be current (including server-connection channels with connected clients). This parameter is valid only on z/OS.

***MaxHandles* (MQCFIN)**
Maximum number of handles (parameter identifier: MQIA_MAX_HANDLES).

Specifies the maximum number of handles that any one connection can have open at the same time.

***MaxMsgLength* (MQCFIN)**
Maximum message length (parameter identifier: MQIA_MAX_MSG_LENGTH).

***MaxPriority* (MQCFIN)**
Maximum priority (parameter identifier: MQIA_MAX_PRIORITY).

***MaxPropertiesLength* (MQCFIN)**
Maximum properties length (parameter identifier: MQIA_MAX_PROPERTIES_LENGTH).

***MaxUncommittedMsgs* (MQCFIN)**
Maximum number of uncommitted messages within a unit of work (parameter identifier: MQIA_MAX_UNCOMMITTED_MSGS).

This number is the sum of the following number of messages under any one sync point. :

- The number of messages that can be retrieved, plus
- The number of messages that can be put on a queue, plus
- Any trigger messages generated within this unit of work

The limit does not apply to messages that are retrieved or put outside sync point.

***MQIAccounting* (MQCFIN)**
Specifies whether accounting information for MQI data is to be collected (parameter identifier: MQIA_ACCOUNTING_MQI).

The value can be:

MQMON_OFF
MQI accounting data collection is disabled.

MQMON_ON
MQI accounting data collection is enabled.

This parameter applies only to AIX, HP-UX, IBM i, Linux, Solaris, and Windows.

***MQIStatistics* (MQCFIN)**
Specifies whether statistics monitoring data is to be collected for the queue manager (parameter identifier: MQIA_STATISTICS_MQI).

The value can be:

MQMON_OFF
Data collection for MQI statistics is disabled. MQMON_OFF is the initial default value of the queue manager.

MQMON_ON
Data collection for MQI statistics is enabled.

This parameter applies only to AIX, HP-UX, IBM i, Linux, Solaris, and Windows.

MsgMarkBrowseInterval (MQCFIN)
Mark-browse interval (parameter identifier: MQIA_MSG_MARK_BROWSE_INTERVAL).

The time interval in milliseconds after which the queue manager can automatically unmark messages.

Attention: This value should not be below the default of 5000.

***OutboundPortMax* (MQCFIN)**
The maximum value in the range for the binding of outgoing channels (parameter identifier: MQIA_OUTBOUND_PORT_MAX).

The maximum value in the range of port numbers to be used when binding outgoing channels. This parameter is valid only on z/OS.

***OutboundPortMin* (MQCFIN)**
The minimum value in the range for the binding of outgoing channels (parameter identifier: MQIA_OUTBOUND_PORT_MIN).

The minimum value in the range of port numbers to be used when binding outgoing channels. This parameter is valid only on z/OS.

***Parent* (MQCFST)**
The name of the hierarchically connected queue manager nominated as the parent of this queue manager (parameter identifier: MQCA_PARENT).

***PerformanceEvent* (MQCFIN)**
Controls whether performance-related events are generated (parameter identifier: MQIA_PERFORMANCE_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

***Platform* (MQCFIN)**
Platform on which the queue manager resides (parameter identifier: MQIA_PLATFORM).

The value can be:

MQPL_AIX
AIX (same value as MQPL_UNIX).

MQPL_NSK
HP Integrity NonStop Server.

MQPL_OS400
IBM i.

MQPL_UNIX
UNIX systems.

MQPL_WINDOWS_NT
Windows.

MQPL_ZOS
z/OS

***PubSubClus* (MQCFIN)**
Controls whether the queue manager participates in publish/subscribe clustering (parameter identifier: MQIA_PUBSUB_CLUSTER).

The value can be:

MQPSCLUS_ENABLED
The creating or receipt of clustered topic definitions and cluster subscriptions is permitted.

Note: The introduction of a clustered topic into a large IBM WebSphere MQ cluster can cause a degradation in performance. This degradation occurs because all partial repositories are notified of all the other members of the cluster. Unexpected subscriptions might be created at all other nodes; for example, where proxysub(FORCE) is specified. Large numbers of channels might be started from a queue manager; for example, on resync after a queue manager failure.

MQPSCLUS_DISABLED
The creating or receipt of clustered topic definitions and cluster subscriptions is inhibited. The creations or receipts are recorded as warnings in the queue manager error logs.

***PubSubMaxMsgRetryCount* (MQCFIN)**
The number of attempts to reprocess a failed command message under sync point (parameter identifier: MQIA_PUBSUB_MAXMSG_RETRY_COUNT).

***PubSubMode* (MQCFIN)**
Specifies whether the publish/subscribe engine and the queued publish/subscribe interface are running. The publish/subscribe engine enables applications to publish or subscribe by using the application programming interface. The publish/subscribe interface monitors the queues used the queued publish/subscribe interface (parameter identifier: MQIA_PUBSUB_MODE).

The values can be as follows:

MQPSM_COMPAT
The publish/subscribe engine is running. It is therefore possible to publish or subscribe by using the application programming interface. The queued publish/subscribe interface is not running. Therefore any message that is put to the queues that are monitored by the queued publish/subscribe interface is not acted on. MQPSM_COMPAT is used for compatibility with WebSphere Message Broker V6 or earlier versions of WebSphere Message Broker that use this queue manager. WebSphere Message Broker reads the same queues from which the queued publish/subscribe interface normally reads.

MQPSM_DISABLED
The publish/subscribe engine and the queued publish/subscribe interface are not running. It is therefore not possible to publish or subscribe by using the application programming interface. Any publish/subscribe messages that are put to the queues that are monitored by the queued publish/subscribe interface are not acted on.

MQPSM_ENABLED
The publish/subscribe engine and the queued publish/subscribe interface are running. It is therefore possible to publish or subscribe by using the application programming interface and the queues that are being monitored by the queued publish/subscribe interface. MQPSM_ENABLED is the initial default value of the queue manager.

***PubSubNPInputMsg* (MQCFIN)**
Specifies whether to discard or keep an undelivered input message (parameter identifier: MQIA_PUBSUB_NP_MSG).

The values can be as follows:

MQUNDELIVERED_DISCARD
Non-persistent input messages can be discarded if they cannot be processed. MQUNDELIVERED_DISCARD is the default value.

MQUNDELIVERED_KEEP
Non-persistent input messages are not discarded if they cannot be processed. The queued publish/subscribe interface continues to try the process again at appropriate intervals. It does not continue processing subsequent messages.

***PubSubNPResponse* (MQCFIN)**
Controls the behavior of undelivered response messages (parameter identifier: MQIA_PUBSUB_NP_RESP).

The values can be as follows:

MQUNDELIVERED_NORMAL
Non-persistent responses that cannot be placed on the reply queue are put on the dead letter queue. If they cannot be placed on the dead letter queue, they are discarded.

MQUNDELIVERED_SAFE
Non-persistent responses that cannot be placed on the reply queue are put on the dead letter queue. If the response cannot be sent and cannot be placed on the dead letter queue the queued publish/subscribe interface rolls back the current operation. The operation is tried again at appropriate intervals and does not continue processing subsequent messages.

MQUNDELIVERED_DISCARD
Non-persistent responses that cannot be placed on the reply queue are discarded. MQUNDELIVERED_DISCARD is the default value for new queue managers.

MQUNDELIVERED_KEEP
Non-persistent responses are not placed on the dead letter queue or discarded. Instead, the queued publish/subscribe interface backs out the current operation and then tries it again at appropriate intervals.

***PubSubSyncPoint* (MQCFIN)**
Specifies whether only persistent messages or all messages are processed under sync point (parameter identifier: MQIA_PUBSUB_SYNC_PT).

The values can be as follows:

MQSYNCPOINT_IFPER
This makes the queued publish/subscribe interface receive non-persistent messages outside sync point. If the daemon receives a publication outside sync point, the daemon forwards the publication to subscribers known to it outside sync point. MQSYNCPOINT_IFPER is the default value.

MQSYNCPOINT_YES
MQSYNCPOINT_YES makes the queued publish/subscribe interface receive all messages under sync point.

***QMgrDesc* (MQCFST)**
Queue manager description (parameter identifier: MQCA_Q_MGR_DESC).

This parameter is text that briefly describes the object.

The maximum length of the string is MQ_Q_MGR_DESC_LENGTH.

Use characters from the character set identified by the coded character set identifier (CCSID) for the queue manager on which the command is executing. Using this character set ensures that the text is translated correctly.

***QMgrIdentifier* (MQCFST)**
Queue manager identifier (parameter identifier: MQCA_Q_MGR_IDENTIFIER).

The unique identifier of the queue manager.

***QMgrName* (MQCFST)**
Name of local queue manager (parameter identifier: MQCA_Q_MGR_NAME).

The maximum length of the string is MQ_Q_MGR_NAME_LENGTH.

***QSGName* (MQCFST)**
Queue sharing group name (parameter identifier: MQCA_QSG_NAME).

The maximum length of the string is MQ_QSG_NAME_LENGTH. This parameter is valid only on z/OS.

***QueueAccounting* (MQCFIN)**
Collection of accounting (thread-level and queue-level accounting) data for queues (parameter identifier: MQIA_ACCOUNTING_Q).

The value can be:

MQMON_NONE
Accounting data collection for queues is disabled.

MQMON_OFF
Accounting data collection is disabled for queues specifying a value of MQMON_Q_MGR in the *QueueAccounting* parameter.

MQMON_ON
Accounting data collection is enabled for queues specifying a value of MQMON_Q_MGR in the *QueueAccounting* parameter.

***QueueMonitoring* (MQCFIN)**
Default setting for online monitoring for queues (parameter identifier: MQIA_MONITORING_Q).

If the *QueueMonitoring* queue attribute is set to MQMON_Q_MGR, this attribute specifies the value which is assumed by the channel. The value can be:

MQMON_OFF
Online monitoring data collection is turned off.

MQMON_NONE
Online monitoring data collection is turned off for queues regardless of the setting of their *QueueMonitoring* attribute.

MQMON_LOW
Online monitoring data collection is turned on, with a low ratio of data collection.

MQMON_MEDIUM
Online monitoring data collection is turned on, with a moderate ratio of data collection.

MQMON_HIGH
Online monitoring data collection is turned on, with a high ratio of data collection.

***QueueStatistics* (MQCFIN)**
Specifies whether statistics data is to be collected for queues (parameter identifier: MQIA_STATISTICS_Q).

The value can be:

MQMON_NONE
Statistics data collection is turned off for queues regardless of the setting of their *QueueStatistics* parameter.

MQMON_OFF
Statistics data collection is turned off for queues specifying a value of MQMON_Q_MGR in their *QueueStatistics* parameter.

MQMON_ON
Statistics data collection is turned on for queues specifying a value of MQMON_Q_MGR in their *QueueStatistics* parameter.

This parameter is valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.

***ReceiveTimeout* (MQCFIN)**
How long a TCP/IP channel waits to receive data from its partner (parameter identifier: MQIA_RECEIVE_TIMEOUT).

The length of time that a TCP/IP channel waits to receive data, including heartbeats, from its partner before returning to the inactive state.

This parameter is valid only on z/OS.

***ReceiveTimeoutMin* (MQCFIN)**
The minimum length of time that a TCP/IP channel waits to receive data from its partner (parameter identifier: MQIA_RECEIVE_TIMEOUT_MIN).

The minimum length of time that a TCP/IP channel waits to receive data, including heartbeats, from its partner before returning to the inactive state. This parameter is valid only on z/OS.

***ReceiveTimeoutType* (MQCFIN)**
The qualifier to apply to *ReceiveTimeout* (parameter identifier: MQIA_RECEIVE_TIMEOUT_TYPE).

The qualifier to apply to *ReceiveTimeoutType* to calculate how long a TCP/IP channel waits to receive data from its partner. The wait includes heartbeats. If the wait interval expires the channel returns to the inactive state. This parameter is valid only on z/OS.

The value can be:

MQRCVTIME_MULTIPLY
The *ReceiveTimeout* value is a multiplier to be applied to the negotiated value of *HeartbeatInterval* to determine how long a channel waits.

MQRCVTIME_ADD
ReceiveTimeout is a value, in seconds, to be added to the negotiated value of *HeartbeatInterval* to determine how long a channel waits.

MQRCVTIME_EQUAL
ReceiveTimeout is a value, in seconds, representing how long a channel waits.

***RemoteEvent* (MQCFIN)**
Controls whether remote error events are generated (parameter identifier: MQIA_REMOTE_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

***RepositoryName* (MQCFST)**
Repository name (parameter identifier: MQCA_REPOSITORY_NAME).

The name of a cluster for which this queue manager is to provide a repository service.

***RepositoryNamelist* (MQCFST)**
Repository name list (parameter identifier: MQCA_REPOSITORY_NAMELIST).

The name of a list of clusters for which this queue manager is to provide a repository service.

***SecurityCase* (MQCFIN)**
Security case supported (parameter identifier: MQIA_SECURITY_CASE).

Specifies whether the queue manager supports security profile names in mixed case, or in uppercase only. The value is activated when a Refresh Security command is run with *SecurityType(MQSECTYPE_CLASSES)* specified.

The value can be:

MQSCYC_UPPER
Security profile names must be in uppercase.

MQSCYC_MIXED
Security profile names can be in uppercase or in mixed case.

This parameter is valid only on z/OS.

***SharedQQmgrName* (MQCFIN)**
Shared-queue queue manager name (parameter identifier: MQIA_SHARED_Q_Q_MGR_NAME).

A queue manager makes an MQOPEN call for a shared queue. The queue manager that is specified in the *ObjectQmgrName* parameter of the MQOPEN call is in the same queue-sharing group as the processing queue manager. The SQQMNAME attribute specifies whether the *ObjectQmgrName* is used or whether the processing queue manager opens the shared queue directly.

The value can be:

MQSQQM_USE
ObjectQmgrName is used and the appropriate transmission queue is opened.

MQSQQM_IGNORE
The processing queue manager opens the shared queue directly.

This parameter is valid only on z/OS.

***Splcap* (MQCFIN)**
If the WebSphere MQ AMS component is installed for the version of WebSphere MQ that the queue manager is running under, the attribute has a value YES(MQCAP_SUPPORTED). If the WebSphere MQ AMS component is not installed, the value is NO(MQCAP_NOT_SUPPORTED) (parameter identifier: MQIA_PROT_POLICY_CAPABILITY).

The value can be one of the following values:

MQCAP_SUPPORTED
If the WebSphere MQ AMS component is installed for the version of WebSphere MQ that the queue manager is running under.

MQCAP_NOT_SUPPORTED
If the WebSphere MQ AMS component is not installed.

***SSLCRLNamelist* (MQCFST)**
The SSL certificate revocation location namelist (parameter identifier: MQCA_SSL_CRL_NAMELIST).

The length of the string is MQ_NAMELIST_NAME_LENGTH.

Indicates the name of a namelist of authentication information objects to be used for certificate revocation checking by the queue manager.

***SSLCryptoHardware* (MQCFST)**
Parameters to configure the SSL cryptographic hardware (parameter identifier: MQCA_SSL_CRYPTO_HARDWARE).

The length of the string is MQ_SSL_CRYPTO_HARDWARE_LENGTH.

Sets the name of the parameter string required to configure the cryptographic hardware present on the system.

This parameter is supported on AIX, HP-UX, Solaris, Linux, and Windows only.

***SSLEvent* (MQCFIN)**
Controls whether SSL events are generated (parameter identifier: MQIA_SSL_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

***SSLFipsRequired* (MQCFIN)**
Controls whether only FIPS-certified algorithms are to be used if cryptography is executed in IBM WebSphere MQ itself (parameter identifier: MQIA_SSL_FIPS_REQUIRED). This parameter is valid only on Windows Linux UNIX and z/OS platforms.

The value can be:

MQSSL_FIPS_NO
Any supported CipherSpec can be used.

MQSSL_FIPS_YES
Only FIPS-certified cryptographic algorithms are to be used if cryptography is executed in IBM WebSphere MQ rather than cryptographic hardware.

***SSLKeyRepository* (MQCFST)**
Location and name of the SSL key repository (parameter identifier: MQCA_SSL_KEY_REPOSITORY).

The length of the string is MQ_SSL_KEY_REPOSITORY_LENGTH.

Indicates the name of the Secure Sockets Layer key repository.

The format of the name depends on the environment.

***SSLKeyResetCount* (MQCFIN)**
SSL key reset count (parameter identifier: MQIA_SSL_RESET_COUNT).

The number of unencrypted bytes that initiating SSL channel MCAs send or receive before renegotiating the secret key.

***SSLTasks* (MQCFIN)**
Number of server subtasks used for processing SSL calls (parameter identifier: MQIA_SSL_TASKS).

The number of server subtasks used for processing SSL calls. This parameter is valid only on z/OS.

***StartStopEvent* (MQCFIN)**
Controls whether start and stop events are generated (parameter identifier: MQIA_START_STOP_EVENT).

The value can be:

MQEVR_DISABLED
Event reporting disabled.

MQEVR_ENABLED
Event reporting enabled.

***StatisticsInterval* (MQCFIN)**
The time interval, in seconds, at which statistics monitoring data is written to the monitoring queue (parameter identifier: MQIA_STATISTICS_INTERVAL).

This parameter is valid only on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.

***SyncPoint* (MQCFIN)**
Sync point availability (parameter identifier: MQIA_SYNCPOINT).

The value can be:

MQSP_AVAILABLE
Units of work and sync pointing available.

MQSP_NOT_AVAILABLE
Units of work and sync pointing not available.

***TCPChannels* (MQCFIN)**
The maximum number of channels that can be current, or clients that can be connected, that use the TCP/IP transmission protocol (parameter identifier: MQIA_TCP_CHANNELS).

This parameter is valid only on z/OS.

***TCPKeepAlive* (MQCFIN)**
Specifies whether the TCP KEEPALIVE facility is to be used to check whether the other end of the connection is still available (parameter identifier: MQIA_TCP_KEEP_ALIVE).

The value can be:

MQTCPKEEP_YES
The TCP KEEPALIVE facility is to be used as specified in the TCP profile configuration data set. The interval is specified in the *KeepAliveInterval* channel attribute.

MQTCPKEEP_NO
The TCP KEEPALIVE facility is not to be used.

This parameter is valid only on z/OS.

***TCPName* (MQCFST)**
The name of the TCP/IP system that you are using (parameter identifier: MQIA_TCP_NAME).

This parameter is valid only on z/OS.

***TCPStackType* (MQCFIN)**
Specifies whether the channel initiator can use only the TCP/IP address space specified in *TCPName*, or can optionally bind to any selected TCP/IP address (parameter identifier: MQIA_TCP_STACK_TYPE).

The value can be:

MQTCPSTACK_SINGLE
The channel initiator can use only the TCP/IP address space specified in *TCPName*.

MQTCPSTACK_MULTIPLE
The channel initiator can use any TCP/IP address space available to it.

This parameter is valid only on z/OS.

***TraceRouteRecording* (MQCFIN)**
Specifies whether trace-route information can be recorded and a reply message generated (parameter identifier: MQIA_TRACE_ROUTE_RECORDING).

The value can be:

MQRECORDING_DISABLED
Trace-route information cannot be recorded.

MQRECORDING_MSG
Trace-route information can be recorded and sent to the destination specified by the originator of the message causing the trace route record.

MQRECORDING_Q
Trace-route information can be recorded and sent to SYSTEM.ADMIN.TRACE.ROUTE.QUEUE.

***TreeLifeTime* (MQCFIN)**
The lifetime in seconds of non-administrative topics (parameter identifier: MQIA_TREE_LIFE_TIME).

Non-administrative topics are those topics created when an application publishes to, or subscribes on, a topic string that does not exist as an administrative node. When this non-administrative node no longer has any active subscriptions, this parameter determines how long the queue manager waits before removing that node. Only non-administrative topics that are in use by a durable subscription remain after the queue manager it recycled.

The value can be in the range 0 - 604,000. A value of 0 means that non-administrative topics are not removed by the queue manager. The initial default value of the queue manager is 1800.

***TriggerInterval* (MQCFIN)**
Trigger interval (parameter identifier: MQIA_TRIGGER_INTERVAL).

Specifies the trigger time interval, expressed in milliseconds, for use only with queues where *TriggerType* has a value of MQTT_FIRST.

***Version* (MQCFST)**
The version of the IBM WebSphere MQ code (parameter identifier: MQCA_VERSION).

The version of the IBM WebSphere MQ code is shown as VVRRMMFF:

VV: Version

RR: Release

MM: Maintenance level

FF: Fix level

***XrCapability* (MQCFIN)**

Specifies whether the IBM WebSphere MQ Telemetry capability and commands are supported by the queue manager where *XrCapability* has a value of MQCAP_SUPPORTED or MQCAP_NOT_SUPPORTED (parameter identifier: MQIA_XR_CAPABILITY).

This parameter applies only to IBM i, Unix systems, and Windows.

Related tasks
Specifying that only FIPS-certified CipherSpecs are used at run time on the MQI client
Related reference
Federal Information Processing Standards (FIPS) for UNIX, Linux and Windows

Inquire Queue Manager Status

The Inquire Queue Manager Status (MQCMD_INQUIRE_Q_MGR_STATUS) command inquires about the status of the local queue manager.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

Optional parameters

***QMStatusAttrs* (MQCFIL)**
Queue manager status attributes (parameter identifier: MQIACF_Q_MGR_STATUS_ATTRS).

The attribute list might specify the following value on its own - default value used if the parameter is not specified:

MQIACF_ALL
All attributes.

or a combination of the following:

MQCA_Q_MGR_NAME
Name of the local queue manager.

MQCA_INSTALLATION_DESC
Description of the installation associated with the queue manager. This parameter is not valid on IBM i.

MQCA_INSTALLATION_NAME
Name of the installation associated with the queue manager. This parameter is not valid on IBM i.

MQCA_INSTALLATION_PATH
Path of the installation associated with the queue manager. This parameter is not valid on IBM i.

MQCACF_CURRENT_LOG_EXTENT_NAME
Name of the log extent currently being written to by the logger.
MQCACF_CURRENT_LOG_EXTENT_NAME is available only on queue managers using linear logging. On other queue managers, MQCACF_CURRENT_LOG_EXTENT_NAME is blank.

MQCACF_LOG_PATH
Location of the recovery log extents.

MQCACF_MEDIA_LOG_EXTENT_NAME
Name of the earliest log extent required to perform media recovery.
MQCACF_MEDIA_LOG_EXTENT_NAME is available only on queue managers using linear logging. On other queue managers, MQCACF_MEDIA_LOG_EXTENT_NAME is blank.

MQCACF_RESTART_LOG_EXTENT_NAME
Name of the earliest log extent required to perform restart recovery.
MQCACF_RESTART_LOG_EXTENT_NAME is available only on queue managers using linear logging. On other queue managers, MQCACF_RESTART_LOG_EXTENT_NAME is blank.

MQIACF_CHINIT_STATUS
Current status of the channel initiator.

MQIACF_CMD_SERVER_STATUS
Current status of the command server.

MQIACF_CONNECTION_COUNT
Current number of connections to the queue manager.

MQIACF_Q_MGR_STATUS
Current status of the queue manager.

MQCACF_Q_MGR_START_DATE
The date on which the queue manager was started (in the form yyyy-mm-dd). The length of this attribute is given by MQ_DATE_LENGTH.

MQCACF_Q_MGR_START_TIME
The time at which the queue manager was started (in the form hh.mm.ss). The length of this attribute is given by MQ_TIME_LENGTH.

Inquire Queue Manager Status (Response)

The response to the Inquire Queue Manager Status (MQCMD_INQUIRE_Q_MGR_STATUS) command consists of the response header followed by the *QMgrName* and *QMgrStatus* structures and the requested combination of attribute parameter structures.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

Always returned:
QMgrName, *QMgrStatus*

Returned if requested:
ChannelInitiatorStatus, *CommandServerStatus*, *ConnectionCount*, *CurrentLog*, *InstallationDesc*, *InstallationName*, *InstallationPath*, *LogPath*, *MediaRecoveryLog*, *RestartRecoveryLog*, *StartDate*, *StartTime*

Response data

***ChannelInitiatorStatus* (MQCFIN)**
Status of the channel initiator reading SYSTEM.CHANNEL.INITQ (parameter identifier: MQIACF_CHINIT_STATUS).

The value can be:

MQSVC_STATUS_STOPPED
The channel initiator is not running.

MQSVC_STATUS_STARTING
The channel initiator is in the process of initializing.

MQSVC_STATUS_RUNNING
The channel initiator is fully initialized and is running.

MQSVC_STATUS_STOPPING
The channel initiator is stopping.

CommandServerStatus **(MQCFIN)**
Status of the command server (parameter identifier: MQIACF_CMD_SERVER_STATUS).

The value can be:

MQSVC_STATUS_STARTING
The command server is in the process of initializing.

MQSVC_STATUS_RUNNING
The command server is fully initialized and is running.

MQSVC_STATUS_STOPPING
The command server is stopping.

ConnectionCount **(MQCFIN)**
Connection count (parameter identifier: MQIACF_CONNECTION_COUNT).

The current number of connections to the queue manager.

CurrentLog **(MQCFST)**
Log extent name (parameter identifier: MQCACF_CURRENT_LOG_EXTENT_NAME).

The name of the log extent that was being written to at the time of the Inquire command. If the queue manager is using circular logging, this parameter is blank.

The maximum length of the string is MQ_LOG_EXTENT_NAME_LENGTH.

InstallationDesc **(MQCFST)**
Installation Description (parameter identifier: MQCA_INSTALLATION_DESC)

The installation description for this queue manager. Not valid on IBM i.

InstallationName **(MQCFST)**
Installation Name (parameter identifier: MQCA_INSTALLATION_NAME)

The installation name for this queue manager. Not valid on IBM i.

InstallationPath **(MQCFST)**
Installation Path (parameter identifier: MQCA_INSTALLATION_PATH)

The installation path for this queue manager. Not valid on IBM i.

LogPath **(MQCFST)**
Location of the recovery log extents (parameter identifier: MQCACF_LOG_PATH).

This parameter identifies the directory where log files are created by the queue manager.

The maximum length of the string is MQ_LOG_PATH_LENGTH.

MediaRecoveryLog **(MQCFST)**
Name of the oldest log extent required by the queue manager to perform media recovery (parameter identifier: MQCACF_MEDIA_LOG_EXTENT_NAME). This parameter is available only on queue managers using linear logging. If the queue manager is using circular logging, this parameter is blank.

The maximum length of the string is MQ_LOG_EXTENT_NAME_LENGTH.

QMgrName **(MQCFST)**
Name of the local queue manager (parameter identifier: MQCA_Q_MGR_NAME).

The maximum length of the string is MQ_Q_MGR_NAME_LENGTH.

***QMgrStatus* (MQCFIN)**
Current execution status of the queue manager (parameter identifier: MQIACF_Q_MGR_STATUS).

The value can be:

MQQMSTA_STARTING
The queue manager is initializing.

MQQMSTA_RUNNING
The queue manager is fully initialized and is running.

MQQMSTA_QUIESCING
The queue manager is quiescing.

***RestartRecoveryLog* (MQCFST)**
Name of the oldest log extent required by the queue manager to perform restart recovery (parameter identifier: MQCACF_RESTART_LOG_EXTENT_NAME).

This parameter is available only on queue managers using linear logging. If the queue manager is using circular logging, this parameter is blank.

The maximum length of the string is MQ_LOG_EXTENT_NAME_LENGTH.

***StartDate* (MQCFST)**
Date when this queue manager was started (in the form `yyyy-mm-dd`) (parameter identifier: MQCACF_Q_MGR_START_DATE).

The maximum length of the string is MQ_DATE_LENGTH.

***StartTime* (MQCFST)**
Time when this queue manager was started (in the form `hh:mm:ss`) (parameter identifier: MQCACF_Q_MGR_START_TIME).

The maximum length of the string is MQ_TIME_LENGTH.

Inquire Queue Names

The Inquire Queue Names (MQCMD_INQUIRE_Q_NAMES) command inquires a list of queue names that match the generic queue name, and the optional queue type specified.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

Required parameters

***QName* (MQCFST)**
Queue name (parameter identifier: MQCA_Q_NAME).

Generic queue names are supported. A generic name is a character string followed by an asterisk (*), for example ABC*, and it selects all objects having names that start with the selected character string. An asterisk on its own matches all possible names.

The maximum length of the string is MQ_Q_LENGTH.

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.

- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***QSGDisposition* (MQCFIN)**
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object for which information is to be returned (that is, where it is defined and how it behaves). The value can be:

MQQSGD_LIVE
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY. MQQSGD_LIVE is the default value if the parameter is not specified.

MQQSGD_ALL
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY.

If there is a shared queue manager environment, and the command is being executed on the queue manager where it was issued, this option also displays information for objects defined with MQQSGD_GROUP.

If MQQSGD_LIVE is specified or defaulted, or if MQQSGD_ALL is specified in a shared queue manager environment, the command might give duplicated names (with different dispositions).

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_GROUP
The object is defined as MQQSGD_GROUP. MQQSGD_GROUP is permitted only in a shared queue environment.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

MQQSGD_PRIVATE
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY. MQQSGD_PRIVATE returns the same information as MQQSGD_LIVE.

MQQSGD_SHARED
The object is defined as MQQSGD_SHARED. MQQSGD_SHARED is permitted only in a shared queue environment.

***QType* (MQCFIN)**
Queue type (parameter identifier: MQIA_Q_TYPE).

If present, this parameter limits the queue names returned to queues of the specified type. If this parameter is not present, queues of all types are eligible. The value can be:

MQQT_ALL
All queue types.

MQQT_LOCAL
Local queue.

MQQT_ALIAS
Alias queue definition.

MQQT_REMOTE
Local definition of a remote queue.

MQQT_MODEL
Model queue definition.

The default value if this parameter is not specified is MQQT_ALL.

Inquire Queue Names (Response)

The response to the Inquire Queue Names (MQCMD_INQUIRE_Q_NAMES) command consists of the response header followed by a single parameter structure giving zero or more names that match the specified queue name. The response header is followed by the *QTypes* structure, with the same number of entries as the *QNames* structure. Each entry gives the type of the queue with the corresponding entry in the *QNames* structure.

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X	X	X

Additionally, on z/OS only, the *QSGDispositions* parameter structure (with the same number of entries as the *QNames* structure) is returned. Each entry in this structure indicates the disposition of the object with the corresponding entry in the *QNames* structure.

Always returned:
QNames, *QSGDispositions*, *QTypes*

Returned if requested:
None

Response data

***QNames* (MQCFSL)**
List of queue names (parameter identifier: MQCACF_Q_NAMES).

***QSGDispositions* (MQCFIL)**
List of QSG dispositions (parameter identifier: MQIACF_QSG_DISPS). This parameter is valid on z/OS only. Possible values for fields in this structure are:

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_GROUP
The object is defined as MQQSGD_GROUP.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

MQQSGD_SHARED
The object is defined as MQQSGD_SHARED.

***QTypes* (MQCFIL)**
List of queue types (parameter identifier: MQIACF_Q_TYPES). Possible values for fields in this structure are:

MQQT_ALIAS
Alias queue definition.

MQQT_LOCAL
Local queue.

MQQT_REMOTE
Local definition of a remote queue.

MQQT_MODEL
Model queue definition.

Inquire Queue Status

The Inquire Queue Status (MQCMD_INQUIRE_Q_STATUS) command inquires about the status of a local WebSphere MQ queue. You must specify the name of a local queue for which you want to receive status information.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

Required parameters

***QName* (MQCFST)**
Queue name (parameter identifier: MQCA_Q_NAME).

Generic queue names are supported. A generic name is a character string followed by an asterisk (*), for example ABC*, and it selects all queues having names that start with the selected character string. An asterisk on its own matches all possible names.

The queue name is always returned, regardless of the attributes requested.

The maximum length of the string is MQ_Q_NAME_LENGTH.

Optional parameters (Inquire Queue Status)

***ByteStringFilterCommand* (MQCFBF)**
Byte string filter command descriptor. The parameter identifier must be MQBACF_EXTERNAL_UOW_ID or MQBACF_Q_MGR_UOW_ID. Use this parameter to restrict the output from the command by specifying a filter condition. See “MQCFBF - PCF byte string filter parameter” on page 1087 for information about using this filter condition.

If you specify a byte string filter, you cannot also specify an integer filter using the *IntegerFilterCommand* parameter, or a string filter using the *StringFilterCommand* parameter.

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is initiated when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- Blank (or omit the parameter altogether). The command is initiated on the queue manager on which it was entered.
- Queue manager name. The command is initiated on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be initiated.
- An asterisk (*). The command is initiated on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

You cannot use *CommandScope* as a parameter to filter on.

***IntegerFilterCommand* (MQCFIF)**
Integer filter command descriptor. The parameter identifier must be any integer type parameter allowed in *QStatusAttrs* except MQIACF_ALL, MQIACF_MONITORING, and MQIACF_Q_TIME_INDICATOR. Use this parameter to restrict the output from the command by specifying a filter condition. See “MQCFIF - PCF integer filter parameter” on page 1092 for information about using this filter condition.

If you specify an integer filter, you cannot also specify a byte string filter using the *ByteStringFilterCommand* parameter or a string filter using the *StringFilterCommand* parameter.

***OpenType* (MQCFIN)**
Queue status open type (parameter identifier: MQIACF_OPEN_TYPE).

It is always returned, regardless of the queue instance attributes requested.

The value can be:

MQQSOT_ALL
Selects status for queues that are open with any type of access.

MQQSOT_INPUT
Selects status for queues that are open for input.

MQQSOT_OUTPUT
Selects status for queues that are open for output.

The default value if this parameter if not specified is MQQSOT_ALL.

Filtering is not supported for this parameter.

***QSGDispositon* (MQCFIN)**
QSG disposition (parameter identifier: MQIA_QSG_DISP).

Specifies the disposition of the object (that is, where it is defined and how it behaves). This parameter is valid only on z/OS. The value can be:

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

MQQSGD_SHARED
The object is defined as MQQSGD_SHARED.

You cannot use *QSGDispositon* as a parameter to filter on.

***QStatusAttrs* (MQCFIL)**
Queue status attributes (parameter identifier: MQIACF_Q_STATUS_ATTRS).

The attribute list can specify the following value on its own - default value used if the parameter is not specified:

MQIACF_ALL
All attributes.

or a combination of the following:

Where *StatusType* is MQIACF_Q_STATUS:

MQCA_Q_NAME
Queue name.

MQCACF_LAST_GET_DATE
Date of the last message successfully destructively read from the queue.

MQCACF_LAST_GET_TIME
Time of the last message successfully destructively read from the queue.

MQCACF_LAST_PUT_DATE
Date of the last message successfully put to the queue.

MQCACF_LAST_PUT_TIME
Time of the last message successfully put to the queue.

MQCACF_MEDIA_LOG_EXTENT_NAME
Identity of the oldest log extent required to perform media recovery of the queue.

On IBM i, this parameter identifies the name of the oldest journal receiver require to perform media recovery of the queue.

MQIA_CURRENT_Q_DEPTH
The current number of messages on the queue.

MQIA_MONITORING_Q
Current level of monitoring data collection.

MQIA_OPEN_INPUT_COUNT
The number of handles that are currently open for input for the queue.
MQIA_OPEN_INPUT_COUNT does not include handles that are open for browse.

MQIA_OPEN_OUTPUT_COUNT
The number of handles that are currently open for output for the queue.

MQIACF_HANDLE_STATE
Whether an API call is in progress.

MQIACF_MONITORING
All the queue status monitoring attributes. These attributes are:

- MQCACF_LAST_GET_DATE
- MQCACF_LAST_GET_TIME
- MQCACF_LAST_PUT_DATE
- MQCACF_LAST_PUT_TIME
- MQIA_MONITORING_Q
- MQIACF_OLDEST_MSG_AGE
- MQIACF_Q_TIME_INDICATOR

Filtering is not supported for this parameter.

MQIACF_OLDEST_MSG_AGE
Age of oldest message on the queue.

MQIACF_Q_TIME_INDICATOR
Indicator of the time that messages remain on the queue.

MQIACF_UNCOMMITTED_MSGS
The number of uncommitted messages on the queue.

Where *StatusType* is MQIACF_Q_HANDLE:

MQBACF_EXTERNAL_UOW_ID
Unit of recovery identifier assigned by the queue manager.

MQBACF_Q_MGR_UOW_ID
External unit of recovery identifier associated with the connection.

MQCA_Q_NAME
Queue name.

MQCACF_APPL_TAG
This parameter is a string containing the tag of the application connected to the queue manager.

MQCACF_ASID
Address-space identifier of the application identified by *ApplTag*. This parameter is valid on z/OS only.

MQCACF_PSB_NAME
Name of the program specification block (PSB) associated with the running IMS transaction. This parameter is valid on z/OS only.

MQCACF_PSTID
Identifier of the IMS program specification table (PST) for the connected IMS region. This parameter is valid on z/OS only.

MQCACF_TASK_NUMBER
CICS task number. This parameter is valid on z/OS only.

MQCACF_TRANSACTION_ID
CICS transaction identifier. This parameter is valid on z/OS only.

MQCACF_USER_IDENTIFIER
The user name of the application that has opened the specified queue.

MQCACH_CHANNEL_NAME
The name of the channel that has the queue open, if any.

MQCACH_CONNECTION_NAME
The connection name of the channel that has the queue open, if any.

MQIA_APPL_TYPE
The type of application that has the queue open.

MQIACF_OPEN_BROWSE
Open browse.

Filtering is not supported for this parameter.

MQIACF_OPEN_INPUT_TYPE
Open input type.

Filtering is not supported for this parameter.

MQIACF_OPEN_INQUIRE
Open inquire.

Filtering is not supported for this parameter.

MQIACF_OPEN_OPTIONS
The options used to open the queue.

If this parameter is requested, the following parameter structures are also returned:

- *OpenBrowse*
- *OpenInputType*
- *OpenInquire*
- *OpenOutput*
- *OpenSet*

Filtering is not supported for this parameter.

MQIACF_OPEN_OUTPUT
Open output.

Filtering is not supported for this parameter.

MQIACF_OPEN_SET
Open set.

Filtering is not supported for this parameter.

MQIACF_PROCESS_ID
The process identifier of the application that has opened the specified queue.

MQIACF_ASYNC_STATE

MQIACF_THREAD_ID
The thread identifier of the application that has opened the specified queue.

MQIACF_UOW_TYPE
Type of external unit of recovery identifier as seen by the queue manager.

StatusType **(MQCFIN)**
Queue status type (parameter identifier: MQIACF_Q_STATUS_TYPE).

Specifies the type of status information required.

The value can be:

MQIACF_Q_STATUS
Selects status information relating to queues.

MQIACF_Q_HANDLE
Selects status information relating to the handles that are accessing the queues.

The default value, if this parameter is not specified, is MQIACF_Q_STATUS.

You cannot use *StatusType* as a parameter to filter on.

***StringFilterCommand* (MQCFSF)**
String filter command descriptor. The parameter identifier must be any string type parameter allowed in *QStatusAttrs* except MQCA_Q_NAME. Use this parameter to restrict the output from the command by specifying a filter condition. See "MQCFSF - PCF string filter parameter" on page 1099 for information about using this filter condition.

If you specify a string filter, you cannot also specify a byte string filter using the *ByteStringFilterCommand* parameter or an integer filter using the *IntegerFilterCommand* parameter.

Error codes

This command might return the following error code in the response format header "Error codes applicable to all commands" on page 687 along with any additional pertinent values.

***Reason* (MQLONG)**
The value can be:

MQRCCF_Q_TYPE_ERROR
Queue type not valid.

Inquire Queue Status (Response)

The response to the Inquire Queue Status (MQCMD_INQUIRE_Q_STATUS) command consists of the response header followed by the *QName* structure and a set of attribute parameter structures determined by the value of *StatusType* in the Inquire command.

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Always returned:
QName, *QSGDisposition*, *StatusType*

Possible values of *StatusType* are:

MQIACF_Q_STATUS
Returns status information relating to queues.

MQIACF_Q_HANDLE
Returns status information relating to the handles that are accessing the queues.

Returned if requested and *StatusType* is MQIACF_Q_STATUS:
CurrentQDepth, *LastGetDate*, *LastGetTime*, *LastPutDate*, *LastPutTime*, *MediaRecoveryLogExtent*, *OldestMsgAge*, *OnQTime*, *OpenInputCount*, *OpenOutputCount*, *QueueMonitoring*, *UncommittedMsgs*

Returned if requested and *StatusType* is MQIACF_Q_HANDLE:
ApplDesc , *ApplTag*, *ApplType*, *ASId*, *AsynchronousState*, *ChannelName*, *ConnectionName*, *ExternalUOWId*, *HandleState*, *OpenOptions*, *ProcessId*, *PSBName*, *PSTId*, *QMgrUOWId*, *TaskNumber*, *ThreadId*, *TransactionId*, *UOWIdentifier*, *UOWType*, *UserIdentifier*

Response data if StatusType is MQIACF_Q_STATUS

***CurrentQDepth* (MQCFIN)**
Current queue depth (parameter identifier: MQIA_CURRENT_Q_DEPTH).

***LastGetDate* (MQCFST)**
Date on which the last message was destructively read from the queue (parameter identifier: MQCACF_LAST_GET_DATE).

The date, in the form yyyy-mm-dd, on which the last message was successfully read from the queue. The date is returned in the time zone in which the queue manager is running.

The maximum length of the string is MQ_DATE_LENGTH.

***LastGetTime* (MQCFST)**
Time at which the last message was destructively read from the queue (parameter identifier: MQCACF_LAST_GET_TIME).

The time, in the form hh.mm.ss, at which the last message was successfully read from the queue. The time is returned in the time zone in which the queue manager is running.

The maximum length of the string is MQ_TIME_LENGTH.

***LastPutDate* (MQCFST)**
Date on which the last message was successfully put to the queue (parameter identifier: MQCACF_LAST_PUT_DATE).

The date, in the form yyyy-mm-dd, on which the last message was successfully put to the queue. The date is returned in the time zone in which the queue manager is running.

The maximum length of the string is MQ_DATE_LENGTH.

***LastPutTime* (MQCFST)**
Time at which the last message was successfully put to the queue (parameter identifier: MQCACF_LAST_PUT_TIME).

The time, in the form hh.mm.ss, at which the last message was successfully put to the queue. The time is returned in the time zone in which the queue manager is running.

The maximum length of the string is MQ_TIME_LENGTH.

***MediaRecoveryLogExtent* (MQCFST)**
Name of the oldest log extent required to perform media recovery of the queue (parameter identifier: MQCACF_MEDIA_LOG_EXTENT_NAME).

On IBM i, this parameter identifies the name of the oldest journal receiver required to perform media recovery of the queue.

The name returned is of the form Snnnnnnn.LOG and is not a fully qualified path name. The use of this parameter provides the ability for the name to be easily correlated with the messages issued, following an**rcdmqimg** command to identify those queues causing the media recovery LSN not to move forwards.

This parameter is valid on AIX, HP-UX, Linux, IBM i, Solaris, and Windows.

The maximum length of the string is MQ_LOG_EXTENT_NAME_LENGTH.

***OldestMsgAge* (MQCFIN)**
Age of the oldest message (parameter identifier: MQIACF_OLDEST_MSG_AGE). Age, in seconds, of the oldest message on the queue.

If the value is unavailable, MQMON_NOT_AVAILABLE is returned. If the queue is empty, 0 is returned. If the value exceeds 999 999 999, it is returned as 999 999 999.

***OnQTime* (MQCFIL)**
Indicator of the time that messages remain on the queue (parameter identifier: MQIACF_Q_TIME_INDICATOR). Amount of time, in microseconds, that a message spent on the queue. Two values are returned:

- A value based on recent activity over a short period.
- A value based on activity over a longer period.

Where no measurement is available, the value MQMON_NOT_AVAILABLE is returned. If the value exceeds 999 999 999, it is returned as 999 999 999.

***OpenInputCount* (MQCFIN)**
Open input count (parameter identifier: MQIA_OPEN_INPUT_COUNT).

***OpenOutputCount* (MQCFIN)**
Open output count (parameter identifier: MQIA_OPEN_OUTPUT_COUNT).

***QName* (MQCFST)**
Queue name (parameter identifier: MQCA_Q_NAME).

The maximum length of the string is MQ_Q_NAME_LENGTH.

***QSGDisposition* (MQCFIN)**
QSG disposition (parameter identifier: MQIA_QSG_DISP).

Returns the disposition of the object (that is, where it is defined and how it behaves). This parameter is valid on z/OS only. The value can be:

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

MQQSGD_SHARED
The object is defined as MQQSGD_SHARED.

***QueueMonitoring* (MQCFIN)**
Current level of monitoring data collection for the queue (parameter identifier: MQIA_MONITORING_Q). The value can be:

MQMON_OFF
Monitoring for the queue is switched off.

MQMON_LOW
Low rate of data collection.

MQMON_MEDIUM
Medium rate of data collection.

MQMON_HIGH
High rate of data collection.

***StatusType* (MQCFST)**
Queue status type (parameter identifier: MQIACF_Q_STATUS_TYPE).

Specifies the type of status information.

***UncommittedMsgs* (MQCFIN)**
The number of uncommitted changes (puts and gets) pending for the queue (parameter identifier: MQIACF_UNCOMMITTED_MSGS). The value can be:

MQQSUM_YES
On z/OS, there are one or more uncommitted changes pending.

MQQSUM_NO
There are no uncommitted changes pending.

n
On platforms other than z/OS, an integer value indicating how many uncommitted changes are pending.

Response data if StatusType is MQIACF_Q_HANDLE

***ApplDesc* (MQCFST)**
Application description (parameter identifier: MQCACF_APPL_DESC).

The maximum length is MQ_APPL_DESC_LENGTH.

***ApplTag* (MQCFST)**
Open application tag (parameter identifier: MQCACF_APPL_TAG).

The maximum length of the string is MQ_APPL_TAG_LENGTH.

***ApplType* (MQCFIN)**
Open application type (parameter identifier: MQIA_APPL_TYPE).

The value can be:

MQAT_QMGR
A queue manager process.

MQAT_CHANNEL_INITIATOR
The channel initiator.

MQAT_USER
A user application.

MQAT_BATCH
Application using a batch connection. MQAT_BATCH applies only to z/OS.

MQAT_RRS_BATCH
RRS-coordinated application using a batch connection. MQAT_RRS_BATCH applies only to z/OS.

MQAT_CICS
A CICS transaction. MQAT_CICS applies only to z/OS.

MQAT_IMS
An IMS transaction. MQAT_IMS applies only to z/OS.

MQAT_SYSTEM_EXTENSION
Application performing an extension of function that is provided by the queue manager.

***ASId* (MQCFST)**
Address-space identifier (parameter identifier: MQCACF_ASID).

The 4-character address-space identifier of the application identified by *ApplTag*. It distinguishes duplicate values of *ApplTag*. This parameter applies only to z/OS.

The length of the string is MQ_ASID_LENGTH.

***AsynchronousState* (MQCFIN)**
The state of the asynchronous consumer on this queue (parameter identifier: MQIACF_ASYNC_STATE).

The value can be:

MQAS_ACTIVE
An MQCB call has set up a function to call back to process messages asynchronously and the connection handle has been started so that asynchronous message consumption can proceed.

MQAS_INACTIVE
An MQCB call has set up a function to call back to process messages asynchronously but the connection handle has not yet been started, or has been stopped or suspended, so that asynchronous message consumption cannot currently proceed.

MQAS_SUSPENDED
The asynchronous consumption callback has been suspended so that asynchronous message consumption cannot currently proceed on this handle. This situation can be either because an MQCB or MQCTL call with *Operation* MQOP_SUSPEND has been issued against this object handle by the application, or because it has been suspended by the system. If it has been suspended by the system, as part of the process of suspending asynchronous message consumption

the callback function is called with the reason code that describes the problem resulting in suspension. This situation is reported in the *Reason* field in the MQCBC structure passed to the callback. In order for asynchronous message consumption to proceed, the application must issue an MQCB or MQCTL call with *Operation* MQOP_RESUME.

MQAS_SUSPENDED_TEMPORARY
The asynchronous consumption callback has been temporarily suspended by the system so that asynchronous message consumption cannot currently proceed on this object handle. As part of the process of suspending asynchronous message consumption the callback function is called with the reason code that describes the problem resulting in suspension. This situation is reported in the *Reason* field in the MQCBC structure passed to the callback. The callback function is called again when asynchronous message consumption is resumed by the system after the temporary condition has been resolved.

MQAS_NONE
An MQCB call has not been issued against this handle, so no asynchronous message consumption is configured on this handle.

***ChannelName* (MQCFST)**
Channel name (parameter identifier: MQCACH_CHANNEL_NAME).

The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

***Conname* (MQCFST)**
Connection name (parameter identifier: MQCACH_CONNECTION_NAME).

The maximum length of the string is MQ_CONN_NAME_LENGTH.

***ExternalUOWId* (MQCFBS)**
RRS unit-of-recovery identifier (parameter identifier: MQBACF_EXTERNAL_UOW_ID).

The RRS unit-of-recovery identifier associated with the handle. This parameter is valid only on z/OS only.

The length of the string is MQ_EXTERNAL_UOW_ID_LENGTH.

***HandleState* (MQCFIN)**
State of the handle (parameter identifier: MQIACF_HANDLE_STATE).

The value can be:

MQHSTATE_ACTIVE
An API call from a connection is currently in progress for this object. For a queue, this condition can arise when an MQGET WAIT call is in progress.

If there is an MQGET SIGNAL outstanding, it does not mean, by itself, that the handle is active.

MQHSTATE_INACTIVE
No API call from a connection is currently in progress for this object. For a queue, this condition can arise when no MQGET WAIT call is in progress.

***OpenBrowse* (MQCFIN)**
Open browse (parameter identifier: MQIACF_OPEN_BROWSE).

The value can be:

MQQSO_YES
The queue is open for browsing.

MQQSO_NO
The queue is not open for browsing.

***OpenInputType* (MQCFIN)**
Open input type (parameter identifier: MQIACF_OPEN_INPUT_TYPE).

The value can be:

MQQSO_NO
The queue is not open for inputting.

MQQSO_SHARED
The queue is open for shared input.

MQQSO_EXCLUSIVE
The queue is open for exclusive input.

***OpenInquire* (MQCFIN)**
Open inquire (parameter identifier: MQIACF_OPEN_INQUIRE).

The value can be:

MQQSO_YES
The queue is open for inquiring.

MQQSO_NO
The queue is not open for inquiring.

***OpenOptions* (MQCFIN)**
Open options currently in force for the queue (parameter identifier: MQIACF_OPEN_OPTIONS).

***OpenOutput* (MQCFIN)**
Open output (parameter identifier: MQIACF_OPEN_OUTPUT).

The value can be:

MQQSO_YES
The queue is open for output.

MQQSO_NO
The queue is not open for output.

***OpenSet* (MQCFIN)**
Open set (parameter identifier: MQIACF_OPEN_SET).

The value can be:

MQQSO_YES
The queue is open for setting.

MQQSO_NO
The queue is not open for setting.

***ProcessId* (MQCFIN)**
Open application process ID (parameter identifier: MQIACF_PROCESS_ID).

***PSBName* (MQCFST)**
Program specification block (PSB) name (parameter identifier: MQCACF_PSB_NAME).

The 8-character name of the PSB associated with the running IMS transaction. This parameter is valid on z/OS only.

The length of the string is MQ_PSB_NAME_LENGTH.

***PSTId* (MQCFST)**
Program specification table (PST) identifier (parameter identifier: MQCACF_PST_ID).

The 4-character identifier of the PST region identifier for the connected IMS region. This parameter is valid on z/OS only.

The length of the string is MQ_PST_ID_LENGTH.

***QMgrUOWId* (MQCFBS)**
The unit of recovery assigned by the queue manager (parameter identifier: MQBACF_Q_MGR_UOW_ID).

On z/OS, this parameter is a 6-byte log RBA, displayed as 12 hexadecimal characters. On platforms other than z/OS, this parameter is an 8-byte transaction identifier, displayed as 16 hexadecimal characters.

The maximum length of the string is MQ_UOW_ID_LENGTH.

***QName* (MQCFST)**
Queue name (parameter identifier: MQCA_Q_NAME).

The maximum length of the string is MQ_Q_NAME_LENGTH.

***QSGDisposition* (MQCFIN)**
QSG disposition (parameter identifier: MQIA_QSG_DISP).

Returns the disposition of the object (that is, where it is defined and how it behaves). This parameter is valid on z/OS only. The value can be:

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

MQQSGD_SHARED
The object is defined as MQQSGD_SHARED.

***StatusType* (MQCFST)**
Queue status type (parameter identifier: MQIACF_Q_STATUS_TYPE).

Specifies the type of status information.

***TaskNumber* (MQCFST)**
CICS task number (parameter identifier: MQCACF_TASK_NUMBER).

A 7-digit CICS task number. This parameter is valid on z/OS only.

The length of the string is MQ_TASK_NUMBER_LENGTH.

***ThreadId* (MQCFIN)**
The thread ID of the open application (parameter identifier: MQIACF_THREAD_ID).

A value of zero indicates that the handle was opened by a shared connection. A handle created by a shared connection is logically open to all threads.

***TransactionId* (MQCFST)**
CICS transaction identifier (parameter identifier: MQCACF_TRANSACTION_ID).

A 4-character CICS transaction identifier. This parameter is valid on z/OS only.

The length of the string is MQ_TRANSACTION_ID_LENGTH.

***UOWIdentifier* (MQCFBS)**
The external unit of recovery associated with the connection (parameter identifier: MQBACF_EXTERNAL_UOW_ID).

This parameter is the recovery identifier for the unit of recovery. Its format is determined by the value of *UOWType*.

The maximum length of the string is MQ_UOW_ID_LENGTH.

***UOWType* (MQCFIN)**
Type of external unit of recovery identifier as perceived by the queue manager (parameter identifier: MQIACF_UOW_TYPE).

The value can be:

MQUOWT_Q_MGR

MQUOWT_CICS
Valid only on z/OS.

MQUOWT_RRS
Valid only on z/OS.

MQUOWT_IMS
Valid only on z/OS.

MQUOWT_XA

UOWType identifies the *UOWIdentifier* type and not the type of the transaction coordinator. When the value of *UOWType* is MQUOWT_Q_MGR, the associated identifier is in *QMgrUOWId* (and not *UOWIdentifier*).

***UserIdentifier* (MQCFST)**
Open application user name (parameter identifier: MQCACF_USER_IDENTIFIER).

The maximum length of the string is MQ_MAX_USER_ID_LENGTH.

Inquire Service

The Inquire Service (MQCMD_INQUIRE_SERVICE) command inquires about the attributes of existing WebSphere MQ services.

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Required parameters

***ServiceName* (MQCFST)**
Service name (parameter identifier: MQCA_SERVICE_NAME).

This parameter is the name of the service whose attributes are required. Generic service names are supported. A generic name is a character string followed by an asterisk (*), for example ABC*, and it selects all services having names that start with the selected character string. An asterisk on its own matches all possible names.

The service name is always returned regardless of the attributes requested.

The maximum length of the string is MQ_OBJECT_NAME_LENGTH.

Optional parameters

***IntegerFilterCommand* (MQCFIF)**
Integer filter command descriptor. The parameter identifier must be any integer type parameter allowed in *ServiceAttrs* except MQIACF_ALL. Use this parameter to restrict the output from the command by specifying a filter condition. See “MQCFIF - PCF integer filter parameter” on page 1092 for information about using this filter condition.

If you specify an integer filter, you cannot also specify a string filter using the *StringFilterCommand* parameter.

***ServiceAttrs* (MQCFIL)**
Service attributes (parameter identifier: MQIACF_SERVICE_ATTRS).

The attribute list might specify the following value on its own - default value if the parameter is not specified:

MQIACF_ALL
All attributes.

or a combination of the following:

MQCA_ALTERATION_DATE
Date on which the definition was last altered.

MQCA_ALTERATION_TIME
Time at which the definition was last altered.

MQCA_SERVICE_DESC
Description of service definition.

MQCA_SERVICE_NAME
Name of service definition.

MQCA_SERVICE_START_ARGS
Arguments to be passed to the service program.

MQCA_SERVICE_START_COMMAND
Name of program to run to start the service.

MQCA_SERVICE_STOP_ARGS
Arguments to be passed to the stop program to stop the service.

MQCA_STDERR_DESTINATION
Destination of standard error for the process.

MQCA_STDOUT_DESTINATION
Destination of standard output for the process.

MQCA_SERVICE_START_ARGS
Arguments to be passed to the service program.

MQIA_SERVICE_CONTROL
When the queue manager must start the service.

MQIA_SERVICE_TYPE
Mode in which the service is to run.

***StringFilterCommand* (MQCFSF)**
String filter command descriptor. The parameter identifier must be any string type parameter allowed in *ServiceAttrs* except MQCA_SERVICE_NAME. Use this parameter to restrict the output from the command by specifying a filter condition. See "MQCFSF - PCF string filter parameter" on page 1099 for information about using this filter condition.

If you specify a string filter, you cannot also specify an integer filter using the *IntegerFilterCommand* parameter.

Inquire Service (Response)

The response to the Inquire Service (MQCMD_INQUIRE_SERVICE) command consists of the response header followed by the *ServiceName* structure and the requested combination of attribute parameter structures.

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If a generic service name was specified, one such message is generated for each service found.

Always returned:
ServiceName

Returned if requested:
AlterationDate, *AlterationTime*, *Arguments*, *ServiceDesc*, *ServiceType*, *StartArguments*, *StartCommand*, *StartMode*, *StderrDestination*, *StdoutDestination*, *StopArguments*, *StopCommand*

Response data

***AlterationDate* (MQCFST)**
Alteration date (parameter identifier: MQCA_ALTERATION_DATE).

The date on which the information was last altered in the form `yyyy-mm-dd`.

***AlterationTime* (MQCFST)**
Alteration time (parameter identifier: MQCA_ALTERATION_TIME).

The time at which the information was last altered in the form `hh.mm.ss`.

***ServiceDesc* (MQCFST)**
Description of service definition (parameter identifier: MQCA_SERVICE_DESC).

The maximum length of the string is MQ_SERVICE_DESC_LENGTH.

***ServiceName* (MQCFST)**
Name of service definition (parameter identifier: MQCA_SERVICE_ NAME).

The maximum length of the string is MQ_SERVICE_NAME_LENGTH.

***ServiceType* (MQCFIN)**
The mode in which the service is to run (parameter identifier: MQIA_SERVICE_TYPE).

The value can be:

MQSVC_TYPE_SERVER
Only one instance of the service can be executed at a time, with the status of the service made available by the Inquire Service Status command.

MQSVC_TYPE_COMMAND
Multiple instances of the service can be started.

***StartArguments* (MQCFST)**
The arguments to be passed to the user program at queue manager startup (parameter identifier: MQCA_SERVICE_START_ARGS).

The maximum length of the string is MQ_SERVICE_ARGS_LENGTH.

***StartCommand* (MQCFST)**
Service program name (parameter identifier: MQCA_SERVICE_START_COMMAND).

The name of the program which is to run.

The maximum length of the string is MQ_SERVICE_COMMAND_LENGTH.

***StartMode* (MQCFIN)**
Service mode (parameter identifier: MQIA_SERVICE_CONTROL).

Specifies how the service is to be started and stopped. The value can be:

MQSVC_CONTROL_MANUAL
The service is not to be started automatically or stopped automatically. It is to be controlled by user command.

MQSVC_CONTROL_Q_MGR
The service is to be started and stopped at the same time as the queue manager is started and stopped.

MQSVC_CONTROL_Q_MGR_START
The service is to be started at the same time as the queue manager is started, but is not requested to stop when the queue manager is stopped.

***StderrDestination* (MQCFST)**
The path to a file to which the standard error (stderr) of the service program is to be redirected (parameter identifier: MQCA_STDERR_DESTINATION).

The maximum length of the string is MQ_SERVICE_PATH_LENGTH.

***StdoutDestination* (MQCFST)**
The path to a file to which the standard output (stdout) of the service program is to be redirected (parameter identifier: MQCA_STDOUT_DESTINATION).

The maximum length of the string is MQ_SERVICE_PATH_LENGTH.

***StopArguments* (MQCFST)**
The arguments to be passed to the stop program when instructed to stop the service (parameter identifier: MQCA_SERVICE_STOP_ARGS).

The maximum length of the string is MQ_SERVICE_ARGS_LENGTH.

***StopCommand* (MQCFST)**
Service program stop command (parameter identifier: MQCA_SERVICE_STOP_COMMAND).

This parameter is the name of the program that is to run when the service is requested to stop.

The maximum length of the string is MQ_SERVICE_COMMAND_LENGTH.

Inquire Service Status

The Inquire Service Status (MQCMD_INQUIRE_SERVICE_STATUS) command inquires about the status of one or more WebSphere MQ service instances.

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Required parameters

***ServiceName* (MQCFST)**
Service name (parameter identifier: MQCA_SERVICE_NAME).

Generic service names are supported. A generic name is a character string followed by an asterisk (*), for example ABC*, and it selects all services having names that start with the selected character string. An asterisk on its own matches all possible names.

The service name is always returned, regardless of the attributes requested.

The maximum length of the string is MQ_OBJECT_NAME_LENGTH.

Optional parameters (Inquire Service Status)

***IntegerFilterCommand* (MQCFIF)**
Integer filter command descriptor. The parameter identifier must be any integer type parameter allowed in *ServiceStatusAttrs* except MQIACF_ALL. Use this parameter to restrict the output from the command by specifying a filter condition. See “MQCFIF - PCF integer filter parameter” on page 1092 for information about using this filter condition.

If you specify an integer filter, you cannot also specify a string filter using the *StringFilterCommand* parameter.

***ServiceStatusAttrs* (MQCFIL)**
Service status attributes (parameter identifier: MQIACF_SERVICE_STATUS_ATTRS).

The attribute list can specify the following value on its own - is the default value used if the parameter is not specified:

MQIACF_ALL
All attributes.

or a combination of the following:

MQCA_SERVICE_DESC
Description of service definition.

MQCA_SERVICE_NAME
Name of service definition.

MQCA_SERVICE_START_ARGS
The arguments to pass to the service program.

MQCA_SERVICE_START_COMMAND
The name of the program to run to start the service.

MQCA_SERVICE_STOP_ARGS
The arguments to pass to the stop command to stop the service.

MQCA_SERVICE_STOP_COMMAND
The name of the program to run to stop the service.

MQCA_STDERR_DESTINATION
Destination of standard error for the process.

MQCA_STDOUT_DESTINATION
Destination of standard output for the process.

MQCACF_SERVICE_START_DATE
The date on which the service was started.

MQCACF_SERVICE_START_TIME
The time at which the service was started.

MQIA_SERVICE_CONTROL
How the service is to be started and stopped.

MQIA_SERVICE_TYPE
The mode in which the service is to run.

MQIACF_PROCESS_ID
The process identifier of the operating system task under which this service is executing.

MQIACF_SERVICE_STATUS
Status of the service.

***StringFilterCommand* (MQCFSF)**
String filter command descriptor. The parameter identifier must be any string type parameter allowed in *ServiceStatusAttrs* except MQCA_SERVICE_NAME. Use this parameter to restrict the output from the command by specifying a filter condition. See "MQCFSF - PCF string filter parameter" on page 1099 for information about using this filter condition.

If you specify a string filter, you cannot also specify an integer filter using the *IntegerFilterCommand* parameter.

Error codes

This command might return the following error code in the response format header, in addition to the values shown in "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_SERV_STATUS_NOT_FOUND
Service status not found.

Inquire Service Status (Response)

The response to the Inquire Service Status (MQCMD_INQUIRE_SERVICE_STATUS) command consists of the response header followed by the *ServiceName* structure and the requested combination of attribute parameter structures.

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If a generic service name was specified, one such message is generated for each service found.

Always returned:
ServiceName

Returned if requested:
ProcessId, *ServiceDesc*, *StartArguments*, *StartCommand*, *StartDate*, *StartMode*, *StartTime*, *Status*, *StderrDestination*, *StdoutDestination*, *StopArguments*, *StopCommand*

Response data

ProcessId **(MQCFIN)**
Process identifier (parameter identifier: MQIACF_PROCESS_ID).

The operating system process identifier associated with the service.

ServiceDesc **(MQCFST)**
Description of service definition (parameter identifier: MQCACH_SERVICE_DESC).

The maximum length of the string is MQ_SERVICE_DESC_LENGTH.

ServiceName **(MQCFST)**
Name of the service definition (parameter identifier: MQCA_SERVICE_NAME).

The maximum length of the string is MQ_OBJECT_NAME_LENGTH.

StartArguments **(MQCFST)**
Arguments to be passed to the program on startup (parameter identifier: MQCA_SERVICE_START_ARGS).

The maximum length of the string is MQ_SERVICE_ARGS_LENGTH.

StartCommand **(MQCFST)**
Service program name (parameter identifier: MQCA_SERVICE_START_COMMAND).

Specifies the name of the program which is to run.

The maximum length of the string is MQ_SERVICE_COMMAND_LENGTH.

StartDate **(MQCFST)**
Start date (parameter identifier: MQIACF_SERVICE_START_DATE).

The date, in the form `yyyy-mm-dd`, on which the service was started.

The maximum length of the string is MQ_DATE_LENGTH

StartMode **(MQCFIN)**
Service mode (parameter identifier: MQIACH_SERVICE_CONTROL).

How the service is to be started and stopped. The value can be:

MQSVC_CONTROL_MANUAL
The service is not to be started automatically or stopped automatically. It is to be controlled by user command.

MQSVC_CONTROL_Q_MGR
The service is to be started and stopped at the same time as the queue manager is started and stopped.

MQSVC_CONTROL_Q_MGR_START
The service is to be started at the same time as the queue manager is started, but is not request to stop when the queue manager is stopped.

StartTime **(MQCFST)**
Start date (parameter identifier: MQIACF_SERVICE_START_TIME).

The time, in the form `hh.mm.ss`, at which the service was started.

The maximum length of the string is MQ_TIME_LENGTH

Status **(MQCFIN)**
Service status (parameter identifier: MQIACF_SERVICE_STATUS).

The status of the service. The value can be:

MQSVC_STATUS_STARTING
The service is in the process of initializing.

MQSVC_STATUS_RUNNING
The service is running.

MQSVC_STATUS_STOPPING
The service is stopping.

***StderrDestination* (MQCFST)**
Specifies the path to a file to which the standard error (stderr) of the service program is to be redirected (parameter identifier: MQCA_STDERR_DESTINATION).

The maximum length of the string is MQ_SERVICE_PATH_LENGTH.

***StdoutDestination* (MQCFST)**
Specifies the path to a file to which the standard output (stdout) of the service program is to be redirected (parameter identifier: MQCA_STDOUT_DESTINATION).

The maximum length of the string is MQ_SERVICE_PATH_LENGTH.

***StopArguments* (MQCFST)**
Specifies the arguments to be passed to the stop program when instructed to stop the service (parameter identifier: MQCA_SERVICE_STOP_ARGS).

The maximum length of the string is MQ_SERVICE_ARGS_LENGTH.

***StopCommand* (MQCFST)**
Service program stop command (parameter identifier: MQCA_SERVICE_STOP_COMMAND).

This parameter is the name of the program that is to run when the service is requested to stop.

The maximum length of the string is MQ_SERVICE_COMMAND_LENGTH.

Inquire Subscription

The Inquire Subscription (MQCMD_INQUIRE_SUBSCRIPTION) command inquires about the attributes of a subscription.

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Required parameters

***SubName* (MQCFST)**
The unique identifier of the application for a subscription (parameter identifier: MQCACF_SUB_NAME).

If *SubName* is not provided, *SubId* must be specified to identify the subscription to be inquired.

The maximum length of the string is MQ_SUB_NAME_LENGTH.

***SubId* (MQCFBS)**
Subscription identifier (parameter identifier: MQBACF_SUB_ID).

Specifies the unique internal subscription identifier. If the queue manager is generating the CorrelId for a subscription, then the *SubId* is used as the *DestinationCorrelId*.

You must supply a value for *SubId* if you have not supplied a value for *SubName*.

The maximum length of the string is MQ_CORREL_ID_LENGTH.

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- Blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.

- A queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- An asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

You cannot use *CommandScope* as a parameter to filter on.

***Durable* (MQCFIN)**
Specify this attribute to restrict the type of subscriptions which are displayed (parameter identifier: MQIACF_DURABLE_SUBSCRIPTION).

MQSUB_DURABLE_YES
Information about durable subscriptions only is displayed.

MQSUB_DURABLE_NO
Information about nondurable subscriptions only is displayed.

MQSUB_DURABLE_ALL
Information about all subscriptions is displayed.

***SubscriptionAttrs* (MQCFIL)**
Subscription attributes (parameter identifier: MQIACF_SUB_ATTRS).

Use one of the following parameters to select the attributes you want to display:

- ALL to display all attributes.
- SUMMARY to display a subset of the attributes (see MQIACF_SUMMARY for a list).
- Any of the following parameters individually or in combination.

MQIACF_ALL
All attributes.

MQIACF_SUMMARY
Use this parameter to display:

- MQBACF_DESTINATION_CORREL_ID
- MQBACF_SUB_ID
- MQCACF_DESTINATION
- MQCACF_DESTINATION_Q_MGR
- MQCACF_SUB_NAME
- MQCA_TOPIC_STRING
- MQIACF_SUB_TYPE

MQBACF_ACCOUNTING_TOKEN
The accounting token passed by the subscriber for propagation into messages sent to this subscription in the AccountingToken field of the MQMD.

MQBACF_DESTINATION_CORREL_ID
The CorrelId used for messages sent to this subscription.

MQBACF_SUB_ID
The internal unique key identifying a subscription.

MQCA_ALTERATION_DATE
The date of the most recent MQSUB with MQSO_ALTER or ALTER SUB command.

MQCA_ALTERATION_TIME
The time of the most recent MQSUB with MQSO_ALTER or ALTER SUB command.

MQCA_CREATION_DATE
The date of the first MQSUB command that caused this subscription to be created.

MQCA_CREATION_TIME
The time of the first MQSUB that caused this subscription to be created.

MQCA_TOPIC_STRING
The resolved topic string the subscription is for.

MQCACF_APPL_IDENTITY_DATA
The identity data passed by the subscriber for propagation into messages sent to this subscription in the ApplIdentity field of the MQMD.

MQCACF_DESTINATION
The destination for messages published to this subscription.

MQCACF_DESTINATION_Q_MGR
The destination queue manager for messages published to this subscription.

MQCACF_SUB_NAME
The unique identifier of an application for a subscription.

MQCACF_SUB_SELECTOR
The SQL 92 selector string to be applied to messages published on the named topic to select whether they are eligible for this subscription.

MQCACF_SUB_USER_DATA
The user data associated with the subscription.

MQCACF_SUB_USER_ID
The userid that owns the subscription. MQCACF_SUB_USER_ID is either the userid associated with the creator of the subscription, or, if subscription takeover is permitted, the userid which last took over the subscription.

MQCA_TOPIC_NAME
The name of the topic object that identifies a position in the topic hierarchy to which the topic string is concatenated.

MQIACF_DESTINATION_CLASS
Indicated whether this subscription is a managed subscription.

MQIACF_DURABLE_SUBSCRIPTION
Whether the subscription is durable, persisting over queue manager restart.

MQIACF_EXPIRY
The time to live from creation date and time.

MQIACF_PUB_PRIORITY
The priority of the messages sent to this subscription.

MQIACF_PUBSUB_PROPERTIES
The manner in which publish/subscribe related message properties are added to messages sent to this subscription.

MQIACF_REQUEST_ONLY
Indicates whether the subscriber polls for updates by using MQSUBRQ API, or whether all publications are delivered to this subscription.

MQIACF_SUB_TYPE
The type of subscription - how it was created.

MQIACF_SUBSCRIPTION_SCOPE
Whether the subscription forwards messages to all other queue managers directly connected by using a Publish/Subscribe collective or hierarchy, or the subscription forwards messages on this topic within this queue manager only.

MQIACF_SUB_LEVEL
The level within the subscription interception hierarchy at which this subscription is made.

MQIACF_VARIABLE_USER_ID
Users other than the creator of this subscription that can connect to it (subject to topic and destination authority checks).

MQIACF_WILDCARD_SCHEMA
The schema to be used when interpreting wildcard characters in the topic string.

***SubscriptionType* (MQCFIN)**
Specify this attribute to restrict the type of subscriptions which are displayed (parameter identifier: MQIACF_SUB_TYPE).

MQSUBTYPE_ADMIN
Subscriptions which have been created by an admin interface or modified by an admin interface are selected.

MQSUBTYPE_ALL
All subscription types are displayed.

MQSUBTYPE_API
Subscriptions created by applications by way of the WebSphere MQ API are displayed.

MQSUBTYPE_PROXY
System created subscriptions relating to inter-queue manager subscriptions are displayed.

MQSUBTYPE_USER
USER subscriptions (with SUBTYPE of either ADMIN or API) are displayed. MQSUBTYPE_USER is the default value.

Inquire Subscription (Response)

The response to the Inquire Subscription (MQCMD_INQUIRE_SUBSCRIPTION) command consists of the response header followed by the *SubId* and *SubName* structures, and the requested combination of attribute parameter structures (where applicable).

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Always returned
SubID, *SubName*

Returned if requested
AlterationDate, *AlterationTime*, *CreationDate*, *CreationTime*, *Destination*, *DestinationClass*, *DestinationCorrelId*, *DestinationQueueManager*, *Expiry*, *PublishedAccountingToken*, *PublishedApplicationIdentityData*, *PublishPriority*, *PublishSubscribeProperties*, *Requestonly*, *Selector*, *SelectorType* ,*SubscriptionLevel*,*SubscriptionScope*, *SubscriptionType*, *SubscriptionUser*, *TopicObject*, *TopicString*, *Userdata*, *VariableUser*, *WildcardSchema*

Response Data

***AlterationDate* (MQCFST)**
The date of the most recent **MQSUB** or **Change Subscription** command that modified the properties of the subscription (parameter identifier: MQCA_ALTERATION_DATE).

***AlterationTime* (MQCFST)**
The time of the most recent **MQSUB** or **Change Subscription** command that modified the properties of the subscription (parameter identifier: MQCA_ALTERATION_TIME).

***CreationDate* (MQCFST)**
The creation date of the subscription, in the form yyyy-mm-dd (parameter identifier: MQCA_CREATION_DATE).

***CreationTime* (MQCFST)**
The creation time of the subscription, in the form hh.mm.ss (parameter identifier: MQCA_CREATION_TIME).

***Destination* (MQCFST)**
Destination (parameter identifier: MQCACF_DESTINATION).

Specifies the name of the alias, local, remote, or cluster queue to which messages for this subscription are put.

***DestinationClass* (MQCFIN)**
Destination class (parameter identifier: MQIACF_DESTINATION_CLASS).

Whether the destination is managed.

The value can be:

MQDC_MANAGED
The destination is managed.

MQDC_PROVIDED
The destination queue is as specified in the *Destination* field.

***DestinationCorrelId* (MQCFBS)**
Destination correlation identifier (parameter identifier: MQBACF_DESTINATION_CORREL_ID).

A correlation identifier that is placed in the *CorrelId* field of the message descriptor for all the messages sent to this subscription.

The maximum length is MQ_CORREL_ID_LENGTH.

***DestinationQueueManager* (MQCFST)**
Destination queue manager (parameter identifier: MQCACF_DESTINATION_Q_MGR).

Specifies the name of the destination queue manager, either local or remote, to which messages for the subscription are forwarded.

The maximum length of the string is MQ_Q_MGR_NAME_LENGTH.

***Durable* (MQCFIN)**
Whether this subscription is a durable subscription (parameter identifier: MQIACF_DURABLE_SUBSCRIPTION).

The value can be:

MQSUB_DURABLE_YES
The subscription persists, even if the creating application disconnects from the queue manager or issues an MQCLOSE call for the subscription. The queue manager reinstates the subscription during restart.

MQSUB_DURABLE_NO
The subscription is non-durable. The queue manager removes the subscription when the creating application disconnects from the queue manager or issues an MQCLOSE call for the subscription. If the subscription has a destination class (DESTCLAS) of MANAGED, the queue manager removes any messages not yet consumed when it closes the subscription.

***Expiry* (MQCFIN)**
The time, in tenths of a second, at which a subscription expires after its creation date and time (parameter identifier: MQIACF_EXPIRY).

A value of unlimited means that the subscription never expires.

After a subscription has expired it becomes eligible to be discarded by the queue manager and receives no further publications.

***PublishedAccountingToken* (MQCFBS)**
Value of the accounting token used in the *AccountingToken* field of the message descriptor (parameter identifier: MQBACF_ACCOUNTING_TOKEN).

The maximum length of the string is MQ_ACCOUNTING_TOKEN_LENGTH.

***PublishedApplicationIdentityData* (MQCFST)**
Value of the application identity data used in the *ApplIdentityData* field of the message descriptor (parameter identifier: MQCACF_APPL_IDENTITY_DATA.

The maximum length of the string is MQ_APPL_IDENTITY_DATA_LENGTH.

***PublishPriority* (MQCFIN)**
The priority of messages sent to this subscription (parameter identifier: MQIACF_PUB_PRIORITY).

The value can be:

MQPRI_PRIORITY_AS_PUBLISHED
The priority of messages sent to this subscription is taken from that priority supplied to the published message. MQPRI_PRIORITY_AS_PUBLISHED is the supplied default value.

MQPRI_PRIORITY_AS_QDEF
The priority of messages sent to this subscription is determined by the default priority of the queue defined as a destination.

0-9
An integer value providing an explicit priority for messages sent to this subscription.

***PublishSubscribeProperties* (MQCFIN)**
Specifies how publish/subscribe related message properties are added to messages sent to this subscription (parameter identifier: MQIACF_PUBSUB_PROPERTIES).

The value can be:

MQPSPROP_NONE
Publish/subscribe properties are not added to the messages. MQPSPROP_NONE is the supplied default value.

MQPSPROP_MSGPROP
Publish/subscribe properties are added as PCF attributes.

MQPSPROP_COMPAT
If the original publication is a PCF message, then the publish/subscribe properties are added as PCF attributes. Otherwise, publish/subscribe properties are added within an MQRFH version 1 header. This method is compatible with applications coded for use with previous versions of WebSphere MQ.

MQPSPROP_RFH2
Publish/subscribe properties are added within an MQRFH version 2 header. This method is compatible with applications coded for use with WebSphere Message Brokers.

***Requestonly*(MQCFIN)**
Indicates whether the subscriber polls for updates using the MQSUBRQ API call, or whether all publications are delivered to this subscription (parameter identifier: MQIACF_REQUEST_ONLY).

The value can be:

MQRU_PUBLISH_ALL
All publications on the topic are delivered to this subscription.

MQRU_PUBLISH_ON_REQUEST
Publications are only delivered to this subscription in response to an MQSUBRQ API call.

***Selector* (MQCFST)**
Specifies the selector applied to messages published to the topic (parameter identifier: MQCACF_SUB_SELECTOR).

Only those messages that satisfy the selection criteria are put to the destination specified by this subscription.

***SelectorType*(MQCFIN)**
The type of selector string that has been specified (parameter identifier: MQIACF_SELECTOR_TYPE).

The value can be:

MQSELTYPE_NONE
No selector has been specified.

MQSELTYPE_STANDARD
The selector references only the properties of the message, not its content, using the standard WebSphere MQ selector syntax. Selectors of this type are to be handled internally by the queue manager.

MQSELTYPE_EXTENDED
The selector uses extended selector syntax, typically referencing the content of the message. Selectors of this type cannot be handled internally by the queue manager; extended selectors can be handled only by another program such as WebSphere Message Broker.

SubID **(MQCFBS)**
The internal, unique key identifying a subscription (parameter identifier: MQBACF_SUB_ID).

SubscriptionLevel **(MQCFIN)**
The level within the subscription interception hierarchy at which this subscription is made (parameter identifier: MQIACF_SUB_LEVEL).

The value can be:

0 - 9
An integer in the range 0-9. The default value is 1. Subscribers with a subscription level of 9 will intercept publications before they reach subscribers with lower subscription levels.

SubscriptionScope **(MQCFIN)**
Determines whether this subscription is passed to other queue managers in the network (parameter identifier: MQIACF_SUBSCRIPTION_SCOPE).

The value can be:

MQTSCOPE_ALL
The subscription is forwarded to all queue managers directly connected through a publish/subscribe collective or hierarchy. MQTSCOPE_ALL is the supplied default value.

MQTSCOPE_QMGR
The subscription only forwards messages published on the topic within this queue manager.

SubscriptionType**(MQCFIN)**
Indicates how the subscription was created (parameter identifier: MQIACF_SUB_TYPE).

MQSUBTYPE_PROXY
An internally created subscription used for routing publications through a queue manager.

MQSUBTYPE_ADMIN
Created using **DEF SUB** MQSC or PCF command. This **SUBTYPE** also indicates that a subscription has been modified using an administrative command.

MQSUBTYPE_API
Created using an **MQSUB** API request.

SubscriptionUser **(MQCFST)**
The userid that 'owns' this subscription. This parameter is either the userid associated with the creator of the subscription, or, if subscription takeover is permitted, the userid which last took over the subscription. (parameter identifier: MQCACF_SUB_USER_ID).

The maximum length of the string is MQ_USER_ID_LENGTH.

TopicObject **(MQCFST)**
The name of a previously defined topic object from which is obtained the topic name for the subscription (parameter identifier: MQCA_TOPIC_NAME).

The maximum length of the string is MQ_TOPIC_NAME_LENGTH.

TopicString **(MQCFST)**
The resolved topic string (parameter identifier: MQCA_TOPIC_STRING).

The maximum length of the string is MQ_TOPIC_STR_LENGTH.

***Userdata* (MQCFST)**
User data (parameter identifier: MQCACF_SUB_USER_DATA).

Specifies the user data associated with the subscription

The maximum length of the string is MQ_USER_DATA_LENGTH.

***VariableUser* (MQCFIN)**
Specifies whether a user other than the one who created the subscription, that is, the user shown in *SubscriptionUser* can take over the ownership of the subscription (parameter identifier: MQIACF_VARIABLE_USER_ID).

The value can be:

MQVU_ANY_USER
Any user can take over the ownership. MQVU_ANY_USER is the supplied default value.

MQVU_FIXED_USER
No other user can take over the ownership.

***WildcardSchema* (MQCFIN)**
Specifies the schema to be used when interpreting any wildcard characters contained in the *TopicString* (parameter identifier: MQIACF_WILDCARD_SCHEMA).

The value can be:

MQWS_CHAR
Wildcard characters represent portions of strings; it is for compatibility with WebSphere MQ V6.0 broker.

MQWS_TOPIC
Wildcard characters represent portions of the topic hierarchy; this is for compatibility with WebSphere Message Brokers. MQWS_TOPIC is the supplied default value.

Inquire Subscription Status

The Inquire Subscription Status (MQCMD_INQUIRE_SUB_STATUS) command inquires about the status of a subscription.

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Required parameters

***SubName* (MQCFST)**
The unique identifier of an application for a subscription (parameter identifier: MQCACF_SUB_NAME).

If *SubName* is not provided, *SubId* must be specified to identify the subscription to be inquired.

The maximum length of the string is MQ_SUB_NAME_LENGTH.

***SubId* (MQCFBS)**
Subscription identifier (parameter identifier: MQBACF_SUB_ID).

Specifies the unique internal subscription identifier. If the queue manager is generating the CorrelId for a subscription, then the *SubId* is used as the *DestinationCorrelId*.

You must supply a value for *SubId* if you have not supplied a value for *SubName*.

The maximum length of the string is MQ_CORREL_ID_LENGTH.

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is processed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- Blank (or omit the parameter altogether). The command is processed on the queue manager on which it was entered.
- A queue manager name. The command is processed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- An asterisk (*). The command is processed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

You cannot use *CommandScope* as a parameter on which to filter.

***Durable* (MQCFIN)**
Specify this attribute to restrict the type of subscriptions which are displayed (parameter identifier: MQIACF_DURABLE_SUBSCRIPTION).

MQSUB_DURABLE_YES
Information about durable subscriptions only is displayed. MQSUB_DURABLE_YES is the default.

MQSUB_DURABLE_NO
Information about non-durable subscriptions only is displayed.

***SubscriptionType* (MQCFIN)**
Specify this attribute to restrict the type of subscriptions which are displayed (parameter identifier: MQIACF_SUB_TYPE).

MQSUBTYPE_ADMIN
Subscriptions which have been created by an admin interface or modified by an admin interface are selected.

MQSUBTYPE_ALL
All subscription types are displayed.

MQSUBTYPE_API
Subscriptions created by applications through a WebSphere MQ API call are displayed.

MQSUBTYPE_PROXY
System created subscriptions relating to inter-queue-manager subscriptions are displayed.

MQSUBTYPE_USER
USER subscriptions (with SUBTYPE of either ADMIN or API) are displayed. MQSUBTYPE_USER is the default value.

***StatusAttrs* (MQCFIL)**
Subscription status attributes (parameter identifier: MQIACF_SUB_STATUS_ATTRS).

To select the attributes you want to display you can specify;

- ALL to display all attributes.
- any of the following parameters individually or in combination.

MQIACF_ALL
All attributes.

MQBACF_CONNECTION_ID
The currently active *ConnectionID* that has opened the subscription.

MQIACF_DURABLE_SUBSCRIPTION
Whether the subscription is durable, persisting over queue manager restart.

MQCACF_LAST_MSG_DATE
The date that a message was last sent to the destination specified by the subscription.

MQCACF_LAST_MSG_TIME
The time when a message was last sent to the destination specified by the subscription.

MQIACF_MESSAGE_COUNT
The number of messages put to the destination specified by the subscription.

MQCA_RESUME_DATE
The date of the most recent MQSUB command that connected to the subscription.

MQCA_RESUME_TIME
The time of the most recent MQSUB command that connected to the subscription.

MQIACF_SUB_TYPE
The type of subscription - how it was created.

MQCACF_SUB_USER_ID
The userid owns the subscription.

Inquire Subscription Status (Response)

The response to the Inquire Subscription Status (MQCMD_INQUIRE_SUB_STATUS) command consists of the response header followed by the *SubId* and *SubName* structures, and the requested combination of attribute parameter structures (where applicable).

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Always returned
SubID, *SubName*

Returned if requested
ActiveConnection, *Durable*, *LastPublishDate*, *LastPublishTime*, *MCastRelIndicator*, *NumberMsgs*, *ResumeDate*, *ResumeTime*, *SubType*, *TopicString*

Response Data

ActiveConnection **(MQCFBS)**
The *ConnId* of the *HConn* that currently has this subscription open (parameter identifier: MQBACF_CONNECTION_ID).

Durable **(MQCFIN)**
A durable subscription is not deleted when the creating application closes its subscription handle (parameter identifier: MQIACF_DURABLE_SUBSCRIPTION).

MQSUB_DURABLE_NO
The subscription is removed when the application that created it is closed or disconnected from the queue manager.

MQSUB_DURABLE_YES
The subscription persists even when the creating application is no longer running or has been disconnected. The subscription is reinstated when the queue manager restarts.

LastMessageDate **(MQCFST)**
The date that a message was last sent to the destination specified by the subscription (parameter identifier: MQCACF_LAST_MSG_DATE).

LastMessageTime **(MQCFST)**
The time when a message was last sent to the destination specified by the subscription (parameter identifier: MQCACF_LAST_MSG_TIME).

MCastRelIndicator **(MQCFIN)**
The multicast reliability indicator (parameter identifier: MQIACF_MCAST_REL_INDICATOR).

NumberMsgs **(MQCFIN)**
The number of messages put to the destination specified by this subscription (parameter identifier: MQIACF_MESSAGE_COUNT).

***ResumeDate* (MQCFST)**
The date of the most recent **MQSUB** API call that connected to the subscription (parameter identifier: MQCA_RESUME_DATE).

***ResumeTime* (MQCFST)**
The time of the most recent **MQSUB** API call that connected to the subscription (parameter identifier: MQCA_RESUME_TIME).

***SubscriptionUser* (MQCFST)**
The userid that 'owns' this subscription. This parameter is either the userid associated with the creator of the subscription, or, if subscription takeover is permitted, the userid which last took over the subscription. (parameter identifier: MQCACF_SUB_USER_ID).

The maximum length of the string is MQ_USER_ID_LENGTH.

***SubID* (MQCFBS)**
The internal, unique key identifying a subscription (parameter identifier: MQBACF_SUB_ID).

***SubName* (MQCFST)**
The unique identifier of a subscription (parameter identifier: MQCACF_SUB_NAME).

***SubType* (MQCFIN)**
Indicates how the subscription was created (parameter identifier: MQIA_SUB_TYPE).

MQSUBTYPE_PROXY
An internally created subscription used for routing publications through a queue manager.

MQSUBTYPE_ADMIN
Created using the **DEF SUB** MQSC or **Create Subscription**PCF command. This Subtype also indicates that a subscription has been modified using an administrative command.

MQSUBTYPE_API
Created using an **MQSUB** API call.

***TopicString* (MQCFST)**
The resolved topic string (parameter identifier: MQCA_TOPIC_STRING). The maximum length of the string is MQ_TOPIC_STR_LENGTH.

Inquire Topic

The Inquire Topic (MQCMD_INQUIRE_TOPIC) command inquires about the attributes of existing IBM WebSphere MQ administrative topic objects

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	X	X

Required parameters

***TopicName* (MQCFST)**
Administrative topic object name (parameter identifier: MQCA_TOPIC_NAME).

Specifies the name of the administrative topic object about which information is to be returned. Generic topic object names are supported. A generic name is a character string followed by an asterisk (*). For example, ABC* selects all administrative topic objects having names that start with the selected character string. An asterisk on its own matches all possible names.

The maximum length of the string is MQ_TOPIC_NAME_LENGTH.

Optional parameters

***ClusterInfo* (MQCFIN)**
Cluster information (parameter identifier: MQIACF_CLUSTER_INFO).

This parameter requests that, in addition to information about attributes of topics defined on this queue manager, cluster information about these topics and other topics in the repository that match the selection criteria is returned.

In this case, there might be multiple topics with the same name returned.

You can set this parameter to any integer value: the value used does not affect the response to the command.

The cluster information is obtained locally from the queue manager.

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

You cannot use *CommandScope* as a parameter to filter on.

***IntegerFilterCommand* (MQCFIF)**
Integer filter command descriptor. The parameter identifier must be any integer type parameter allowed in *TopicAttrs* except MQIACF_ALL.

Use this parameter to restrict the output from the command by specifying a filter condition. See "MQCFIF - PCF integer filter parameter" on page 1092 for information about using this filter condition.

If you specify an integer filter, you cannot also specify a string filter using the *StringFilterCommand* parameter.

***QSGDisposition* (MQCFIN)**
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object for which information is to be returned (that is, where it is defined and how it behaves). The value can be:

MQQSGD_LIVE
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY. MQQSGD_LIVE is the default value if the parameter is not specified.

MQQSGD_ALL
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY.

If there is a shared queue manager environment, and the command is being executed on the queue manager where it was issued, this option also displays information for objects defined with MQQSGD_GROUP.

If MQQSGD_LIVE is specified or defaulted, or if MQQSGD_ALL is specified in a shared queue manager environment, the command might give duplicated names (with different dispositions).

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_GROUP
The object is defined as MQQSGD_GROUP. MQQSGD_GROUP is permitted only in a shared queue environment.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

MQQSGD_PRIVATE
The object is defined as either MQQSGD_Q_MGR or MQQSGD_COPY. MQQSGD_PRIVATE returns the same information as MQQSGD_LIVE.

You cannot use *QSGDisposition* as a parameter to filter on.

***StringFilterCommand* (MQCFSF)**
String filter command descriptor. The parameter identifier must be any string type parameter allowed in *TopicAttrs* except MQCA_TOPIC_NAME. Use this parameter to restrict the output from the command by specifying a filter condition. See "MQCFSF - PCF string filter parameter" on page 1099 for information about using this filter condition.

If you specify a string filter, you cannot also specify an integer filter using the *IntegerFilterCommand* parameter.

***TopicAttrs* (MQCFIL)**
Topic object attributes (parameter identifier: MQIACF_TOPIC_ATTRS).

The attribute list can specify the following value on its own - default value if the parameter is not specified:

MQIACF_ALL
All attributes.

or a combination of the following:

MQCA_ALTERATION_DATE
The date on which the information was last altered.

MQCA_ALTERATION_TIME
The time at which the information was last altered.

MQCA_CLUSTER_NAME
The cluster that is to be used for the propagation of publications and subscription to publish/subscribe cluster-connected queue managers for this topic.

MQCA_CLUSTER_DATE
The date on which this information became available to the local queue manager.

MQCA_CLUSTER_TIME
The time at which this information became available to the local queue manager.

MQCA_CLUSTER_Q_MGR_NAME
Queue manager that hosts the topic.

MQCA_CUSTOM
The custom attribute for new features.

MQCA_MODEL_DURABLE_Q
Name of the model queue for durable managed subscriptions.

MQCA_MODEL_NON_DURABLE_Q
Name of the model queue for non-durable managed subscriptions.

MQCA_TOPIC_DESC
Description of the topic object.

MQCA_TOPIC_NAME
Name of the topic object.

MQCA_TOPIC_STRING
The topic string for the topic object.

MQIA_DEF_PRIORITY
Default message priority.

MQIA_DEF_PUT_RESPONSE_TYPE
Default put response.

MQIA_DURABLE_SUB
Whether durable subscriptions are permitted.

MQIA_INHIBIT_PUB
Whether publications are allowed.

MQIA_INHIBIT_SUB
Whether subscriptions are allowed.

MQIA_NPM_DELIVERY
The delivery mechanism for non-persistent messages.

MQIA_PM_DELIVERY
The delivery mechanism for persistent messages.

MQIA_PROXY_SUB
Whether a proxy subscription is to be sent for this topic, even if no local subscriptions exist.

MQIA_PUB_SCOPE
Whether this queue manager propagates publications to queue managers as part of a hierarchy or a publish/subscribe cluster.

MQIA_SUB_SCOPE
Whether this queue manager propagates subscriptions to queue managers as part of a hierarchy or a publish/subscribe cluster.

MQIA_TOPIC_DEF_PERSISTENCE
Default message persistence.

MQIA_USE_DEAD_LETTER_Q
Determines whether the dead-letter queue is used when publication messages cannot be delivered to their correct subscriber queue.

***TopicType* (MQCFIN)**
Cluster information (parameter identifier: MQIA_TOPIC_TYPE).

If this parameter is present, eligible queues are limited to the specified type. Any attribute selector that is specified in the TopicAttrs list and that is valid only for topics of different type is ignored; no error is raised.

If this parameter is not present (or if MQIACF_ALL is specified), queues of all types are eligible. Each attribute specified must be a valid topic attribute selector (that is, it must be in the following list), but it need not be applicable to all or any of the topics returned. Topic attribute selectors that are valid but not applicable to the queue are ignored; no error messages occur and no attribute is returned.

The value can be:

MQTOPT_ALL
All topic types are displayed. MQTOPT_ALL includes cluster topics, if ClusterInfo is also specified. MQTOPT_ALL is the default value.

MQTOPT_CLUSTER
Topics that are defined in publish/subscribe clusters are returned.

MQTOPT_LOCAL
Locally defined topics are displayed.

Inquire Topic (Response)

The response to the Inquire Topic (MQCMD_INQUIRE_TOPIC) command consists of the response header followed by the *TopicName* structure (and on z/OS only, the *QSG Disposition* structure), and the requested combination of attribute parameter structures (where applicable).

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Always returned:
TopicName, *TopicType*, *QSGDisposition*

Returned if requested:
AlterationDate, *AlterationTime*, *ClusterName*, *Custom*, *DefPersistence*, *DefPriority*, *DefPutResponse*, *DurableModelQName*, *DurableSubscriptions*, *InhibitPublications*, *InhibitSubscriptions*, *NonDurableModelQName*, *NonPersistentMsgDelivery*, *PersistentMsgDelivery*, *ProxySubscriptions*, *PublicationScope*, *QMgrName*, *SubscriptionScope*, *TopicDesc*, *TopicString*, *UseDLQ*, *WildcardOperation*

Response data

AlterationDate **(MQCFST)**
Alteration date (parameter identifier: MQCA_ALTERATION_DATE).

The date when the information was last altered, in the form `yyyy-mm-dd`.

AlterationTime **(MQCFST)**
Alteration time (parameter identifier: MQCA_ALTERATION_TIME).

The time when the information was last altered, in the form `hh.mm.ss`.

ClusterName **(MQCFST)**
The name of the cluster to which this topic belongs (parameter identifier: MQCA_CLUSTER_NAME).

The maximum length of the string is MQ_CLUSTER_NAME_LENGTH.

The value can be as follows:

Blank
This topic does not belong to a cluster. Publications and subscriptions for this topic are not propagated to publish/subscribe cluster-connected queue managers.

Blank is the default value for this parameter if no value is specified.

String
This topic belongs to the indicated cluster.

Additionally, if PublicationScope or SubscriptionScope is set to MQSCOPE_ALL, this cluster is to be used for the propagation of publications and subscriptions, for this topic, to publish/subcribe cluster-connected queue managers.

Custom **(MQCFST)**
Custom attribute for new features (parameter identifier: MQCA_CUSTOM).

This attribute is reserved for the configuration of new features before separate attributes have been introduced. It can contain the values of zero or more attributes as pairs of attribute name and value, separated by at least one space. The attribute name and value pairs have the form `NAME(VALUE)`.

This description will be updated when features using this attribute are introduced.

DefPersistence **(MQCFIN)**
Default persistence (parameter identifier: MQIA_TOPIC_DEF_PERSISTENCE).

The value can be:

MQPER_PERSISTENCE_AS_PARENT
The default persistence is based on the setting of the closest parent administrative topic object in the topic tree.

MQPER_PERSISTENT
Message is persistent.

MQPER_NOT_PERSISTENT
Message is not persistent.

DefPriority **(MQCFIN)**
Default priority (parameter identifier: MQIA_DEF_PRIORITY).

DefPutResponse **(MQCFIN)**
Default put response (parameter identifier: MQIA_DEF_PUT_RESPONSE_TYPE).

The value can be:

MQPRT_ASYNC_RESPONSE
The put operation is issued asynchronously, returning a subset of MQMD fields.

MQPRT_RESPONSE_AS_PARENT
The default put response is based on the setting of the closest parent administrative topic object in the topic tree.

MQPRT_SYNC_RESPONSE
The put operation is issued synchronously, returning a response.

DurableModelQName **(MQCFST)**
Name of the model queue to be used for durable managed subscriptions (parameter identifier: MQCA_MODEL_DURABLE_Q).

The maximum length of the string is MQ_Q_NAME_LENGTH.

DurableSubscriptions **(MQCFIN)**
Whether applications are permitted to make durable subscriptions (parameter identifier: MQIA_DURABLE_SUB).

The value can be:

MQSUB_DURABLE_AS_PARENT
Whether durable subscriptions are permitted is based on the setting of the closest parent administrative topic object in the topic tree.

MQSUB_DURABLE
Durable subscriptions are permitted.

MQSUB_NON_DURABLE
Durable subscriptions are not permitted.

InhibitPublications **(MQCFIN)**
Whether publications are allowed for this topic (parameter identifier: MQIA_INHIBIT_PUB).

The value can be:

MQTA_PUB_AS_PARENT
Whether messages can be published to this topic is based on the setting of the closest parent administrative topic object in the topic tree.

MQTA_PUB_INHIBITED
Publications are inhibited for this topic.

MQTA_PUB_ALLOWED
Publications are allowed for this topic.

InhibitSubscriptions **(MQCFIN)**
Whether subscriptions are allowed for this topic (parameter identifier: MQIA_INHIBIT_SUB).

The value can be:

MQTA_SUB_AS_PARENT
Whether applications can subscribe to this topic is based on the setting of the closest parent administrative topic object in the topic tree.

MQTA_SUB_INHIBITED
Subscriptions are inhibited for this topic.

MQTA_SUB_ALLOWED
Subscriptions are allowed for this topic.

***NonDurableModelQName* (MQCFST)**
Name of the model queue to be used for non-durable managed subscriptions (parameter identifier: MQCA_MODEL_NON_DURABLE_Q).

The maximum length of the string is MQ_Q_NAME_LENGTH.

***NonPersistentMsgDelivery* (MQCFIN)**
The delivery mechanism for non-persistent messages published to this topic (parameter identifier: MQIA_NPM_DELIVERY).

The value can be:

MQDLV_AS_PARENT
The delivery mechanism used is based on the setting of the first parent administrative node found in the topic tree relating to this topic.

MQDLV_ALL
Non-persistent messages must be delivered to all subscribers, irrespective of durability for the MQPUT call to report success. If a delivery failure to any subscriber occurs, no other subscribers receive the message and the MQPUT fails.

MQDLV_ALL_DUR
Non-persistent messages must be delivered to all durable subscribers. Failure to deliver a non-persistent message to any non-durable subscribers does not return an error to the MQPUT call. If a delivery failure to a durable subscriber occurs, no other subscribers receive the message and the MQPUT fails.

MQDLV_ALL_AVAIL
Non-persistent messages are delivered to all subscribers that can accept the message. Failure to deliver the message to any subscriber does not prevent other subscribers from receiving the message.

***PersistentMsgDelivery* (MQCFIN)**
The delivery mechanism for persistent messages published to this topic (parameter identifier: MQIA_PM_DELIVERY).

The value can be:

MQDLV_AS_PARENT
The delivery mechanism used is based on the setting of the first parent administrative node found in the topic tree relating to this topic.

MQDLV_ALL
Persistent messages must be delivered to all subscribers, irrespective of durability for the MQPUT call to report success. If a delivery failure to any subscriber occurs, no other subscribers receive the message and the MQPUT fails.

MQDLV_ALL_DUR
Persistent messages must be delivered to all durable subscribers. Failure to deliver a persistent message to any non-durable subscribers does not return an error to the MQPUT call. If a delivery failure to a durable subscriber occurs, no other subscribers receive the message and the MQPUT fails.

MQDLV_ALL_AVAIL
Persistent messages are delivered to all subscribers that can accept the message. Failure to deliver the message to any subscriber does not prevent other subscribers from receiving the message.

***ProxySubscriptions* (MQCFIN)**
Whether a proxy subscription is to be sent for this topic, even if no local subscriptions exist, to directly connected queue managers (parameter identifier: MQIA_PROXY_SUB).

The value can be:

MQTA_PROXY_SUB_FORCE
A proxy subscription is sent to connected queue managers even if no local subscriptions exist.

MQTA_PROXY_SUB_FIRSTUSE
A proxy subscription is sent for this topic only when a local subscription exists.

***PublicationScope* (MQCFIN)**
Whether this queue manager propagates publications to queue managers as part of a hierarchy or as part of a publish/subscribe cluster (parameter identifier: MQIA_PUB_SCOPE).

The value can be:

MQSCOPE_ALL
Publications for this topic are propagated to hierarchically connected queue managers and to publish/subscribe cluster-connected queue managers.

MQSCOPE_AS_PARENT
Whether this queue manager propagates publications to queue managers as part of a hierarchy or as part of a publish/subscribe cluster is based on the setting of the first parent administrative node found in the topic tree relating to this topic.

MQSCOPE_AS_PARENT is the default value for this parameter if no value is specified.

MQSCOPE_QMGR
Publications for this topic are not propagated to other queue managers.

Note: You can override this behavior on a publication-by-publication basis, using MQPMO_SCOPE_QMGR on the Put Message Options.

***QMgrName* (MQCFST)**
Name of local queue manager (parameter identifier: MQCA_CLUSTER_Q_MGR_NAME).

The maximum length of the string is MQ_Q_MGR_NAME_LENGTH

***SubscriptionScope* (MQCFIN)**
Whether this queue manager propagates subscriptions to queue managers as part of a hierarchy or as part of a publish/subscribe cluster (parameter identifier: MQIA_SUB_SCOPE).

The value can be:

MQSCOPE_ALL
Subscriptions for this topic are propagated to hierarchically connected queue managers and to publish/subscribe cluster-connected queue managers.

MQSCOPE_AS_PARENT
Whether this queue manager propagates subscriptions to queue managers as part of a hierarchy or as part of a publish/subscribe cluster is based on the setting of the first parent administrative node found in the topic tree relating to this topic.

MQSCOPE_AS_PARENT is the default value for this parameter if no value is specified.

MQSCOPE_QMGR
Subscriptions for this topic are not propagated to other queue managers.

Note: You can override this behavior on a subscription-by-subscription basis, using MQSO_SCOPE_QMGR on the Subscription Descriptor or SUBSCOPE(QMGR) on DEFINE SUB.

***TopicDesc* (MQCFST)**
Topic description (parameter identifier: MQCA_TOPIC_DESC).

The maximum length is MQ_TOPIC_DESC_LENGTH.

***TopicName* (MQCFST)**
Topic object name (parameter identifier: MQCA_TOPIC_NAME).

The maximum length of the string is MQ_TOPIC_NAME_LENGTH

***TopicString* (MQCFST)**
The topic string (parameter identifier: MQCA_TOPIC_STRING).

The '/' character within this string has special meaning. It delimits the elements in the topic tree. A topic string can start with the '/' character but is not required to. A string starting with the '/' character is not the same as the string which starts without the '/' character. A topic string cannot end with the "/" character.

The maximum length of the string is MQ_TOPIC_STR_LENGTH.

***TopicType* (MQCFIN)**
Whether this object is a local or cluster topic (parameter identifier: MQIA_TOPIC_TYPE).

The value can be:

MQTOPT_LOCAL
This object is a local topic.

MQTOPT_CLUSTER
This object is a cluster topic.

***UseDLQ* (MQCFIN)**
Whether the dead-letter queue (or undelivered message queue) should be used when publication messages cannote be delivered to their correct subscriber queue (parameter identifier: MQIA_USE_DEAD_LETTER_Q).

The value might be:

MQUSEDLQ_NO
Publication messages that cannot be delivered to their correct subscriber queue are treated as a failure to put the message and the application's MQPUT to a topic will fail in accordance with the settings of NPMSGDLV and PMSGDLV.

MQUSEDLQ_YES
If the queue manager DEADQ attribute provides the name of a dead-letter queue then it will be used, otherwise the behvaiour will be as for MQUSEDLQ_NO.

MQUSEDLQ_AS_PARENT
Whether to use the dead-letter queue is based on the setting of the closest administrative topic object in the topic tree.

***WildcardOperation* (MQCFIN)**
Behavior of subscriptions including wildcards made to this topic (parameter identifier: MQIA_WILDCARD_OPERATION).

The value can be:

MQTA_PASSTHRU
Subscriptions made using wildcard topic names that are less specific than the topic string at this topic object receive publications made to this topic and to topic strings more specific than this topic. MQTA_PASSTHRU is the default supplied with WebSphere MQ.

MQTA_BLOCK
Subscriptions made using wildcard topic names that are less specific than the topic string at this topic object do not receive publications made to this topic or to topic strings more specific than this topic.

Inquire Topic Names

The Inquire Topic Names (MQCMD_INQUIRE_TOPIC_NAMES) command inquires a list of administrative topic names that match the generic topic name specified.

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Required parameters

***TopicName* (MQCFST)**
Administrative topic object name (parameter identifier: MQCA_TOPIC_NAME).

Specifies the name of the administrative topic object that information is to be returned for.

Generic topic object names are supported. A generic name is a character string followed by an asterisk (*), for example ABC*, and it selects all objects having names that start with the selected character string. An asterisk on its own matches all possible names.

The maximum length of the string is MQ_TOPIC_NAME_LENGTH.

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***QSGDisposition* (MQCFIN)**
Disposition of the object within the group (parameter identifier: MQIA_QSG_DISP). This parameter applies to z/OS only.

Specifies the disposition of the object for which information is to be returned (that is, where it is defined and how it behaves). The value can be:

MQQSGD_LIVE
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY. MQQSGD_LIVE is the default value if the parameter is not specified.

MQQSGD_ALL
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY.

If there is a shared queue manager environment, and the command is being executed on the queue manager where it was issued, this option also displays information for objects defined with MQQSGD_GROUP.

If MQQSGD_LIVE is specified or defaulted, or if MQQSGD_ALL is specified in a shared queue manager environment, the command might give duplicated names (with different dispositions).

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_GROUP
The object is defined as MQQSGD_GROUP. MQQSGD_GROUP is permitted only in a shared queue environment.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

MQQSGD_PRIVATE
The object is defined as MQQSGD_Q_MGR or MQQSGD_COPY. MQQSGD_PRIVATE returns the same information as MQQSGD_LIVE.

Inquire Topic Names (Response)

The response to the Inquire Topic Names (MQCMD_INQUIRE_TOPIC_NAMES) command consists of the response header followed by a parameter structure giving zero or more names that match the specified administrative topic name.

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Additionally, on z/OS only, the *QSGDispositions* parameter structure (with the same number of entries as the *TopicNames* structure) is returned. Each entry in this structure indicates the disposition of the object with the corresponding entry in the *TopicNames* structure.

Always returned:
TopicNames, *QSGDispositions*

Returned if requested:
None

Response data

***TopicNames* (MQCFSL)**
List of topic object names (parameter identifier: MQCACF_TOPIC_NAMES).

***QSGDispositions* (MQCFIL)**
List of QSG dispositions (parameter identifier: MQIACF_QSG_DISPS). This parameter is valid on z/OS only. The value can be:

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_GROUP
The object is defined as MQQSGD_GROUP.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

Inquire Topic Status

The Inquire Topic Status (MQCMD_INQUIRE_TOPIC_STATUS) command inquires the status of a particular topic, or of a topic and its child topics. The Inquire Topic Status command has a required parameter. The Inquire Topic Status command has optional parameters.

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Required parameters

***TopicString* (MQCFST)**
The topic string (parameter identifier: MQCA_TOPIC_STRING).

The name of the topic string to display. WebSphere MQ uses the topic wildcard characters ('#' and '+') and does not treat a trailing asterisk as a wildcard. For more information about using wildcard characters, refer to the related topic.

The maximum length of the string is MQ_TOPIC_STR_LENGTH.

Optional parameters

***StatusType* (MQCFIN)**
The type of status to return (parameter identifier: MQIACF_TOPIC_STATUS_TYPE).

The value can be:

MQIACF_TOPIC_STATUS
MQIACF_TOPIC_SUB
MQIACF_TOPIC_PUB

This command ignores any attribute selectors specified in the *TopicStatusAttrs* list that are not valid for the selected *StatusType* and the command raises no error.

The default value if this parameter is not specified is **MQIACF_TOPIC_STATUS**.

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- Blank (or omit the parameter altogether). The command runs on the queue manager on which you enter it.
- A queue manager name. The command runs on the queue manager that you specify, if it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which you entered the command, you must be using a queue-sharing group environment, and the command server must be enabled.
- An asterisk (*). The command runs on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

You cannot use CommandScope as a filter parameter.

***IntegerFilterCommand*(MQCFIF)**
Integer filter command descriptor that you use to restrict the output from the command. The parameter identifier must be an integer type and must be one of the values allowed for *MQIACF_TOPIC_SUB_STATUS*, *MQIACF_TOPIC_PUB_STATUS* or *MQIACF_TOPIC_STATUS*, except *MQIACF_ALL*.

If you specify an integer filter, you cannot also specify a string filter with the *StringFilterCommand* parameter.

***StringFilterCommand*(MQCFSF)**
String filter command descriptor. The parameter identifier must be any string type parameter allowed for *MQIACF_TOPIC_SUB_STATUS*, *MQIACF_TOPIC_PUB_STATUS* or *MQIACF_TOPIC_STATUS*, except *MQIACF_ALL*, or the identifier *MQCA_TOPIC_STRING_FILTER* to filter on the topic string.

Use the parameter identifier to restrict the output from the command by specifying a filter condition. Ensure that the parameter is valid for the type selected in StatusType. If you specify a string filter, you cannot also specify an integer filter using the *IntegerFilterCommand* parameter.

***TopicStatusAttrs*(MQCFIL)**
Topic status attributes (parameter identifier: MQIACF_TOPIC_STATUS_ATTRS)

The default value used if the parameter is not specified is:

MQIACF_ALL

You can specify any of the parameter values listed in the related reference about Response Data. It is not an error to request status information that is not relevant for a particular status type, but the response contains no information for the value concerned.

Inquire Topic Status (Response)

The response of the Inquire topic (MQCMD_INQUIRE_TOPIC_STATUS) command consists of the response header, followed by the *TopicString* structure, and the requested combination of attribute parameter structures (where applicable). The Inquire Topic Status command returns the values requested when the *StatusType* is MQIACF_TOPIC_STATUS. The Inquire Topic Status command returns the values requested when the *StatusType* is MQIACF_TOPIC_STATUS_SUB. The Inquire Topic Status command returns the values requested when the *StatusType* is MQIACF_TOPIC_STATUS_PUB.

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Always returned:
TopicString

Returned if requested and StatusType is MQIACF_TOPIC_STATUS:
Cluster, *DefPriority*, *DefaultPutResponse*, *DefPersistence*, *DurableSubscriptions*, *InhibitPublications*, *InhibitSubscriptions*, *AdminTopicName*, *DurableModelQName*, *NonDurableModelQName*, *PersistentMessageDelivery*, *NonPersistentMessageDelivery*, *RetainedPublication*, *PublishCount*, *SubscriptionScope*, *SubscriptionCount*, *PublicationScope*, *UseDLQ*

Note: The Inquire Topic Status command returns only resolved values for the topic, and no AS_PARENT values.

Returned if requested and StatusType is MQIACF_TOPIC_SUB:
SubscriptionId, *SubscriptionUserId*, *Durable*, *SubscriptionType*, *ResumeDate*, *ResumeTime*, *LastMessageDate*, *LastMessageTime*, *NumberOfMessages*, *ActiveConnection*

Returned if requested and StatusType is MQIACF_TOPIC_PUB:
LastPublishDate, *LastPublishTime*, *NumberOfPublishes*, *ActiveConnection*

Response data (TOPIC_STATUS)

***ClusterName* (MQCFST)**
The name of the cluster to which this topic belongs (parameter identifier: MQCA_CLUSTER_NAME).

The maximum length of the string is MQ_CLUSTER_NAME_LENGTH.

The value can be as follows:

Blank
This topic does not belong to a cluster. Publications and subscriptions for this topic are not propagated to publish/subscribe cluster-connected queue managers.

Blank is the default value for this parameter if no value is specified.

String
This topic belongs to the indicated cluster.

Additionally, if PublicationScope or SubscriptionScope is set to MQSCOPE_ALL, this cluster is to be used for the propagation of publications and subscriptions, for this topic, to publish/subcribe cluster-connected queue managers.

***DefPersistence* (MQCFIN)**
Default persistence (parameter identifier: MQIA_TOPIC_DEF_PERSISTENCE).

Returned value:

MQPER_PERSISTENT
Message is persistent.

MQPER_NOT_PERSISTENT
Message is not persistent.

***DefaultPutResponse* (MQCFIN)**
Default put response (parameter identifier: MQIA_DEF_PUT_RESPONSE_TYPE).

Returned value:

MQPRT_SYNC_RESPONSE
The put operation is issued synchronously, returning a response.

MQPRT_ASYNC_RESPONSE
The put operation is issued asynchronously, returning a subset of MQMD fields.

***DefPriority* (MQCFIN)**
Default priority (parameter identifier: MQIA_DEF_PRIORITY).

Shows the resolved default priority of messages published to the topic.

***DurableSubscriptions* (MQCFIN)**
Whether applications are permitted to make durable subscriptions (parameter identifier: MQIA_DURABLE_SUB).

Returned value:

MQSUB_DURABLE_ALLOWED
Durable subscriptions are permitted.

MQSUB_DURABLE_INHIBITED
Durable subscriptions are not permitted.

***InhibitPublications* (MQCFIN)**
Whether publications are allowed for this topic (parameter identifier: MQIA_INHIBIT_PUB).

Returned value:

MQTA_PUB_INHIBITED
Publications are inhibited for this topic.

MQTA_PUB_ALLOWED
Publications are allowed for this topic.

***InhibitSubscriptions* (MQCFIN)**
Whether subscriptions are allowed for this topic (parameter identifier: MQIA_INHIBIT_SUB).

Returned value:

MQTA_SUB_INHIBITED
Subscriptions are inhibited for this topic.

MQTA_SUB_ALLOWED
Subscriptions are allowed for this topic.

***AdminTopicName* (MQCFST)**
Topic object name (parameter identifier: MQCA_ADMIN_TOPIC_NAME).

If the topic is an admin-node, the command displays the associated topic object name containing the node configuration. If the field is not an admin-node the command displays a blank.

The maximum length of the string is MQ_TOPIC_NAME_LENGTH.

***DurableModelQName* (MQCFST)**
The name of the model queue used for managed durable subscriptions (parameter identifier: MQCA_MODEL_DURABLE_Q).

Shows the resolved value of the name of the model queue to be used for durable subscriptions that request the queue manager to manage the destination of publications.

The maximum length of the string is MQ_Q_NAME_LENGTH.

***NonDurableModelQName* (MQCFST)**
The name of the model queue for managed non-durable subscriptions (parameter identifier: MQCA_MODEL_NON_DURABLE_Q).

The maximum length of the string is MQ_Q_NAME_LENGTH.

***PersistentMessageDelivery* (MQCFIN)**
Delivery mechanism for persistent messages published to this topic (parameter identifier: MQIA_PM_DELIVERY).

Returned value:

MQDLV_ALL
Persistent messages must be delivered to all subscribers, irrespective of durability, for the MQPUT call to report success. If a delivery failure to any subscriber occurs, no other subscribers receive the message and the MQPUT call fails.

MQDLV_ALL_DUR
Persistent messages must be delivered to all durable subscribers. Failure to deliver a persistent message to any non-durable subscribers does not return an error to the MQPUT call. If a delivery failure to a durable subscriber occurs, no subscribers receive the message and the MQPUT call fails.

MQDLV_ALL_AVAIL
Persistent messages are delivered to all subscribers that can accept the message. Failure to deliver the message to any subscriber does not prevent other subscribers from receiving the message.

***NonPersistentMessageDelivery* (MQCFIN)**
Delivery mechanism for non-persistent messages published to this topic (parameter identifier: MQIA_NPM_DELIVERY).

Returned value:

MQDLV_ALL
Non-persistent messages must be delivered to all subscribers, irrespective of durability, for the MQPUT call to report success. If a delivery failure to any subscriber occurs, no other subscribers receive the message and the MQPUT call fails.

MQDLV_ALL_DUR
Non-persistent messages must be delivered to all durable subscribers. Failure to deliver a non-persistent message to any non-durable subscribers does not return an error to the MQPUT call. If a delivery failure to a durable subscriber occurs, no subscribers receive the message and the MQPUT call fails.

MQDLV_ALL_AVAIL
Non-persistent messages are delivered to all subscribers that can accept the message. Failure to deliver the message to any subscriber does not prevent other subscribers from receiving the message.

***RetainedPublication* (MQCFIN)**
Whether there is a retained publication for this topic (parameter identifier: MQIACF_RETAINED_PUBLICATION).

Returned value:

MQQSO_YES
There is a retained publication for this topic.

MQQSO_NO
There is no retained publication for this topic.

***PublishCount* (MQCFIN)**
Publish count (parameter identifier: MQIA_PUB_COUNT).

The number of applications currently publishing to the topic.

***SubscriptionCount* (MQCFIN)**
Subscription count (parameter identifier: MQIA_SUB_COUNT).

The number of subscribers for this topic string, including durable subscribers who are not currently connected.

***SubscriptionScope* (MQCFIN)**
Determines whether this queue manager propagates subscriptions for this topic to queue managers as part of a hierarchy or as part of a publish/subscribe cluster (parameter identifier: MQIA_SUB_SCOPE).

Returned value:

MQSCOPE_QMGR
The queue manager does not propagate subscriptions for this topic to other queue managers.

MQSCOPE_ALL
The queue manager propagates subscriptions for this topic to hierarchically connected queue managers and to publish/subscribe cluster connected queues.

***PublicationScope* (MQCFIN)**
Determines whether this queue manager propagates publications for this topic to queue managers as part of a hierarchy or as part of a publish/subscribe cluster (parameter identifier: MQIA_PUB_SCOPE).

Returned value:

MQSCOPE_QMGR
The queue manager does not propagate publications for this topic to other queue managers.

MQSCOPE_ALL
The queue manager propagates publications for this topic to hierarchically connected queue managers and to publish/subscribe cluster connected queues.

***UseDLQ* (MQCFIN)**
Determines whether the dead-letter queue is used when publication messages cannot be delivered to their correct subscriber queue (parameter identifier: MQIA_USE_DEAD_LETTER_Q).

The value can be:

MQUSEDLQ_NO
Publication messages that cannot be delivered to their correct subscriber queue are treated as a failure to put the message. The MQPUT of an application to a topic fails in accordance with the settings of MQIA_NPM_DELIVERY and MQIA_PM_DELIVERY.

MQUSEDLQ_YES
If the DEADQ queue manager attribute provides the name of a dead-letter queue then it is used, otherwise the behavior is as for MQUSEDLQ_NO.

Response data (TOPIC_STATUS_SUB)

***SubscriptionId* (MQCFBS)**
Subscription identifier (parameter identifier: MQBACF_SUB_ID).

The queue manager assigns *SubscriptionId* as an all time unique identifier for this subscription.

The maximum length of the string is MQ_CORREL_ID_LENGTH.

***SubscriptionUserId* (MQCFST)**
The user ID that owns this subscription (parameter identifier: MQCACF_SUB_USER_ID).

The maximum length of the string is MQ_USER_ID_LENGTH.

***Durable* (MQCFIN)**
Whether this subscription is a durable subscription (parameter identifier: MQIACF_DURABLE_SUBSCRIPTION).

MQSUB_DURABLE_YES
The subscription persists, even if the creating application disconnects from the queue manager or issues an MQCLOSE call for the subscription. The queue manager reinstates the subscription during restart.

MQSUB_DURABLE_NO
The subscription is non-durable. The queue manager removes the subscription when the creating application disconnects from the queue manager or issues an MQCLOSE call for the subscription. If the subscription has a destination class (DESTCLAS) of MANAGED, the queue manager removes any messages not yet consumed when it closes the subscription.

***SubscriptionType* (MQCFIN)**
The type of subscription (parameter identifier: MQIACF_SUB_TYPE).

The value can be:

MQSUBTYPE_ADMIN
MQSUBTYPE_API
MQSUBTYPE_PROXY

***ResumeDate* (MQCFST)**
Date of the most recent MQSUB call that connected to this subscription (parameter identifier: MQCA_RESUME_DATE).

The maximum length of the string is MQ_DATE_LENGTH.

***ResumeTime* (MQCFST)**
Time of the most recent MQSUB call that connected to this subscription (parameter identifier: MQCA_RESUME_TIME).

The maximum length of the string is MQ_TIME_LENGTH.

***LastMessageDate* (MQCFST)**
Date on which an MQPUT call last sent a message to this subscription. The queue manager updates the date field after the MQPUT call successfully puts a message to the destination specified by this subscription (parameter identifier: MQCACF_LAST_MSG_DATE).

The maximum length of the string is MQ_DATE_LENGTH.

Note: An **MQSUBRQ** call updates this value.

***LastMessageTime* (MQCFST)**
Time at which an MQPUT call last sent a message to this subscription. The queue manager updates the time field after the MQPUT call successfully puts a message to the destination specified by this subscription (parameter identifier: MQCACF_LAST_MSG_TIME).

The maximum length of the string is MQ_TIME_LENGTH.

Note: An **MQSUBRQ** call updates this value.

***NumberOfMessages* (MQCFIN)**
Number of messages put to the destination specified by this subscription (parameter identifier: MQIACF_MESSAGE_COUNT).

Note: An **MQSUBRQ** call updates this value.

***ActiveConnection* (MQCFBS)**
The currently active *ConnectionId* (CONNID) that opened this subscription (parameter identifier: MQBACF_CONNECTION_ID).

The maximum length of the string is MQ_CONNECTION_ID_LENGTH.

Response data (TOPIC_STATUS_PUB)

***LastPublicationDate* (MQCFST)**
Date on which this publisher last sent a message (parameter identifier: MQCACF_LAST_PUB_DATE).

The maximum length of the string is MQ_DATE_LENGTH.

***LastPublicationTime*(MQCFST)**
Time at which this publisher last sent a message (parameter identifier: MQCACF_LAST_PUB_TIME).

The maximum length of the string is MQ_TIME_LENGTH.

***NumberOfPublishes*(MQCFIN)**
Number of publishes made by this publisher (parameter identifier: MQIACF_PUBLISH_COUNT).

***ActiveConnection* (MQCFBS)**
The currently active *ConnectionId* (CONNID) associated with the handle that has this topic open for publish (parameter identifier: MQBACF_CONNECTION_ID).

The maximum length of the string is MQ_CONNECTION_ID_LENGTH.

Ping Channel

The Ping Channel (MQCMD_PING_CHANNEL) command tests a channel by sending data as a special message to the remote message queue manager and checking that the data is returned. The data is generated by the local queue manager.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

This command can only be used for channels with a *ChannelType* value of MQCHT_SENDER, MQCHT_SERVER, or MQCHT_CLUSSDR.

Where there is both a locally defined channel and an auto-defined cluster-sender channel of the same name, the command applies to the locally defined channel.

If there is no locally defined channel but more than one auto-defined cluster-sender channel, the command applies to the last channel added to the repository on the local queue manager.

The command is not valid if the channel is running; however it is valid if the channel is stopped or in retry mode.

Required parameters

***ChannelName* (MQCFST)**
Channel name (parameter identifier: MQCACH_CHANNEL_NAME).

The name of the channel to be tested. The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

Optional parameters

***DataCount* (MQCFIN)**
Data count (parameter identifier: MQIACH_DATA_COUNT).

Specifies the length of the data.

Specify a value in the range 16 through 32 768. The default value is 64 bytes.

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***ChannelDisposition* (MQCFIN)**
Channel disposition (parameter identifier: MQIACH_CHANNEL_DISP). This parameter applies to z/OS only.

Specifies the disposition of the channels to be tested.

If this parameter is omitted, then the value for the channel disposition is taken from the default channel disposition attribute of the channel object.

The value can be:

MQCHLD_PRIVATE
A receiving channel is private if it was started in response to an inbound transmission directed to the queue manager.

A sending channel is private if its transmission queue has a disposition other than MQQSGD_SHARED.

MQCHLD_SHARED
A receiving channel is shared if it was started in response to an inbound transmission directed to the queue-sharing group.

A sending channel is shared if its transmission queue has a disposition of MQQSGD_SHARED.

MQCHLD_FIXSHARED
Tests shared channels, tied to a specific queue manager.

The combination of the *ChannelDisposition* and *CommandScope* parameters also controls from which queue manager the channel is operated. The possible options are:

- On the local queue manager where the command is issued.
- On another specific named queue manager in the group.
- On the most suitable queue manager in the group, determined automatically by the queue manager itself.

The various combinations of *ChannelDisposition* and *CommandScope* are summarized in Table 68 on page 1040

Table 68. ChannelDisposition and CommandScope for PING CHANNEL

ChannelDisposition	***CommandScope* blank or local-qmgr**	***CommandScope* qmgr-name**	***CommandScope(*)***
MQCHLD_PRIVATE	Ping private channel on the local queue manager	Ping private channel on the named queue manager	Ping private channel on all active queue managers

Table 68. ChannelDisposition and CommandScope for PING CHANNEL (continued)			
ChannelDisposition	***CommandScope* blank or local-qmgr**	***CommandScope* qmgr-name**	***CommandScope(*)***
MQCHLD_SHARED	Ping a shared channel on the most suitable queue manager in the group MQCHLD_SHARED might automatically generate a command using *CommandScope* and send it to the appropriate queue manager. If there is no definition for the channel on the queue manager to which the command is sent, or if the definition is unsuitable for the command, the command fails. The definition of a channel on the queue manager where the command is entered might be used to determine the target queue manager where the command is run. Therefore, it is important that channel definitions are consistent. Inconsistent channel definitions might result in unexpected command behavior.	Not permitted	Not permitted
MQCHLD_FIXSHARED	Ping a shared channel on the local queue manager	Ping a shared channel on the named queue manager	Not permitted

Error codes

This command might return the following error codes in the response format header, in addition to the values shown in “Error codes applicable to all commands” on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_ALLOCATE_FAILED
Allocation failed.

MQRCCF_BIND_FAILED
Bind failed.

MQRCCF_CCSID_ERROR
Coded character-set identifier error.

MQRCCF_CHANNEL_CLOSED
Channel closed.

MQRCCF_CHANNEL_IN_USE
Channel in use.

MQRCCF_CHANNEL_NOT_FOUND
Channel not found.

MQRCCF_CHANNEL_TYPE_ERROR
Channel type not valid.

MQRCCF_CONFIGURATION_ERROR
Configuration error.

MQRCCF_CONNECTION_CLOSED
Connection closed.

MQRCCF_CONNECTION_REFUSED
Connection refused.

MQRCCF_DATA_TOO_LARGE
Data too large.

MQRCCF_ENTRY_ERROR
Connection name not valid.

MQRCCF_HOST_NOT_AVAILABLE
Remote system not available.

MQRCCF_NO_COMMS_MANAGER
Communications manager not available.

MQRCCF_PING_DATA_COMPARE_ERROR
Ping Channel command failed.

MQRCCF_PING_DATA_COUNT_ERROR
Data count not valid.

MQRCCF_PING_ERROR
Ping error.

MQRCCF_RECEIVE_FAILED
Receive failed.

MQRCCF_RECEIVED_DATA_ERROR
Received data error.

MQRCCF_REMOTE_QM_TERMINATING
Remote queue manager terminating.

MQRCCF_REMOTE_QM_UNAVAILABLE
Remote queue manager not available.

MQRCCF_SEND_FAILED
Send failed.

MQRCCF_STRUCTURE_TYPE_ERROR
Structure type not valid.

MQRCCF_TERMINATED_BY_SEC_EXIT
Channel terminated by security exit.

MQRCCF_UNKNOWN_REMOTE_CHANNEL
Remote channel not known.

MQRCCF_USER_EXIT_NOT_AVAILABLE
User exit not available.

Ping Queue Manager

The Ping Queue Manager (MQCMD_PING_Q_MGR) command tests whether the queue manager and its command server is responsive to commands. If the queue manager is responding a positive reply is returned.

HP Integrity NonStop Server	UNIX and Linux systems	Windows
X	X	X

Required parameters:
None

Optional parameters:
None

Purge Channel

The Purge Channel (MQCMD_PURGE_CHANNEL) command stops and purges an IBM WebSphere MQ telemetry channel.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

This command can only be issued to an MQTT channel type.

Purging a telemetry channel disconnects all the MQTT clients connect to it, cleans up the state of the MQTT clients, and stops the telemetry channel. Cleaning the state of a client deletes all the pending publications and removes all the subscriptions from the client.

Required parameters

***ChannelName* (MQCFST)**
Channel name (parameter identifier: MQCACH_CHANNEL_NAME).

The name of the channel to be stopped and purged. The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

***ChannelType* (MQCFIN)**
Channel type. This parameter must follow immediately after the **ChannelName** parameter on all platforms except z/OS, and the value must be MQTT.

Optional parameters

***ClientIdentifier* (MQCFST)**
Client identifier. The client identifier is a 23-byte string that identifies a IBM WebSphere MQ Telemetry Transport client. When the Purge Channel command specifies a *ClientIdentifier*, only the connection for the specified client identifier is purged. If the *ClientIdentifier* is not specified, all the connections on the channel are purged.

The maximum length of the string is MQ_CLIENT_ID_LENGTH.

Refresh Cluster

The Refresh Cluster (MQCMD_REFRESH_CLUSTER) command discards all locally held cluster information, including any auto-defined channels that are not in doubt, and forces the repository to be rebuilt.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

Note: For large clusters, use of the **REFRESH CLUSTER** command can be disruptive to the cluster while it is in progress, and again at 27 day intervals thereafter when the cluster objects automatically send status updates to all interested queue managers. See Refreshing in a large cluster can affect performance and availability of the cluster.

Required parameters

***ClusterName* (MQCFST)**
Cluster name (parameter identifier: MQCA_CLUSTER_NAME).

The name of the cluster to be refreshed.

The maximum length of the string is MQ_CLUSTER_NAME_LENGTH.

This parameter is the name of the cluster to be refreshed. If an asterisk (*) is specified for the name, the queue manager is refreshed in all the clusters to which it belongs.

If an asterisk (*) is specified with *RefreshRepository* set to MQCFO_REFRESH_REPOSITORY_YES, the queue manager restarts its search for repository queue managers, using information in the local cluster-sender channel definitions.

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.

The maximum length is MQ_QSG_NAME_LENGTH.

***RefreshRepository* (MQCFIN)**
Whether repository information is refreshed (parameter identifier: MQIACF_REFRESH_REPOSITORY).

This parameter indicates whether the information about repository queue managers is refreshed.

The value can be:

MQCFO_REFRESH_REPOSITORY_YES
Refresh repository information.

This value cannot be specified if the queue manager is itself a repository queue manager.

MQCFO_REFRESH_REPOSITORY_YES specifies that in addition to MQCFO_REFRESH_REPOSITORY_NO behavior, objects representing full repository cluster queue managers are also refreshed. Do not use this option if the queue manager is itself a full repository.

If it is a full repository, you must first alter it so that it is not a full repository for the cluster in question.

The full repository location is recovered from the manually defined cluster-sender channel definitions. After the refresh with MQCFO_REFRESH_REPOSITORY_YES has been issued the queue manager can be altered so that it is once again a full repository.

MQCFO_REFRESH_REPOSITORY
Do not refresh repository information. MQCFO_REFRESH_REPOSITORY is the default.

If you select MQCFO_REFRESH_REPOSITORY_YES, check that all cluster-sender channels in the relevant cluster are inactive or stopped before you issue the Refresh Cluster command. If there are cluster-sender channels running at the time when the Refresh is processed, and they are used exclusively by the cluster or clusters being refreshed and MQCFO_REFRESH_REPOSITORY_YES is used, the channels are stopped, by using the Stop Channel command with a value of MQMODE_FORCE in the *Mode* parameter if necessary.

This scenario ensures that the Refresh can remove the channel state and that the channel will run with the refreshed version after the Refresh has completed. If the state of a channel cannot be deleted, for example because it is in doubt, or because it is also running as part of another cluster, it is state is not new after the refresh and it does not automatically restart if it was stopped.

Related information
Clustering: Using REFRESH CLUSTER best practices

Refresh Queue Manager

Use the Refresh Queue Manager (MQCMD_REFRESH_Q_MGR) command to perform special operations on queue managers.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

Required parameters

***RefreshType* (MQCFIN)**
Type of information to be refreshed (parameter identifier: MQIACF_REFRESH_TYPE).

Use this parameter to specify the type of information to be refreshed. The value can be:

MQRT_CONFIGURATION
MQRT_CONFIGURATION causes the queue manager to generate configuration event messages for every object definition that matches the selection criteria specified by the *ObjectType*, *ObjectName*, and *RefreshInterval* parameters.

A Refresh Queue Manager command with a *RefreshType* value of MQRT_CONFIGURATION is generated automatically when the value of the queue manager's *ConfigurationEvent* parameter changes from MQEVR_DISABLED to MQEVR_ENABLED.

Use this command with a *RefreshType* of MQRT_CONFIGURATION to recover from problems such as errors on the event queue. In such cases, use appropriate selection criteria, to avoid excessive processing time and event message generation.

MQRT_EXPIRY
This requests that the queue manager performs a scan to discard expired messages for every queue that matches the selection criteria specified by the *ObjectName* parameter.

Note: Valid only on z/OS.

MQRT_PROXYSUB
Requests that the queue manager resynchronizes the proxy subscriptions that are held with and on behalf of queue managers that are connected in a hierarchy or a publish/subscribe cluster.

You must resynchronize the proxy subscriptions only in exceptional circumstances, for example, when the queue manager is receiving subscriptions that it must not be sent, or not receiving subscriptions that it must receive. The following list describes some of the exceptional reasons for resynchronizing proxy subscriptions:

- Disaster recovery.
- Problems that are identified in a queue manager error log where messages inform of the issuing of the REFRESH QMGR TYPE(REPOS) command.
- Operator errors, for example, issuing a DELETE SUB command on a proxy subscription.

Missing proxy subscriptions can be caused if the closest matching topic definition is specified with **Subscription scope** set to `Queue Manager` or it has an empty or incorrect cluster name. Note that **Publication scope** does not prevent the sending of proxy subscriptions, but does prevent publications from being delivered to them.

Extraneous proxy subscriptions can be caused if the closest matching topic definition is specified with **Proxy subscription behavior** set to `Force`.

Missing or extraneous proxy subscriptions that are due to configuration errors are not changed by issuing a resynchronization. A resynchronization does resolve missing or extraneous publications as a result of the exceptional reasons listed.

Optional parameters (Refresh Queue Manager)

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE).

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***ObjectName* (MQCFST)**
Name of object to be included in the processing of this command (parameter identifier: MQCACF_OBJECT_NAME).

Use this parameter to specify the name of the object to be included in the processing of this command.

Generic names are supported. A generic name is a character string followed by an asterisk (*), for example ABC*, and it selects all objects having names that start with the selected character string. An asterisk on its own matches all possible names.

The maximum length is MQ_OBJECT_NAME_LENGTH.

***ObjectType* (MQCFIN)**
Object type for which configuration data is to be refreshed (parameter identifier: MQIACF_OBJECT_TYPE).

Use this parameter to specify the object type for which configuration data is to be refreshed. This parameter is valid only if the value of *RefreshType* is MQRT_CONFIGURATION. The default value, in that case, is MQOT_ALL. The value can be one of:

MQOT_AUTH_INFO
Authentication information object.

MQOT_CF_STRUC
CF structure.

MQOT_CHANNEL
Channel.

MQOT_CHLAUTH
Channel authentication

MQOT_LISTENER
Listener.

MQOT_NAMELIST
Namelist.

MQOT_PROCESS
Process definition.

MQOT_Q
Queue.

MQOT_LOCAL_Q
Local queue.

MQOT_MODEL_Q
Model queue.

MQOT_ALIAS_Q
Alias queue.

MQOT_REMOTE_Q
Remote queue.

MQOT_Q_MGR
Queue manager.

MQOT_CFSTRUC
CF structure.

MQOT_SERVICE
Service.

Note: Not valid on z/OS.

MQOT_STORAGE_CLASS
Storage class.

MQOT_TOPIC
Topic name.

***RefreshInterval* (MQCFIN)**
Refresh interval (parameter identifier: MQIACF_REFRESH_INTERVAL).

Use this parameter to specify a value, in minutes, defining a period immediately before the current time. This requests that only objects that have been created or altered within that period (as defined by their *AlterationDate* and *AlterationTime* attributes) are included.

Specify a value in the range zero through 999 999. A value of zero means there is no time limit (0 is the default).

This parameter is valid only if the value of *RefreshType* is MQRT_CONFIGURATION.

Refresh Security

The Refresh Security (MQCMD_REFRESH_SECURITY) command refreshes the list of authorizations held internally by the authorization service component.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***SecurityItem* (MQCFIN)**
Resource class for which the security refresh is to be performed (parameter identifier: MQIACF_SECURITY_ITEM). This parameter applies to z/OS only.

Use this parameter to specify the resource class for which the security refresh is to be performed. The value can be:

MQSECITEM_ALL
A full refresh of the type specified is performed. MQSECITEM_ALL is the default value.

MQSECITEM_MQADMIN
Specifies that administration type resources are to be refreshed. Valid only if the value of *SecurityType* is MQSECTYPE_CLASSES.

MQSECITEM_MQNLIST
Specifies that namelist resources are to be refreshed. Valid only if the value of *SecurityType* is MQSECTYPE_CLASSES.

MQSECITEM_MQPROC
Specifies that process resources are to be refreshed. Valid only if the value of *SecurityType* is MQSECTYPE_CLASSES.

MQSECITEM_MQQUEUE
Specifies that queue resources are to be refreshed. Valid only if the value of *SecurityType* is MQSECTYPE_CLASSES.

MQSECITEM_MXADMIN
Specifies that administration type resources are to be refreshed. Valid only if the value of *SecurityType* is MQSECTYPE_CLASSES.

MQSECITEM_MXNLIST
Specifies that namelist resources are to be refreshed. Valid only if the value of *SecurityType* is MQSECTYPE_CLASSES.

MQSECITEM_MXPROC
Specifies that process resources are to be refreshed. Valid only if the value of *SecurityType* is MQSECTYPE_CLASSES.

MQSECITEM_MXQUEUE
Specifies that queue resources are to be refreshed. Valid only if the value of *SecurityType* is MQSECTYPE_CLASSES.

MQSECITEM_MXTOPIC
Specifies that topic resources are to be refreshed. Valid only if the value of *SecurityType* is MQSECTYPE_CLASSES.

***SecurityType* (MQCFIN)**
Security type (parameter identifier: MQIACF_SECURITY_TYPE).

Use this parameter to specify the type of security refresh to be performed. The value can be:

MQSECTYPE_AUTHSERV
The list of authorizations held internally by the authorization services component is refreshed. MQSECTYPE_AUTHSERV is not valid on z/OS.

MQSECTYPE_AUTHSERV is the default on platforms other than z/OS.

MQSECTYPE_CLASSES
Permits you to select specific resource classes for which to perform the security refresh.

MQSECTYPE_CLASSES is valid only on z/OS where it is the default.

MQSECTYPE_SSL
MQSECTYPE_SSL refreshes the locations of the LDAP servers to be used for Certified Revocation Lists and the key repository. It also refreshes any cryptographic hardware parameters specified through WebSphere MQ and the cached view of the Secure Sockets Layer key repository. It also allows updates to become effective on successful completion of the command.

MQSECTYPE_SSL updates all SSL channels currently running, as follows:

- Sender, server, and cluster-sender channels using SSL are allowed to complete the current batch. In general, they then run the SSL handshake again with the refreshed view of the SSL key repository. However, you must manually restart a requester-server channel on which the server definition has no CONNAME parameter.
- All other channel types using SSL are stopped with a STOP CHANNEL MODE(FORCE) STATUS(INACTIVE) command. If the partner end of the stopped message channel has retry values defined, the channel tries again and the new SSL handshake uses the refreshed view of the contents of the SSL key repository, the location of the LDAP server to be used for Certification Revocation Lists, and the location of the key repository. If there is a server-connection channel, the client application loses its connection to the queue manager and must reconnect in order to continue.

Reset Channel

The Reset Channel (MQCMD_RESET_CHANNEL) command resets the message sequence number for a WebSphere MQ channel with, optionally, a specified sequence number to be used the next time that the channel is started.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

This command can be issued to a channel of any type (except MQCHT_SVRCONN and MQCHT_CLNTCONN). However, if it is issued to a sender (MQCHT_SENDER), server (MQCHT_SERVER), or cluster-sender (MQCHT_CLUSSDR) channel, the value at both ends (issuing end and receiver or requester end), is reset when the channel is next initiated or resynchronized. The value at both ends is reset to be equal.

If the command is issued to a receiver (MQCHT_RECEIVER), requester (MQCHT_REQUESTER), or cluster-receiver (MQCHT_CLUSRCVR) channel, the value at the other end is *not* reset as well; this step must be done separately if necessary.

Where there is both a locally defined channel and an auto-defined cluster-sender channel of the same name, the command applies to the locally defined channel.

If there is no locally defined channel but more than one auto-defined cluster-sender channel, the command applies to the last channel added to the repository on the local queue manager.

Required parameters

***ChannelName* (MQCFST)**
Channel name (parameter identifier: MQCACH_CHANNEL_NAME).

The name of the channel to be reset. The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.

The maximum length is MQ_QSG_NAME_LENGTH.

***ChannelDisposition* (MQCFIN)**
Channel disposition (parameter identifier: MQIACH_CHANNEL_DISP). This parameter applies to z/OS only.

Specifies the disposition of the channels to be reset.

If this parameter is omitted, then the value for the channel disposition is taken from the default channel disposition attribute of the channel object.

The value can be:

MQCHLD_PRIVATE
A receiving channel is private if it was started in response to an inbound transmission directed to the queue manager.

A sending channel is private if its transmission queue has a disposition other than MQQSGD_SHARED.

MQCHLD_SHARED
A receiving channel is shared if it was started in response to an inbound transmission directed to the queue-sharing group.

A sending channel is shared if its transmission queue has a disposition of MQQSGD_SHARED.

The combination of the *ChannelDisposition* and *CommandScope* parameters also controls from which queue manager the channel is operated. The possible options are:

- On the local queue manager where the command is issued.
- On another specific named queue manager in the group.

The various combinations of *ChannelDisposition* and *CommandScope* are summarized in Table 69 on page 1050

Table 69. ChannelDisposition and CommandScope for RESET CHANNEL

ChannelDisposition	***CommandScope* blank or local-qmgr**	***CommandScope* qmgr-name**
MQCHLD_PRIVATE	Reset private channel on the local queue manager	Reset private channel on the named queue manager
MQCHLD_SHARED	Reset a shared channel on all active queue managers. MQCHLD_SHARED might automatically generate a command using *CommandScope* and send it to the appropriate queue manager. If there is no definition for the channel on the queue manager to which the command is sent, or if the definition is unsuitable for the command, the command fails. The definition of a channel on the queue manager where the command is entered might be used to determine the target queue manager where the command is run. Therefore, it is important that channel definitions are consistent. Inconsistent channel definitions might result in unexpected command behavior.	Not permitted

***MsgSeqNumber* (MQCFIN)**
Message sequence number (parameter identifier: MQIACH_MSG_SEQUENCE_NUMBER).

Specifies the new message sequence number.

The value must be in the range 1 through 999 999 999. The default value is one.

Error codes

This command might return the following error code in the response format header, in addition to the values shown in "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_CHANNEL_NOT_FOUND
Channel not found.

Reset Cluster

The Reset Cluster (MQCMD_RESET_CLUSTER) command forces a queue manager to leave a cluster.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

Required parameters

***ClusterName* (MQCFST)**
Cluster name (parameter identifier: MQCA_CLUSTER_NAME).

The name of the cluster to be reset.

The maximum length of the string is MQ_CLUSTER_NAME_LENGTH.

***QMgrIdentifier* (MQCFST)**
Queue manager identifier (parameter identifier: MQCA_Q_MGR_IDENTIFIER).

This parameter is the unique identifier of the queue manager to be forcibly removed from the cluster. Only one of `QMgrIdentifier` and `QMgrName` can be specified. Use `QMgrIdentifier` in preference to `QmgrName`, because `QmgrName` might not be unique.

***QMgrName* (MQCFST)**
Queue manager name (parameter identifier: MQCA_Q_MGR_NAME).

This parameter is the name of the queue manager to be forcibly removed from the cluster. Only one of `QMgrIdentifier` and `QMgrName` can be specified. Use `QMgrIdentifier` in preference to `QmgrName`, because `QmgrName` might not be unique.

***Action* (MQCFIN)**
Action (parameter identifier: MQIACF_ACTION).

Specifies the action to take place. This parameter can be requested only by a repository queue manager.

The value can be:

MQACT_FORCE_REMOVE
Requests that a queue manager is forcibly removed from a cluster.

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.

The maximum length is MQ_QSG_NAME_LENGTH.

***RemoveQueues* (MQCFIN)**
Whether cluster queues are removed from the cluster (parameter identifier: MQIACF_REMOVE_QUEUES).

This parameter indicates whether the cluster queues that belong to the queue manager being removed from the cluster are to be removed from the cluster. This parameter can be specified even if the queue manager identified by the *QMgrName* parameter is not currently in the cluster.

The value can be:

MQCFO_REMOVE_QUEUES_YES
Remove queues belonging to the queue manager being removed from the cluster.

MQCFO_REMOVE_QUEUES_NO
Do not remove queues belonging to the queue manager being removed. MQCFO_REMOVE_QUEUES_NO is the default.

Error codes

This command might return the following error code in the response format header, in addition to the values shown in "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_ACTION_VALUE_ERROR
Value not valid.

Reset Queue Manager

Use the Reset Queue Manager (MQCMD_RESET_Q_MGR) command as part of your backup and recovery procedures on AIX, HP-UX, Linux, Solaris, IBM i, and Windows.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

You can use this command to request that the queue manager starts writing to a new log extent, making the previous log extent available for archiving.

Use the Reset Queue Manager (MQCMD_RESET_Q_MGR) command to forcibly remove a publish/subscribe hierarchical connection for which this queue manager is nominated as either the parent or the child in a hierarchical connection. Valid on all supported platforms.

Required parameters

***Action* (MQCFIN)**
Action (parameter identifier: MQIACF_ACTION).

Specifies the action to take place.

The value can be:

MQACT_ADVANCE_LOG
Requests that the queue manager starts writing to a new log extent, making the previous log extent available for archiving. This command is accepted only if the queue manager is configured to use linear logging.

Note: Not valid on Compaq NSK or z/OS.

MQACT_COLLECT_STATISTICS
Requests that the queue manager ends the current statistics collection period, and writes the statistics collected.

Note: Not valid on Compaq NSK, or z/OS.

MQACT_PUBSUB
Requests a publish/subscribe reset. This value requires that one of the optional parameters, ChildName or ParentName, is specified.

Optional parameters

***ChildName* (MQCFST)**
The name of the child queue manager for which the hierarchical connection is to be forcibly canceled (parameter identifier: MQCA_CHILD).

This attribute is valid only when the Action parameter has the value MQACT_PUBSUB.

The maximum length of the string is MQ_Q_MGR_NAME_LENGTH.

***ParentName* (MQCFST)**
The name of the parent queue manager for which the hierarchical connection is to be forcibly canceled (parameter identifier: MQCA_PARENT).

This attribute is valid only when the Action parameter has the value MQACT_PUBSUB.

The maximum length of the string is MQ_Q_MGR_NAME_LENGTH.

Error codes

This command might return the following error code in the response format header, in addition to the values shown in "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRC_RESOURCE_PROBLEM
Insufficient system resources available.

Reset Queue Statistics

The Reset Queue Statistics (MQCMD_RESET_Q_STATS) command reports the performance data for a queue and then resets the performance data. Performance data is maintained for each local queue (including transmission queues).

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

Performance data is reset at the following times:

- When a Reset Queue Statistics command is issued
- When the queue manager is restarted
- When a performance event is generated for a queue

Required parameters

***QName* (MQCFST)**
Queue name (parameter identifier: MQCA_Q_NAME).

The name of the local queue to be tested and reset.

Generic queue names are supported. A generic name is a character string followed by an asterisk (*), for example ABC*, and it selects all objects having names that start with the selected character string. An asterisk on its own matches all possible names.

The maximum length of the string is MQ_Q_NAME_LENGTH.

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

Error codes

This command might return the following error codes in the response format header, in addition to the values shown in “Error codes applicable to all commands” on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_Q_WRONG_TYPE
Action not valid for the queue of specified type.

MQRCCF_EVENTS_DISABLED
The queue manager performance events are disabled (PERFMEV). On z/OS, it is necessary to enable queue manager performance events to use this command. For more details, see the PerformanceEvent property in the “Change Queue Manager” on page 764 command.

Reset Queue Statistics (Response)

The response to the Reset Queue Statistics (MQCMD_RESET_Q_STATS) command consists of the response header followed by the *QName* structure and the attribute parameter structures shown in the following sections.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

If a generic queue name was specified, one such message is generated for each queue found.

Always returned:
HighQDepth, *MsgDeqCount*, *MsgEnqCount*, *QName*, *QSGDisposition*, *TimeSinceReset*

Response data

***HighQDepth* (MQCFIN)**
Maximum number of messages on a queue (parameter identifier: MQIA_HIGH_Q_DEPTH).

This count is the peak value of the *CurrentQDepth* local queue attribute since the last reset. The *CurrentQDepth* is incremented during an MQPUT call, and during backout of an MQGET call, and is decremented during a (nonbrowse) MQGET call, and during backout of an MQPUT call.

***MsgDeqCount* (MQCFIN)**
Number of messages dequeued (parameter identifier: MQIA_MSG_DEQ_COUNT).

This count includes messages that have been successfully retrieved (with a nonbrowse MQGET) from the queue, even though the MQGET has not yet been committed. The count is not decremented if the MQGET is later backed out.

On z/OS, if the value exceeds 999 999 999, it is returned as 999 999 999

***MsgEnqCount* (MQCFIN)**
Number of messages enqueued (parameter identifier: MQIA_MSG_ENQ_COUNT).

This count includes messages that have been put to the queue, but have not yet been committed. The count is not decremented if the put is later backed out.

On z/OS, if the value exceeds 999 999 999, it is returned as 999 999 999

***QName* (MQCFST)**
Queue name (parameter identifier: MQCA_Q_NAME).

The maximum length of the string is MQ_Q_NAME_LENGTH.

***QSGDisposition* (MQCFIN)**
QSG disposition (parameter identifier: MQIA_QSG_DISP).

Specifies the disposition of the object (that is, where it is defined and how it behaves). This parameter is valid on z/OS only. The value can be:

MQQSGD_COPY
The object is defined as MQQSGD_COPY.

MQQSGD_SHARED
The object is defined as MQQSGD_SHARED.

MQQSGD_Q_MGR
The object is defined as MQQSGD_Q_MGR.

***TimeSinceReset* (MQCFIN)**
Time since statistics reset in seconds (parameter identifier: MQIA_TIME_SINCE_RESET).

Resolve Channel

The Resolve Channel (MQCMD_RESOLVE_CHANNEL) command requests a channel to commit or back out in-doubt messages. This command is used when the other end of a link fails during the confirmation stage, and for some reason it is not possible to reestablish the connection. In this situation the sending end remains in an in-doubt state, whether the messages were received. Any outstanding units of work must be resolved using Resolve Channel with either backout or commit.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

Care must be exercised in the use of this command. If the resolution specified is not the same as the resolution at the receiving end, messages can be lost or duplicated.

This command can only be used for channels with a *ChannelType* value of MQCHT_SENDER, MQCHT_SERVER, or MQCHT_CLUSSDR.

Where there is both a locally defined channel and an auto-defined cluster-sender channel of the same name, the command applies to the locally defined channel.

If there is no locally defined channel but more than one auto-defined cluster-sender channel, the command applies to the last channel added to the repository on the local queue manager.

Required parameters

***ChannelName* (MQCFST)**
Channel name (parameter identifier: MQCACH_CHANNEL_NAME).

The name of the channel to be resolved. The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

***InDoubt* (MQCFIN)**
Indoubt resolution (parameter identifier: MQIACH_IN_DOUBT).

Specifies whether to commit or back out the in-doubt messages.

The value can be:

MQIDO_COMMIT
Commit.

MQIDO_BACKOUT
Backout.

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.

The maximum length is MQ_QSG_NAME_LENGTH.

***ChannelDisposition* (MQCFIN)**
Channel disposition (parameter identifier: MQIACH_CHANNEL_DISP). This parameter applies to z/OS only.

Specifies the disposition of the channels to be resolved.

If this parameter is omitted, then the value for the channel disposition is taken from the default channel disposition attribute of the channel object.

The value can be:

MQCHLD_PRIVATE
A receiving channel is private if it was started in response to an inbound transmission directed to the queue manager.

A sending channel is private if its transmission queue has a disposition other than MQQSGD_SHARED.

MQCHLD_SHARED
A receiving channel is shared if it was started in response to an inbound transmission directed to the queue-sharing group.

A sending channel is shared if its transmission queue has a disposition of MQQSGD_SHARED.

The combination of the *ChannelDisposition* and *CommandScope* parameters also controls from which queue manager the channel is operated. The possible options are:

- On the local queue manager where the command is issued.
- On another specific named queue manager in the group.

The various combinations of *ChannelDisposition* and *CommandScope* are summarized in Table 70 on page 1057

Table 70. ChannelDisposition and CommandScope for RESOLVE CHANNEL

ChannelDisposition	***CommandScope* blank or local-qmgr**	***CommandScope* qmgr-name**
MQCHLD_PRIVATE	Resolve private channel on the local queue manager	Resolve private channel on the named queue manager
MQCHLD_SHARED	Resolve a shared channel on all active queue managers. MQCHLD_SHARED might automatically generate a command using *CommandScope* and send it to the appropriate queue manager. If there is no definition for the channel on the queue manager to which the command is sent, or if the definition is unsuitable for the command, the command fails. The definition of a channel on the queue manager where the command is entered might be used to determine the target queue manager where the command is run. Therefore, it is important that channel definitions are consistent. Inconsistent channel definitions might result in unexpected command behavior.	Not permitted

Error codes

This command might return the following error codes in the response format header, in addition to the values shown in "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_CHANNEL_NOT_FOUND
Channel not found.

MQRCCF_INDOUBT_VALUE_ERROR
In-doubt value not valid.

Resume Queue Manager Cluster

The Resume Queue Manager Cluster (MQCMD_RESUME_Q_MGR_CLUSTER) command informs other queue managers in a cluster that the local queue manager is again available for processing, and can be sent messages. It reverses the action of the Suspend Queue Manager Cluster (MQCMD_SUSPEND_Q_MGR_CLUSTER) command.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

Required parameters

***ClusterName* (MQCFST)**
Cluster name (parameter identifier: MQCA_CLUSTER_NAME).

The name of the cluster for which availability is to be resumed.

The maximum length of the string is MQ_CLUSTER_NAME_LENGTH.

***ClusterNamelist* (MQCFST)**
Cluster Namelist (parameter identifier: MQCA_CLUSTER_NAMELIST).

The name of the namelist specifying a list of clusters for which availability is to be resumed.

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.

The maximum length is MQ_QSG_NAME_LENGTH.

Error codes

This command might return the following error code in the response format header, in addition to the values shown in “Error codes applicable to all commands” on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_CLUSTER_NAME_CONFLICT
Cluster name conflict.

Set Authority Record

The Set Authority Record (MQCMD_SET_AUTH_REC) command sets the authorizations of a profile, object, or class of objects. Authorizations can be granted to, or revoked from, any number of principals or groups.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

Required parameters

***ProfileName* (MQCFST)**
Profile name (parameter identifier: MQCACF_AUTH_PROFILE_NAME).

The authorizations apply to all WebSphere MQ objects with names that match the profile name specified. You can define a generic profile. If you specify an explicit profile name, the object must exist.

The maximum length of the string is MQ_AUTH_PROFILE_NAME_LENGTH.

***ObjectType* (MQCFIN)**
The type of object for which to set authorizations (parameter identifier: MQIACF_OBJECT_TYPE).

The value can be:

MQOT_AUTH_INFO
Authentication information.

MQOT_CHANNEL
Channel object.

MQOT_CLNTCONN_CHANNEL
Client-connection channel object.

MQOT_COMM_INFO
Communication information object

MQOT_LISTENER
Listener object.

MQOT_NAMELIST
Namelist.

MQOT_PROCESS
Process.

MQOT_Q
Queue, or queues, that match the object name parameter.

MQOT_Q_MGR
Queue manager.

MQOT_REMOTE_Q_MGR_NAME
Remote queue manager.

MQOT_SERVICE
Service object.

MQOT_TOPIC
Topic object.

Note: The required parameters must be in the order **ProfileName** followed by **ObjectType**.

Optional parameters

***AuthorityAdd* (MQCFIL)**
Authority values to set (parameter identifier: MQIACF_AUTH_ADD_AUTHS).

This parameter is a list of authority values to set for the named profile. The values can be:

MQAUTH_NONE
The entity has authority set to 'none'.

MQAUTH_ALT_USER_AUTHORITY
Specify an alternate user ID on an MQI call.

MQAUTH_BROWSE
Retrieve a message from a queue by issuing an MQGET call with the BROWSE option.

MQAUTH_CHANGE
Change the attributes of the specified object, using the appropriate command set.

MQAUTH_CLEAR
Clear a queue.

MQAUTH_CONNECT
Connect the application to the specified queue manager by issuing an MQCONN call.

MQAUTH_CREATE
Create objects of the specified type using the appropriate command set.

MQAUTH_DELETE
Delete the specified object using the appropriate command set.

MQAUTH_DISPLAY
Display the attributes of the specified object using the appropriate command set.

MQAUTH_INPUT
Retrieve a message from a queue by issuing an MQGET call.

MQAUTH_INQUIRE
Make an inquiry on a specific queue by issuing an MQINQ call.

MQAUTH_OUTPUT
Put a message on a specific queue by issuing an MQPUT call.

MQAUTH_PASS_ALL_CONTEXT
Pass all context.

MQAUTH_PASS_IDENTITY_CONTEXT
Pass the identity context.

MQAUTH_SET
Set attributes on a queue from the MQI by issuing an MQSET call.

MQAUTH_SET_ALL_CONTEXT
Set all context on a queue.

MQAUTH_SET_IDENTITY_CONTEXT
Set the identity context on a queue.

MQAUTH_CONTROL
For listeners and services, start and stop the specified channel, listener, or service.

For channels, start, stop, and ping the specified channel.

For topics, define, alter, or delete subscriptions.

MQAUTH_CONTROL_EXTENDED
Reset or resolve the specified channel.

MQAUTH_PUBLISH
Publish to the specified topic.

MQAUTH_SUBSCRIBE
Subscribe to the specified topic.

MQAUTH_RESUME
Resume a subscription to the specified topic.

MQAUTH_SYSTEM
Use queue manager for internal system operations.

MQAUTH_ALL
Use all operations applicable to the object.

MQAUTH_ALL_ADMIN
Use all administration operations applicable to the object.

MQAUTH_ALL_MQI
Use all MQI calls applicable to the object.

The contents of the *AuthorityAdd* and *AuthorityRemove* lists must be mutually exclusive. You must specify a value for either *AuthorityAdd* or *AuthorityRemove*. An error occurs if you do not specify either.

***AuthorityRemove* (MQCFIL)**
Authority values to remove (parameter identifier: MQIACF_AUTH_REMOVE_AUTHS).

This parameter is a list of authority values to remove from the named profile. The values can be:

MQAUTH_NONE
The entity has authority set to 'none'.

MQAUTH_ALT_USER_AUTHORITY
Specify an alternate user ID on an MQI call.

MQAUTH_BROWSE
Retrieve a message from a queue by issuing an MQGET call with the BROWSE option.

MQAUTH_CHANGE
Change the attributes of the specified object, using the appropriate command set.

MQAUTH_CLEAR
Clear a queue.

MQAUTH_CONNECT
Connect the application to the specified queue manager by issuing an MQCONN call.

MQAUTH_CREATE
Create objects of the specified type using the appropriate command set.

MQAUTH_DELETE
Delete the specified object using the appropriate command set.

MQAUTH_DISPLAY
Display the attributes of the specified object using the appropriate command set.

MQAUTH_INPUT
Retrieve a message from a queue by issuing an MQGET call.

MQAUTH_INQUIRE
Make an inquiry on a specific queue by issuing an MQINQ call.

MQAUTH_OUTPUT
Put a message on a specific queue by issuing an MQPUT call.

MQAUTH_PASS_ALL_CONTEXT
Pass all context.

MQAUTH_PASS_IDENTITY_CONTEXT
Pass the identity context.

MQAUTH_SET
Set attributes on a queue from the MQI by issuing an MQSET call.

MQAUTH_SET_ALL_CONTEXT
Set all context on a queue.

MQAUTH_SET_IDENTITY_CONTEXT
Set the identity context on a queue.

MQAUTH_CONTROL
For listeners and services, start and stop the specified channel, listener, or service.

For channels, start, stop, and ping the specified channel.

For topics, define, alter, or delete subscriptions.

MQAUTH_CONTROL_EXTENDED
Reset or resolve the specified channel.

MQAUTH_PUBLISH
Publish to the specified topic.

MQAUTH_SUBSCRIBE
Subscribe to the specified topic.

MQAUTH_RESUME
Resume a subscription to the specified topic.

MQAUTH_SYSTEM
Use queue manager for internal system operations.

MQAUTH_ALL
Use all operations applicable to the object.

MQAUTH_ALL_ADMIN
Use all administration operations applicable to the object.

MQAUTH_ALL_MQI
Use all MQI calls applicable to the object.

The contents of the *AuthorityAdd* and *AuthorityRemove* lists must be mutually exclusive. You must specify a value for either *AuthorityAdd* or *AuthorityRemove*. An error occurs if you do not specify either.

***GroupNames* (MQCFSL)**
Group names (parameter identifier: MQCACF_GROUP_ENTITY_NAMES).

The names of groups having their authorizations set. At least one group name or principal name must be specified. An error occurs if neither are specified.

Each member in this list can be a maximum length of MQ_ENTITY_NAME_LENGTH.

***PrincipalNames* (MQCFSL)**
Principal names (parameter identifier: MQCACF_PRINCIPAL_ENTITY_NAMES).

The names of principals having their authorizations set. At least one group name or principal name must be specified. An error occurs if neither are specified.

Each member in this list can be a maximum length of MQ_ENTITY_NAME_LENGTH.

***ServiceComponent* (MQCFST)**
Service component (parameter identifier: MQCACF_SERVICE_COMPONENT).

If installable authorization services are supported, this parameter specifies the name of the authorization service to which the authorizations apply.

If you omit this parameter, the authorization inquiry is made to the first installable component for the service.

The maximum length of the string is MQ_SERVICE_COMPONENT_LENGTH.

Error codes

This command might return the following error codes in the response format header, in addition to the values shown in “Error codes applicable to all commands” on page 687.

***Reason* (MQLONG)**
The value can be:

MQRC_UNKNOWN_ENTITY
Userid not authorized, or unknown.

MQRCCF_AUTH_VALUE_ERROR
Invalid authorization.

MQRCCF_AUTH_VALUE_MISSING
Authorization missing.

MQRCCF_ENTITY_NAME_MISSING
Entity name missing.

MQRCCF_OBJECT_TYPE_MISSING
Object type missing.

MQRCCF_PROFILE_NAME_ERROR
Invalid profile name.

Set Channel Authentication Record

The Set Channel Authentication Record (MQCMD_SET_CHLAUTH_REC) command sets the allowed partner details and mappings to MCAUSER for a channel or set of channels.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

Syntax diagram

See the syntax diagram in the MQSC "SET CHLAUTH" on page 663 command for combinations of parameters and values that are allowed.

Required parameters

The required parameters are valid for the **Action** values of:

- MQACT_ADD or MQACT_REPLACE
- MQACT_REMOVE
- MQACT_REMOVEALL

***ProfileName* (MQCFST)**
The name of the channel or set of channels for which you are setting channel authentication configuration (parameter identifier: MQCACH_CHANNEL_NAME). You can use one or more asterisks (*), in any position, as wildcards to specify a set of channels. If you set Type to MQCAUT_BLOCKADDR, you must set the generic channel name to a single asterisk, which matches all channel names.

The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

***Type* (MQCFIN)**
The **Type** parameter must follow the **ProfileName** parameter.

The type of channel authentication record for which to set allowed partner details or mappings to MCAUSER (parameter identifier: MQIACF_CHLAUTH_TYPE). The following values are valid:

MQCAUT_BLOCKUSER
This channel authentication record prevents a specified user or users from connecting. The MQCAUT_BLOCKUSER parameter must be accompanied by a UserList.

MQCAUT_BLOCKADDR
This channel authentication record prevents connections from a specified IP address or addresses. The MQCAUT_BLOCKADDR parameter must be accompanied by an AddrList.

MQCAUT_SSLPEERMAP
This channel authentication record maps SSL Distinguished Names (DNs) to MCAUSER values. The MQCAUT_SSLPEERMAP parameter must be accompanied by an SSLPeer.

MQCAUT_ADDRESSMAP
This channel authentication record maps IP addresses to MCAUSER values. The MQCAUT_ADDRESSMAP parameter must be accompanied by an Address.

MQCAUT_USERMAP
This channel authentication record maps asserted user IDs to MCAUSER values. The MQCAUT_USERMAP parameter must be accompanied by a ClntUser.

MQCAUT_QMGRMAP
This channel authentication record maps remote queue manager names to MCAUSER values. The MQCAUT_QMGRMAP parameter must be accompanied by a QMName.

Optional parameters

The following table shows which parameters are valid for each value of **Action**:

	Action		
Parameter	**MQACT_ADD or MQACT_REPLACE**	**MQACT_REMOVE**	**MQACT_REMOVEALL**
CommandScope	✓	✓	✓
Action	✓	✓	✓
Address	✓	✓	
Addrlist	✓	✓	
ClntUser	✓	✓	
MCAUser	✓		
QMName	✓	✓	
SSLPeer	✓	✓	
UserList	✓	✓	
UserSrc	✓		
Warn	✓		
Description	✓		

***Action* (MQCFIN)**
The action to perform on the channel authentication record (parameter identifier: MQIACF_ACTION). The following values are valid:

MQACT_ADD
Add the specified configuration to a channel authentication record. This is the default value.

For types MQCAUT_SSLPEERMAP, MQCAUT_ADDRESSMAP, MQCAUT_USERMAP and MQCAUT_QMGRMAP, if the specified configuration exists, the command fails.

For types MQCAUT_BLOCKUSER and MQCAUT_BLOCKADDR, the configuration is added to the list.

MQACT_REPLACE
Replace the current configuration of a channel authentication record.

For types MQCAUT_SSLPEERMAP, MQCAUT_ADDRESSMAP, MQCAUT_USERMAP and MQCAUT_QMGRMAP, if the specified configuration exists, it is replaced with the new configuration. If it does not exist it is added.

For types MQCAUT_BLOCKUSER and MQCAUT_BLOCKADDR, the configuration specified replaces the current list, even if the current list is empty. If you replace the current list with an empty list, this acts like MQACT_REMOVEALL.

MQACT_REMOVE
Remove the specified configuration from the channel authentication records. If the configuration does not exist the command fails. If you remove the last entry from a list, this acts like MQACT_REMOVEALL.

MQACT_REMOVEALL
Remove all members of the list and thus the whole record (for MQCAUT_BLOCKADDR and MQCAUT_BLOCKUSER) or all previously defined mappings (for MQCAUT_ADDRESSMAP, MQCAUT_SSLPEERMAP, MQCAUT_QMGRMAP and MQCAUT_USERMAP) from the channel authentication records. This option cannot be combined with specific values supplied in

AddrList, **UserList**, **Address**, **SSLPeer**, **QMName** or **CltnUser**. If the specified type has no current configuration the command still succeeds.

***Address* (MQCFST)**
The filter to be used to compare with the IP address of the partner queue manager or client at the other end of the channel (parameter identifier: MQCACH_CONNECTION_NAME).

This parameter is mandatory when **Type** is MQCAUT_ADDESSMAP and is also valid when **Type** is MQCAUT_SSLPEERMAP, MQCAUT_USERMAP, or MQCAUT_QMGRMAP and **Action** is MQACT_ADD, MQACT_REPLACE, or MQACT_REMOVE. You can define more than one channel authentication object with the same main identity, for example the same SSL or TLS peer name, with different addresses. See "Generic IP addresses" on page 668 for more information about filtering IP addresses.

The maximum length of the string is MQ_CONN_NAME_LENGTH.

***AddrList* (MQCFSL)**
A list of up to 100 generic IP addresses which are banned from accessing this queue manager on any channel (parameter identifier: MQCACH_CONNECTION_NAME_LIST).

This parameter is only valid when **Type** is MQCAUT_BLOCKADDR.

The maximum length of each address is MQ_CONN_NAME_LENGTH.

***CltnUser* (MQCFST)**
The client asserted user ID to be mapped to a new user ID or blocked (parameter identifier: MQCACH_CLIENT_USER_ID).

This parameter is valid only when **Type** is MQCAUT_BLOCKADDR.

The maximum length of the string is MQ_MCA_USER_ID_LENGTH.

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is run when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is run on the queue manager on which it was entered.
- a queue manager name. The command is run on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which the command was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is run on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

***Custom* (MQCFST)**
Reserved for future use.

***Description* (MQCFST)**
Provides descriptive information about the channel authentication record, which is displayed when you issue the Inquire Channel Authentication Records command (parameter identifier: MQCA_CHLAUTH_DESC).

This parameter must contain only displayable characters. In a DBCS installation, it can contain DBCS characters. The maximum length of the string is MQ_CHLAUTH_DESC_LENGTH.

Note: Use characters from the coded character set identifier (CCSID) for this queue manager. Other characters might be translated incorrectly if the information is sent to another queue manager.

***MCAUser* (MQCFST)**
The user identifier to be used when the inbound connection matches the SSL DN, IP address, client asserted user ID or remote queue manager name supplied (parameter identifier: MQCACH_MCA_USER_ID).

This parameter is mandatory when **UserSrc** is MQUSRC_MAP and is valid when **Type** is MQCAUT_SSLPEERMAP, MQCAUT_ADDRESSMAP, MQCAUT_USERMAP, or MQCAUT_QMGRMAP.

This parameter is valid only when **Action** is MQACT_ADD or MQACT_REPLACE.

The maximum length of the string is MQ_MCA_USER_ID_LENGTH.

***QMName* (MQCFST)**
The name of the remote partner queue manager, or pattern that matches a set of queue manager names, to be mapped to a user ID or blocked (parameter identifier: MQCA_REMOTE_Q_MGR_NAME).

This parameter is valid only when **Type** is MQCAUT_QMGRMAP

The maximum length of the string is MQ_Q_MGR_NAME_LENGTH.

***SSLPeer* (MQCFST)**

The filter to use to compare with the Distinguished Name of the certificate from the peer queue manager or client at the other end of the channel (parameter identifier: MQCACH_SSL_PEER_NAME).

The **SSLPeer** value is specified in the standard form used to specify a Distinguished Name. See Distinguished Names and WebSphere MQ rules for SSLPEER values .

The maximum length of the string is MQ_SSL_PEER_NAME_LENGTH .

***UserList* (MQCFSL)**
A list of up to 100 user IDs which are banned from using this channel or set of channels (parameter identifier: MQCACH_MCA_USER_ID_LIST).

The following special value can be used:

***MQADMIN**
The exact meaning of this value is determined at runtime. If you are using the OAM supplied with IBM WebSphere MQ, the meaning depends on platform, as follows:

- On Windows, all members of the mqm group, the Administrators group and SYSTEM
- On UNIX and Linux, all members of the mqm group
- On IBM i, the profiles (users) qmqm and qmqmadm and all members of the qmqmadm group, and any user defined with the *ALLOBJ special setting
- On z/OS, the user ID that the CHINIT and the user ID that the MSTR address spaces are running under

This parameter is only valid when **TYPE** is MQCAUT_BLOCKUSER.

The maximum length of each user ID is MQ_MCA_USER_ID_LENGTH .

***UserSrc* (MQCFIN)**
The source of the user ID to be used for MCAUSER at run time (parameter identifier: MQIACH_USER_SOURCE).

The following values are valid:

MQUSRC_MAP
Inbound connections that match this mapping use the user ID specified in the **MCAUser** attribute. This is the default value.

MQUSRC_NOACCESS
Inbound connections that match this mapping have no access to the queue manager and the channel ends immediately.

MQUSRC_CHANNEL
Inbound connections that match this mapping use the flowed user ID or any user defined on the channel object in the MCAUSER field.

Note that *Warn* and MQUSRC_CHANNEL, or MQUSRC_MAP are incompatible. This is because channel access is never blocked in these cases, so there is never a reason to generate a warning.

***Warn* (MQCFIN)**
Indicates whether this record operates in warning mode (parameter identifier: MQIACH_WARNING).

MQWARN_NO
This record does not operate in warning mode. Any inbound connection that matches this record is blocked. This is the default value.

MQWARN_YES
This record operates in warning mode. Any inbound connection that matches this record and would therefore be blocked is allowed access. An error message is written and, if events are configured, an event message is created showing the details of what would have been blocked. The connection is allowed to continue. An attempt is made to find another record that is set to WARN(NO) to set the credentials for the inbound channel.

Error codes

This command might return the following error codes in the response format header, in addition to the values shown at "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_CHLAUTH_TYPE_ERROR
Channel authentication record type not valid.

MQRCCF_CHLAUTH_ACTION_ERROR
Channel authentication record action not valid.

MQRCCF_CHLAUTH_USERSRC_ERROR
Channel authentication record user source not valid.

MQRCCF_WRONG_CHLAUTH_TYPE
Parameter not allowed for this channel authentication record type.

MQRCCF_CHLAUTH_ALREADY_EXISTS
Channel authentication record already exists

Related concepts
Channel authentication records

Start Channel

The Start Channel (MQCMD_START_CHANNEL) command starts an IBM WebSphere MQ channel. This command can be issued to a channel of any type (except MQCHT_CLNTCONN). If, however, it is issued to a channel with a *ChannelType* value of MQCHT_RECEIVER, MQCHT_SVRCONN, or MQCHT_CLUSRCVR, the only action is to enable the channel, not start it.

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X	X	X

Where there is both a locally defined channel and an auto-defined cluster-sender channel of the same name, the command applies to the locally defined channel.

If there is no locally defined channel but more than one auto-defined cluster-sender channel, the command applies to the last channel added to the repository on the local queue manager.

None of the following attributes are applicable to MQTT channels unless specifically mentioned in the parameter description.

Required parameters

***ChannelName* (MQCFST)**
Channel name (parameter identifier: MQCACH_CHANNEL_NAME).

The name of the channel to be started. The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

This parameter is required for all channel types including MQTT channels.

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***ChannelDisposition* (MQCFIN)**
Channel disposition (parameter identifier: MQIACH_CHANNEL_DISP). This parameter applies to z/OS only.

Specifies the disposition of the channels to be started.

If this parameter is omitted, then the value for the channel disposition is taken from the default channel disposition attribute of the channel object.

The value can be:

MQCHLD_PRIVATE
A receiving channel is private if it was started in response to an inbound transmission directed to the queue manager.

A sending channel is private if its transmission queue has a disposition other than MQQSGD_SHARED.

MQCHLD_SHARED
A receiving channel is shared if it was started in response to an inbound transmission directed to the queue-sharing group.

A sending channel is shared if its transmission queue has a disposition of MQQSGD_SHARED.

MQCHLD_FIXSHARED
Shared channels tied to a specific queue manager.

The combination of the *ChannelDisposition* and *CommandScope* parameters also controls from which queue manager the channel is operated. The possible options are:

- On the local queue manager where the command is issued.
- On another specific named queue manager in the group.
- On every active queue manager in the group.
- On the most suitable queue manager in the group, determined automatically by the queue manager itself.

The various combinations of *ChannelDisposition* and *CommandScope* are summarized in Table 71 on page 1069

Table 71. ChannelDisposition and CommandScope for START CHANNEL			
ChannelDisposition	***CommandScope* blank or local-qmgr**	***CommandScope* qmgr-name**	***CommandScope(*)***
MQCHLD_PRIVATE	Start as a private channel on the local queue manager	Start as a private channel on the named queue manager	Start as a private channel on all active queue managers
MQCHLD_SHARED	For channels of *ChannelType* MQCHT_SENDER, MQCHT_REQUESTER, and MQCHT_SERVER, start as a shared channel on the most suitable queue manager in the group. For a shared channel of *ChannelType* MQCHT_RECEIVER and MQCHT_SVRCONN, start the channel on all active queue managers. For a shared channel of *ChannelType* MQCHT_CLUSSDR and MQCHT_CLUSRCVR, this option is not permitted. MQCHLD_SHARED might automatically generate a command using *CommandScope* and send it to the appropriate queue manager. If there is no definition for the channel on the queue manager to which the command is sent, or if the definition is unsuitable for the command, the command fails. The definition of a channel on the queue manager where the command is entered might be used to determine the target queue manager where the command is run. Therefore, it is important that channel definitions are consistent. Inconsistent channel definitions might result in unexpected command behavior.	Not permitted	Not permitted
MQCHLD_FIXSHARED	For a shared channel of *ChannelType* MQCHT_SENDER, MQCHT_REQUESTER, and MQCHT_SERVER, with a nonblank *ConnectionName*, start as a shared channel on the local queue manager.	For a shared channel of *ChannelType* MQCHT_SENDER, MQCHT_REQUESTER, and MQCHT_SERVER, with a nonblank *ConnectionName*, start as a shared channel on the named queue manager.	Not permitted

Error codes

This command might return the following error codes in the response format header, in addition to the values shown in "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_CHANNEL_INDOUBT
Channel in-doubt.

MQRCCF_CHANNEL_IN_USE
Channel in use.

MQRCCF_CHANNEL_NOT_FOUND
Channel not found.

MQRCCF_CHANNEL_TYPE_ERROR
Channel type not valid.

MQRCCF_MQCONN_FAILED
MQCONN call failed.

MQRCCF_MQINQ_FAILED
MQINQ call failed.

MQRCCF_MQOPEN_FAILED
MQOPEN call failed.

MQRCCF_NOT_XMIT_Q
Queue is not a transmission queue.

Start Channel (MQTT)

The Start Channel (MQCMD_START_CHANNEL) command starts an IBM WebSphere MQ channel. This command can be issued to a channel of type MQCHT_MQTT.

Required parameters

***ChannelName* (MQCFST)**
Channel name (parameter identifier: MQCACH_CHANNEL_NAME).

The name of the channel to be started. The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

This parameter is required for all channel types including MQTT channels.

***ChannelType* (MQCFIN)**
The type of channel (parameter identifier: MQIACH_CHANNEL_TYPE). This parameter is currently only used with MQTT Telemetry channels, and is required when starting a Telemetry channel. The only value that can currently be given to the parameter is MQCHT_MQTT.

Error codes

This command might return the following error codes in the response format header, in addition to the values shown in "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_PARM_SYNTAX_ERROR
The parameter specified contained a syntax error.

MQRCCF_PARM_MISSING
Parameters are missing.

MQRCCF_CHANNEL_NOT_FOUND
The channel specified does not exist.

MQRCCF_CHANNEL_IN_USE
The command did not specify a parameter or parameter value that was required.

MQRCCF_NO_STORAGE
Insufficient storage is available.

MQRCCF_COMMAND_FAILED
The command has failed.

MQRCCF_PORT_IN_USE
The port is in use.

MQRCCF_BIND_FAILED
The bind to a remote system during session negotiation has failed.

MQRCCF_SOCKET_ERROR
Socket error has occurred.

MQRCCF_HOST_NOT_AVAILABLE
An attempt to allocate a conversation to a remote system was unsuccessful. The error might be transitory, and the allocate might succeed later. This reason can occur if the listening program at the remote system is not running.

Start Channel Initiator

The Start Channel Initiator (MQCMD_START_CHANNEL_INIT) command starts a WebSphere MQ channel initiator.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

Required parameters

***InitiationQName* (MQCFST)**
Initiation queue name (parameter identifier: MQCA_INITIATION_Q_NAME).

The name of the initiation queue for the channel initiation process. That is, the initiation queue that is specified in the definition of the transmission queue.

This parameter is not valid on z/OS.

The maximum length of the string is MQ_Q_NAME_LENGTH.

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.

The maximum length is MQ_QSG_NAME_LENGTH.

***EnvironmentInfo* (MQCFST)**
Environment information (parameter identifier: MQCACF_ENV_INFO).

The parameters and values to be substituted in the JCL procedure (xxxxCHIN, where xxxx is the queue manager name) that is used to start the channel initiator address space. This parameter applies to z/OS only.

The maximum length of the string is MQ_ENV_INFO_LENGTH.

Error codes

This command might return the following error codes in the response format header, in addition to the values shown in "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_MQCONN_FAILED
MQCONN call failed.

MQRCCF_MQGET_FAILED
MQGET call failed.

MQRCCF_MQOPEN_FAILED
MQOPEN call failed.

Start Channel Listener

The Start Channel Listener (MQCMD_START_CHANNEL_LISTENER) command starts a WebSphere MQ listener. On z/OS, this command is valid for any transmission protocol; on other platforms, it is valid only for TCP transmission protocols.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.

The maximum length is MQ_Q_MGR_NAME_LENGTH.

***InboundDisposition* (MQCFIN)**
Inbound transmission disposition (parameter identifier: MQIACH_INBOUND_DISP). This parameter applies to z/OS only.

Specifies the disposition of the inbound transmissions that are to be handled. The value can be:

MQINBD_Q_MGR
Listen for transmissions directed to the queue manager. MQINBD_Q_MGR is the default.

MQINBD_GROUP
Listen for transmissions directed to the queue-sharing group. MQINBD_GROUP is permitted only if there is a shared queue manager environment.

***IPAddress* (MQCFST)**
IP address (parameter identifier: MQCACH_IP_ADDRESS). This parameter applies to z/OS only.

The IP address for TCP/IP specified in IPv4 dotted decimal, IPv6 hexadecimal, or alphanumeric form. This parameter is valid only for channels that have a *TransportType* of MQXPT_TCP.

The maximum length of the string is MQ_IP_ADDRESS_LENGTH.

***ListenerName* (MQCFST)**
Listener name (parameter identifier: MQCACH_LISTENER_NAME). This parameter does not apply to z/OS.

The name of the listener definition to be started. On those platforms on which this parameter is valid, if this parameter is not specified, the default listener SYSTEM.DEFAULT.LISTENER is assumed. If this parameter is specified, no other parameters can be specified.

The maximum length of the string is MQ_LISTENER_NAME_LENGTH.

***LUName* (MQCFST)**
LU name (parameter identifier: MQCACH_LU_NAME). This parameter applies to z/OS only.

The symbolic destination name for the logical unit (LU) as specified in the APPC side information data set. The LU must be the same LU that is specified in the channel initiator parameters to be used for outbound transmissions. This parameter is valid only for channels with a *TransportType* of MQXPT_LU62.

The maximum length of the string is MQ_LU_NAME_LENGTH.

***Port* (MQCFIN)**
Port number for TCP (parameter identifier: MQIACH_PORT_NUMBER). This parameter applies to z/OS only.

The port number for TCP. This parameter is valid only for channels with a *TransportType* of MQXPT_TCP.

***TransportType* (MQCFIN)**
Transmission protocol type (parameter identifier: MQIACH_XMIT_PROTOCOL_TYPE).

The value can be:

MQXPT_LU62
LU 6.2.

MQXPT_TCP
TCP.

MQXPT_NETBIOS
NetBIOS.

MQXPT_SPX
SPX.

On platforms other than z/OS, this parameter is invalid.

Error codes

This command might return the following error codes in the response format header, in addition to the values shown in “Error codes applicable to all commands” on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_COMMS_LIBRARY_ERROR
Communications protocol library error.

MQRCCF_LISTENER_NOT_STARTED
Listener not started.

MQRCCF_LISTENER_RUNNING
Listener already running.

MQRCCF_NETBIOS_NAME_ERROR
NetBIOS listener name error.

Start Service

The Start Service (MQCMD_START_SERVICE) command starts an existing WebSphere MQ service definition.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

Required parameters

***ServiceName* (MQCFST)**
Service name (parameter identifier: MQCA_SERVICE_NAME).

This parameter is the name of the service definition to be started. The maximum length of the string is MQ_OBJECT_NAME_LENGTH.

Error codes

This command might return the following error codes in the response format header, in addition to the values shown in "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_NO_START_CMD
The *StartCommand* parameter of the service is blank.

MQRCCF_SERVICE_RUNNING
Service is already running.

Stop Channel

The Stop Channel (MQCMD_STOP_CHANNEL) command stops an IBM WebSphere MQ channel.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

This command can be issued to a channel of any type (except MQCHT_CLNTCONN).

Where there is both a locally defined channel and an auto-defined cluster-sender channel of the same name, the command applies to the locally defined channel.

If there is no locally defined channel but more than one auto-defined cluster-sender channel, the command applies to the last channel added to the repository on the local queue manager.

None of the following attributes are applicable to MQTT channels unless specifically mentioned in the parameter description.

Required parameters

***ChannelName* (MQCFST)**
Channel name (parameter identifier: MQCACH_CHANNEL_NAME).

The name of the channel to be stopped. The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

This parameter is required for all channel types..

Optional parameters

***ChannelDisposition* (MQCFIN)**
Channel disposition (parameter identifier: MQIACH_CHANNEL_DISP). This parameter applies to z/OS only.

Specifies the disposition of the channels to be stopped.

If this parameter is omitted, then the value for the channel disposition is taken from the default channel disposition attribute of the channel object.

The value can be:

MQCHLD_PRIVATE
A receiving channel is private if it was started in response to an inbound transmission directed to the queue manager.

A sending channel is private if its transmission queue has a disposition other than MQQSGD_SHARED.

MQCHLD_SHARED
A receiving channel is shared if it was started in response to an inbound transmission directed to the queue-sharing group.

A sending channel is shared if its transmission queue has a disposition of MQQSGD_SHARED.

The combination of the *ChannelDisposition* and *CommandScope* parameters also controls from which queue manager the channel is operated. The possible options are:

- On the local queue manager where the command is issued.
- On another specific named queue manager in the group.
- On every active queue manager in the group.
- On the most suitable queue manager in the group, determined automatically by the queue manager itself.

The various combinations of *ChannelDisposition* and *CommandScope* are summarized in Table 72 on page 1075

Table 72. ChannelDisposition and CommandScope for STOP CHANNEL

ChannelDisposition	***CommandScope* blank or local-qmgr**	***CommandScope* qmgr-name**	***CommandScope(*)***
MQCHLD_PRIVATE	Stop as a private channel on the local queue manager	Stop as a private channel on the named queue manager	Stop as a private channel on all active queue managers

Table 72. ChannelDisposition and CommandScope for STOP CHANNEL (continued)			
ChannelDisposition	***CommandScope* blank or local-qmgr**	***CommandScope* qmgr-name**	***CommandScope(*)***
MQCHLD_SHARED	For channels of *ChannelType* MQCHT_RECEIVER or MQCHT_SVRCONN, stop as shared channel on all active queue managers. For channels of *ChannelType* MQCHT_SENDER, MQCHT_REQUESTER, and MQCHT_SERVER, stop as a shared channel on the queue manager where it is running. If the channel is in an inactive state (not running), or if it is in RETRY state because the channel initiator on which it was running has stopped, a STOP request for the channel is issued on the local queue manager. MQCHLD_SHARED might automatically generate a command using *CommandScope* and send it to the appropriate queue manager. If there is no definition for the channel on the queue manager to which the command is sent, or if the definition is unsuitable for the command, the command fails. The definition of a channel on the queue manager where the command is entered might be used to determine the target queue manager where the command is run. Therefore, it is important that channel definitions are consistent. Inconsistent channel definitions might result in unexpected command behavior.	Not permitted	Not permitted

***ChannelStatus* (MQCFIN)**
The new state of the channel after the command is executed (parameter identifier: MQIACH_CHANNEL_STATUS).

The value can be:

MQCHS_INACTIVE
Channel is inactive.

MQCHS_STOPPED
Channel is stopped. MQCHS_STOPPED is the default if nothing is specified.

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.
- an asterisk (*). The command is executed on the local queue manager and is also passed to every active queue manager in the queue-sharing group.

The maximum length is MQ_QSG_NAME_LENGTH.

***ConnectionName* (MQCFST)**
Connection name of channel to be stopped (parameter identifier: MQCACH_CONNECTION_NAME).

This parameter is the connection name of the channel to be stopped. If this parameter is omitted, all channels with the specified channel name and remote queue manager name are stopped. On platforms other than z/OS, the maximum length of the string is MQ_CONN_NAME_LENGTH. On z/OS, the maximum length of the string is MQ_LOCAL_ADDRESS_LENGTH.

If this parameter is specified, ChannelStatus must be MQCHS_INACTIVE.

***Mode* (MQCFIN)**
How the channel must be stopped (parameter identifier: MQIACF_MODE).

The value can be:

MQMODE_QUIESCE
Quiesce the channel. MQMODE_QUIESCE is the default.

If you issue a `Stop Channel <channelname> Mode(MQMODE_QUIESCE)` command on a server-connection channel with the sharing conversations feature enabled, the IBM WebSphere MQ client infrastructure becomes aware of the stop request in a timely manner; this time is dependent upon the speed of the network. The client application becomes aware of the stop request as a result of issuing a subsequent call to IBM WebSphere MQ.

MQMODE_FORCE
Stop the channel immediately; the thread or process of the channel is not terminated. Stops transmission of any current batch.

For server-connection channels, breaks the current connection, returning MQRC_CONNECTION_BROKEN.

For other types of channels, this situation is likely to result in in-doubt situations.

Onz/OS, this option interrupts any message reallocation in progress, which can leave BIND_NOT_FIXED messages partially reallocated or out of order.

MQMODE_TERMINATE
On z/OS, MQMODE_TERMINATE is synonymous with FORCE. On other platforms, stop the channel immediately; the thread or process of the channel is terminated.

On z/OS, this option interrupts any message reallocation in progress, which can leave BIND_NOT_FIXED messages partially reallocated or out of order.

Note: This parameter was previously called *Quiesce* (MQIACF_QUIESCE), with values MQQO_YES and MQQO_NO. The old names can still be used.

***QMgrName* (MQCFST)**
Name of remote queue manager (parameter identifier: MQCA_Q_MGR_NAME).

This parameter is the name of the remote queue manager to which the channel is connected. If this parameter is omitted, all channels with the specified channel name and connection name are stopped. The maximum length of the string is MQ_Q_MGR_NAME_LENGTH.

If this parameter is specified, ChannelStatus must be MQCHS_INACTIVE.

Error codes

This command might return the following error codes in the response format header, in addition to the values shown in "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_CHANNEL_DISABLED
Channel disabled.

MQRCCF_CHANNEL_NOT_ACTIVE
Channel not active.

MQRCCF_CHANNEL_NOT_FOUND
Channel not found.

MQRCCF_MODE_VALUE_ERROR
Mode value not valid.

MQRCCF_MQCONN_FAILED
MQCONN call failed.

MQRCCF_MQOPEN_FAILED
MQOPEN call failed.

MQRCCF_MQSET_FAILED
MQSET call failed.

Stop Channel (MQTT)

The Stop Channel (MQCMD_STOP_CHANNEL) command stops a IBM WebSphere MQ Telemetry channel.

Required parameters

***ChannelName* (MQCFST)**
Channel name (parameter identifier: MQCACH_CHANNEL_NAME).

This parameter is required.

The name of the channel to be stopped. The maximum length of the string is MQ_CHANNEL_NAME_LENGTH.

Optional parameters

***ChannelType* (MQCFIN)**
The type of channel (parameter identifier: MQIACH_CHANNEL_TYPE). This parameter is currently only used with MQTT Telemetry channels, and is required when stopping a Telemetry channel. The only value that can currently be given to the parameter is **MQCHT_MQTT**.

***ClientIdentifier* (MQCFST)**
Client identifier. The client identifier is a 23-byte string that identifies an IBM WebSphere MQ Telemetry Transport client. When the Stop Channel command specifies a *ClientIdentifier*, only the connection for the specified client identifier is stopped. If the CLIENTID is not specified, all the connections on the channel are stopped.

Error codes

This command might return the following error codes in the response format header, in addition to the values shown in "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_CHANNEL_DISABLED
Channel disabled.

MQRCCF_CHANNEL_NOT_ACTIVE
Channel not active.

MQRCCF_CHANNEL_NOT_FOUND
Channel not found.

MQRCCF_MODE_VALUE_ERROR
Mode value not valid.

MQRCCF_MQCONN_FAILED
MQCONN call failed.

MQRCCF_MQOPEN_FAILED
MQOPEN call failed.

MQRCCF_MQSET_FAILED
MQSET call failed.

Stop Channel Listener

The Stop Channel Listener (MQCMD_STOP_CHANNEL_LISTENER) command stops a WebSphere MQ listener.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

Required parameters

***ListenerName* (MQCFST)**
Listener name (parameter identifier: MQCACH_LISTENER_NAME). This parameter does not apply to z/OS.

The name of the listener definition to be stopped. If this parameter is specified, no other parameters can be specified.

The maximum length of the string is MQ_LISTENER_NAME_LENGTH.

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE).

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.

This parameter is valid only on z/OS.

The maximum length is MQ_QSG_NAME_LENGTH.

***InboundDisposition* (MQCFIN)**
Inbound transmission disposition (parameter identifier: MQIACH_INBOUND_DISP).

Specifies the disposition of the inbound transmissions that the listener handles. The value can be:

MQINBD_Q_MGR
Handling for transmissions directed to the queue manager. MQINBD_Q_MGR is the default.

MQINBD_GROUP
Handling for transmissions directed to the queue-sharing group. MQINBD_GROUP is permitted only if there is a shared queue manager environment.

This parameter is valid only on z/OS.

***IPAddress* (MQCFST)**
IP address (parameter identifier: MQCACH_IP_ADDRESS).

The IP address for TCP/IP specified in dotted decimal or alphanumeric form. This parameter is valid on z/OS only where channels have a *TransportType* of MQXPT_TCP.

The maximum length of the string is MQ_IP_ADDRESS_LENGTH.

This parameter is valid only on z/OS.

***Port* (MQCFIN)**
Port number for TCP (parameter identifier: MQIACH_PORT_NUMBER).

The port number for TCP. This parameter is valid only on z/OS where channels have a *TransportType* of MQXPT_TCP.

***TransportType* (MQCFIN)**
Transmission protocol type (parameter identifier: MQIACH_XMIT_PROTOCOL_TYPE).

The value can be:

MQXPT_LU62
LU 6.2.

MQXPT_TCP
TCP.

This parameter is valid only on z/OS.

Error codes

This command might return the following error code in the response format header, in addition to the values shown in "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_LISTENER_STOPPED
Listener not running.

Stop Connection

The Stop Connection (MQCMD_STOP_CONNECTION) command attempts to break a connection between an application and the queue manager. There might be circumstances in which the queue manager cannot implement this command.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

Required parameters

***ConnectionId* (MQCFBS)**
Connection identifier (parameter identifier: MQBACF_CONNECTION_ID).

This parameter is the unique connection identifier associated with an application that is connected to the queue manager.

The length of the byte string is MQ_CONNECTION_ID_LENGTH.

Stop Service

The Stop Service (MQCMD_STOP_SERVICE) command stops an existing WebSphere MQ service definition that is running.

HP Integrity NonStop Server	UNIX and Linux	Windows
	X	X

Required parameters

***ServiceName* (MQCFST)**
Service name (parameter identifier: MQCA_SERVICE_NAME).

This parameter is the name of the service definition to be stopped. The maximum length of the string is MQ_OBJECT_NAME_LENGTH.

Error codes

This command might return the following error codes in the response format header, in addition to the values shown on page "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_NO_STOP_CMD
The *StopCommand* parameter of the service is blank.

MQRCCF_SERVICE_STOPPED
Service is not running.

Suspend Queue Manager Cluster

The Suspend Queue Manager Cluster (MQCMD_SUSPEND_Q_MGR_CLUSTER) command informs other queue managers in a cluster that the local queue manager is not available for processing, and cannot be sent messages. Its action can be reversed by the Resume Queue Manager Cluster (MQCMD_RESUME_Q_MGR_CLUSTER) command.

HP Integrity NonStop Server	UNIX and Linux	Windows
X	X	X

Required parameters

***ClusterName* (MQCFST)**
Cluster name (parameter identifier: MQCA_CLUSTER_NAME).

The name of the cluster for which availability is to be suspended.

The maximum length of the string is MQ_CLUSTER_NAME_LENGTH.

***ClusterNamelist* (MQCFST)**
Cluster Namelist (parameter identifier: MQCA_CLUSTER_NAMELIST).

The name of the namelist specifying a list of clusters for which availability is to be suspended.

Optional parameters

***CommandScope* (MQCFST)**
Command scope (parameter identifier: MQCACF_COMMAND_SCOPE). This parameter applies to z/OS only.

Specifies how the command is executed when the queue manager is a member of a queue-sharing group. You can specify one of the following:

- blank (or omit the parameter altogether). The command is executed on the queue manager on which it was entered.
- a queue manager name. The command is executed on the queue manager you specify, providing it is active within the queue sharing group. If you specify a queue manager name other than the queue manager on which it was entered, you must be using a queue-sharing group environment, and the command server must be enabled.

The maximum length is MQ_QSG_NAME_LENGTH.

***Mode* (MQCFIN)**
How the local queue manager is suspended from the cluster (parameter identifier: MQIACF_MODE).

The value can be:

MQMODE_QUIESCE
Other queue managers in the cluster are told not to send further messages to the local queue manager.

MQMODE_FORCE
All inbound and outbound channels to other queue managers in the cluster are stopped forcibly.

Note: This parameter was previously called *Quiesce* (MQIACF_QUIESCE), with values MQQO_YES and MQQO_NO. The old names can still be used.

Error codes

This command might return the following error codes in the response format header, in addition to the values shown in "Error codes applicable to all commands" on page 687.

***Reason* (MQLONG)**
The value can be:

MQRCCF_CLUSTER_NAME_CONFLICT
Cluster name conflict.

MQRCCF_MODE_VALUE_ERROR
Mode value not valid.

Structures for commands and responses

PCF commands and responses have a consistent structure including of a header and any number of parameter structures of defined types.

Commands and responses have the form:

- PCF header (MQCFH) structure (described in topic "MQCFH - PCF header" on page 1084), followed by
- Zero or more parameter structures. Each of these is one of the following:
  - PCF byte string filter parameter (MQCFBF, see topic "MQCFBF - PCF byte string filter parameter" on page 1087)
  - PCF byte string parameter (MQCFBS, see topic "MQCFBS - PCF byte string parameter" on page 1090)
  - PCF integer filter parameter (MQCFIF, see topic "MQCFIF - PCF integer filter parameter" on page 1092)
  - PCF integer list parameter (MQCFIL, see topic "MQCFIL - PCF integer list parameter" on page 1095)
  - PCF integer parameter (MQCFIN, see topic "MQCFIN - PCF integer parameter" on page 1097)

- PCF string filter parameter (MQCFSF, see topic “MQCFSF - PCF string filter parameter” on page 1099)
- PCF string list parameter (MQCFSL, see topic “MQCFSL - PCF string list parameter” on page 1103)
- PCF string parameter (MQCFST, see topic “MQCFST - PCF string parameter” on page 1106)

How the structures are shown

The structures are described in a language-independent form.

The declarations are shown in the following programming languages:

- C
- COBOL
- PL/I
- S/390® assembler
- Visual Basic

Data types

For each field of the structure, the data type is given in brackets after the field name. These data types are the elementary data types described in Data types used in the MQI .

Initial values and default structures

See WebSphere MQ COPY, header, include, and module files for details of the supplied header files that contain the structures, constants, initial values, and default structures.

Usage notes

The format of the strings in the PCF message determines the settings of the character set fields in the message descriptor to enable conversion of strings within the message.

If all of the strings in a PCF message have the same coded character-set identifier, the *CodedCharSetId* field in the message descriptor MQMD should be set to that identifier when the message is put, and the *CodedCharSetId* fields in the MQCFST, MQCFSL, and MQCFSF structures within the message should be set to MQCCSI_DEFAULT.

If the format of the PCF message is MQFMT_ADMIN, MQFMT_EVENT, or MQFMT_PCF and some of the strings in the message have different character-set identifiers, the *CodedCharSetId* field in MQMD should be set to MQCCSI_EMBEDDED when the message is put, and the *CodedCharSetId* fields in the MQCFST, MQCFSL, and MQCFSF structures within the message should all be set to the identifiers that apply.

This enables conversions of the strings within the message, to the *CodedCharSetId* value in the MQMD specified on the MQGET call, if the MQGMO_CONVERT option is also specified.

For more information about the MQEPH structure, see MQEPH - Embedded PCF header .

Note: If you request conversion of the internal strings in the message, the conversion will occur only if the value of the *CodedCharSetId* field in the MQMD of the message is different from the *CodedCharSetId* field of the MQMD specified on the MQGET call.

Do not specify MQCCSI_EMBEDDED in MQMD when the message is put, with MQCCSI_DEFAULT in the MQCFST, MQCFSL, or MQCFSF structures within the message, as this will prevent conversion of the message.

MQCFH - PCF header

The MQCFH structure describes the information that is present at the start of the message data of a command message, or a response to a command message. In either case, the message descriptor *Format* field is MQFMT_ADMIN.

The PCF structures are also used for event messages. In this case the message descriptor *Format* field is MQFMT_EVENT.

The PCF structures can also be used for user-defined message data. In this case the message descriptor *Format* field is MQFMT_PCF (see Message descriptor for a PCF command). Also in this case, not all the fields in the structure are meaningful. The supplied initial values can be used for most fields, but the application must set the *StrucLength* and *ParameterCount* fields to the values appropriate to the data.

Fields for MQCFH

***Type* (MQLONG)**
Structure type.

This field indicates the content of the message. The following are valid for commands:

MQCFT_COMMAND
Message is a command.

MQCFT_COMMAND_XR
Message is a command to which standard or extended responses might be sent.

This value is required on z/OS.

MQCFT_RESPONSE
Message is a response to a command.

MQCFT_XR_MSG
Message is an extended response to a command. It contains informational or error details.

MQCFT_XR_ITEM
Message is an extended response to an Inquire command. It contains item data.

MQCFT_XR_SUMMARY
Message is an extended response to a command. It contains summary information.

MQCFT_USER
User-defined PCF message.

***StrucLength* (MQLONG)**
Structure length.

This field is the length in bytes of the MQCFH structure. The value must be:

MQCFH_STRUC_LENGTH
Length of command format header structure.

***Version* (MQLONG)**
Structure version number.

For z/OS, the value must be:

MQCFH_VERSION_3
Version number for command format header structure.

The following constant specifies the version number of the current version:

MQCFH_CURRENT_VERSION
Current version of command format header structure.

***Command* (MQLONG)**
Command identifier.

For a command message, this field identifies the function to be performed. For a response message, it identifies the command to which this field is the reply. See the description of each command for the value of this field.

***MsgSeqNumber* (MQLONG)**
Message sequence number.

This field is the sequence number of the message within a set of related messages. For a command, this field must have the value one (because a command is always contained within a single message). For a response, the field has the value one for the first (or only) response to a command, and increases by one for each successive response to that command.

The last (or only) message in a set has the MQCFC_LAST flag set in the *Control* field.

***Control* (MQLONG)**
Control options.

The following are valid:

MQCFC_LAST
Last message in the set.

For a command, this value must always be set.

MQCFC_NOT_LAST
Not the last message in the set.

***CompCode* (MQLONG)**
Completion code.

This field is meaningful only for a response; its value is not significant for a command. The following are possible:

MQCC_OK
Command completed successfully.

MQCC_WARNING
Command completed with warning.

MQCC_FAILED
Command failed.

MQCC_UNKNOWN
Whether command succeeded is not known.

***Reason* (MQLONG)**
Reason code qualifying completion code.

This field is meaningful only for a response; its value is not significant for a command.

The possible reason codes that can be returned in response to a command are listed in,"Definitions of the Programmable Command Formats" on page 685 and in the description of each command.

***ParameterCount* (MQLONG)**
Count of parameter structures.

This field is the number of parameter structures (MQCFBF, MQCFBS, MQCFIF, MQCFIL, MQCFIN, MQCFSL, MQCFSF, and MQCFST) that follow the MQCFH structure. The value of this field is zero or greater.

C language declaration

```
typedef struct tagMQCFH {
  MQLONG  Type;            /* Structure type */
  MQLONG  StrucLength;     /* Structure length */
  MQLONG  Version;         /* Structure version number */
  MQLONG  Command;         /* Command identifier */
  MQLONG  MsgSeqNumber;    /* Message sequence number */
  MQLONG  Control;         /* Control options */
```

```
  MQLONG  CompCode;        /* Completion code */
  MQLONG  Reason;          /* Reason code qualifying completion code */
  MQLONG  ParameterCount;  /* Count of parameter structures */
 } MQCFH;
```

COBOL language declaration

```
**   MQCFH structure
  10 MQCFH.
**    Structure type
   15 MQCFH-TYPE           PIC S9(9) BINARY.
**    Structure length
   15 MQCFH-STRUCLENGTH    PIC S9(9) BINARY.
**    Structure version number
   15 MQCFH-VERSION        PIC S9(9) BINARY.
**    Command identifier
   15 MQCFH-COMMAND        PIC S9(9) BINARY.
**    Message sequence number
   15 MQCFH-MSGSEQNUMBER   PIC S9(9) BINARY.
**    Control options
   15 MQCFH-CONTROL        PIC S9(9) BINARY.
**    Completion code
   15 MQCFH-COMPCODE       PIC S9(9) BINARY.
**    Reason code qualifying completion code
   15 MQCFH-REASON         PIC S9(9) BINARY.
**    Count of parameter structures
   15 MQCFH-PARAMETERCOUNT PIC S9(9) BINARY.
```

PL/I language declaration (z/OS only)

```
dcl
 1 MQCFH based,
  3 Type           fixed bin(31), /* Structure type */
  3 StrucLength    fixed bin(31), /* Structure length */
  3 Version        fixed bin(31), /* Structure version number */
  3 Command        fixed bin(31), /* Command identifier */
  3 MsgSeqNumber   fixed bin(31), /* Message sequence number */
  3 Control        fixed bin(31), /* Control options */
  3 CompCode       fixed bin(31), /* Completion code */
  3 Reason         fixed bin(31), /* Reason code qualifying completion
                                     code */
  3 ParameterCount fixed bin(31); /* Count of parameter structures */
```

System/390 assembler-language declaration (z/OS only)

```
MQCFH                          DSECT
MQCFH_TYPE                     DS   F        Structure type
MQCFH_STRUCLENGTH              DS   F        Structure length
MQCFH_VERSION                  DS   F        Structure version number
MQCFH_COMMAND                  DS   F        Command identifier
MQCFH_MSGSEQNUMBER             DS   F        Message sequence number
MQCFH_CONTROL                  DS   F        Control options
MQCFH_COMPCODE                 DS   F        Completion code
MQCFH_REASON                   DS   F        Reason code qualifying
*                                            completion code
MQCFH_PARAMETERCOUNT           DS   F        Count of parameter
*                                            structures
MQCFH_LENGTH                   EQU  *-MQCFH  Length of structure
                               ORG  MQCFH
MQCFH_AREA                     DS   CL(MQCFH_LENGTH)
```

Visual Basic language declaration (Windows only)

```
Type MQCFH
  Type As Long            'Structure type
  StrucLength As Long     'Structure length
  Version As Long         'Structure version number
  Command As Long         'Command identifier
  MsgSeqNumber As Long    'Message sequence number
```

```
  Control As Long         'Control options
  CompCode As Long        'Completion code
  Reason As Long          'Reason code qualifying completion code
  ParameterCount As Long  'Count of parameter structures
End Type

Global MQCFH_DEFAULT As MQCFH
```

RPG language declaration (IBM i only)

```
D*..1....:....2....:....3....:....4....:....5....:....6....:....7..
D* MQCFH Structure
D*
D* Structure type
D  FHTYP                  1      4I 0 INZ(1)
D* Structure length
D  FHLEN                  5      8I 0 INZ(36)
D* Structure version number
D  FHVER                  9     12I 0 INZ(1)
D* Command identifier
D  FHCMD                 13     16I 0 INZ(0)
D* Message sequence number
D  FHSEQ                 17     20I 0 INZ(1)
D* Control options
D  FHCTL                 21     24I 0 INZ(1)
D* Completion code
D  FHCMP                 25     28I 0 INZ(0)
D* Reason code qualifying completion code
D  FHREA                 29     32I 0 INZ(0)
D* Count of parameter structures
D  FHCNT                 33     36I 0 INZ(0)
D*
```

MQCFBF - PCF byte string filter parameter

The MQCFBF structure describes a byte string filter parameter. The format name in the message descriptor is MQFMT_ADMIN.

The MQCFBF structure is used in Inquire commands to provide a filter description. This filter description is used to filter the results of the Inquire command and return to the user only those objects that satisfy the filter description.

When an MQCFBF structure is present, the Version field in the MQCFH structure at the start of the PCF must be MQCFH_VERSION_3 or higher.

Fields for MQCFBF

Type **(MQLONG)**
Structure type.

This indicates that the structure is a MQCFBF structure describing a byte string filter parameter. The value must be:

MQCFT_BYTE_STRING_FILTER
Structure defining a byte string filter.

StrucLength **(MQLONG)**
Structure length.

This is the length, in bytes, of the MQCFBF structure, including the string at the end of the structure (the *FilterValue* field). The length must be a multiple of 4, and must be sufficient to contain the string. Bytes between the end of the string and the length defined by the *StrucLength* field are not significant.

The following constant gives the length of the *fixed* part of the structure, that is the length excluding the *FilterValue* field:

MQCFBF_STRUC_LENGTH_FIXED
Length of fixed part of command format filter string-parameter structure.

Parameter **(MQLONG)**
Parameter identifier.

This identifies the parameter that is to be filtered on. The value of this identifier depends on the parameter to be filtered on.

The parameter is one of the following:

- MQBACF_EXTERNAL_UOW_ID
- MQBACF_Q_MGR_UOW_ID
- MQBACF_ORIGIN_UOW_ID (on z/OS only)

Operator **(MQLONG)**
Operator identifier.

This identifies the operator that is being used to evaluate whether the parameter satisfies the filter-value.

Possible values are:

MQCFOP_GREATER
Greater than

MQCFOP_LESS
Less than

MQCFOP_EQUAL
Equal to

MQCFOP_NOT_EQUAL
Not equal to

MQCFOP_NOT_LESS
Greater than or equal to

MQCFOP_NOT_GREATER
Less than or equal to

FilterValueLength **(MQLONG)**
Length of filter-value string.

This is the length, in bytes, of the data in the *FilterValue* field. This must be zero or greater, and does not need to be a multiple of 4.

FilterValue **(MQBYTE×*FilterValueLength*)**
Filter value.

This specifies the filter-value that must be satisfied. Use this parameter where the response type of the filtered parameter is a byte string.

Depending on the filter-keyword, this can be:

Note: If the specified byte string is shorter than the standard length of the parameter in MQFMT_ADMIN command messages, the omitted characters are assumed to be blanks. If the specified string is longer than the standard length, it is an error.

C language declaration

```
typedef struct tagMQCFBF {
   MQLONG  Type;               /* Structure type */
   MQLONG  StrucLength;        /* Structure length */
   MQLONG  Parameter;          /* Parameter identifier */
   MQLONG  Operator;           /* Operator identifier */
   MQLONG  FilterValueLength;  /* Filter value length */
```

```
   MQBYTE  FilterValue[1];     /* Filter value -- first byte */
  } MQCFBF;
```

COBOL language declaration

```
**   MQCFBF structure
  10  MQCFBF.
** Structure type
  15  MQCFBF-TYPE PIC S9(9) BINARY.
** Structure length
  15  MQCFBF-STRUCLENGTH PIC S9(9) BINARY.
** Parameter identifier
  15  MQCFBF-PARAMETER PIC S9(9) BINARY.
** Operator identifier
  15  MQCFBF-OPERATOR PIC S9(9) BINARY.
** Filter value length
  15  MQCFBF-FILTERVALUELENGTH PIC S9(9) BINARY.
```

PL/I language declaration (z/OS only)

```
dcl
  1 MQCFBF based,
   3 Type  fixed bin(31)
    init(MQCFT_BYTE_STRING_FILTER),  /* Structure type */
   3 StrucLength  fixed bin(31)
    init(MQCFBF_STRUC_LENGTH_FIXED),  /* Structure length */
   3 Parameter  fixed bin(31)
    init(0),  /* Parameter identifier */
   3 Operator  fixed bin(31)
    init(0),  /* Operator identifier */
   3 FilterValueLength  fixed bin(31)
    init(0);  /* Filter value length */
```

System/390 assembler-language declaration (z/OS only)

```
MQCFBF                          DSECT
MQCFBF_TYPE                     DS  F    Structure type
MQCFBF_STRUCLENGTH              DS  F    Structure length
MQCFBF_PARAMETER                DS  F    Parameter identifier
MQCFBF_OPERATOR                 DS  F    Operator identifier
MQCFBF_FILTERVALUELENGTH        DS  F    Filter value length
MQCFBF_LENGTH                   EQU  *-MQCFIF Length of structure
                                ORG  MQCFBF
MQCFBF_AREA                     DS   CL(MQCFBF_LENGTH)
```

Visual Basic language declaration (Windows only)

```
Type MQCFBF
  Type As Long 'Structure type'
  StrucLength As Long 'Structure length'
  Parameter As Long 'Parameter identifier'
  Operator As Long 'Operator identifier'
  FilterValueLength As Long 'Filter value length'
  FilterValue As 1 'Filter value -- first byte'
End Type
Global MQCFBF_DEFAULT As MQCFBF
```

RPG language declaration (IBM i only)

```
D* MQCFBF Structure
D*
D* Structure type
D  FBFTYP                1      4I 0 INZ(15)
D* Structure length
```

```
D  FBFLEN                 5      8I 0 INZ(20)
D* Parameter identifier
D  FBFPRM                 9     12I 0 INZ(0)
D* Operator identifier
D  FBFOP                 13     16I 0 INZ(0)
D* Filter value length
D  FBFFVL                17     20I 0 INZ(0)
D* Filter value -- first byte
D  FBFFV                 21     21    INZ
```

MQCFBS - PCF byte string parameter

The MQCFBS structure describes a byte-string parameter in a PCF message. The format name in the message descriptor is MQFMT_ADMIN.

When an MQCFBS structure is present, the *Version* field in the MQCFH structure at the start of the PCF must be MQCFH_VERSION_2 or greater.

In a user PCF message, the *Parameter* field has no significance, and can be used by the application for its own purposes.

The structure ends with a variable-length byte string; see the *String* field in the following section for further details.

Fields for MQCFBS

Type **(MQLONG)**
Structure type.

This indicates that the structure is an MQCFBS structure describing byte string parameter. The value must be:

MQCFT_BYTE_STRING
Structure defining a byte string.

StrucLength **(MQLONG)**
Structure length.

This is the length in bytes of the MQCFBS structure, including the variable-length string at the end of the structure (the *String* field). The length must be a multiple of four, and must be sufficient to contain the string; any bytes between the end of the string and the length defined by the *StrucLength* field are not significant.

The following constant gives the length of the *fixed* part of the structure, that is the length excluding the *String* field:

MQCFBS_STRUC_LENGTH_FIXED
Length of fixed part of MQCFBS structure.

Parameter **(MQLONG)**
Parameter identifier.

This identifies the parameter with a value that is contained in the structure. The values that can occur in this field depend on the value of the *Command* field in the MQCFH structure; see "MQCFH - PCF header" on page 1084 for details. In user PCF messages (MQCFT_USER), this field has no significance.

The parameter is from the MQBACF_* group of parameters.

StringLength **(MQLONG)**
Length of string.

This is the length in bytes of the data in the *string* field; it must be zero or greater. This length does not need to be a multiple of four.

String **(MQBYTE×*StringLength*)**
String value.

This is the value of the parameter identified by the *parameter* field. The string is a byte string, and so is not subject to character-set conversion when sent between different systems.

Note: A null character in the string is treated as normal data, and does not act as a delimiter for the string

For MQFMT_ADMIN messages, if the specified string is shorter than the standard length of the *parameter,* the omitted characters are assumed to be nulls. If the specified string is longer than the standard length, it is an error.

The way that this field is declared depends on the programming language:

- For the C programming language, the field is declared as an array with one element. Storage for the structure must be allocated dynamically, and pointers used to address the fields within it.
- For other programming languages, the field is omitted from the structure declaration. When an instance of the structure is declared, you must include MQCFBS in a larger structure, and declare additional fields following MQCFBS, to represent the *String* field as required.

C language declaration

```
typedef struct tagMQCFBS {
  MQLONG  Type;         /* Structure type */
  MQLONG  StrucLength;  /* Structure length */
  MQLONG  Parameter;    /* Parameter identifier */
  MQLONG  StringLength; /* Length of string */
  MQBYTE  String[1];    /* String value - first byte */


   } MQCFBS;
```

COBOL language declaration

```
**   MQCFBS structure
  10 MQCFBS.
**    Structure type
   15 MQCFBS-TYPE        PIC S9(9) BINARY.
**    Structure length
   15 MQCFBS-STRUCLENGTH PIC S9(9) BINARY.
**    Parameter identifier
   15 MQCFBS-PARAMETER   PIC S9(9) BINARY.
**    Length of string
   15 MQCFBS-STRINGLENGTH PIC S9(9) BINARY.
```

PL/I language declaration (z/OS only)

```
dcl
 1 MQCFBS based,
  3 Type        fixed bin(31), /* Structure type */
  3 StrucLength fixed bin(31), /* Structure length */
  3 Parameter   fixed bin(31), /* Parameter identifier */
  3 StringLength fixed bin(31)  /* Length of string */
```

System/390 assembler-language declaration (z/OS only)

```
MQCFBS                        DSECT
MQCFBS_TYPE                   DS   F        Structure type
MQCFBS_STRUCLENGTH            DS   F        Structure length
MQCFBS_PARAMETER              DS   F        Parameter identifier
MQCFBS_STRINGLENGTH           DS   F        Length of string
                              ORG  MQCFBS
MQCFBS_AREA                   DS   CL(MQCFBS_LENGTH)
```

Visual Basic language declaration (Windows only)

```
Type MQCFBS
  Type As Long         ' Structure type
  StrucLength As Long  ' Structure length
  Parameter As Long    ' Parameter identifier
  StringLength As Long ' Operator identifier
  String as 1          ' String value - first byte
  End Type

Global MQCFBS_DEFAULT As MQCFBS
```

RPG language declaration (IBM i only)

```
D* MQCFBS Structure
D*
D* Structure type
D  BSTYP                  1      4I 0 INZ(3)
D* Structure length
D  BSLEN                  5      8I 0 INZ(16)
D* Parameter identifier
D  BSPRM                  9     12I 0 INZ(0)
D* Length of string
D  BSSTL                 13     16I 0 INZ(0)
D* String value - first byte
D  BSSRA                 17     16
D*
```

MQCFIF - PCF integer filter parameter

The MQCFIF structure describes an integer filter parameter. The format name in the message descriptor is MQFMT_ADMIN.

The MQCFIF structure is used in Inquire commands to provide a filter condition. This filter condition is used to filter the results of the Inquire command and return to the user only those objects that satisfy the filter condition.

When an MQCFIF structure is present, the Version field in the MQCFH structure at the start of the PCF must be MQCFH_VERSION_3 or higher.

Fields for MQCFIF

Type **(MQLONG)**
Structure type.

This indicates that the structure is an MQCFIF structure describing an integer filter parameter. The value must be:

MQCFT_INTEGER_FILTER
Structure defining an integer filter.

StrucLength **(MQLONG)**
Structure length.

This is the length in bytes of the MQCFIF structure. The value must be:

MQCFIF_STRUC_LENGTH
Length of command format integer-parameter structure.

Parameter **(MQLONG)**
Parameter identifier.

This identifies the parameter that is to be filtered on. The value of this identifier depends on the parameter to be filtered on. Any of the parameters which can be used in the Inquire command can be used in this field.

The parameter is from the following groups of parameters:

- MQIA_*
- MQIACF_*
- MQIAMO_*
- MQIACH_*

***Operator* (MQLONG)**
Operator identifier.

This identifies the operator that is being used to evaluate whether the parameter satisfies the filter-value.

Possible values are:

MQCFOP_GREATER
Greater than

MQCFOP_LESS
Less than

MQCFOP_EQUAL
Equal to

MQCFOP_NOT_EQUAL
Not equal to

MQCFOP_NOT_LESS
Greater than or equal to

MQCFOP_NOT_GREATER
Less than or equal to

MQCFOP_CONTAINS
Contains a specified value. Use MQCFOP_CONTAINS when filtering on lists of values or integers.

MQCFOP_EXCLUDES
Does not contain a specified value. Use MQCFOP_EXCLUDES when filtering on lists of values or integers.

See the *FilterValue* description for details telling you which operators can be used in which circumstances.

***FilterValue* (MQLONG)**
Filter value identifier.

This specifies the filter-value that must be satisfied.

Depending on the parameter, the value and the permitted operators can be:

- An explicit integer value, if the parameter takes a single integer value.

  You can only use the following operators:

  - MQCFOP_GREATER
  - MQCFOP_LESS
  - MQCFOP_EQUAL
  - MQCFOP_NOT_EQUAL
  - MQCFOP_NOT_GREATER
  - MQCFOP_NOT_LESS
- An MQ constant, if the parameter takes a single value from a possible set of values (for example, the value MQCHT_SENDER on the *ChannelType* parameter). You can only use MQCFOP_EQUAL or MQCFOP_NOT_EQUAL.
- An explicit value or an MQ constant, as the case might be, if the parameter takes a list of values. You can use either MQCFOP_CONTAINS or MQCFOP_EXCLUDES. For example, if the value 6 is specified with the operator MQCFOP_CONTAINS, all items where one of the parameter values is 6 are listed.

For example, if you need to filter on queues that are enabled for put operations in your Inquire Queue command, the parameter would be MQIA_INHIBIT_PUT and the filter-value would be MQQA_PUT_ALLOWED.

The filter value must be a valid value for the parameter being tested.

C language declaration

```
typedef struct tagMQCFIF {
  MQLONG  Type;         /* Structure type */
  MQLONG  StrucLength;  /* Structure length */
  MQLONG  Parameter;    /* Parameter identifier */
  MQLONG  Operator;     /* Operator identifier */
  MQLONG  FilterValue;  /* Filter value */
 } MQCFIF;
```

COBOL language declaration

```
**   MQCFIF structure
  10 MQCFIF.
**    Structure type
   15 MQCFIF-TYPE        PIC S9(9) BINARY.
**    Structure length
   15 MQCFIF-STRUCLENGTH PIC S9(9) BINARY.
**    Parameter identifier
   15 MQCFIF-PARAMETER   PIC S9(9) BINARY.
**    Operator identifier
   15 MQCFIF-OPERATOR    PIC S9(9) BINARY.
**    Filter value
   15 MQCFIF-FILTERVALUE PIC S9(9) BINARY.
```

PL/I language declaration (z/OS only)

```
dcl
 1 MQCFIF based,
  3 Type        fixed bin(31), /* Structure type */
  3 StrucLength fixed bin(31), /* Structure length */
  3 Parameter   fixed bin(31), /* Parameter identifier */
  3 Operator    fixed bin(31)  /* Operator identifier */
  3 FilterValue fixed bin(31); /* Filter value */
```

System/390 assembler-language declaration (z/OS only)

```
MQCFIF                        DSECT
MQCFIF_TYPE                   DS   F        Structure type
MQCFIF_STRUCLENGTH            DS   F        Structure length
MQCFIF_PARAMETER              DS   F        Parameter identifier
MQCFIF_OPERATOR               DS   F        Operator identifier
MQCFIF_FILTERVALUE            DS   F        Filter value
MQCFIF_LENGTH                 EQU  *-MQCFIF Length of structure
                              ORG  MQCFIF
MQCFIF_AREA                   DS   CL(MQCFIF_LENGTH)
```

Visual Basic language declaration (Windows only)

```
Type MQCFIF
  Type As Long         ' Structure type
  StrucLength As Long  ' Structure length
  Parameter As Long    ' Parameter identifier
  Operator As Long     ' Operator identifier
  FilterValue As Long  ' Filter value
End Type

Global MQCFIF_DEFAULT As MQCFIF
```

RPG language declaration (IBM i only)

```
D* MQCFIF Structure
D*
D* Structure type
D  FIFTYP                  1      4I 0 INZ(3)
D* Structure length
D  FIFLEN                  5      8I 0 INZ(16)
D* Parameter identifier
D  FIFPRM                  9     12I 0 INZ(0)
D* Operator identifier
D  FIFOP                  13     16I 0 INZ(0)
D* Condition identifier
D  FIFFV                  17     20I 0 INZ(0)
D*
```

MQCFIL - PCF integer list parameter

The MQCFIL structure describes an integer-list parameter in a message that is a command or a response to a command. In either case, the format name in the message descriptor is MQFMT_ADMIN.

The MQCFIL structure can also be used for user-defined message data. In this case the message descriptor *Format* field is MQFMT_PCF (see Message descriptor for a PCF command). Also in this case, not all the fields in the structure are meaningful. The supplied initial values can be used for most fields, but the application must set the *StrucLength*, *Count*, and *Values* fields to the values appropriate to the data.

The structure ends with a variable-length array of integers; see the *Values* field in the following section for further details.

Fields for MQCFIL

***Type* (MQLONG)**
Structure type.

This indicates that the structure is an MQCFIL structure describing an integer-list parameter. The value must be:

MQCFT_INTEGER_LIST
Structure defining an integer list.

***StrucLength* (MQLONG)**
Structure length.

This is the length in bytes of the MQCFIL structure, including the array of integers at the end of the structure (the *Values* field). The length must be a multiple of four, and must be sufficient to contain the array; any bytes between the end of the array and the length defined by the *StrucLength* field are not significant.

The following constant gives the length of the *fixed* part of the structure, that is the length excluding the *Values* field:

MQCFIL_STRUC_LENGTH_FIXED
Length of fixed part of command format integer-list parameter structure.

***Parameter* (MQLONG)**
Parameter identifier.

This identifies the parameter with values that are contained in the structure. The values that can occur in this field depend on the value of the *Command* field in the MQCFH structure; see "MQCFH - PCF header" on page 1084 for details.

The parameter is from the following groups of parameters:

- MQIA_*
- MQIACF_*

- MQIAMO_*
- MQIACH_*

***Count* (MQLONG)**
Count of parameter values.

This is the number of elements in the *Values* array; it must be zero or greater.

***Values* (MQLONG×*Count*)**
Parameter values.

This is an array of values for the parameter identified by the *Parameter* field. For example, for MQIACF_Q_ATTRS, this field is a list of attribute selectors (MQCA_* and MQIA_* values).

The way that this field is declared depends on the programming language:

- For the C programming language, the field is declared as an array with one element. Storage for the structure must be allocated dynamically, and pointers used to address the fields within it.
- For the COBOL, PL/I, RPG, and System/390® assembler programming languages, the field is omitted from the structure declaration. When an instance of the structure is declared, you must include MQCFIL in a larger structure, and declare additional fields following MQCFIL, to represent the *Values* field as required.

C language declaration

```
typedef struct tagMQCFIL {
  MQLONG  Type;         /* Structure type */
  MQLONG  StrucLength;  /* Structure length */
  MQLONG  Parameter;    /* Parameter identifier */
  MQLONG  Count;        /* Count of parameter values */
  MQLONG  Values[1];    /* Parameter values - first element */
 } MQCFIL;
```

COBOL language declaration

```
**   MQCFIL structure
  10 MQCFIL.
**    Structure type
   15 MQCFIL-TYPE        PIC S9(9) BINARY.
**    Structure length
   15 MQCFIL-STRUCLENGTH PIC S9(9) BINARY.
**    Parameter identifier
   15 MQCFIL-PARAMETER   PIC S9(9) BINARY.
**    Count of parameter values
   15 MQCFIL-COUNT       PIC S9(9) BINARY.
```

PL/I language declaration (z/OS only)

```
dcl
 1 MQCFIL based,
  3 Type        fixed bin(31), /* Structure type */
  3 StrucLength fixed bin(31), /* Structure length */
  3 Parameter   fixed bin(31), /* Parameter identifier */
  3 Count       fixed bin(31); /* Count of parameter values */
```

System/390 assembler-language declaration (z/OS only)

```
MQCFIL                        DSECT
MQCFIL_TYPE                   DS   F        Structure type
MQCFIL_STRUCLENGTH            DS   F        Structure length
MQCFIL_PARAMETER              DS   F        Parameter identifier
MQCFIL_COUNT                  DS   F        Count of parameter values
MQCFIL_LENGTH                 EQU  *-MQCFIL Length of structure
```

```
                                ORG  MQCFIL
MQCFIL_AREA                     DS   CL(MQCFIL_LENGTH)
```

Visual Basic language declaration (Windows only)

```
Type MQCFIL
  Type As Long         ' Structure type
  StrucLength As Long  ' Structure length
  Parameter As Long    ' Parameter identifier
  Count As Long        ' Count of parameter values
End Type

Global MQCFIL_DEFAULT As MQCFIL
```

RPG language declaration (IBM i only)

```
D* MQCFIL Structure
D*
D* Structure type
D  ILTYP                  1      4I 0 INZ(5)
D* Structure length
D  ILLEN                  5      8I 0 INZ(16)
D* Parameter identifier
D  ILPRM                  9     12I 0 INZ(0)
D* Count of parameter values
D  ILCNT                 13     16I 0 INZ(0)
D*
```

MQCFIN - PCF integer parameter

The MQCFIN structure describes an integer parameter in a message that is a command or a response to a command. In either case, the format name in the message descriptor is MQFMT_ADMIN.

The MQCFIN structure can also be used for user-defined message data. In this case the message descriptor *Format* field is MQFMT_PCF (see Message descriptor for a PCF command). Also in this case, not all the fields in the structure are meaningful. The supplied initial values can be used for most fields, but the application must set the *Value* field to the value appropriate to the data.

Fields for MQCFIN

***Type* (MQLONG)**
Structure type.

This indicates that the structure is an MQCFIN structure describing an integer parameter. The value must be:

MQCFT_INTEGER
Structure defining an integer.

***StrucLength* (MQLONG)**
Structure length.

This is the length in bytes of the MQCFIN structure. The value must be:

MQCFIN_STRUC_LENGTH
Length of command format integer-parameter structure.

***Parameter* (MQLONG)**
Parameter identifier.

This identifies the parameter with a value that is contained in the structure. The values that can occur in this field depend on the value of the *Command* field in the MQCFH structure; see “MQCFH - PCF header” on page 1084 for details.

The parameter is from the following groups of parameters:

- MQIA_*
- MQIACF_*
- MQIAMO_*
- MQIACH_*

***Value* (MQLONG)**
Parameter value.

This is the value of the parameter identified by the *Parameter* field.

C language declaration

```
typedef struct tagMQCFIN {
  MQLONG  Type;         /* Structure type */
  MQLONG  StrucLength;  /* Structure length */
  MQLONG  Parameter;    /* Parameter identifier */
  MQLONG  Value;        /* Parameter value */
 } MQCFIN;
```

COBOL language declaration

```
**   MQCFIN structure
  10 MQCFIN.
**    Structure type
   15 MQCFIN-TYPE        PIC S9(9) BINARY.
**    Structure length
   15 MQCFIN-STRUCLENGTH PIC S9(9) BINARY.
**    Parameter identifier
   15 MQCFIN-PARAMETER   PIC S9(9) BINARY.
**    Parameter value
   15 MQCFIN-VALUE       PIC S9(9) BINARY.
```

PL/I language declaration (z/OS only)

```
dcl
 1 MQCFIN based,
  3 Type        fixed bin(31), /* Structure type */
  3 StrucLength fixed bin(31), /* Structure length */
  3 Parameter   fixed bin(31), /* Parameter identifier */
  3 Value       fixed bin(31); /* Parameter value */
```

System/390 assembler-language declaration (z/OS only)

```
MQCFIN                          DSECT
MQCFIN_TYPE                     DS   F        Structure type
MQCFIN_STRUCLENGTH              DS   F        Structure length
MQCFIN_PARAMETER                DS   F        Parameter identifier
MQCFIN_VALUE                    DS   F        Parameter value
MQCFIN_LENGTH                   EQU  *-MQCFIN Length of structure
                                ORG  MQCFIN
MQCFIN_AREA                     DS   CL(MQCFIN_LENGTH)
```

Visual Basic language declaration (Windows only)

```
Type MQCFIN
  Type As Long         ' Structure type
  StrucLength As Long  ' Structure length
  Parameter As Long    ' Parameter identifier
  Value As Long        ' Parameter value
End Type

Global MQCFIN_DEFAULT As MQCFIN
```

RPG language declaration (IBM i only)

```
D* MQCFIN Structure
D*
D* Structure type
D  INTYP                  1      4I 0 INZ(3)
D* Structure length
D  INLEN                  5      8I 0 INZ(16)
D* Parameter identifier
D  INPRM                  9     12I 0 INZ(0)
D* Parameter value
D  INVAL                 13     16I 0 INZ(0)
D*
```

MQCFSF - PCF string filter parameter

The MQCFSF structure describes a string filter parameter. The format name in the message descriptor is MQFMT_ADMIN.

The MQCFSF structure is used in Inquire commands to provide a filter condition. This filter condition is used to filter the results of the Inquire command and return to the user only those objects that satisfy the filter condition.

The results of filtering character strings on EBCDIC-based systems might be different from those results achieved on ASCII-based systems. This difference is because comparison of character strings is based on the collating sequence of the internal built-in values representing the characters.

When an MQCFSF structure is present, the Version field in the MQCFH structure at the start of the PCF must be MQCFH_VERSION_3 or higher.

Fields for MQCFSF

Type **(MQLONG)**
Structure type.

This indicates that the structure is an MQCFSF structure describing a string filter parameter. The value must be:

MQCFT_STRING_FILTER
Structure defining a string filter.

StrucLength **(MQLONG)**
Structure length.

This is the length in bytes of the MQCFSF structure. The value must be:

MQCFSF_STRUC_LENGTH
MQCFSF_STRUC_LENGTH is the length, in bytes, of the MQCFSF structure, including the string at the end of the structure (the *FilterValue* field). The length must be a multiple of 4, and must be sufficient to contain the string. Bytes between the end of the string and the length defined by the *StrucLength* field are not significant.

The following constant gives the length of the *fixed* part of the structure, that is the length excluding the *FilterValue* field:

MQCFSF_STRUC_LENGTH_FIXED
Length of fixed part of command format filter string-parameter structure.

Parameter **(MQLONG)**
Parameter identifier.

This identifies the parameter that is to be filtered on. The value of this identifier depends on the parameter to be filtered on. Any of the parameters which can be used in the Inquire command can be used in this field.

The parameter is from the following groups of parameters:

- MQCA_*
- MQCACF_*
- MQCAMO_*
- MQCACH_*

***Operator* (MQLONG)**
Operator identifier.

This identifies the operator that is being used to evaluate whether the parameter satisfies the filter-value.

Possible values are:

MQCFOP_GREATER
Greater than

MQCFOP_LESS
Less than

MQCFOP_EQUAL
Equal to

MQCFOP_NOT_EQUAL
Not equal to

MQCFOP_NOT_LESS
Greater than or equal to

MQCFOP_NOT_GREATER
Less than or equal to

MQCFOP_LIKE
Matches a generic string

MQCFOP_NOT_LIKE
Does not match a generic string

MQCFOP_CONTAINS
Contains a specified string. Use MQCFOP_CONTAINS when filtering on lists of strings.

MQCFOP_EXCLUDES
Does not contain a specified string. Use MQCFOP_EXCLUDES when filtering on lists of strings.

MQCFOP_CONTAINS_GEN
Contains an item which matches a generic string. Use MQCFOP_CONTAINS_GEN when filtering on lists of strings.

MQCFOP_EXCLUDES_GEN
Does not contain any item which matches a generic string. Use MQCFOP_EXCLUDES_GEN when filtering on lists of strings.

See the *FilterValue* description for details telling you which operators can be used in which circumstances.

***CodedCharSetId* (MQLONG)**
Coded character set identifier.

This specifies the coded character set identifier of the data in the *FilterValue* field. The following special value can be used:

MQCCSI_DEFAULT
Default character set identifier.

The string data is in the character set defined by the *CodedCharSetId* field in the MQ header structure that *precedes* the MQCFH structure, or by the *CodedCharSetId* field in the MQMD if the MQCFH structure is at the start of the message.

***FilterValueLength* (MQLONG)**
Length of filter-value string.

This is the length, in bytes, of the data in the *FilterValue* field. This parameter must be zero or greater, and does not need to be a multiple of 4.

***FilterValue* (MQCHAR×*FilterValueLength*)**
Filter value.

This specifies the filter-value that must be satisfied. Depending on the parameter, the value and the permitted operators can be:

- An explicit string value.

  You can only use the following operators:

  – MQCFOP_GREATER
  – MQCFOP_LESS
  – MQCFOP_EQUAL
  – MQCFOP_NOT_EQUAL
  – MQCFOP_NOT_GREATER
  – MQCFOP_NOT_LESS
- A generic string value. This field is a character string with an asterisk at the end, for example ABC*. The operator must be either MQCFOP_LIKE or MQCFOP_NOT_LIKE. The characters must be valid for the attribute you are testing. If the operator is MQCFOP_LIKE, all items where the attribute value begins with the string (ABC in the example) are listed. If the operator is MQCFOP_NOT_LIKE, all items where the attribute value does not begin with the string are listed.
- If the parameter takes a list of string values, the operator can be:

  – MQCFOP_CONTAINS
  – MQCFOP_EXCLUDES
  – MQCFOP_CONTAINS_GEN
  – MQCFOP_EXCLUDES_GEN

  An item in a list of values. The value can be explicit or generic. If it is explicit, use MQCFOP_CONTAINS or MQCFOP_EXCLUDES as the operator. For example, if the value DEF is specified with the operator MQCFOP_CONTAINS, all items where one of the attribute values is DEF are listed. If it is generic, use MQCFOP_CONTAINS_GEN or MQCFOP_EXCLUDES_GEN as the operator. If ABC* is specified with the operator MQCFOP_CONTAINS_GEN, all items where one of the attribute values begins with ABC are listed.

Note:

1. If the specified string is shorter than the standard length of the parameter in MQFMT_ADMIN command messages, the omitted characters are assumed to be blanks. If the specified string is longer than the standard length, it is an error.
2. When the queue manager reads an MQCFSF structure in an MQFMT_ADMIN message from the command input queue, the queue manager processes the string as though it had been specified on an MQI call. This processing means that within the string, the first null and the characters following it (up to the end of the string) are treated as blanks.

The filter value must be a valid value for the parameter being tested.

C language declaration

```
typedef struct tagMQCFSF {
  MQLONG  Type;         /* Structure type */
  MQLONG  StrucLength;  /* Structure length */
  MQLONG  Parameter;    /* Parameter identifier */
  MQLONG  Operator;     /* Operator identifier */
  MQLONG  CodedCharSetId; /* Coded character set identifier */
  MQLONG  FilterValueLength /* Filtervalue length */
```

```
  MQCHAR[1]  FilterValue;  /* Filter value */
 } MQCFSF;
```

COBOL language declaration

```
**   MQCFSF structure
  10 MQCFSF.
**    Structure type
   15 MQCFSF-TYPE        PIC S9(9) BINARY.
**    Structure length
   15 MQCFSF-STRUCLENGTH PIC S9(9) BINARY.
**    Parameter identifier
   15 MQCFSF-PARAMETER   PIC S9(9) BINARY.
**    Operator identifier
   15 MQCFSF-OPERATOR PIC S9(9) BINARY.
**    Coded character set identifier
   15 MQCFSF-CODEDCHARSETID PIC S9(9) BINARY.
**    Filter value length
   15 MQCFSF-FILTERVALUE PIC S9(9) BINARY.
```

PL/I language declaration (z/OS only)

```
dcl
 1 MQCFSF based,
  3 Type        fixed bin(31), /* Structure type */
  3 StrucLength fixed bin(31), /* Structure length */
  3 Parameter   fixed bin(31), /* Parameter identifier */
  3 Operator    fixed bin(31)  /* Operator identifier */
  3 CodedCharSetId    fixed bin(31)  /* Coded character set identifier */
  3 FilterValueLength fixed bin(31); /* Filter value length */
```

System/390 assembler-language declaration (z/OS only)

```
MQCFSF                          DSECT
MQCFSF_TYPE                     DS   F        Structure type
MQCFSF_STRUCLENGTH              DS   F        Structure length
MQCFSF_PARAMETER                DS   F        Parameter identifier
MQCFSF_OPERATOR                 DS   F        Operator identifier
MQCFSF_CODEDCHARSETID           DS   F        Coded character set identifier
MQCFSF_FILTERVALUELENGTH        DS   F        Filter value length
MQCFSF_LENGTH                   EQU  *-MQCFSF Length of structure
                                ORG  MQCFSF
MQCFSF_AREA                     DS   CL(MQCFSF_LENGTH)
```

Visual Basic language declaration (Windows only)

```
Type MQCFSF
  Type As Long         ' Structure type
  StrucLength As Long  ' Structure length
  Parameter As Long    ' Parameter identifier
  Operator As Long     ' Operator identifier
  CodedCharSetId As Long     ' Coded character set identifier
  FilterValueLength As Long  ' Operator identifier
  FilterValue As String*1  ' Condition value -- first character
End Type

Global MQCFSF_DEFAULT As MQCFSF
```

RPG language declaration (IBM i only)

```
D* MQCFSF Structure
D*
D* Structure type
D  FISTYP                 1      4I 0 INZ(3)
D* Structure length
D  FSFLEN                 5      8I 0 INZ(16)
```

```
D* Parameter identifier
D  FSFPRM                 9     12I 0 INZ(0)
D* Reserved field
D  FSFRSV                13     16I 0 INZ(0)
D* Parameter value
D  FSFVAL                17     16
D* Structure type
D  FSFTYP                17     20I 0
D* Structure length
D  FSFLEN                21     24I 0
D* Parameter value
D  FSFPRM                25     28I 0
D* Operator identifier
D  FSFOP                 29     32I 0
D* Coded character set identifier
D  FSFCSI                33     36I 0
D* Length of condition
D  FSFFVL                37     40 0
D* Condition value -- first character
D  FSFFV                 41        41
D*
```

MQCFSL - PCF string list parameter

The MQCFSL structure describes a string-list parameter in a message which is a command or a response to a command. In either case, the format name in the message descriptor is MQFMT_ADMIN.

The MQCFSL structure can also be used for user-defined message data. In this case the message descriptor *Format* field is MQFMT_PCF (see Message descriptor for a PCF command). Also in this case, not all the fields in the structure are meaningful. The supplied initial values can be used for most fields, but the application must set the *StrucLength*, *Count*, *StringLength*, and *Strings* fields to the values appropriate to the data.

The structure ends with a variable-length array of character strings; see the *Strings* field section for further details.

See "Usage notes" on page 1083 for further information about how to use the structure.

Fields for MQCFSL

***Type* (MQLONG)**
Structure type.

This indicates that the structure is an MQCFSL structure describing a string-list parameter. The value must be:

MQCFT_STRING_LIST
Structure defining a string list.

***StrucLength* (MQLONG)**
Structure length.

This is the length in bytes of the MQCFSL structure, including the data at the end of the structure (the *Strings* field). The length must be a multiple of four, and must be sufficient to contain all the strings; any bytes between the end of the strings and the length defined by the *StrucLength* field are not significant.

The following constant gives the length of the *fixed* part of the structure, that is the length excluding the *Strings* field:

MQCFSL_STRUC_LENGTH_FIXED
Length of fixed part of command format string-list parameter structure.

***Parameter* (MQLONG)**
Parameter identifier.

This identifies the parameter with values that are contained in the structure. The values that can occur in this field depend on the value of the *Command* field in the MQCFH structure; see "MQCFH - PCF header" on page 1084 for details.

The parameter is from the following groups of parameters:

- MQCA_*
- MQCACF_*
- MQCAMO_*
- MQCACH_*

***CodedCharSetId* (MQLONG)**
Coded character set identifier.

This specifies the coded character set identifier of the data in the *Strings* field. The following special value can be used:

MQCCSI_DEFAULT
Default character set identifier.

The string data is in the character set defined by the *CodedCharSetId* field in the MQ header structure that *precedes* the MQCFH structure, or by the *CodedCharSetId* field in the MQMD if the MQCFH structure is at the start of the message.

***Count* (MQLONG)**
Count of parameter values.

This is the number of strings present in the *Strings* field; it must be zero or greater.

***StringLength* (MQLONG)**
Length of one string.

This is the length in bytes of one parameter value, that is the length of one string in the *Strings* field; all the strings are this length. The length must be zero or greater, and need not be a multiple of four.

***Strings* (MQCHAR×*StringLength*×*Count*)**
String values.

This is a set of string values for the parameter identified by the *Parameter* field. The number of strings is given by the *Count* field, and the length of each string is given by the *StringLength* field. The strings are concatenated together, with no bytes skipped between adjacent strings. The total length of the strings is the length of one string multiplied by the number of strings present (that is, *StringLength*×*Count*).

- In MQFMT_ADMIN command messages, if the specified string is shorter than the standard length of the parameter, the omitted characters are assumed to be blanks. If the specified string is longer than the standard length, it is an error.
- In MQFMT_ADMIN response messages, string parameters might be returned padded with blanks to the standard length of the parameter.
- In MQFMT_EVENT messages, trailing blanks might be omitted from string parameters (that is, the string might be shorter than the standard length of the parameter).

In all cases, *StringLength* gives the length of the string present in the message.

The strings can contain any characters that are in the character set defined by *CodedCharSetId*, and that are valid for the parameter identified by *Parameter*.

Note: When the queue manager reads an MQCFSL structure in an MQFMT_ADMIN message from the command input queue, the queue manager processes each string in the list as though it had been specified on an MQI call. This processing means that within each string, the first null, and the characters following it (up to the end of the string) are treated as blanks.

In responses and all other cases, a null character in a string is treated as normal data, and does not act as a delimiter for the string. This treatment means that when a receiving application reads a MQFMT_PCF, MQFMT_EVENT, or MQFMT_ADMIN message, the receiving application receives all the data specified by the sending application.

The way that this field is declared depends on the programming language:

- For the C programming language, the field is declared as an array with one element. Storage for the structure must be allocated dynamically, and pointers used to address the fields within it.
- For the COBOL, PL/I, RPG, and System/390 assembler programming languages, the field is omitted from the structure declaration. When an instance of the structure is declared, you must include MQCFSL in a larger structure, and declare additional fields following MQCFSL, to represent the *Strings* field as required.

C language declaration

```
typedef struct tagMQCFSL {
  MQLONG  Type;            /* Structure type */
  MQLONG  StrucLength;     /* Structure length */
  MQLONG  Parameter;       /* Parameter identifier */
  MQLONG  CodedCharSetId;  /* Coded character set identifier */
  MQLONG  Count;           /* Count of parameter values */
  MQLONG  StringLength;    /* Length of one string */
  MQCHAR  Strings[1];      /* String values - first
                              character */
 } MQCFSL;
```

COBOL language declaration

```
**   MQCFSL structure
  10 MQCFSL.
**    Structure type
   15 MQCFSL-TYPE           PIC S9(9) BINARY.
**    Structure length
   15 MQCFSL-STRUCLENGTH    PIC S9(9) BINARY.
**    Parameter identifier
   15 MQCFSL-PARAMETER      PIC S9(9) BINARY.
**    Coded character set identifier
   15 MQCFSL-CODEDCHARSETID PIC S9(9) BINARY.
**    Count of parameter values
   15 MQCFSL-COUNT          PIC S9(9) BINARY.
**    Length of one string
   15 MQCFSL-STRINGLENGTH   PIC S9(9) BINARY.
```

PL/I language declaration (z/OS only)

```
dcl
 1 MQCFSL based,
  3 Type           fixed bin(31), /* Structure type */
  3 StrucLength    fixed bin(31), /* Structure length */
  3 Parameter      fixed bin(31), /* Parameter identifier */
  3 CodedCharSetId fixed bin(31), /* Coded character set identifier */
  3 Count          fixed bin(31), /* Count of parameter values */
  3 StringLength   fixed bin(31); /* Length of one string */
```

System/390 assembler-language declaration (z/OS only)

```
MQCFSL                       DSECT
MQCFSL_TYPE                  DS   F        Structure type
MQCFSL_STRUCLENGTH           DS   F        Structure length
MQCFSL_PARAMETER             DS   F        Parameter identifier
MQCFSL_CODEDCHARSETID        DS   F        Coded character set
*                                          identifier
MQCFSL_COUNT                 DS   F        Count of parameter values
MQCFSL_STRINGLENGTH          DS   F        Length of one string
MQCFSL_LENGTH                EQU  *-MQCFSL Length of structure
                             ORG  MQCFSL
MQCFSL_AREA                  DS   CL(MQCFSL_LENGTH)
```

Visual Basic language declaration (Windows only)

```
Type MQCFSL
  Type As Long            ' Structure type
  StrucLength As Long     ' Structure length
  Parameter As Long       ' Parameter identifier
  CodedCharSetId As Long  ' Coded character set identifier
  Count As Long           ' Count of parameter values
  StringLength As Long    ' Length of one string
End Type

Global MQCFSL_DEFAULT As MQCFSL
```

RPG language declaration (IBM i only)

```
D* MQCFSL Structure
D*
D* Structure type
D  SLTYP                  1      4I 0 INZ(6)
D* Structure length
D  SLLEN                  5      8I 0 INZ(24
D* Parameter identifier
D  SLPRM                  9     12I 0 INZ(0)
D* Coded character set identifier
D  SLCSI                 13     16I 0 INZ(0)
D* Count of parameter values
D  SLCNT                 17     20I 0 INZ(0)
D* Length of one string
D  SLSTL                 21     24I 0 INZ(0)
```

MQCFST - PCF string parameter

The MQCFST structure describes a string parameter in a message that is a command or a response to a command. In either case, the format name in the message descriptor is MQFMT_ADMIN.

The MQCFST structure can also be used for user-defined message data. In this case the message descriptor *Format* field is MQFMT_PCF (see Message descriptor for a PCF command). Also in this case, not all the fields in the structure are meaningful. The supplied initial values can be used for most fields, but the application must set the *StrucLength*, *StringLength*, and *String* fields to the values appropriate to the data.

The structure ends with a variable-length character string; see the *String* field section for further details.

See “Usage notes” on page 1083 for further information about how to use the structure.

Fields for MQCFST

***Type* (MQLONG)**
Structure type.

This indicates that the structure is an MQCFST structure describing a string parameter. The value must be:

MQCFT_STRING
Structure defining a string.

***StrucLength* (MQLONG)**
Structure length.

This is the length in bytes of the MQCFST structure, including the string at the end of the structure (the *String* field). The length must be a multiple of four, and must be sufficient to contain the string; any bytes between the end of the string and the length defined by the *StrucLength* field are not significant.

The following constant gives the length of the *fixed* part of the structure, that is the length excluding the *String* field:

MQCFST_STRUC_LENGTH_FIXED
Length of fixed part of command format string-parameter structure.

***Parameter* (MQLONG)**
Parameter identifier.

This identifies the parameter with a value that is contained in the structure. The values that can occur in this field depend on the value of the *Command* field in the MQCFH structure; see "MQCFH - PCF header" on page 1084 for details.

The parameter is from the following groups of parameters:

- MQCA_*
- MQCACF_*
- MQCAMO_*
- MQCACH_*

***CodedCharSetId* (MQLONG)**
Coded character set identifier.

This specifies the coded character set identifier of the data in the *String* field. The following special value can be used:

MQCCSI_DEFAULT
Default character set identifier.

The string data is in the character set defined by the *CodedCharSetId* field in the MQ header structure that *precedes* the MQCFH structure, or by the *CodedCharSetId* field in the MQMD if the MQCFH structure is at the start of the message.

***StringLength* (MQLONG)**
Length of string.

This is the length in bytes of the data in the *String* field; it must be zero or greater. This length does not need to be a multiple of four.

***String* (MQCHAR×*StringLength*)**
String value.

This is the value of the parameter identified by the *Parameter* field:

- In MQFMT_ADMIN command messages, if the specified string is shorter than the standard length of the parameter, the omitted characters are assumed to be blanks. If the specified string is longer than the standard length, it is an error.
- In MQFMT_ADMIN response messages, string parameters might be returned padded with blanks to the standard length of the parameter.
- In MQFMT_EVENT messages, trailing blanks might be omitted from string parameters (that is, the string can be shorter than the standard length of the parameter).

The value of *StringLength* depends on whether, when the specified string is shorter than the standard length, padding blanks have been added to the string. If so, the value of *StringLength* is the sum of the actual length of the string plus the padded blanks.

The string can contain any characters that are in the character set defined by *CodedCharSetId*, and that are valid for the parameter identified by *Parameter*.

Note: When the queue manager reads an MQCFST structure in an MQFMT_ADMIN message from the command input queue, the queue manager processes the string as though it had been specified on an MQI call. This processing means that within the string, the first null and the characters following it (up to the end of the string) are treated as blanks.

In responses and all other cases, a null character in the string is treated as normal data, and does not act as a delimiter for the string. This treatment means that when a receiving application reads a

MQFMT_PCF, MQFMT_EVENT, or MQFMT_ADMIN message, the receiving application receives all the data specified by the sending application.

The way that this field is declared depends on the programming language:

- For the C programming language, the field is declared as an array with one element. Storage for the structure must be allocated dynamically, and pointers used to address the fields within it.
- For the COBOL, PL/I, and System/390 assembler programming languages, the field is omitted from the structure declaration. When an instance of the structure is declared, the user must include MQCFST in a larger structure, and declare an additional field or additional fields following MQCFST, to represent the *String* field as required.

C language declaration

```
typedef struct tagMQCFST {
  MQLONG  Type;            /* Structure type */
  MQLONG  StrucLength;     /* Structure length */
  MQLONG  Parameter;       /* Parameter identifier */
  MQLONG  CodedCharSetId;  /* Coded character set identifier */
  MQLONG  StringLength;    /* Length of string */
  MQCHAR  String[1];       /* String value - first
                              character */
 } MQCFST;
```

COBOL language declaration

```
**   MQCFST structure
  10 MQCFST.
**    Structure type
   15 MQCFST-TYPE           PIC S9(9) BINARY.
**    Structure length
   15 MQCFST-STRUCLENGTH    PIC S9(9) BINARY.
**    Parameter identifier
   15 MQCFST-PARAMETER      PIC S9(9) BINARY.
**    Coded character set identifier
   15 MQCFST-CODEDCHARSETID PIC S9(9) BINARY.
**    Length of string
   15 MQCFST-STRINGLENGTH   PIC S9(9) BINARY.
```

PL/I language declaration (z/OS only)

```
dcl
 1 MQCFST based,
  3 Type           fixed bin(31), /* Structure type */
  3 StrucLength    fixed bin(31), /* Structure length */
  3 Parameter      fixed bin(31), /* Parameter identifier */
  3 CodedCharSetId fixed bin(31), /* Coded character set identifier */
  3 StringLength   fixed bin(31); /* Length of string */
```

System/390 assembler-language declaration (z/OS only)

```
MQCFST                          DSECT
MQCFST_TYPE                     DS   F        Structure type
MQCFST_STRUCLENGTH              DS   F        Structure length
MQCFST_PARAMETER                DS   F        Parameter identifier
MQCFST_CODEDCHARSETID           DS   F        Coded character set
*                                             identifier
MQCFST_STRINGLENGTH             DS   F        Length of string
MQCFST_LENGTH                   EQU  *-MQCFST Length of structure
                                ORG  MQCFST
MQCFST_AREA                     DS   CL(MQCFST_LENGTH)
```

Visual Basic language declaration (Windows only)

```
Type MQCFST
  Type As Long            ' Structure type
  StrucLength As Long     ' Structure length
  Parameter As Long       ' Parameter identifier
  CodedCharSetId As Long  ' Coded character set identifier
  StringLength As Long    ' Length of string
End Type

Global MQCFST_DEFAULT As MQCFST
```

RPG language declaration (IBM i only)

```
D* MQCFST Structure
D*
D* Structure type
D  STTYP                  1      4I 0 INZ(4)
D* Structure length
D  STLEN                  5      8I 0 INZ(20)
D* Parameter identifier
D  STPRM                  9     12I 0 INZ(0)
D* Coded character set identifier
D  STCSI                 13     16I 0 INZ(0)
D* Length of string
D  STSTL                 17     20I 0 INZ(0)
D*
```

PCF example

The compiled program, written in C language, in the example uses WebSphere MQ for Windows. It inquires of the default queue manager about a subset of the attributes for all local queues defined to it. It then produces an output file, SAVEQMGR.TST, in the directory from which it was run for use with RUNMQSC.

Inquire local queue attributes

This following section provides an example of how Programmable Command Formats can be used in a program for administration of WebSphere MQ queues.

The program is given as an example of using PCFs and has been limited to a simple case. This program is of most use as an example if you are considering the use of PCFs to manage your WebSphere MQ environment.

Program listing

```
/*============================================================================*/
/*                                                                            */
/* This is a program to inquire of the default queue manager about the        */
/* local queues defined to it.                                                */
/*                                                                            */
/* The program takes this information and appends it to a file                */
/* SAVEQMGR.TST which is of a format suitable for RUNMQSC. It could,          */
/* therefore, be used to recreate or clone a queue manager.                   */
/*                                                                            */
/* It is offered as an example of using Programmable Command Formats (PCFs)   */
/* as a method for administering a queue manager.                             */
/*                                                                            */
/*============================================================================*/

/* Include standard libraries */
#include <memory.h>
#include <stdio.h>

/* Include MQSeries headers */
#include <cmqc.h>
#include <cmqcfc.h>
#include <cmqxc.h>
```

```
typedef struct LocalQParms {
   MQCHAR48    QName;
   MQLONG      QType;
   MQCHAR64    QDesc;
   MQLONG      InhibitPut;
   MQLONG      DefPriority;
   MQLONG      DefPersistence;
   MQLONG      InhibitGet;
   MQCHAR48    ProcessName;
   MQLONG      MaxQDepth;
   MQLONG      MaxMsgLength;
   MQLONG      BackoutThreshold;
   MQCHAR48    BackoutReqQName;
   MQLONG      Shareability;
   MQLONG      DefInputOpenOption;
   MQLONG      HardenGetBackout;
   MQLONG      MsgDeliverySequence;
   MQLONG      RetentionInterval;
   MQLONG      DefinitionType;
   MQLONG      Usage;
   MQLONG      OpenInputCount;
   MQLONG      OpenOutputCount;
   MQLONG      CurrentQDepth;
   MQCHAR12    CreationDate;
   MQCHAR8     CreationTime;
   MQCHAR48    InitiationQName;
   MQLONG      TriggerControl;
   MQLONG      TriggerType;
   MQLONG      TriggerMsgPriority;
   MQLONG      TriggerDepth;
   MQCHAR64    TriggerData;
   MQLONG      Scope;
   MQLONG      QDepthHighLimit;
   MQLONG      QDepthLowLimit;
   MQLONG      QDepthMaxEvent;
   MQLONG      QDepthHighEvent;
   MQLONG      QDepthLowEvent;
   MQLONG      QServiceInterval;
   MQLONG      QServiceIntervalEvent;
} LocalQParms;

MQOD  ObjDesc = { MQOD_DEFAULT };
MQMD  md      = { MQMD_DEFAULT  };
MQPMO pmo     = { MQPMO_DEFAULT };
MQGMO gmo     = { MQGMO_DEFAULT };

void ProcessStringParm( MQCFST *pPCFString, LocalQParms *DefnLQ );

void ProcessIntegerParm( MQCFIN *pPCFInteger, LocalQParms *DefnLQ );

void AddToFileQLOCAL( LocalQParms DefnLQ );

void MQParmCpy( char *target, char *source, int length );

void PutMsg( MQHCONN   hConn       /* Connection to queue manager            */
           , MQCHAR8   MsgFormat   /* Format of user data to be put in msg   */
           , MQHOBJ    hQName      /* handle of queue to put the message to  */
           , MQCHAR48  QName       /* name of queue to put the message to    */
           , MQBYTE   *UserMsg     /* The user data to be put in the message */
           , MQLONG    UserMsgLen  /*                                        */
           );

void GetMsg( MQHCONN   hConn          /* handle of queue manager            */
           , MQLONG    MQParm         /* Options to specify nature of get   */
           , MQHOBJ    hQName         /* handle of queue to read from       */
           , MQBYTE   *UserMsg        /* Input/Output buffer containing msg */
           , MQLONG    ReadBufferLen  /* Length of supplied buffer          */
           );
MQHOBJ OpenQ( MQHCONN     hConn
            , MQCHAR48    QName
            , MQLONG      OpenOpts
            );

int main( int argc, char *argv[] )
{
  MQCHAR48             QMgrName;         /* Name of connected queue mgr     */
  MQHCONN              hConn;            /* handle to connected queue mgr   */
  MQOD                 ObjDesc;          /*                                 */
  MQLONG               OpenOpts;         /*                                 */
  MQLONG               CompCode;         /* MQ API completion code          */
  MQLONG               Reason;           /* Reason qualifying above         */
                                         /*                                 */
```

```
MQHOBJ               hAdminQ;          /* handle to output queue          */
MQHOBJ               hReplyQ;          /* handle to input queue           */
                                       /*                                 */
MQLONG               AdminMsgLen;      /* Length of user message buffer   */
MQBYTE              *pAdminMsg;        /* Ptr to outbound data buffer     */
MQCFH               *pPCFHeader;       /* Ptr to PCF header structure     */
MQCFST              *pPCFString;       /* Ptr to PCF string parm block    */
MQCFIN              *pPCFInteger;      /* Ptr to PCF integer parm block   */
MQLONG              *pPCFType;         /* Type field of PCF message parm  */
LocalQParms          DefnLQ;           /*                                 */
                                       /*                                 */
char                 ErrorReport[40];  /*                       */
MQCHAR8              MsgFormat;        /* Format of inbound message       */
short                Index;            /* Loop counter                    */

/* Connect to default queue manager */
QMgrName[0] =  '\0';                   /* set to null   default QM */
if ( argc > 1 )
  strcpy(QMgrName, argv[1]);

MQCONN(  QMgrName                      /*  use default queue manager  */
      , &hConn                         /*  queue manager handle       */
      , &CompCode                      /*  Completion code            */
      , &Reason                        /*  Reason qualifying CompCode */
      );

if ( CompCode != MQCC_OK ) {
   printf( "MQCONN failed for %s, CC=%d RC=%d\n"
         , QMgrName
         , CompCode
         , Reason
         );
   exit( -1 );
} /* endif */

/* Open all the required queues */
hAdminQ = OpenQ( hConn, "SYSTEM.ADMIN.COMMAND.QUEUE\0", MQOO_OUTPUT );

hReplyQ = OpenQ( hConn, "SAVEQMGR.REPLY.QUEUE\0", MQOO_INPUT_EXCLUSIVE );

/* ****************************************************************** */
/* Put a message to the SYSTEM.ADMIN.COMMAND.QUEUE to inquire all     */
/* the local queues defined on the queue manager.                     */
/*                                                                    */
/* The request consists of a Request Header and a parameter block     */
/* used to specify the generic search. The header and the parameter   */
/* block follow each other in a contiguous buffer which is pointed    */
/* to by the variable pAdminMsg. This entire buffer is then put to    */
/* the queue.                                                         */
/*                                                                    */
/* The command server, (use STRMQCSV to start it), processes the      */
/* SYSTEM.ADMIN.COMMAND.QUEUE and puts a reply on the application     */
/* ReplyToQ for each defined queue.                                   */
/* ****************************************************************** */

/* Set the length for the message buffer */
AdminMsgLen = MQCFH_STRUC_LENGTH
            + MQCFST_STRUC_LENGTH_FIXED + MQ_Q_NAME_LENGTH
            + MQCFIN_STRUC_LENGTH
            ;

/* ------------------------------------------------------------------ */
/* Set pointers to message data buffers                               */
/*                                                                    */
/* pAdminMsg points to the start of the message buffer                */
/*                                                                    */
/* pPCFHeader also points to the start of the message buffer. It is   */
/* used to indicate the type of command we wish to execute and the    */
/* number of parameter blocks following in the message buffer.        */
/*                                                                    */
/* pPCFString points into the message buffer immediately after the    */
/* header and is used to map the following bytes onto a PCF string    */
/* parameter block. In this case the string is used to indicate the   */
/* nameof the queue we want details about, * indicating all queues.   */
/*                                                                    */
/* pPCFInteger points into the message buffer immediately after the   */
/* string block described above. It is used to map the following      */
/* bytes onto a PCF integer parameter block. This block indicates     */
/* the type of queue we wish to receive details about, thereby        */
/* qualifying the generic search set up by passing the previous       */
/* string parameter.                                                  */
/*                                                                    */
```

```
/* Note that this example is a generic search for all attributes of  */
/* all local queues known to the queue manager. By using different,  */
/* or more, parameter blocks in the request header it is possible    */
/* to narrow the search.                                             */
/* ----------------------------------------------------------------- */

pAdminMsg   = (MQBYTE *)malloc( AdminMsgLen );

pPCFHeader  = (MQCFH *)pAdminMsg;

pPCFString  = (MQCFST *)(pAdminMsg
                       + MQCFH_STRUC_LENGTH
                       );

pPCFInteger = (MQCFIN *)( pAdminMsg
                       + MQCFH_STRUC_LENGTH
                       + MQCFST_STRUC_LENGTH_FIXED + MQ_Q_NAME_LENGTH
                       );


/* Setup request header */
pPCFHeader->Type           = MQCFT_COMMAND;
pPCFHeader->StrucLength    = MQCFH_STRUC_LENGTH;
pPCFHeader->Version        = MQCFH_VERSION_1;
pPCFHeader->Command        = MQCMD_INQUIRE_Q;
pPCFHeader->MsgSeqNumber   = MQCFC_LAST;
pPCFHeader->Control        = MQCFC_LAST;
pPCFHeader->ParameterCount = 2;

/* Setup parameter block */
pPCFString->Type           = MQCFT_STRING;
pPCFString->StrucLength    = MQCFST_STRUC_LENGTH_FIXED + MQ_Q_NAME_LENGTH;
pPCFString->Parameter      = MQCA_Q_NAME;
pPCFString->CodedCharSetId = MQCCSI_DEFAULT;
pPCFString->StringLength   = MQ_Q_NAME_LENGTH;
memset( pPCFString->String, ' ', MQ_Q_NAME_LENGTH );
memcpy( pPCFString->String, "*", 1 );

/* Setup parameter block */
pPCFInteger->Type        = MQCFT_INTEGER;
pPCFInteger->StrucLength = MQCFIN_STRUC_LENGTH;
pPCFInteger->Parameter   = MQIA_Q_TYPE;
pPCFInteger->Value       = MQQT_LOCAL;

PutMsg(  hConn                    /* Queue manager handle            */
      ,  MQFMT_ADMIN              /* Format of message               */
      ,  hAdminQ                  /* Handle of command queue         */
      ,  "SAVEQMGR.REPLY.QUEUE\0" /* reply to queue                  */
      ,  (MQBYTE *)pAdminMsg      /* Data part of message to put     */
      ,  AdminMsgLen
      );

free( pAdminMsg );

/* ***************************************************************** */
/* Get and process the replies received from the command server onto  */
/* the applications ReplyToQ.                                        */
/*                                                                   */
/* There will be one message per defined local queue.                */
/*                                                                   */
/* The last message will have the Control field of the PCF header    */
/* set to MQCFC_LAST. All others will be MQCFC_NOT_LAST.             */
/*                                                                   */
/* An individual Reply message consists of a header followed by a    */
/* number a parameters, the exact number, type and order will depend */
/* upon the type of request.                                         */
/*                                                                   */
/* ----------------------------------------------------------------- */
/*                                                                   */
/* The message is retrieved into a buffer pointed to by pAdminMsg.   */
/* This buffer has been allocated enough memory to hold every        */
/* parameter needed for a local queue definition.                    */
/*                                                                   */
/* pPCFHeader is then allocated to point also to the beginning of    */
/* the buffer and is used to access the PCF header structure. The    */
/* header contains several fields. The one we are specifically       */
/* interested in is the ParameterCount. This tells us how many       */
/* parameters follow the header in the message buffer. There is      */
/* one parameter for each local queue attribute known by the         */
/* queue manager.                                                    */
/*                                                                   */
/* At this point we do not know the order or type of each parameter  */
```

```
/* block in the buffer, the first MQLONG of each block defines its    */
/* type; they may be parameter blocks containing either strings or    */
/* integers.                                                          */
/*                                                                    */
/* pPCFType is used initially to point to the first byte beyond the   */
/* known parameter block. Initially then, it points to the first byte */
/* after the PCF header. Subsequently it is incremented by the length */
/* of the identified parameter block and therefore points at the      */
/* next. Looking at the value of the data pointed to by pPCFType we   */
/* can decide how to process the next group of bytes, either as a     */
/* string, or an integer.                                             */
/*                                                                    */
/* In this way we parse the message buffer extracting the values of   */
/* each of the parameters we are interested in.                       */
/*                                                                    */
/* ****************************************************************** */

/* AdminMsgLen is to be set to the length of the expected reply       */
/* message. This structure is specific to Local Queues.               */
AdminMsgLen =   MQCFH_STRUC_LENGTH
              + ( MQCFST_STRUC_LENGTH_FIXED * 7 )
              + ( MQCFIN_STRUC_LENGTH       * 39 )
              + ( MQ_Q_NAME_LENGTH          * 6  )
              + ( MQ_Q_MGR_NAME_LENGTH      * 2  )
              +   MQ_Q_DESC_LENGTH
              +   MQ_PROCESS_NAME_LENGTH
              +   MQ_CREATION_DATE_LENGTH
              +   MQ_CREATION_TIME_LENGTH
              +   MQ_TRIGGER_DATA_LENGTH + 100
              ;

/* Set pointers to message data buffers */
pAdminMsg = (MQBYTE *)malloc( AdminMsgLen );

do {

   GetMsg(  hConn                      /* Queue manager handle           */
         ,  MQGMO_WAIT
         ,  hReplyQ                    /* Get queue handle               */
         ,  (MQBYTE *)pAdminMsg        /* pointer to message area        */
         ,  AdminMsgLen                /* length of get buffer           */
         );

   /* Examine Header */
   pPCFHeader = (MQCFH *)pAdminMsg;

   /* Examine first parameter */
   pPCFType = (MQLONG *)(pAdminMsg + MQCFH_STRUC_LENGTH);

   Index = 1;

   while ( Index <= pPCFHeader->ParameterCount ) {

      /* Establish the type of each parameter and allocate  */
      /* a pointer of the correct type to reference it.     */
      switch ( *pPCFType ) {
      case MQCFT_INTEGER:
         pPCFInteger = (MQCFIN *)pPCFType;
         ProcessIntegerParm( pPCFInteger, &DefnLQ );
         Index++;
         /* Increment the pointer to the next parameter by the */
         /* length of the current parm.                        */
         pPCFType = (MQLONG *)( (MQBYTE *)pPCFType
                              + pPCFInteger->StrucLength
                              );
         break;
      case MQCFT_STRING:
         pPCFString = (MQCFST *)pPCFType;
         ProcessStringParm( pPCFString, &DefnLQ );
         Index++;
         /* Increment the pointer to the next parameter by the */
         /* length of the current parm.                        */
         pPCFType = (MQLONG *)( (MQBYTE *)pPCFType
                              + pPCFString->StrucLength
                              );
         break;
      } /* endswitch */

   } /* endwhile */

   /* ****************************************************** */
   /* Message parsed, append to output file                  */
```

```
     /* ********************************************************* */
     AddToFileQLOCAL( DefnLQ );


     /* ********************************************************* */
     /* Finished processing the current message, do the next one. */
     /* ********************************************************* */

  } while ( pPCFHeader->Control == MQCFC_NOT_LAST ); /* enddo */

  free( pAdminMsg );

  /* ************************************ */
  /* Processing of the local queues complete */
  /* ************************************ */

}

void ProcessStringParm( MQCFST *pPCFString, LocalQParms *DefnLQ )
{
   switch ( pPCFString->Parameter ) {
   case MQCA_Q_NAME:
      MQParmCpy( DefnLQ->QName, pPCFString->String, 48 );
      break;
   case MQCA_Q_DESC:
      MQParmCpy( DefnLQ->QDesc, pPCFString->String, 64 );
      break;
   case MQCA_PROCESS_NAME:
      MQParmCpy( DefnLQ->ProcessName, pPCFString->String, 48 );
      break;
   case MQCA_BACKOUT_REQ_Q_NAME:
      MQParmCpy( DefnLQ->BackoutReqQName, pPCFString->String, 48 );
      break;
   case MQCA_CREATION_DATE:
      MQParmCpy( DefnLQ->CreationDate, pPCFString->String, 12 );
      break;
   case MQCA_CREATION_TIME:
      MQParmCpy( DefnLQ->CreationTime, pPCFString->String, 8 );
      break;
   case MQCA_INITIATION_Q_NAME:
      MQParmCpy( DefnLQ->InitiationQName, pPCFString->String, 48 );
      break;
   case MQCA_TRIGGER_DATA:
      MQParmCpy( DefnLQ->TriggerData, pPCFString->String, 64 );
      break;
   } /* endswitch */
}

void ProcessIntegerParm( MQCFIN *pPCFInteger, LocalQParms *DefnLQ )
{
   switch ( pPCFInteger->Parameter ) {
   case MQIA_Q_TYPE:
      DefnLQ->QType = pPCFInteger->Value;
      break;
   case MQIA_INHIBIT_PUT:
      DefnLQ->InhibitPut = pPCFInteger->Value;
      break;
   case MQIA_DEF_PRIORITY:
      DefnLQ->DefPriority = pPCFInteger->Value;
      break;
   case MQIA_DEF_PERSISTENCE:
      DefnLQ->DefPersistence = pPCFInteger->Value;
      break;
   case MQIA_INHIBIT_GET:
      DefnLQ->InhibitGet = pPCFInteger->Value;
      break;
   case MQIA_SCOPE:
      DefnLQ->Scope = pPCFInteger->Value;
      break;
   case MQIA_MAX_Q_DEPTH:
      DefnLQ->MaxQDepth = pPCFInteger->Value;
      break;
   case MQIA_MAX_MSG_LENGTH:
      DefnLQ->MaxMsgLength = pPCFInteger->Value;
      break;
   case MQIA_BACKOUT_THRESHOLD:
      DefnLQ->BackoutThreshold = pPCFInteger->Value;
      break;
   case MQIA_SHAREABILITY:
      DefnLQ->Shareability = pPCFInteger->Value;
      break;
   case MQIA_DEF_INPUT_OPEN_OPTION:
```

```
      DefnLQ->DefInputOpenOption = pPCFInteger->Value;
      break;
   case MQIA_HARDEN_GET_BACKOUT:
      DefnLQ->HardenGetBackout = pPCFInteger->Value;
      break;
   case MQIA_MSG_DELIVERY_SEQUENCE:
      DefnLQ->MsgDeliverySequence = pPCFInteger->Value;
      break;
   case MQIA_RETENTION_INTERVAL:
      DefnLQ->RetentionInterval = pPCFInteger->Value;
      break;
   case MQIA_DEFINITION_TYPE:
      DefnLQ->DefinitionType = pPCFInteger->Value;
      break;
   case MQIA_USAGE:
      DefnLQ->Usage = pPCFInteger->Value;
      break;
   case MQIA_OPEN_INPUT_COUNT:
      DefnLQ->OpenInputCount = pPCFInteger->Value;
      break;
   case MQIA_OPEN_OUTPUT_COUNT:
      DefnLQ->OpenOutputCount = pPCFInteger->Value;
      break;
   case MQIA_CURRENT_Q_DEPTH:
      DefnLQ->CurrentQDepth = pPCFInteger->Value;
      break;
   case MQIA_TRIGGER_CONTROL:
      DefnLQ->TriggerControl = pPCFInteger->Value;
      break;
   case MQIA_TRIGGER_TYPE:
      DefnLQ->TriggerType = pPCFInteger->Value;
      break;
   case MQIA_TRIGGER_MSG_PRIORITY:
      DefnLQ->TriggerMsgPriority = pPCFInteger->Value;
      break;
   case MQIA_TRIGGER_DEPTH:
      DefnLQ->TriggerDepth = pPCFInteger->Value;
      break;
   case MQIA_Q_DEPTH_HIGH_LIMIT:
      DefnLQ->QDepthHighLimit = pPCFInteger->Value;
      break;
   case MQIA_Q_DEPTH_LOW_LIMIT:
      DefnLQ->QDepthLowLimit = pPCFInteger->Value;
      break;
   case MQIA_Q_DEPTH_MAX_EVENT:
      DefnLQ->QDepthMaxEvent = pPCFInteger->Value;
      break;
   case MQIA_Q_DEPTH_HIGH_EVENT:
      DefnLQ->QDepthHighEvent = pPCFInteger->Value;
      break;
   case MQIA_Q_DEPTH_LOW_EVENT:
      DefnLQ->QDepthLowEvent = pPCFInteger->Value;
      break;
   case MQIA_Q_SERVICE_INTERVAL:
      DefnLQ->QServiceInterval = pPCFInteger->Value;
      break;
   case MQIA_Q_SERVICE_INTERVAL_EVENT:
      DefnLQ->QServiceIntervalEvent = pPCFInteger->Value;
      break;
   } /* endswitch */
}

/* ------------------------------------------------------------------------ */
/*                                                                          */
/* This process takes the attributes of a single local queue and adds them  */
/* to the end of a file, SAVEQMGR.TST, which can be found in the current    */
/* directory.                                                               */
/*                                                                          */
/* The file is of a format suitable for subsequent input to RUNMQSC.        */
/*                                                                          */
/* ------------------------------------------------------------------------ */
void AddToFileQLOCAL( LocalQParms DefnLQ )
{
   char    ParmBuffer[120];   /* Temporary buffer to hold for output to file */
   FILE   *fp;                /* Pointer to a file                           */

   /* Append these details to the end of the current SAVEQMGR.TST file */
   fp = fopen( "SAVEQMGR.TST", "a" );

   sprintf( ParmBuffer, "DEFINE QLOCAL ('%s') REPLACE +\n", DefnLQ.QName );
   fputs( ParmBuffer, fp );
```

```
   sprintf( ParmBuffer, "       DESCR('%s') +\n" , DefnLQ.QDesc );
   fputs( ParmBuffer, fp );

   if ( DefnLQ.InhibitPut == MQQA_PUT_ALLOWED ) {
      sprintf( ParmBuffer, "       PUT(ENABLED) +\n" );
      fputs( ParmBuffer, fp );
   } else {
      sprintf( ParmBuffer, "       PUT(DISABLED) +\n" );
      fputs( ParmBuffer, fp );
   } /* endif */

   sprintf( ParmBuffer, "       DEFPRTY(%d) +\n", DefnLQ.DefPriority );
   fputs( ParmBuffer, fp );

   if ( DefnLQ.DefPersistence == MQPER_PERSISTENT ) {
      sprintf( ParmBuffer, "       DEFPSIST(YES) +\n" );
      fputs( ParmBuffer, fp );
   } else {
      sprintf( ParmBuffer, "       DEFPSIST(NO) +\n" );
      fputs( ParmBuffer, fp );
   } /* endif */

   if ( DefnLQ.InhibitGet == MQQA_GET_ALLOWED ) {
      sprintf( ParmBuffer, "       GET(ENABLED) +\n" );
      fputs( ParmBuffer, fp );
   } else {
      sprintf( ParmBuffer, "       GET(DISABLED) +\n" );
      fputs( ParmBuffer, fp );
   } /* endif */

   sprintf( ParmBuffer, "       MAXDEPTH(%d) +\n", DefnLQ.MaxQDepth );
   fputs( ParmBuffer, fp );

   sprintf( ParmBuffer, "       MAXMSGL(%d) +\n", DefnLQ.MaxMsgLength );
   fputs( ParmBuffer, fp );

   if ( DefnLQ.Shareability == MQQA_SHAREABLE ) {
      sprintf( ParmBuffer, "       SHARE +\n" );
      fputs( ParmBuffer, fp );
   } else {
      sprintf( ParmBuffer, "       NOSHARE +\n" );
      fputs( ParmBuffer, fp );
   } /* endif */

   if ( DefnLQ.DefInputOpenOption == MQOO_INPUT_SHARED ) {
      sprintf( ParmBuffer, "       DEFSOPT(SHARED) +\n" );
      fputs( ParmBuffer, fp );
   } else {
      sprintf( ParmBuffer, "       DEFSOPT(EXCL) +\n" );
      fputs( ParmBuffer, fp );
   } /* endif */

   if ( DefnLQ.MsgDeliverySequence == MQMDS_PRIORITY ) {
      sprintf( ParmBuffer, "       MSGDLVSQ(PRIORITY) +\n" );
      fputs( ParmBuffer, fp );
   } else {
      sprintf( ParmBuffer, "       MSGDLVSQ(FIFO) +\n" );
      fputs( ParmBuffer, fp );
   } /* endif */

   if ( DefnLQ.HardenGetBackout == MQQA_BACKOUT_HARDENED ) {
      sprintf( ParmBuffer, "       HARDENBO +\n" );
      fputs( ParmBuffer, fp );
   } else {
      sprintf( ParmBuffer, "       NOHARDENBO +\n" );
      fputs( ParmBuffer, fp );
   } /* endif */

   if ( DefnLQ.Usage == MQUS_NORMAL ) {
      sprintf( ParmBuffer, "       USAGE(NORMAL) +\n" );
      fputs( ParmBuffer, fp );
   } else {
      sprintf( ParmBuffer, "       USAGE(XMIT) +\n" );
      fputs( ParmBuffer, fp );
   } /* endif */

   if ( DefnLQ.TriggerControl == MQTC_OFF ) {
      sprintf( ParmBuffer, "       NOTRIGGER +\n" );
      fputs( ParmBuffer, fp );
   } else {
      sprintf( ParmBuffer, "       TRIGGER +\n" );
      fputs( ParmBuffer, fp );
```

```
} /* endif */

switch ( DefnLQ.TriggerType ) {
case MQTT_NONE:
   sprintf( ParmBuffer, "       TRIGTYPE(NONE) +\n" );
   fputs( ParmBuffer, fp );
   break;
case MQTT_FIRST:
   sprintf( ParmBuffer, "       TRIGTYPE(FIRST) +\n" );
   fputs( ParmBuffer, fp );
   break;
case MQTT_EVERY:
   sprintf( ParmBuffer, "       TRIGTYPE(EVERY) +\n" );
   fputs( ParmBuffer, fp );
   break;
case MQTT_DEPTH:
   sprintf( ParmBuffer, "       TRIGTYPE(DEPTH) +\n" );
   fputs( ParmBuffer, fp );
   break;
} /* endswitch */

sprintf( ParmBuffer, "       TRIGDPTH(%d) +\n", DefnLQ.TriggerDepth );
fputs( ParmBuffer, fp );

sprintf( ParmBuffer, "       TRIGMPRI(%d) +\n", DefnLQ.TriggerMsgPriority);
fputs( ParmBuffer, fp );

sprintf( ParmBuffer, "       TRIGDATA('%s') +\n", DefnLQ.TriggerData );
fputs( ParmBuffer, fp );

sprintf( ParmBuffer, "       PROCESS('%s') +\n", DefnLQ.ProcessName );
fputs( ParmBuffer, fp );

sprintf( ParmBuffer, "       INITQ('%s') +\n", DefnLQ.InitiationQName );
fputs( ParmBuffer, fp );


sprintf( ParmBuffer, "       RETINTVL(%d) +\n", DefnLQ.RetentionInterval );
fputs( ParmBuffer, fp );

sprintf( ParmBuffer, "       BOTHRESH(%d) +\n", DefnLQ.BackoutThreshold );
fputs( ParmBuffer, fp );

sprintf( ParmBuffer, "       BOQNAME('%s') +\n", DefnLQ.BackoutReqQName );
fputs( ParmBuffer, fp );

if ( DefnLQ.Scope == MQSCO_Q_MGR ) {
   sprintf( ParmBuffer, "       SCOPE(QMGR) +\n" );
   fputs( ParmBuffer, fp );
} else {
   sprintf( ParmBuffer, "       SCOPE(CELL) +\n" );
   fputs( ParmBuffer, fp );
} /* endif */

sprintf( ParmBuffer, "       QDEPTHHI(%d) +\n", DefnLQ.QDepthHighLimit );
fputs( ParmBuffer, fp );

sprintf( ParmBuffer, "       QDEPTHLO(%d) +\n", DefnLQ.QDepthLowLimit );
fputs( ParmBuffer, fp );

if ( DefnLQ.QDepthMaxEvent == MQEVR_ENABLED ) {
   sprintf( ParmBuffer, "       QDPMAXEV(ENABLED) +\n" );
   fputs( ParmBuffer, fp );
} else {
   sprintf( ParmBuffer, "       QDPMAXEV(DISABLED) +\n" );
   fputs( ParmBuffer, fp );
} /* endif */

if ( DefnLQ.QDepthHighEvent == MQEVR_ENABLED ) {
   sprintf( ParmBuffer, "       QDPHIEV(ENABLED) +\n" );
   fputs( ParmBuffer, fp );
} else {
   sprintf( ParmBuffer, "       QDPHIEV(DISABLED) +\n" );
   fputs( ParmBuffer, fp );
} /* endif */

if ( DefnLQ.QDepthLowEvent == MQEVR_ENABLED ) {
   sprintf( ParmBuffer, "       QDPLOEV(ENABLED) +\n" );
   fputs( ParmBuffer, fp );
} else {
   sprintf( ParmBuffer, "       QDPLOEV(DISABLED) +\n" );
   fputs( ParmBuffer, fp );
```

```
   } /* endif */

   sprintf( ParmBuffer, "       QSVCINT(%d) +\n", DefnLQ.QServiceInterval );
   fputs( ParmBuffer, fp );

   switch ( DefnLQ.QServiceIntervalEvent ) {
   case MQQSIE_OK:
      sprintf( ParmBuffer, "       QSVCIEV(OK)\n" );
      fputs( ParmBuffer, fp );
      break;
   case MQQSIE_NONE:
      sprintf( ParmBuffer, "       QSVCIEV(NONE)\n" );
      fputs( ParmBuffer, fp );
      break;
   case MQQSIE_HIGH:
      sprintf( ParmBuffer, "       QSVCIEV(HIGH)\n" );
      fputs( ParmBuffer, fp );
      break;
   } /* endswitch */

   sprintf( ParmBuffer, "\n" );
   fputs( ParmBuffer, fp );

   fclose(fp);

}

/* ------------------------------------------------------------------------ */
/*                                                                          */
/* The queue manager returns strings of the maximum length for each         */
/* specific parameter, padded with blanks.                                  */
/*                                                                          */
/* We are interested in only the nonblank characters so will extract them   */
/* from the message buffer, and terminate the string with a null, \0.       */
/*                                                                          */
/* ------------------------------------------------------------------------ */
void MQParmCpy( char *target, char *source, int length )
{
   int   counter=0;

   while ( counter < length && source[counter] != ' ' ) {
      target[counter] = source[counter];
      counter++;
   } /* endwhile */

   if ( counter < length) {
      target[counter] = '\0';
   } /* endif */
}

MQHOBJ OpenQ( MQHCONN hConn, MQCHAR48 QName, MQLONG OpenOpts)
{
   MQHOBJ Hobj;
   MQLONG CompCode, Reason;

   ObjDesc.ObjectType = MQOT_Q;
   strncpy(ObjDesc.ObjectName, QName, MQ_Q_NAME_LENGTH);

   MQOPEN(hConn,     /* connection handle                     */
          &ObjDesc,  /* object descriptor for queue           */
          OpenOpts,  /* open options                          */
          &Hobj,     /* object handle                         */
          &CompCode, /* MQOPEN completion code                */
          &Reason);  /* reason code                           */

   /* report reason, if any; stop if failed                   */
   if (Reason != MQRC_NONE)
   {
     printf("MQOPEN for %s ended with Reason Code %d and Comp Code %d\n",
                       QName,
                       Reason,
                       CompCode);
     exit( -1 );
   }

   return Hobj;
}

void PutMsg(MQHCONN hConn,
                       MQCHAR8 MsgFormat,
                       MQHOBJ hQName,
                       MQCHAR48 QName,
```

```
                        MQBYTE *UserMsg,
                        MQLONG UserMsgLen)
{
   MQLONG CompCode, Reason;

   /* setup the message descriptor prior to putting the message */
   md.Report         = MQRO_NONE;
   md.MsgType        = MQMT_REQUEST;
   md.Expiry         = MQEI_UNLIMITED;
   md.Feedback       = MQFB_NONE;
   md.Encoding       = MQENC_NATIVE;
   md.Priority       = MQPRI_PRIORITY_AS_Q_DEF;
   md.Persistence    = MQPER_PERSISTENCE_AS_Q_DEF;
   md.MsgSeqNumber   = 1;
   md.Offset         = 0;
   md.MsgFlags       = MQMF_NONE;
   md.OriginalLength = MQOL_UNDEFINED;

   memcpy(md.GroupId,  MQGI_NONE, sizeof(md.GroupId));
   memcpy(md.Format,   MsgFormat, sizeof(md.Format) );
   memcpy(md.ReplyToQ, QName,     sizeof(md.ReplyToQ) );

   /* reset MsgId and CorrelId to get a new one                */
   memcpy(md.MsgId,    MQMI_NONE, sizeof(md.MsgId) );
   memcpy(md.CorrelId, MQCI_NONE, sizeof(md.CorrelId) );

   MQPUT(hConn,             /* connection handle               */
         hQName,            /* object handle                   */
         &md,               /* message descriptor              */
         &pmo,              /* default options                 */
         UserMsgLen,        /* message length                  */
         (MQBYTE *)UserMsg, /* message buffer                  */
         &CompCode,         /* completion code                 */
         &Reason);          /* reason code                     */

   if (Reason != MQRC_NONE) {
      printf("MQPUT ended with with Reason Code %d and Comp Code %d\n",
                           Reason, CompCode);
      exit( -1 );
   }
}

void GetMsg(MQHCONN hConn, MQLONG MQParm, MQHOBJ hQName,
                        MQBYTE *UserMsg, MQLONG ReadBufferLen)
{
   MQLONG CompCode, Reason, msglen;

   gmo.Options      = MQParm;
   gmo.WaitInterval = 15000;

   /* reset MsgId and CorrelId to get a new one                */
   memcpy(md.MsgId,    MQMI_NONE, sizeof(md.MsgId) );
   memcpy(md.CorrelId, MQCI_NONE, sizeof(md.CorrelId) );

   MQGET(hConn,             /* connection handle               */
         hQName,            /* object handle                   */
         &md,               /* message descriptor              */
         &gmo,              /* get message options             */
         ReadBufferLen,     /* Buffer length                   */
         (MQBYTE *)UserMsg, /* message buffer                  */
         &msglen,           /* message length                  */
         &CompCode,         /* completion code                 */
         &Reason);          /* reason code                     */

   if (Reason != MQRC_NONE) {
      printf("MQGET ended with Reason Code %d and Comp Code %d\n",
                           Reason, CompCode);
      exit( -1 );
   }
}
```

IBM WebSphere MQ Administration Interface

Reference information for the IBM WebSphere MQ Administration Interface (MQAI).

Related tasks

Using the MQAI to simplify the use of PCFs

MQAI calls

Reference information for MQAI calls.

A list of reference information for the MQAI.

There are two types of selector: *user selector* and *system selector*. These are described in "MQAI Selectors" on page 1200.

There are three types of call:

- Data-bag manipulation calls for configuring data bags:
  - "mqAddBag" on page 1121
  - "mqAddByteString" on page 1122
  - "mqAddByteStringFilter" on page 1124
  - "mqAddInquiry" on page 1126
  - "mqAddInteger" on page 1128
  - "mqAddInteger64" on page 1129
  - "mqAddIntegerFilter" on page 1131
  - "mqAddString" on page 1133
  - "mqAddStringFilter" on page 1135
  - "mqClearBag" on page 1140
  - "mqCountItems" on page 1141
  - "mqCreateBag" on page 1143
  - "mqDeleteBag" on page 1146
  - "mqDeleteItem" on page 1147
  - "mqInquireBag" on page 1155
  - "mqInquireByteString" on page 1157
  - "mqInquireByteStringFilter" on page 1160
  - "mqInquireInteger" on page 1162
  - "mqInquireInteger64" on page 1165
  - "mqInquireIntegerFilter" on page 1167
  - "mqInquireItemInfo" on page 1169
  - "mqInquireString" on page 1171
  - "mqInquireStringFilter" on page 1174
  - "mqSetByteString" on page 1180
  - "mqSetByteStringFilter" on page 1182
  - "mqSetInteger" on page 1185
  - "mqSetInteger64" on page 1187
  - "mqSetIntegerFilter" on page 1189
  - "mqSetString" on page 1192
  - "mqSetStringFilter" on page 1194
  - "mqTruncateBag" on page 1198
- Command calls for sending and receiving administration commands and PCF messages:
  - "mqBagToBuffer" on page 1137
  - "mqBufferToBag" on page 1139
  - "mqExecute" on page 1149

  - “mqGetBag” on page 1153
  - “mqPutBag” on page 1178
- Utility calls for handling blank-padded and null-terminated strings:
  - “mqPad” on page 1177
  - “mqTrim” on page 1197

These calls are described in alphabetical order in the following sections.

mqAddBag

The mqAddBag call nests a bag in another bag.

Syntax for mqAddBag

mqAddBag *(Bag, Selector, ItemValue, CompCode, Reason)*

Parameters for mqAddBag

Bag **(MQHBAG) - input**
Bag handle into which the item is to be added.

The bag must be a user bag. This means that it must have been created using the MQCBO_USER_BAG option on the mqCreateBag call. If the bag was not created in this way, MQRC_WRONG_BAG_TYPE results.

Selector **(MQLONG) - input**
Selector identifying the item to be nested.

If the selector is less than zero (that is, a system selector), MQRC_SELECTOR_OUT_OF_RANGE results.

If the selector is zero or greater (that is, a user selector) and the bag was created with the MQCBO_CHECK_SELECTORS option, the selector must be in the range MQGA_FIRST through MQGA_LAST; if not, again MQRC_SELECTOR_OUT_OF_RANGE results.

If MQCBO_CHECK_SELECTORS was not specified, the selector can be any value of zero or greater.

If the call is creating a second or later occurrence of a selector that is already in the bag, the data type of this occurrence must be the same as the data type of the first occurrence; MQRC_INCONSISTENT_ITEM_TYPE results if it is not.

ItemValue **(MQHBAG) - input**
The bag which is to be nested.

If the bag is not a group bag, MQRC_BAG_WRONG_TYPE results. If an attempt is made to add a bag to itself, MQRC_HBAG_ERROR results.

CompCode **(MQLONG) - output**
Completion code.

Reason **(MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicate error conditions that can be returned from the mqAddBag call:

MQRC_BAG_WRONG_TYPE
Wrong type of bag for intended use (either Bag or ItemValue).

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INCONSISTENT_ITEM_TYPE
Data type of this occurrence of selector differs from data type of first occurrence.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

Usage notes for mqAddBag

If a bag with the specified selector is already present in the bag, an additional instance of that selector is added to the end of the bag. The new instance is not necessarily adjacent to the existing instance.

C language invocation for mqAddBag

```
mqAddBag (Bag, Selector, ItemValue, &CompCode, &Reason)
```

Declare the parameters as follows:

```
MQHBAG   Bag;       /* Bag handle */
MQLONG   Selector;  /* Selector */
MQHBAG   ItemValue; /* Nested bag handle */
MQLONG   CompCode;  /* Completion code */
MQLONG   Reason;    /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqAddBag

(Supported on Windows only.)

```
mqAddGroup Bag, Selector, ItemValue, CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag       As Long 'Bag handle'
Dim Selector  As Long 'Selector'
Dim ItemValue As Long 'Nested bag handle'
Dim CompCode  As Long 'Completion code'
Dim Reason    As Long 'Reason code qualifying CompCode'
```

Note: The mqAddBag call can be used with user bags only; you cannot add nested bags to administration or command bags. You can only nest group bags.

mqAddByteString

The mqAddByteString call adds a byte string identified by a user selector to the end of a specified bag.

Syntax for mqAddByteString

mqAddByteString ***(Bag, Selector, BufferLength, Buffer, CompCode, Reason)***

Parameters for mqAddByteString

Bag **(MQHBAG) - input**
Handle of the bag to be modified.

This value must be the handle of a bag created by the user, not the handle of a system bag. MQRC_SYSTEM_BAG_NOT_ALTERABLE results if the value you specify relates to a system bag.

***Selector* (MQLONG) - input**
Selector identifying the item to be added to the bag.

If the selector is less than zero (that is, a system selector), MQRC_SELECTOR_OUT_OF_RANGE results.

If the selector is zero or greater (that is, a user selector), and the bag was created with the MQCBO_CHECK_SELECTORS option or as an administration bag (MQCBO_ADMIN_BAG), the selector must be in the range MQBA_FIRST through MQBA_LAST. MQRC_SELECTOR_OUT_OF_RANGE results if it is not in the correct range.

If MQCBO_CHECK_SELECTORS was not specified, the selector can be any value zero or greater.

If the call is creating a second or later occurrence of a selector that is already in the bag, the data type of this occurrence must be the same as the data type of the first occurrence; MQRC_INCONSISTENT_ITEM_TYPE results if it is not.

***BufferLength* (MQLONG) - input**
The length in bytes of the string contained in the *Buffer* parameter. The value must be zero or greater.

***Buffer* (MQBYTE × *BufferLength*) - input**
Buffer containing the byte string.

The length is given by the *BufferLength* parameter. If zero is specified for *BufferLength*, the null pointer can be specified for the address of the *Buffer* parameter. In all other cases, a valid (nonnull) address must be specified for the *Buffer* parameter.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error conditions can be returned from the mqAddByteString call:

MQRC_BUFFER_ERROR
Buffer parameter not valid (invalid parameter address or buffer not completely accessible).

MQRC_BUFFER_LENGTH_ERROR
Buffer length not valid.

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INCONSISTENT_ITEM_TYPE
Data type of this occurrence of selector differs from data type of first occurrence.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

MQRC_SYSTEM_BAG_NOT_ALTERABLE
System bag cannot be altered or deleted.

Usage notes for mqAddByteString

1. If a data item with the specified selector is already present in the bag, an additional instance of that selector is added to the end of the bag. The new instance is not necessarily adjacent to the existing instance.
2. This call cannot be used to add a system selector to a bag.

C language invocation for mqAddByteString

```
mqAddByteString (hBag, Selector, BufferLength, Buffer, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   Bag;          /* Bag handle */
MQLONG   Selector;      /* Selector */
MQLONG   BufferLength;  /* Buffer length */
PMQBYTE  Buffer         /* Buffer containing item value */
MQLONG   CompCode;       /* Completion code */
MQLONG   Reason;         /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqAddByteString

(Supported on Windows only.)

```
mqAddByteString Bag, Selector, BufferLength, Buffer, CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag          As Long 'Bag handle'
Dim Selector     As Long 'Selector'
Dim BufferLength As Long 'Buffer length'
Dim Buffer       As Byte 'Buffer containing item value'
Dim CompCode     As Long 'Completion code'
Dim Reason       As Long 'Reason code qualifying CompCode'
```

mqAddByteStringFilter

The mqAddByteStringFilter call adds a byte string filter identified by a user selector to the end of a specified bag.

Syntax for mqAddByteStringFilter

mqAddByteStringFilter *(Bag, Selector, BufferLength, Buffer, Operator, CompCode, Reason)*

Parameters for mqAddByteStringFilter

***Bag* (MQHBAG) - input**
Handle of the bag to be modified.

This value must be the handle of a bag created by the user, not the handle of a system bag. MQRC_SYSTEM_BAG_NOT_ALTERABLE results if the value you specify relates to a system bag.

***Selector* (MQLONG) - input**
Selector identifying the item to be added to the bag.

If the selector is less than zero (that is, a system selector), MQRC_SELECTOR_OUT_OF_RANGE results.

If the selector is zero or greater (that is, a user selector), and the bag was created with the MQCBO_CHECK_SELECTORS option or as an administration bag (MQCBO_ADMIN_BAG), the selector must be in the range MQBA_FIRST through MQBA_LAST. MQRC_SELECTOR_OUT_OF_RANGE results if it is not in the correct range.

If MQCBO_CHECK_SELECTORS was not specified, the selector can be any value zero or greater.

If the call is creating a second or later occurrence of a selector that is already in the bag, the data type of this occurrence must be the same as the data type of the first occurrence; MQRC_INCONSISTENT_ITEM_TYPE results if it is not.

***BufferLength* (MQLONG) - input**
The length in bytes of the condition byte string contained in the *Buffer* parameter. The value must be zero or greater.

***Buffer* (MQBYTE × *BufferLength*) - input**
Buffer containing the condition byte string.

The length is given by the *BufferLength* parameter. If zero is specified for *BufferLength*, the null pointer can be specified for the address of the *Buffer* parameter. In all other cases, a valid (nonnull) address must be specified for the *Buffer* parameter.

***Operator* (MQLONG) - input**
The byte string filter operator to be placed in the bag. Valid operators are of the form MQCFOP_*.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error conditions can be returned from the mqAddByteStringFilter call:

MQRC_BUFFER_ERROR
Buffer parameter not valid (invalid parameter address or buffer not accessible).

MQRC_BUFFER_LENGTH_ERROR
Buffer length not valid.

MQRC_FILTER_OPERATOR_ERROR
Filter operator not valid.

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INCONSISTENT_ITEM_TYPE
Data type of this occurrence of selector differs from data type of first occurrence.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

MQRC_SYSTEM_BAG_NOT_ALTERABLE
System bag cannot be altered or deleted.

Usage notes for mqAddByteStringFilter

1. If a data item with the specified selector is already present in the bag, an additional instance of that selector is added to the end of the bag. The new instance is not necessarily adjacent to the existing instance.
2. This call cannot be used to add a system selector to a bag.

C language invocation for mqAddByteStringFilter

```
mqAddByteStringFilter (hBag, Selector, BufferLength, Buffer, Operator,
&CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   hBag;          /* Bag handle */
MQLONG   Selector;      /* Selector */
MQLONG   BufferLength;  /* Buffer length */
PMQBYTE  Buffer         /* Buffer containing item value */
MQLONG   Operator       /* Operator */
PMQLONG  CompCode;      /* Completion code */
PMQLONG  Reason;        /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqAddByteStringFilter

(Supported on Windows only.)

```
mqAddByteStringFilter Bag, Selector, BufferLength, Buffer, Operator, CompCode,
Reason
```

Declare the parameters as follows:

```
Dim Bag          As Long 'Bag handle'
Dim Selector     As Long 'Selector'
Dim BufferLength As Long 'Buffer length'
Dim Buffer       As String 'Buffer containing item value'
Dim Operator     As Long 'Operator'
Dim CompCode     As Long 'Completion code'
Dim Reason       As Long 'Reason code qualifying CompCode'
```

mqAddInquiry

The mqAddInquiry call can be used with administration bags only; it is specifically for administration purposes.

The mqAddInquiry call adds a selector to an administration bag. The selector refers to an IBM WebSphere MQ object attribute that is to be returned by a PCF INQUIRE command. The value of the `Selector` parameter specified on this call is added to the end of the bag, as the value of a data item that has the selector value MQIACF_INQUIRY.

Syntax for mqAddInquiry

mqAddInquiry *(Bag, Selector, CompCode, Reason)*

Parameters for mqAddInquiry

***Bag* (MQHBAG) - input**
Bag handle.

The bag must be an administration bag; that is, it must have been created with the MQCBO_ADMIN_BAG option on the mqCreateBag call. If the bag was not created this way, MQRC_BAG_WRONG_TYPE results.

***Selector* (MQLONG) - input**
Selector of the IBM WebSphere MQ object attribute that is to be returned by the appropriate INQUIRE administration command.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicate error conditions that can be returned from the mqAddInquiry call:

MQRC_BAG_WRONG_TYPE
Wrong type of bag for intended use.

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

MQRC_SYSTEM_BAG_NOT_ALTERABLE
System bag cannot be altered or deleted.

Usage notes for mqAddInquiry

1. When the administration message is generated, the MQAI constructs an integer list with the MQIACF_*_ATTRS or MQIACH_*_ATTRS selector that is appropriate to the Command value specified on the mqExecute, mqPutBag, or mqBagToBuffer call. It then adds the values of the attribute selectors specified by the mqAddInquiry call.
2. If the Command value specified on the mqExecute, mqPutBag, or mqBagToBuffer call is not recognized by the MQAI, MQRC_INQUIRY_COMMAND_ERROR results. Instead of using the mqAddInquiry call, this can be overcome by using the mqAddInteger call with the appropriate MQIACF_*_ATTRS or MQIACH_*_ATTRS selector and the ItemValue parameter of the selector being inquired.

C language invocation for mqAddInquiry

```
mqAddInquiry (Bag, Selector, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   Bag;           /* Bag handle */
MQLONG   Selector;      /* Selector */
MQLONG   CompCode;      /* Completion code */
MQLONG   Reason;        /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqAddInquiry

(Supported on Windows only.)

```
mqAddInquiry Bag, Selector, CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag      As Long 'Bag handle'
Dim Selector As Long 'Selector'
Dim CompCode As Long 'Completion code'
Dim Reason   As Long 'Reason code qualifying CompCode'
```

Supported INQUIRE command codes

- MQCMD_INQUIRE_AUTH_INFO
- MQCMD_INQUIRE_AUTH_RECS
- MQCMD_INQUIRE_AUTH_SERVICE
- MQCMD_INQUIRE_CHANNEL
- MQCMD_INQUIRE_CHANNEL_STATUS

- MQCMD_INQUIRE_CLUSTER_Q_MGR
- MQCMD_INQUIRE_CONNECTION
- MQCMD_INQUIRE_LISTENER
- MQCMD_INQUIRE_LISTENER_STATUS
- MQCMD_INQUIRE_NAMELIST
- MQCMD_INQUIRE_PROCESS
- MQCMD_INQUIRE_Q
- MQCMD_INQUIRE_Q_MGR
- MQCMD_INQUIRE_Q_MGR_STATUS
- MQCMD_INQUIRE_Q_STATUS
- MQCMD_INQUIRE_SECURITY

For an example that demonstrates the use of supported INQUIRE command codes, see Inquiring about queues and printing information (amqsailq.c).

mqAddInteger

The mqAddInteger call adds an integer item identified by a user selector to the end of a specified bag.

Syntax for mqAddInteger

mqAddInteger *(Bag, Selector, ItemValue, CompCode, Reason)*

Parameters for mqAddInteger

***Bag* (MQHBAG) - input**
Handle of the bag to be modified.

This must be the handle of a bag created by the user, not the handle of a system bag. MQRC_SYSTEM_BAG_NOT_ALTERABLE results if the value you specify identifies a system bag.

***Selector* (MQLONG)**
Selector identifying the item to be added to the bag.

If the selector is less than zero (that is, a system selector), MQRC_SELECTOR_OUT_OF_RANGE results.

If the selector is zero or greater (that is, a user selector) and the bag was created with the MQCBO_CHECK_SELECTORS option or as an administration bag (MQCBO_ADMIN_BAG), the selector must be in the range MQIA_FIRST through MQIA_LAST; if not, again MQRC_SELECTOR_OUT_OF_RANGE results.

If MQCBO_CHECK_SELECTORS was not specified, the selector can be any value of zero or greater.

If the call is creating a second or later occurrence of a selector that is already in the bag, the data type of this occurrence must be the same as the data type of the first occurrence; MQRC_INCONSISTENT_ITEM_TYPE results if it is not.

***ItemValue* (MQLONG) - input**
The integer value to be placed in the bag.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicate error conditions that can be returned from the mqAddInteger call:

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INCONSISTENT_ITEM_TYPE
Data type of this occurrence of selector differs from data type of first occurrence.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

MQRC_SYSTEM_BAG_NOT_ALTERABLE
System bag cannot be altered or deleted.

Usage notes for mqAddInteger

1. If a data item with the specified selector is already present in the bag, an additional instance of that selector is added to the end of the bag. The new instance is not necessarily next to the existing instance.
2. This call cannot be used to add a system selector to a bag.

C language invocation for mqAddInteger

```
mqAddInteger (Bag, Selector, ItemValue, &CompCode, &Reason)
```

Declare the parameters as follows:

```
MQHBAG   Bag;       /* Bag handle */
MQLONG   Selector;  /* Selector */
MQLONG   ItemValue; /* Integer value */
MQLONG   CompCode;  /* Completion code */
MQLONG   Reason;    /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqAddInteger

(Supported on Windows only.)

```
mqAddInteger Bag, Selector, ItemValue, CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag       As Long 'Bag handle'
Dim Selector  As Long 'Selector'
Dim ItemValue As Long 'Integer value'
Dim CompCode  As Long 'Completion code'
Dim Reason    As Long 'Reason code qualifying CompCode'
```

mqAddInteger64

The mqAddInteger64 call adds a 64-bit integer item identified by a user selector to the end of a specified bag.

Syntax for mqAddInteger64

mqAddInteger64 ***(Bag, Selector, ItemValue, CompCode, Reason)***

Parameters for mqAddInteger64

Bag **(MQHBAG) - input**
Handle of the bag to be modified.

This must be the handle of a bag created by the user, not the handle of a system bag. MQRC_SYSTEM_BAG_NOT_ALTERABLE results if the value you specify identifies a system bag.

Selector **(MQLONG) - input**
Selector identifying the item to be added to the bag.

If the selector is less than zero (that is, a system selector), MQRC_SELECTOR_OUT_OF_RANGE results.

If the selector is zero or greater (that is, a user selector) and the bag was created with the MQCBO_CHECK_SELECTORS option or as an administration bag (MQCBO_ADMIN_BAG), the selector must be in the range MQIA_FIRST through MQIA_LAST; if not, again MQRC_SELECTOR_OUT_OF_RANGE results.

If MQCBO_CHECK_SELECTORS was not specified, the selector can be any value of zero or greater.

If the call is creating a second or later occurrence of a selector that is already in the bag, the data type of this occurrence must be the same as the data type of the first occurrence; MQRC_INCONSISTENT_ITEM_TYPE results if it is not.

ItemValue **(MQINT64) - input**
The 64-bit integer value to be placed in the bag.

CompCode **(MQLONG) - output**
Completion code.

Reason **(MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicate error conditions that can be returned from the mqAddInteger64 call:

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INCONSISTENT_ITEM_TYPE
Data type of this occurrence of selector differs from data type of first occurrence.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

MQRC_SYSTEM_BAG_NOT_ALTERABLE
System bag cannot be altered or deleted.

Usage notes for mqAddInteger64

1. If a data item with the specified selector is already present in the bag, an additional instance of that selector is added to the end of the bag. The new instance is not necessarily adjacent to the existing instance.
2. This call cannot be used to add a system selector to a bag.

C language invocation for mqAddInteger64

```
mqAddInteger64 (Bag, Selector, ItemValue, &CompCode, &Reason)
```

Declare the parameters as follows:

```
MQHBAG   Bag;       /* Bag handle */
MQLONG   Selector;  /* Selector */
MQINT64  ItemValue; /* Integer value */
MQLONG   CompCode;  /* Completion code */
MQLONG   Reason;    /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqAddInteger64

(Supported on Windows only.)

```
mqAddInteger64 Bag, Selector, ItemValue, CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag       As Long 'Bag handle'
Dim Selector  As Long 'Selector'
Dim Item Value As Long 'Integer value'
Dim CompCode  As Long 'Completion code'
Dim Reason    As Long 'Reason code qualifying CompCode'
```

mqAddIntegerFilter

The mqAddIntegerFilter call adds an integer filter identified by a user selector to the end of a specified bag.

Syntax for mqAddIntegerFilter

mqAddIntegerFilter ***(Bag, Selector, ItemValue, Operator, CompCode, Reason)***

Parameters for mqAddIntegerFilter

Bag **(MQHBAG) - input**

Handle of the bag to be modified.

This must be the handle of a bag created by the user, not the handle of a system bag. MQRC_SYSTEM_BAG_NOT_ALTERABLE results if the value you specify identifies a system bag.

Selector **(MQLONG) - input**

Selector identifying the item to be added to the bag.

If the selector is less than zero (that is, a system selector), MQRC_SELECTOR_OUT_OF_RANGE results.

If the selector is zero or greater (that is, a user selector) and the bag was created with the MQCBO_CHECK_SELECTORS option or as an administration bag (MQCBO_ADMIN_BAG), the selector must be in the range MQIA_FIRST through MQIA_LAST; if not, again MQRC_SELECTOR_OUT_OF_RANGE results.

If MQCBO_CHECK_SELECTORS was not specified, the selector can be any value of zero or greater.

If the call is creating a second or later occurrence of a selector that is already in the bag, the data type of this occurrence must be the same as the data type of the first occurrence; MQRC_INCONSISTENT_ITEM_TYPE results if it is not.

***ItemValue* (MQLONG) - input**
The integer condition value to be placed in the bag.

***Operator* (MQLONG) - input**
The integer filter operator to be placed in the bag. Valid operators take the form MQCFOP_*.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicate error conditions that can be returned from the mqAddIntegerFilter call:

MQRC_FILTER_OPERATOR_ERROR
Filter operator not valid.

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INCONSISTENT_ITEM_TYPE
Data type of this occurrence of selector differs from data type of first occurrence.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

MQRC_SYSTEM_BAG_NOT_ALTERABLE
System bag cannot be altered or deleted.

Usage notes for mqAddIntegerFilter

1. If a data item with the specified selector is already present in the bag, an additional instance of that selector is added to the end of the bag. The new instance is not necessarily adjacent to the existing instance.
2. This call cannot be used to add a system selector to a bag.

C language invocation for mqAddIntegerFilter

```
mqAddIntegerFilter (Bag, Selector, ItemValue, Operator, &CompCode, &Reason)
```

Declare the parameters as follows:

```
MQHBAG   Bag;       /* Bag handle */
MQLONG   Selector;  /* Selector */
MQLONG   ItemValue; /* Integer value */
MQLONG   Operator;  /* Item operator */
MQLONG   CompCode;  /* Completion code */
MQLONG   Reason;    /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqAddIntegerFilter

(Supported on Windows only.)

```
mqAddIntegerFilter Bag, Selector, ItemValue, Operator, CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag       As Long 'Bag handle'
Dim Selector  As Long 'Selector'
Dim ItemValue As Long 'Integer value'
Dim Operator  As Long 'Item Operator'
Dim CompCode  As Long 'Completion code'
Dim Reason    As Long 'Reason code qualifying CompCode'
```

mqAddString

The mqAddString call adds a character data item identified by a user selector to the end of a specified bag.

Syntax for mqAddString

mqAddString *(Bag, Selector, BufferLength, Buffer, CompCode, Reason)*

Parameters for mqAddString

***Bag* (MQHBAG) - input**
Handle of the bag to be modified.

This value must be the handle of a bag created by the user, not the handle of a system bag. MQRC_SYSTEM_BAG_NOT_ALTERABLE results if the value you specify relates to a system bag.

***Selector* (MQLONG) - input**
Selector identifying the item to be added to the bag.

If the selector is less than zero (that is, a system selector), MQRC_SELECTOR_OUT_OF_RANGE results.

If the selector is zero or greater (that is, a user selector), and the bag was created with the MQCBO_CHECK_SELECTORS option or as an administration bag (MQCBO_ADMIN_BAG), the selector must be in the range MQCA_FIRST through MQCA_LAST. MQRC_SELECTOR_OUT_OF_RANGE results if it is not in the correct range.

If MQCBO_CHECK_SELECTORS was not specified, the selector can be any value zero or greater.

If the call is creating a second or later occurrence of a selector that is already in the bag, the data type of this occurrence must be the same as the data type of the first occurrence; MQRC_INCONSISTENT_ITEM_TYPE results if it is not.

***BufferLength* (MQLONG) - input**
The length in bytes of the string contained in the *Buffer* parameter. The value must be zero or greater, or the special value MQBL_NULL_TERMINATED:

- If MQBL_NULL_TERMINATED is specified, the string is delimited by the first null encountered in the string. The null is not added to the bag as part of the string.
- If MQBL_NULL_TERMINATED is not specified, *BufferLength* characters are inserted into the bag, even if null characters are present. Nulls do not delimit the string.

***Buffer* (MQCHAR × *BufferLength*) - input**
Buffer containing the character string.

The length is given by the *BufferLength* parameter. If zero is specified for *BufferLength*, the null pointer can be specified for the address of the *Buffer* parameter. In all other cases, a valid (nonnull) address must be specified for the *Buffer* parameter.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error conditions can be returned from the mqAddString call:

MQRC_BUFFER_ERROR
Buffer parameter not valid (invalid parameter address or buffer not completely accessible).

MQRC_BUFFER_LENGTH_ERROR
Buffer length not valid.

MQRC_CODED_CHAR_SET_ID_ERROR
Bag CCSID is MQCCSI_EMBEDDED.

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INCONSISTENT_ITEM_TYPE
Data type of this occurrence of selector differs from data type of first occurrence.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

MQRC_SYSTEM_BAG_NOT_ALTERABLE
System bag cannot be altered or deleted.

Usage notes for mqAddString

1. If a data item with the specified selector is already present in the bag, an additional instance of that selector is added to the end of the bag. The new instance is not necessarily adjacent to the existing instance.
2. This call cannot be used to add a system selector to a bag.
3. The Coded Character Set ID associated with this string is copied from the current CCSID of the bag.

C language invocation for mqAddString

```
mqAddString (hBag, Selector, BufferLength, Buffer, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   hBag;          /* Bag handle */
MQLONG   Selector;      /* Selector */
MQLONG   BufferLength;  /* Buffer length */
PMQCHAR  Buffer         /* Buffer containing item value */
MQLONG   CompCode;       /* Completion code */
MQLONG   Reason;         /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqAddString

(Supported on Windows only.)

```
mqAddString Bag, Selector, BufferLength, Buffer, CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag          As Long 'Bag handle'
Dim Selector     As Long 'Selector'
Dim BufferLength As Long 'Buffer length'
```

```
Dim Buffer       As String 'Buffer containing item value'
Dim CompCode     As Long 'Completion code'
Dim Reason       As Long 'Reason code qualifying CompCode'
```

mqAddStringFilter

The mqAddStringFilter call adds a string filter identified by a user selector to the end of a specified bag.

Syntax for mqAddStringFilter

mqAddStringFilter *(Bag, Selector, BufferLength, Buffer, Operator, CompCode, Reason)*

Parameters for mqAddStringFilter

***Bag* (MQHBAG) - input**
Handle of the bag to be modified.

This value must be the handle of a bag created by the user, not the handle of a system bag. MQRC_SYSTEM_BAG_NOT_ALTERABLE results if the value you specify relates to a system bag.

***Selector* (MQLONG) - input**
Selector identifying the item to be added to the bag.

If the selector is less than zero (that is, a system selector), MQRC_SELECTOR_OUT_OF_RANGE results.

If the selector is zero or greater (that is, a user selector), and the bag was created with the MQCBO_CHECK_SELECTORS option or as an administration bag (MQCBO_ADMIN_BAG), the selector must be in the range MQCA_FIRST through MQCA_LAST. MQRC_SELECTOR_OUT_OF_RANGE results if it is not in the correct range.

If MQCBO_CHECK_SELECTORS was not specified, the selector can be any value zero or greater.

If the call is creating a second or later occurrence of a selector that is already in the bag, the data type of this occurrence must be the same as the data type of the first occurrence; MQRC_INCONSISTENT_ITEM_TYPE results if it is not.

***BufferLength* (MQLONG) - input**
The length in bytes of the character condition string contained in the *Buffer* parameter. The value must be zero or greater, or the special value MQBL_NULL_TERMINATED:

- If MQBL_NULL_TERMINATED is specified, the string is delimited by the first null encountered in the string. The null is not added to the bag as part of the string.
- If MQBL_NULL_TERMINATED is not specified, *BufferLength* characters are inserted into the bag, even if null characters are present. Nulls do not delimit the string.

***Buffer* (MQCHAR × *BufferLength*) - input**
Buffer containing the character condition string.

The length is given by the *BufferLength* parameter. If zero is specified for *BufferLength*, the null pointer can be specified for the address of the *Buffer* parameter. In all other cases, a valid (nonnull) address must be specified for the *Buffer* parameter.

***Operator* (MQLONG) - input**
The string filter operator to be placed in the bag. Valid operators are of the form MQCFOP_*.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error conditions can be returned from the mqAddStringFilter call:

MQRC_BUFFER_ERROR
Buffer parameter not valid (invalid parameter address or buffer not completely accessible).

MQRC_BUFFER_LENGTH_ERROR
Buffer length not valid.

MQRC_CODED_CHAR_SET_ID_ERROR
Bag CCSID is MQCCSI_EMBEDDED.

MQRC_FILTER_OPERATOR_ERROR
Filter operator not valid.

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INCONSISTENT_ITEM_TYPE
Data type of this occurrence of selector differs from data type of first occurrence.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

MQRC_SYSTEM_BAG_NOT_ALTERABLE
System bag cannot be altered or deleted.

Usage notes for mqAddStringFilter

1. If a data item with the specified selector is already present in the bag, an additional instance of that selector is added to the end of the bag. The new instance is not necessarily adjacent to the existing instance.
2. This call cannot be used to add a system selector to a bag.
3. The Coded Character Set ID associated with this string is copied from the current CCSID of the bag.

C language invocation for mqAddStringFilter

```
mqAddStringFilter (hBag, Selector, BufferLength, Buffer, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   hBag;          /* Bag handle */
MQLONG   Selector;      /* Selector */
MQLONG   BufferLength;  /* Buffer length */
PMQCHAR  Buffer         /* Buffer containing item value */
MQLONG   Operator       /* Operator */
MQLONG   CompCode;       /* Completion code */
MQLONG   Reason;         /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqAddStringFilter

(Supported on Windows only.)

```
mqAddStringFilter Bag, Selector, BufferLength, Buffer, Operator, CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag          As Long 'Bag handle'
Dim Selector     As Long 'Selector'
Dim BufferLength As Long 'Buffer length'
Dim Buffer       As String 'Buffer containing item value'
Dim Operator     As Long 'Item operator'
Dim CompCode     As Long 'Completion code'
Dim Reason       As Long 'Reason code qualifying CompCode'
```

mqBagToBuffer

The mqBagToBuffer call converts the bag into a PCF message in the supplied buffer.

Syntax for mqBagToBuffer

mqBagToBuffer ***(OptionsBag, DataBag, BufferLength, Buffer, DataLength, CompCode, Reason)***

Parameters for mqBagToBuffer

OptionsBag **(MQHBAG) - input**
Handle of the bag containing options that control the processing of the call. This is a reserved parameter; the value must be MQHB_NONE.

DataBag **(MQHBAG) - input**
The handle of the bag to convert.

If the bag contains an administration message and mqAddInquiry was used to insert values into the bag, the value of the MQIASY_COMMAND data item must be an INQUIRE command that is recognized by the MQAI; MQRC_INQUIRY_COMMAND_ERROR results if it is not.

If the bag contains nested system bags, MQRC_NESTED_BAG_NOT_SUPPORTED results.

BufferLength **(MQLONG) - input**
Length in bytes of the buffer supplied.

If the buffer is too small to accommodate the message generated, MQRC_BUFFER_LENGTH_ERROR results.

Buffer **(MQBYTE × *BufferLength*) - output**
The buffer to hold the message.

DataLength **(MQLONG) - output**
The length in bytes of the buffer required to hold the entire bag. If the buffer is not long enough, the contents of the buffer are undefined but the `DataLength` is returned.

CompCode **(MQLONG) - output**
Completion code.

Reason **(MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error conditions can be returned from the mqBagToBuffer call:

MQRC_BAG_WRONG_TYPE
Input data bag is a group bag.

MQRC_BUFFER_ERROR
Buffer parameter not valid (invalid parameter address or buffer not accessible).

MQRC_BUFFER_LENGTH_ERROR
Buffer length not valid or buffer too small. (Required length returned in *DataLength*.)

MQRC_DATA_LENGTH_ERROR
DataLength parameter not valid (invalid parameter address).

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INQUIRY_COMMAND_ERROR
mqAddInquiry used with a command code that is not recognized as an INQUIRE command.

MQRC_NESTED_BAG_NOT_SUPPORTED
Input data bag contains one or more nested system bags.

MQRC_OPTIONS_ERROR
Options bag contains unsupported data items or a supported option has an invalid value.

MQRC_PARAMETER_MISSING
An administration message requires a parameter that is not present in the bag.

Note: This reason code occurs for bags created with the MQCBO_ADMIN_BAG or MQCBO_REORDER_AS_REQUIRED options only.

MQRC_SELECTOR_WRONG_TYPE
mqAddString or mqSetString was used to add the MQIACF_INQUIRY selector to the bag.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

Usage notes for mqBagToBuffer

1. The PCF message is generated with an encoding of MQENC_NATIVE for the numeric data.
2. The buffer that holds the message can be null if the `BufferLength` is zero. This is useful if you use the mqBagToBuffer call to calculate the size of buffer necessary to convert your bag.

C language invocation for mqBagToBuffer

```
mqBagToBuffer (OptionsBag, DataBag, BufferLength, Buffer, &DataLength,
&CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   OptionsBag;    /* Options bag handle */
MQHBAG   DataBag;       /* Data bag handle */
MQLONG   BufferLength;  /* Buffer length */
MQBYTE  Buffer[n];      /* Buffer to contain PCF */
MQLONG  DataLength;     /* Length of PCF returned in buffer */
MQLONG  CompCode;       /* Completion code */
MQLONG  Reason;         /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqBagToBuffer

(Supported on Windows only.)

```
mqBagToBuffer OptionsBag, DataBag, BufferLength, Buffer, DataLength,
CompCode, Reason
```

Declare the parameters as follows:

```
Dim OptionsBag   As Long 'Options bag handle'
Dim DataBag      As Long 'Data bag handle'
Dim BufferLength As Long 'Buffer length'
Dim Buffer       As Long 'Buffer to contain PCF'
```

```
Dim DataLength   As Long 'Length of PCF returned in buffer'
Dim CompCode     As Long 'Completion code'
Dim Reason       As Long 'Reason code qualifying CompCode'
```

mqBufferToBag

The mqBufferToBag call converts the supplied buffer into bag form.

Syntax for mqBufferToBag

mqBufferToBag ***(OptionsBag, BufferLength, Buffer, DataBag, CompCode, Reason)***

Parameters for mqBufferToBag

OptionsBag **(MQHBAG) - input**
Handle of the bag containing options that control the processing of the call. This is a reserved parameter; the value must be MQHB_NONE.

BufferLength **(MQLONG) - input**
Length in bytes of the buffer.

Buffer **(MQBYTE × *BufferLength*) - input**
Pointer to the buffer containing the message to be converted.

Databag **(MQHBAG) - input/output**
Handle of the bag to receive the message. The MQAI performs an mqClearBag call on the bag before placing the message in the bag.

CompCode **(MQLONG) - output**
Completion code.

Reason **(MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error conditions can be returned from the mqBufferToBag call:

MQRC_BAG_CONVERSION_ERROR
Data could not be converted into a bag. This indicates a problem with the format of the data to be converted into a bag (for example, the message is not a valid PCF).

MQRC_BUFFER_ERROR
Buffer parameter not valid (invalid parameter address or buffer not accessible).

MQRC_BUFFER_LENGTH_ERROR
Buffer length not valid.

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INCONSISTENT_ITEM_TYPE
Data type of second occurrence of selector differs from data type of first occurrence.

MQRC_OPTIONS_ERROR
Options bag contains unsupported data items, or a supported option has a value that is not valid.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

MQRC_SYSTEM_BAG_NOT_ALTERABLE
System bag cannot be altered or deleted.

Usage notes for mqBufferToBag

The buffer must contain a valid PCF message. The encoding of numeric data in the buffer must be MQENC_NATIVE.

The Coded Character Set ID of the bag is unchanged by this call.

C language invocation for mqBufferToBag

```
mqBufferToBag (OptionsBag, BufferLength, Buffer, DataBag,
&CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   OptionsBag;    /* Options bag handle */
MQLONG   BufferLength;  /* Buffer length  */
MQBYTE   Buffer[n];     /* Buffer containing PCF */
MQHBAG   DataBag;       /* Data bag handle */
MQLONG  CompCode;       /* Completion code */
MQLONG  Reason;         /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqBufferToBag

(Supported on Windows only.)

```
mqBufferToBag OptionsBag, BufferLength, Buffer, DataBag,
CompCode, Reason
```

Declare the parameters as follows:

```
Dim OptionsBag   As Long 'Options bag handle'
Dim BufferLength As Long 'Buffer length'
Dim Buffer       As Long 'Buffer containing PCF'
Dim DataBag      As Long 'Data bag handle'
Dim CompCode     As Long 'Completion code'
Dim Reason       As Long 'Reason code qualifying CompCode'
```

mqClearBag

The mqClearBag call deletes all user items from the bag, and resets system items to their initial values.

Syntax for mqClearBag

mqClearBag *(Bag, CompCode, Reason)*

Parameters for mqClearBag

***Bag* (MQHBAG) - input**
Handle of the bag to be cleared. This must be the handle of a bag created by the user, not the handle of a system bag. MQRC_SYSTEM_BAG_NOT_ALTERABLE results if you specify the handle of a system bag.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error conditions can be returned from the mqClearBag call:

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_SYSTEM_BAG_NOT_ALTERABLE
System bag cannot be altered or deleted.

Usage notes for mqClearBag

1. If the bag contains system bags, they are also deleted.
2. The call cannot be used to clear system bags.

C language invocation for mqClearBag

```
mqClearBag (Bag, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   Bag;           /* Bag handle */
MQLONG   CompCode;      /* Completion code */
MQLONG   Reason;        /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqClearBag

(Supported on Windows only.)

```
mqClearBag Bag, CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag      As Long 'Bag handle'
Dim CompCode As Long 'Completion code'
Dim Reason   As Long 'Reason code qualifying CompCode'
```

mqCountItems

The mqCountItems call returns the number of occurrences of user items, system items, or both, that are stored in a bag with the same specific selector.

Syntax for mqCountItems

mqCountItems *(Bag, Selector, ItemCount, CompCode, Reason)*

Parameters for mqCountItems

***Bag* (MQHBAG) - input**
Handle of the bag with items that are to be counted. This can be a user bag or a system bag.

***Selector* (MQLONG) - input**
Selector of the data items to count.

If the selector is less than zero (a system selector), the selector must be one that is supported by the MQAI. MQRC_SELECTOR_NOT_SUPPORTED results if it is not.

If the specified selector is not present in the bag, the call succeeds and zero is returned for *ItemCount*.

The following special values can be specified for *Selector*:

MQSEL_ALL_SELECTORS
All user and system items are to be counted.

MQSEL_ALL_USER_SELECTORS
All user items are to be counted; system items are excluded from the count.

MQSEL_ALL_SYSTEM_SELECTORS
All system items are to be counted; user items are excluded from the count.

***ItemCount* (MQLONG) - output**
Number of items of the specified type in the bag (can be zero).

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error conditions can be returned from the mqCountItems call:

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_ITEM_COUNT_ERROR
ItemCount parameter not valid (invalid parameter address).

MQRC_SELECTOR_NOT_SUPPORTED
Specified system selector not supported by the MQAI.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

Usage notes for mqCountItems

This call counts the number of data items, not the number of unique selectors in the bag. A selector can occur multiple times, so there might be fewer unique selectors in the bag than data items.

C language invocation for mqCountItems

```
mqCountItems (Bag, Selector, &ItemCount, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   Bag;           /* Bag handle */
MQLONG   Selector;      /* Selector */
MQLONG  ItemCount;      /* Number of items */
MQLONG  CompCode;       /* Completion code */
MQLONG  Reason;         /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqCountItems

(Supported on Windows only.)

```
mqCountItems Bag, Selector, ItemCount, CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag;      As Long 'Bag handle'
Dim Selector  As Long 'Selector'
Dim ItemCount As Long 'Number of items'
Dim CompCode  As Long 'Completion code'
Dim Reason    As Long 'Reason code qualifying CompCode'
```

mqCreateBag

The mqCreateBag call creates a new bag.

Syntax for mqCreateBag

mqCreateBag *(Options, Bag, CompCode, Reason)*

Parameters for mqCreateBag

***Options* (MQLONG) - input**

Options for creation of the bag.

The following are valid:

MQCBO_ADMIN_BAG

Specifies that the bag is for administering IBM WebSphere MQ objects. MQCBO_ADMIN_BAG automatically implies the MQCBO_LIST_FORM_ALLOWED, MQCBO_REORDER_AS_REQUIRED, and MQCBO_CHECK_SELECTORS options.

Administration bags are created with the MQIASY_TYPE system item set to MQCFT_COMMAND.

MQCBO_COMMAND_BAG

Specifies that the bag is a command bag. MQCBO_COMMAND_BAG is an alternative to the administration bag (MQCBO_ADMIN_BAG) and MQRC_OPTIONS_ERROR results if both are specified.

A command bag is processed in the same way as a user bag except that the value of the MQIASY_TYPE system item is set to MQCFT_COMMAND when the bag is created.

The command bag is also created for administering objects but they are not used to send administration messages to a command server as an administration bag is. The bag options assume the following default values:

- MQCBO_LIST_FORM_INHIBITIED
- MQCBO_DO_NOT_REORDER
- MQCBO_DO_NOT_CHECK_SELECTORS

Therefore, the MQAI does not change the order of data items or create lists within a message as with administration bags.

MQCBO_GROUP_BAG

Specifies that the bag is a group bag. This means that the bag is used to hold a set of grouped items. Group bags cannot be used for the administration of IBM WebSphere MQ objects. The bag options assume the following default values:

- MQCBO_LIST_FORM_ALLOWED
- MQCBO_REORDER_AS_REQUIRED
- MQCBO_DO_NOT_CHECK_SELECTORS

Therefore, the MQAI can change the order of data items or create lists within a bag of grouped items.

Group bags are created with two system selectors: MQIASY_BAG_OPTIONS and MQIASY_CODED_CHAR_SET_ID.

If a group bag is nested in a bag in which MQCBO_CHECK_SELECTORS was specified, the group bag to be nested has its selectors checked at that point whether MQCBO_CHECK_SELECTORS was specified when the group bag was created.

MQCBO_USER_BAG
Specifies that the bag is a user bag. MQCBO_USER_BAG is the default bag-type option.
User bags can also be used for the administration of IBM WebSphere MQ objects, but the MQCBO_LIST_FORM_ALLOWED and MQCBO_REORDER_AS_REQUIRED options must be specified to ensure correct generation of the administration messages.

User bags are created with the MQIASY_TYPE system item set to MQCFT_USER.

For user bags, one or more of the following options can be specified:

MQCBO_LIST_FORM_ALLOWED
Specifies that the MQAI can use the more compact list form in the message sent whenever there are two or more adjacent occurrences of the same selector in the bag. However, the items cannot be reordered if this option is used. Therefore, if the occurrences of the selector are not adjacent in the bag, and MQCBO_REORDER_AS_REQUIRED is not specified, the MQAI cannot use the list form for that particular selector.

If the data items are character strings, these strings must have the same Character Set ID and the same selector, in order to be compacted into list form. If the list form is used, the shorter strings are padded with blanks to the length of the longest string.

This option must be specified if the message to be sent is an administration message but MQCBO_ADMIN_BAG is not specified.

Note: MQCBO_LIST_FORM_ALLOWED does not imply that the MQAI definitely uses the list form. The MQAI considers various factors in deciding whether to use the list form.

MQCBO_LIST_FORM_INHIBITED
Specifies that the MQAI cannot use the list form in the message sent, even if there are adjacent occurrences of the same selector in the bag. MQCBO_LIST_FORM_INHIBITED is the default list-form option.

MQCBO_REORDER_AS_REQUIRED
Specifies that the MQAI can change the order of the data items in the message sent. This option does not affect the order of the items in the sending bag.

This option means that you can insert items into a data bag in any order. That is, the items do not need to be inserted in the way that they must be in the PCF message, because the MQAI can reorder these items as required.

If the message is a user message, the order of the items in the receiving bag is the same as the order of the items in the message. This order can be different from the order of the items in the sending bag.

If the message is an administration message, the order of the items in the receiving bag is determined by the message received.

This option must be specified if the message to be sent is an administration message but MQCBO_ADMIN is not specified.

MQCBO_DO_NOT_REORDER
Specifies that the MQAI cannot change the order of data items in the message sent. Both the message sent and the receiving bag contain the items in the same order as they occur in the sending bag. This option is the default ordering option.

MQCBO_CHECK_SELECTORS
Specifies that user selectors (selectors that are zero or greater) must be checked to ensure that the selector is consistent with the data type implied by the mqAddInteger, mqAddInteger64, mqAddIntegerFilter, mqAddString, mqAddStringFilter, mqAddByteString, mqAddByteStringFilter, mqSetInteger, mqSetInteger64, mqSetIntegerFilter, mqSetString, mqSetStringFilter, mqSetByteString, or mqSetByteStringFilter call:

- For the integer, 64-bit integer, and integer filter calls, the selector must be in the range MQIA_FIRST through MQIA_LAST.
- For the string and string filter calls, the selector must be in the range MQCA_FIRST through MQCA_LAST.
- For byte string and byte string filter calls, the selector must be in the range MQBA_FIRST through MQBA_LAST
- For group bag calls, the selector must be in the range MQGA_FIRST through MQGA_LAST
- For the handle calls, the selector must be in the range MQHA_FIRST through MQHA_LAST.

The call fails if the selector is outside the valid range. System selectors (selectors less than zero) are always checked, and if a system selector is specified, it must be one that is supported by the MQAI.

MQCBO_DO_NOT_CHECK_SELECTORS
Specifies that user selectors (selectors that are zero or greater) are not checked. Any selector that is zero or positive can be used with any call. This option is the default selectors option. System selectors (selectors less than zero) are always checked.

MQCBO_NONE
Specifies that all options must have their default values. This option is provided to aid program documentation, and must not be specified with any of the options that have a nonzero value.

The following list summarizes the default option values:

- MQCBO_USER_BAG
  - MQCBO_LIST_FORM_INHIBITIED
  - MQCBO_DO_NOT_REORDER
  - MQCBO_DO_NOT_CHECK_SELECTORS

***Bag* (MQHBAG) - output**
The handle of the bag created by the call.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error conditions can be returned from the mqCreateBag call:

MQRC_HBAG_ERROR
Bag handle not valid (invalid parameter address or the parameter location is read-only).

MQRC_OPTIONS_ERROR
Options not valid or not consistent.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

Usage notes for mqCreateBag

Any options used for creating your bag are contained in a system item within the bag when it is created.

C language invocation for mqCreateBag

```
mqCreateBag (Options, &Bag, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQLONG   Options;       /* Bag options */
MQHBAG  Bag;            /* Bag handle */
MQLONG  CompCode;       /* Completion code */
MQLONG  Reason;         /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqCreateBag

(Supported on Windows only.)

```
mqCreateBag Options, Bag, CompCode, Reason
```

Declare the parameters as follows:

```
Dim Options  As Long 'Bag options'
Dim Bag      As Long 'Bag handle'
Dim CompCode As Long 'Completion code'
Dim Reason   As Long 'Reason code qualifying CompCode'
```

mqDeleteBag

The mqDeleteBag call deletes the specified bag.

Syntax for mqDeleteBag

mqDeleteBag *(Bag, CompCode, Reason)*

Parameters for mqDeleteBag

***Bag* (MQHBAG) - input/output**

The handle of the bag to be deleted. This must be the handle of a bag created by the user, not the handle of a system bag. MQRC_SYSTEM_BAG_NOT_DELETABLE results if you specify the handle of a system bag. The handle is reset to MQHB_UNUSABLE_HBAG.

If the bag contains system-generated bags, they are also deleted.

***CompCode* (MQLONG) - output**

Completion code.

***Reason* (MQLONG) - output**

Reason code qualifying *CompCode*.

The following reason codes indicating error conditions can be returned from the mqDeleteBag call:

MQRC_HBAG_ERROR

Bag handle not valid, or invalid parameter address, or parameter location is read only.

MQRC_SYSTEM_BAG_NOT_DELETABLE

System bag cannot be deleted.

Usage notes for mqDeleteBag

1. Delete any bags created with mqCreateBag.
2. Nested bags are deleted automatically when the containing bag is deleted.

C language invocation for mqDeleteBag

```
mqDeleteBag (&Bag, CompCode, Reason);
```

Declare the parameters as follows:

```
MQHBAG   Bag;           /* Bag handle */
MQLONG   CompCode;      /* Completion code */
MQLONG   Reason;        /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqDeleteBag

(Supported on Windows only.)

```
mqDeleteBag Bag, CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag;     As Long 'Bag handle'
Dim CompCode As Long 'Completion code'
Dim Reason   As Long 'Reason code qualifying CompCode'
```

mqDeleteItem

The mqDeleteItem call removes one or more user items from a bag.

Syntax for mqDeleteItem

mqDeleteItem *(Bag, Selector, ItemIndex, CompCode, Reason)*

Parameters for mqDeleteItem

***Hbag* (MQHBAG) - input**
Handle of the bag to be modified.

This must be the handle of a bag created by the user, and not the handle of a system bag; MQRC_SYSTEM_BAG_NOT_ALTERABLE results if it is a system bag.

***Selector* (MQLONG) - input**
Selector identifying the user item to be deleted.

If the selector is less than zero (that is, a system selector), MQRC_SELECTOR_OUT_OF_RANGE results.

The following special values are valid:

MQSEL_ANY_SELECTOR
The item to be deleted is a user item identified by the `ItemIndex` parameter, the index relative to the set of items that contains both user and system items.

MQSEL_ANY_USER_SELECTOR
The item to be deleted is a user item identified by the `ItemIndex` parameter, the index relative to the set of user items.

If an explicit selector value is specified, but the selector is not present in the bag, the call succeeds if MQIND_ALL is specified for `ItemIndex`, and fails with reason code MQRC_SELECTOR_NOT_PRESENT if MQIND_ALL is not specified.

***ItemIndex* (MQLONG) - input**
Index of the data item to be deleted.

The value must be zero or greater, or one of the following special values:

MQIND_NONE
This specifies that there must be one occurrence only of the selector in the bag. If there is more than one occurrence, MQRC_SELECTOR_NOT_UNIQUE results. If MQIND_NONE is specified with one of the MQSEL_XXX_SELECTOR values, MQRC_INDEX_ERROR results.

MQIND_ALL
This specifies that all occurrences of the selector in the bag are to be deleted. If MQIND_ALL is specified with one of the MQSEL_XXX_SELECTOR values, MQRC_INDEX_ERROR results. If MQIND_ALL is specified when the selector is not present within the bag, the call succeeds.

If MQSEL_ANY_SELECTOR is specified for the `Selector` parameter, the `ItemIndex` parameter is the index relative to the set of items that contains both user items and system items, and must be zero or greater. If `ItemIndex` identifies a system selector MQRC_SYSTEM_ITEM_NOT_DELETABLE results. If MQSEL_ANY_USER_SELECTOR is specified for the `Selector` parameter, the `ItemIndex` parameter is the index relative to the set of user items, and must be zero or greater.

If an explicit selector value is specified, `ItemIndex` is the index relative to the set of items that have that selector value, and can be MQIND_NONE, MQIND_ALL, zero, or greater.

If an explicit index is specified (that is, not MQIND_NONE or MQIND_ALL) and the item is not present in the bag, MQRC_INDEX_NOT_PRESENT results.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error conditions can be returned from the mqDeleteItem call:

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INDEX_ERROR
MQIND_NONE or MQIND_ALL specified with one of the MQSEL_ANY_XXX_SELECTOR values.

MQRC_INDEX_NOT_PRESENT
No item with the specified index is present within the bag.

MQRC_SELECTOR_NOT_PRESENT
No item with the specified selector is present within the bag.

MQRC_SELECTOR_NOT_UNIQUE
MQIND_NONE specified when more than one occurrence of the specified selector is present in the bag.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

MQRC_SYSTEM_BAG_NOT_ALTERABLE
System bag is read only and cannot be altered.

MQRC_SYSTEM_ITEM_NOT_DELETABLE
System item is read only and cannot be deleted.

Usage notes for mqDeleteItem

1. Either a single occurrence of the specified selector can be removed, or all occurrences of the specified selector.
2. The call cannot remove system items from the bag, or remove items from a system bag. However, the call can remove the handle of a system bag from a user bag. This way, a system bag can be deleted.

C language invocation for mqDeleteItem

```
mqDeleteItem (Bag, Selector, ItemIndex, &CompCode, &Reason)
```

Declare the parameters as follows:

```
MQHBAG   Hbag;          /* Bag handle */
MQLONG   Selector;      /* Selector */
MQLONG   ItemIndex;     /* Index of the data item */
MQLONG   CompCode;      /* Completion code */
MQLONG   Reason;        /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqDeleteItem

(Supported on Windows only.)

```
mqDeleteItem Bag, Selector, ItemIndex, CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag       As Long 'Bag handle'
Dim Selector  As Long 'Selector'
Dim ItemIndex As Long 'Index of the data item'
Dim CompCode  As Long 'Completion code'
Dim Reason    As Long 'Reason code qualifying CompCode'
```

mqExecute

The mqExecute call sends an administration command message and waits for the reply (if expected).

Syntax for mqExecute

mqExecute ***(Hconn, Command, OptionsBag, AdminBag, ResponseBag, AdminQ, ResponseQ, CompCode, Reason)***

Parameters for mqExecute

Hconn **(MQHCONN) - input**
MQI Connection handle.

This is returned by a preceding MQCONN call issued by the application.

Command **(MQLONG) - input**
The command to be executed.

This should be one of the MQCMD_* values. If it is a value that is not recognized by the MQAI servicing the mqExecute call, the value is still accepted. However, if mqAddInquiry was used to insert

values in the bag, the Command parameter must be an INQUIRE command recognized by the MQAI; MQRC_INQUIRY_COMMAND_ERROR results if it is not.

***OptionsBag* (MQHBAG) - input**
Handle of a bag containing options that affect the operation of the call.

This must be the handle returned by a preceding mqCreateBag call or the following special value:

MQHB_NONE
No options bag; all options assume their default values.

Only the options listed in this topic can be present in the options bag (MQRC_OPTIONS_ERROR results if other data items are present).

The appropriate default value is used for each option that is not present in the bag. The following option can be specified:

MQIACF_WAIT_INTERVAL
This data item specifies the maximum time in milliseconds that the MQAI should wait for each reply message. The time interval must be zero or greater, or the special value MQWI_UNLIMITED; the default is thirty seconds. The mqExecute call completes either when all of the reply messages are received or when the specified wait interval expires without the expected reply message having been received.

Note: The time interval is an approximate quantity.

If the MQIACF_WAIT_INTERVAL data item has the wrong data type, or there is more than one occurrence of that selector in the options bag, or the value of the data item is not valid, MQRC_WAIT_INTERVAL_ERROR results.

***AdminBag* (MQHBAG) - input**
Handle of the bag containing details of the administration command to be issued.

All user items placed in the bag are inserted into the administration message that is sent. It is the application's responsibility to ensure that only valid parameters for the command are placed in the bag.

If the value of the MQIASY_TYPE data item in the command bag is not MQCFT_COMMAND, MQRC_COMMAND_TYPE_ERROR results. If the bag contains nested system bags, MQRC_NESTED_BAG_NOT_SUPPORTED results.

***ResponseBag* (MQHBAG) - input**
Handle of the bag where reply messages are placed.

The MQAI performs an mqClearBag call on the bag before placing reply messages in the bag. To retrieve the reply messages, the selector, MQIACF_CONVERT_RESPONSE, can be specified.

Each reply message is placed into a separate system bag, with a handle that is then placed in the response bag. Use the mqInquireBag call with selector MQHA_BAG_HANDLE to determine the handles of the system bags within the reply bag, and those bags can then be inquired to determine their contents.

If some but not all of the expected reply messages are received, MQCC_WARNING with MQRC_NO_MSG_AVAILABLE results. If none of the expected reply messages is received, MQCC_FAILED with MQRC_NO_MSG_AVAILABLE results.

Group bags cannot be used as response bags.

***AdminQ* (MQHOBJ) - input**
Object handle of the queue on which the administration message is to be placed.

This handle was returned by a preceding MQOPEN call issued by the application. The queue must be open for output.

The following special value can be specified:

MQHO_NONE
This indicates that the administration message should be placed on the SYSTEM.ADMIN.COMMAND.QUEUE belonging to the currently connected queue manager. If MQHO_NONE is specified, the application need not use MQOPEN to open the queue.

ResponseQ
Object handle of the queue on which reply messages are placed.

This handle was returned by a preceding MQOPEN call issued by the application. The queue must be open for input and for inquiry.

The following special value can be specified:

MQHO_NONE
This indicates that the reply messages should be placed on a dynamic queue created automatically by the MQAI. The queue is created by opening SYSTEM.DEFAULT.MODEL.QUEUE, that must therefore have suitable characteristics. The queue created exists for the duration of the call only, and is deleted by the MQAI on exit from the mqExecute call.

CompCode
Completion code.

Reason
Reason code qualifying *CompCode*.

The following reason codes indicating error conditions can be returned from the mqExecute call:

MQRC_*
Anything from the MQINQ, MQPUT, MQGET, or MQOPEN calls.

MQRC_BAG_WRONG_TYPE
Input data bag is a group bag.

MQRC_CMD_SERVER_NOT_AVAILABLE
The command server that processes administration commands is not available.

MQRC_COMMAND_TYPE_ERROR
The value of the MQIASY_TYPE data item in the request bag is not MQCFT_COMMAND.

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INQUIRY_COMMAND_ERROR
mqAddInteger call used with a command code that is not a recognized INQUIRE command.

MQRC_NESTED_BAG_NOT_SUPPORTED
Input data bag contains one or more nested system bags.

MQRC_NO_MSG_AVAILABLE
Some reply messages received, but not all. Reply bag contains system-generated bags for messages that were received.

MQRC_NO_MSG_AVAILABLE
No reply messages received during the specified wait interval.

MQRC_OPTIONS_ERROR
Options bag contains unsupported data items, or a supported option has a value which is not valid.

MQRC_PARAMETER_MISSING
Administration message requires a parameter which is not present in the bag. This reason code occurs for bags created with the MQCBO_ADMIN_BAG or MQCBO_REORDER_AS_REQUIRED options only.

MQRC_SELECTOR_NOT_UNIQUE
Two or more instances of a selector exist within the bag for a mandatory parameter that permits one instance only.

MQRC_SELECTOR_WRONG_TYPE
mqAddString or mqSetString was used to add the MQIACF_INQUIRY selector to the bag.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

MQRCCF_COMMAND_FAILED
Command failed; details of failure are contained in system-generated bags within the reply bag.

Usage notes for mqExecute

1. If no *AdminQ* is specified, the MQAI checks to see if the command server is active before sending the administration command message. However, if the command server is not active, the MQAI does not start it. If you are sending many administration command messages, you are recommended to open the SYSTEM.ADMIN.COMMAND.QUEUE yourself and pass the handle of the administration queue on each administration request.
2. Specifying the MQHO_NONE value in the *ResponseQ* parameter simplifies the use of the mqExecute call, but if mqExecute is issued repeatedly by the application (for example, from within a loop), the response queue will be created and deleted repeatedly. In this situation, it is better for the application itself to open the response queue before any mqExecute call, and close it after all mqExecute calls have been issued.
3. If the administration command results in a message being sent with a message type of MQMT_REQUEST, the call waits for the time given by the MQIACF_WAIT_INTERVAL data item in the options bag.
4. If an error occurs during the processing of the call, the response bag might contain some data from the reply message, but the data will typically be incomplete.

C language invocation for mqExecute

```
mqExecute (Hconn, Command, OptionsBag, AdminBag, ResponseBag,
AdminQ, ResponseQ, CompCode, Reason);
```

Declare the parameters as follows:

```
MQHCONN  Hconn;         /* MQI connection handle */
MQLONG   Command;       /* Command to be executed */
MQHBAG   OptionsBag;    /* Handle of a bag containing options */
MQHBAG   AdminBag;      /* Handle of administration bag containing
                        /* details of administration command */
MQHBAG   ResponseBag;   /* Handle of bag for response messages */
MQHOBJ   AdminQ         /* Handle of administration queue for
                           administration messages */
MQHOBJ   ResponseQ;     /* Handle of response queue for response
                           messages */
MQLONG   pCompCode;     /* Completion code */
MQLONG   pReason;       /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqExecute

(Supported on Windows only.)

```
mqExecute (Hconn, Command, OptionsBag, AdminBag, ResponseBag,
AdminQ, ResponseQ, CompCode, Reason);
```

Declare the parameters as follows:

```
Dim HConn       As Long 'MQI connection handle'
Dim Command     As Long 'Command to be executed'
Dim OptionsBag  As Long 'Handle of a bag containing options'
Dim AdminBag  As Long 'Handle of command bag containing details of
                       administration command'
Dim ResponseBag As Long 'Handle of bag for reply messages'
Dim AdminQ    As Long 'Handle of command queue for
                       administration messages'
Dim ResponseQ   As Long 'Handle of response queue for reply messages'
Dim CompCode    As Long 'Completion code'
Dim Reason      As Long 'Reason code qualifying CompCode'
```

mqGetBag

The mqGetBag call removes a message from the specified queue and converts the message data into a data bag.

Syntax for mqGetBag

mqGetBag *(Hconn, Hobj, MsgDesc, GetMsgOpts, Bag, CompCode, Reason)*

Parameters for mqGetBag

***Hconn* (MQHCONN) - input**
MQI connection handle.

***Hobj* (MQHOBJ) - input**
Object handle of the queue from which the message is to be retrieved. This handle was returned by a preceding MQOPEN call issued by the application. The queue must be open for input.

***MsgDesc* (MQMD) - input/output**
Message descriptor (for more information, see MQMD - Message descriptor).

If the *Format* field in the message has a value other than MQFMT_ADMIN, MQFMT_EVENT, or MQFMT_PCF, MQRC_FORMAT_NOT_SUPPORTED results.

If, on entry to the call, the *Encoding* field in the application's MQMD has a value other than MQENC_NATIVE and MQGMO_CONVERT is specified, MQRC_ENCODING_NOT_SUPPORTED results. Also, if MQGMO_CONVERT is not specified, the value of the *Encoding* parameter must be the retrieving application's MQENC_NATIVE; if not, again MQRC_ENCODING_NOT_SUPPORTED results.

***GetMsgOpts* (MQGMO) - input/output**
Get-message options (for more information, see MQGMO - Get-message options).

MQGMO_ACCEPT_TRUNCATED_MSG cannot be specified; MQRC_OPTIONS_ERROR results if it is. MQGMO_LOCK and MQGMO_UNLOCK are not supported in a 16-bit or 32-bit Window environment. MQGMO_SET_SIGNAL is supported in a 32-bit Window environment only.

***Bag* (MQHBAG) - input/output**
Handle of a bag into which the retrieved message is placed. The MQAI performs an mqClearBag call on the bag before placing the message in the bag.

MQHB_NONE
Gets the retrieved message. This provides a means of deleting messages from the queue.

If an option of MQGMO_BROWSE_* is specified, this value sets the browse cursor to the selected message; it is not deleted in this case.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating warning and error conditions can be returned from the mqGetBag call:

MQRC_*
Anything from the MQGET call or bag manipulation.

MQRC_BAG_CONVERSION_ERROR
Data could not be converted into a bag.

This indicates a problem with the format of the data to be converted into a bag (for example, the message is not a valid PCF).

If the message was retrieved destructively from the queue (that is, not browsing the queue), this reason code indicates that it has been discarded.

MQRC_BAG_WRONG_TYPE
Input data bag is a group bag.

MQRC_ENCODING_NOT_SUPPORTED
Encoding not supported; the value in the *Encoding* field of the MQMD must be MQENC_NATIVE.

MQRC_FORMAT_NOT_SUPPORTED
Format not supported; the *Format* name in the message is not MQFMT_ADMIN, MQFMT_EVENT, or MQFMT_PCF. If the message was retrieved destructively from the queue (that is, not browsing the queue), this reason code indicates that it has been discarded.

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INCONSISTENT_ITEM_TYPE
Data type of second occurrence of selector differs from data type of first occurrence.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

MQRC_SYSTEM_BAG_NOT_ALTERABLE
System bag cannot be altered or deleted.

Usage notes for mqGetBag

1. Only messages that have a supported format can be returned by this call. If the message has a format that is not supported, the message is discarded, and the call completes with an appropriate reason code.
2. If the message is retrieved within a unit of work (that is, with the MQGMO_SYNCPOINT option), and the message has an unsupported format, the unit of work can be backed out, reinstating the message on the queue. This allows the message to be retrieved by using the MQGET call in place of the mqGetBag call.

C language invocation for mqGetBag

```
mqGetBag (hConn, hObj, &MsgDesc, &GetMsgOpts, hBag, CompCode, Reason);
```

Declare the parameters as follows:

```
MQHCONN  hConn;         /* MQI connection handle */
MQHOBJ   hObj;          /* Object handle */
MQMD     MsgDesc;       /* Message descriptor */
MQGMO    GetMsgOpts;    /* Get-message options */
MQHBAG   hBag;          /* Bag handle */
```

```
MQLONG   CompCode;      /* Completion code */
MQLONG   Reason;        /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqGetBag

(Supported on Windows only.)

```
mqGetBag (HConn, HObj, MsgDesc, GetMsgOpts, Bag, CompCode, Reason);
```

Declare the parameters as follows:

```
Dim HConn      As Long 'MQI connection handle'
Dim HObj       As Long 'Object handle'
Dim MsgDesc    As Long 'Message descriptor'
Dim GetMsgOpts As Long 'Get-message options'
Dim Bag        As Long 'Bag handle'
Dim CompCode   As Long 'Completion code'
Dim Reason     As Long 'Reason code qualifying CompCode'
```

mqInquireBag

The mqInquireBag call inquires the value of a bag handle that is present in the bag. The data item can be a user item or a system item.

Syntax for mqInquireBag

mqInquireBag *(Bag, Selector, ItemIndex, ItemValue, CompCode, Reason)*

Parameters for mqInquireBag

***Bag* (MQHBAG) - input**
Bag handle to be inquired. The bag can be a user bag or a system bag.

***Selector* (MQLONG) - input**
Selector identifying the item to be inquired.

If the selector is less than zero (that is, a system selector), the selector must be one that is supported by the MQAI; MQRC_SELECTOR_NOT_SUPPORTED results if it is not.

The specified selector must be present in the bag; MQRC_SELECTOR_NOT_PRESENT results if it is not.

The data type of the item must agree with the data type implied by the call; MQRC_SELECTOR_WRONG_TYPE results if it is not.

The following special values can be specified for `Selector`:

MQSEL_ANY_SELECTOR
The item to be inquired is a user or system item identified by the `ItemIndex` parameter.

MQSEL_ANY_USER_SELECTOR
The item to be inquired is a user item identified by the `ItemIndex` parameter.

MQSEL_ANY_SYSTEM_SELECTOR
The item to be inquired is a system item identified by the `ItemIndex` parameter.

***ItemIndex* (MQLONG) - input**
Index of the data item to be inquired.

The value must be zero or greater, or the special value MQIND_NONE. If the value is less than zero and not MQIND_NONE, MQRC_INDEX_ERROR results. If the item is not already present in the bag, MQRC_INDEX_NOT_PRESENT results.

The following special value can be specified:

MQIND_NONE
This specifies that there must be one occurrence only of the selector in the bag. If there is more than one occurrence, MQRC_SELECTOR_NOT_UNIQUE results.

If MQSEL_ANY_SELECTOR is specified for the `Selector` parameter, the `ItemIndex` parameter is the index relative to the set of items that contains both user items and system items, and must be zero or greater.

If MQSEL_ANY_USER_SELECTOR is specified for the `Selector` parameter, the `ItemIndex` parameter is the index relative to the set of system items, and must be zero or greater.

If MQSEL_ANY_SYSTEM_SELECTOR is specified for the `Selector` parameter, the `ItemIndex` parameter is the index relative to the set of system items, and must be zero or greater.

If an explicit selector value is specified, the `ItemIndex` parameter is the index relative to the set of items that have that selector value and can be MQIND_NONE, zero, or greater.

***ItemValue* (MQHBAG) - output**
Value of the item in the bag.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error conditions can be returned from the mqInquireBag call:

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INDEX_ERROR
Index not valid (index negative and not MQIND_NONE, or MQIND_NONE specified with one of the MQSEL_ANY_xxx_SELECTOR values).

MQRC_INDEX_NOT_PRESENT
No item with the specified index is present within the bag for the selector given.

MQRC_ITEM_VALUE_ERROR
The `ItemValue` parameter is not valid (invalid parameter address).

MQRC_SELECTOR_NOT_PRESENT
No item with the specified selector is present within the bag.

MQRC_SELECTOR_NOT_SUPPORTED
Specified system selector not supported by the MQAI.

MQRC_SELECTOR_NOT_UNIQUE
MQIND_NONE specified when more than one occurrence of the specified selector is present within the bag.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_SELECTOR_WRONG_TYPE
Data item has wrong data type for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

C language invocation for mqInquireBag

```
mqInquireBag (Bag, Selector, ItemIndex, &ItemValue, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   Bag;           /* Bag handle */
MQLONG   Selector;      /* Selector */
MQLONG   ItemIndex;     /* Index of the data item to be inquired */
MQHBAG   ItemValue;     /* Value of item in the bag */
MQLONG   CompCode;      /* Completion code */
MQLONG   Reason;        /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqInquireBag

(Supported on Windows only.)

```
mqInquireBag (Bag, Selector, ItemIndex, ItemValue, CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag       As Long 'Bag handle'
Dim Selector  As Long 'Selector'
Dim ItemIndex As Long 'Index of the data item to be inquired'
Dim ItemValue As Long 'Value of item in the bag'
Dim CompCode  As Long 'Completion code'
Dim Reason    As Long 'Reason code qualifying CompCode'
```

mqInquireByteString

The mqInquireByteString call requests the value of a byte string data item that is present in the bag. The data item can be a user item or a system item.

Syntax for mqInquireByteString

mqInquireByteString *(Bag, Selector, ItemIndex, Bufferlength, Buffer, ByteStringLength, CompCode, Reason)*

Parameters for mqInquireByteString

***Bag* (MQHBAG) - input**
Handle of the bag to which the inquiry relates. The bag can be a user bag or a system bag.

***Selector* (MQLONG) - input**
Selector of the item to which the inquiry relates.

If the selector is less than zero (that is, a system selector), the selector must be one that is supported by the MQAI; MQRC_SELECTOR_NOT_SUPPORTED results if it is not.

The specified selector must be present in the bag; MQRC_SELECTOR_NOT_PRESENT results if it is not.

The data type of the item must be the same as the data type implied by the call; MQRC_SELECTOR_WRONG_TYPE results if it is not.

The following special values can be specified for *Selector*:

MQSEL_ANY_SELECTOR
The item to be inquired about is a user or system item identified by *ItemIndex*.

MQSEL_ANY_USER_SELECTOR
The item to be inquired about is a user item identified by *ItemIndex*.

MQSEL_ANY_SYSTEM_SELECTOR
The item to be inquired about is a system item identified by *ItemIndex*.

***ItemIndex* (MQLONG) - input**
Index of the data item to which the inquiry relates. The value must be zero or greater, or the special value MQIND_NONE. If the value is less than zero and not MQIND_NONE, MQRC_INDEX_ERROR results. If the item is not already present in the bag, MQRC_INDEX_NOT_PRESENT results. The following special value can be specified:

MQIND_NONE
This specifies that there must be one occurrence only of the selector in the bag. If there is more than one occurrence, MQRC_SELECTOR_NOT_UNIQUE results.

If MQSEL_ANY_SELECTOR is specified for the *Selector* parameter, *ItemIndex* is the index relative to the set of items that contains both user items and system items, and must be zero or greater.

If MQSEL_ANY_USER_SELECTOR is specified for the *Selector* parameter, *ItemIndex* is the index relative to the set of user items, and must be zero or greater.

If MQSEL_ANY_SYSTEM_SELECTOR is specified for *Selector*, *ItemIndex* is the index relative to the set of system items, and must be zero or greater.

If an explicit selector value is specified, *ItemIndex* is the index relative to the set of items that have that selector value, and can be MQIND_NONE, zero, or greater.

***BufferLength* (MQLONG) - input**
Length in bytes of the buffer to receive the byte string. Zero is a valid value.

***Buffer* (MQBYTE × *BufferLength*) - output**
Buffer to receive the byte string. The length is given by the *BufferLength* parameter. If zero is specified for *BufferLength*, the null pointer can be specified for the address of the *Buffer* parameter; in all other cases, a valid (nonnull) address must be specified for the *Buffer* parameter.

The string is padded with nulls to the length of the buffer. If the string is longer than the buffer, the string is truncated to fit; in this case *ByteStringLength* indicates the size of the buffer needed to accommodate the string without truncation.

***ByteStringLength* (MQLONG) - output**
The length in bytes of the string contained in the bag. If the *Buffer* parameter is too small, the length of the string returned is less than *ByteStringLength*.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error and warning conditions can be returned from the mqInquireByteString call:

MQRC_BUFFER_ERROR
Buffer parameter not valid (invalid parameter address or buffer not completely accessible).

MQRC_BUFFER_LENGTH_ERROR
Buffer length not valid.

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INDEX_ERROR
Index not valid (index negative and not MQIND_NONE, or MQIND_NONE specified with one of the MQSEL_ANY_xxx_SELECTOR values).

MQRC_INDEX_NOT_PRESENT
No item with the specified index is present within the bag for the selector given.

MQRC_SELECTOR_NOT_PRESENT
No item with the specified selector is present within the bag.

MQRC_SELECTOR_NOT_SUPPORTED
Specified system selector not supported by the MQAI.

MQRC_SELECTOR_NOT_UNIQUE
MQIND_NONE specified when more than one occurrence of the specified selector is present in the bag.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_SELECTOR_WRONG_TYPE
Data item has wrong data type for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

MQRC_STRING_LENGTH_ERROR
ByteStringLength parameter not valid (invalid parameter address).

MQRC_STRING_TRUNCATED
Data too long for output buffer and has been truncated.

C language invocation for mqInquireByteString

```
mqInquireByteString (Bag, Selector, ItemIndex,
BufferLength, Buffer, &StringLength, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   Bag;           /* Bag handle */
MQLONG   Selector;      /* Selector */
MQLONG   ItemIndex;     /* Item index */
MQLONG   BufferLength;  /* Buffer length */
PMQBYTE  Buffer;        /* Buffer to contain string */
MQLONG   ByteStringLength;  /* Length of byte string returned */
MQLONG   CompCode;      /* Completion code */
MQLONG   Reason;        /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqInquireByteString

(Supported on Windows only.)

```
mqInquireByteString Bag, Selector, ItemIndex,
BufferLength, Buffer, StringLength, CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag             As Long   'Bag handle'
Dim Selector        As Long   'Selector'
Dim ItemIndex       As Long   'Item index'
```

```
Dim BufferLength    As Long   'Buffer length'
Dim Buffer          As Byte 'Buffer to contain string'
Dim ByteStringLength As Long   'Length of byte string returned'
Dim CompCode        As Long   'Completion code'
Dim Reason          As Long   'Reason code qualifying CompCode'
```

mqInquireByteStringFilter

The mqInquireByteStringFilter call requests the value and operator of a byte string filter item that is present in the bag. The data item can be a user item or a system item.

Syntax for mqInquireByteStringFilter

mqInquireByteStringFilter ***(Bag, Selector, ItemIndex, Bufferlength, Buffer, ByteStringLength, Operator, CompCode, Reason)***

Parameters for mqInquireByteStringFilter

Bag **(MQHBAG) - input**
Handle of the bag to which the inquiry relates. The bag can be a user bag or a system bag.

Selector **(MQLONG) - input**
Selector of the item to which the inquiry relates.

If the selector is less than zero (that is, a system selector), the selector must be one that is supported by the MQAI; MQRC_SELECTOR_NOT_SUPPORTED results if it is not.

The specified selector must be present in the bag; MQRC_SELECTOR_NOT_PRESENT results if it is not.

The data type of the item must be the same as the data type implied by the call; MQRC_SELECTOR_WRONG_TYPE results if it is not.

The following special values can be specified for *Selector*:

MQSEL_ANY_SELECTOR
The item to be inquired about is a user or system item identified by *ItemIndex*.

MQSEL_ANY_USER_SELECTOR
The item to be inquired about is a user item identified by *ItemIndex*.

MQSEL_ANY_SYSTEM_SELECTOR
The item to be inquired about is a system item identified by *ItemIndex*.

ItemIndex **(MQLONG) - input**
Index of the data item to which the inquiry relates. The value must be zero or greater, or the special value MQIND_NONE. If the value is less than zero and not MQIND_NONE, MQRC_INDEX_ERROR results. If the item is not already present in the bag, MQRC_INDEX_NOT_PRESENT results. The following special value can be specified:

MQIND_NONE
This specifies that there must be one occurrence only of the selector in the bag. If there is more than one occurrence, MQRC_SELECTOR_NOT_UNIQUE results.

If MQSEL_ANY_SELECTOR is specified for the *Selector* parameter, *ItemIndex* is the index relative to the set of items that contains both user items and system items, and must be zero or greater.

If MQSEL_ANY_USER_SELECTOR is specified for the *Selector* parameter, *ItemIndex* is the index relative to the set of user items, and must be zero or greater.

If MQSEL_ANY_SYSTEM_SELECTOR is specified for *Selector*, *ItemIndex* is the index relative to the set of system items, and must be zero or greater.

If an explicit selector value is specified, *ItemIndex* is the index relative to the set of items that have that selector value, and can be MQIND_NONE, zero, or greater.

***BufferLength* (MQLONG) - input**
Length in bytes of the buffer to receive the condition byte string. Zero is a valid value.

***Buffer* (MQBYTE × *BufferLength*) - output**
Buffer to receive the condition byte string. The length is given by the *BufferLength* parameter. If zero is specified for *BufferLength*, the null pointer can be specified for the address of the *Buffer* parameter; in all other cases, a valid (nonnull) address must be specified for the *Buffer* parameter.

The string is padded with blanks to the length of the buffer; the string is not null-terminated. If the string is longer than the buffer, the string is truncated to fit; in this case *ByteStringLength* indicates the size of the buffer needed to accommodate the string without truncation.

***ByteStringLength* (MQLONG) - output**
The length in bytes of the condition string contained in the bag. If the *Buffer* parameter is too small, the length of the string returned is less than *StringLength*.

***Operator* (MQLONG) - output**
Byte string filter operator in the bag.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error and warning conditions can be returned from the mqInquireByteStringFilter call:

MQRC_BUFFER_ERROR
Buffer parameter not valid (invalid parameter address or buffer not completely accessible).

MQRC_BUFFER_LENGTH_ERROR
Buffer length not valid.

MQRC_FILTER_OPERATOR_ERROR
Filter operator not valid.

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INDEX_ERROR
Index not valid (index negative and not MQIND_NONE, or MQIND_NONE specified with one of the MQSEL_ANY_xxx_SELECTOR values).

MQRC_INDEX_NOT_PRESENT
No item with the specified index is present within the bag for the selector given.

MQRC_SELECTOR_NOT_PRESENT
No item with the specified selector is present within the bag.

MQRC_SELECTOR_NOT_SUPPORTED
Specified system selector not supported by the MQAI.

MQRC_SELECTOR_NOT_UNIQUE
MQIND_NONE specified when more than one occurrence of the specified selector is present in the bag.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_SELECTOR_WRONG_TYPE
Data item has wrong data type for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

MQRC_STRING_LENGTH_ERROR
ByteStringLength parameter not valid (invalid parameter address).

MQRC_STRING_TRUNCATED
Data too long for output buffer and has been truncated.

C language invocation for mqInquireByteStringFilter

```
mqInquireByteStringFilter (Bag, Selector, ItemIndex,
BufferLength, Buffer, &ByteStringLength, &Operator, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   Bag;           /* Bag handle */
MQLONG   Selector;      /* Selector */
MQLONG   ItemIndex;     /* Item index */
MQLONG   BufferLength;  /* Buffer length */
PMQBYTE  Buffer;        /* Buffer to contain string */
MQLONG   ByteStringLength;  /* Length of string returned */
MQLONG   Operator       /* Item operator */
PMQLONG  CompCode;      /* Completion code */
PMQLONG  Reason;        /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqInquireByteStringFilter

(Supported on Windows only.)

```
mqInquireByteStringFilter Bag, Selector, ItemIndex,
BufferLength, Buffer, ByteStringLength,
Operator, CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag             As Long   'Bag handle'
Dim Selector        As Long   'Selector'
Dim ItemIndex       As Long   'Item index'
Dim BufferLength    As Long   'Buffer length'
Dim Buffer          As String 'Buffer to contain string'
Dim ByteStringLength  As Long   'Length of byte string returned'
Dim Operator        As Long   'Operator'
Dim CompCode        As Long   'Completion code'
Dim Reason          As Long   'Reason code qualifying CompCode'
```

mqInquireInteger

The mqInquireInteger call requests the value of an integer data item that is present in the bag. The data item can be a user item or a system item.

Syntax for mqInquireInteger

mqInquireInteger *(Bag, Selector, ItemIndex, ItemValue, CompCode, Reason)*

Parameters for mqInquireInteger

***Bag* (MQHBAG) - input**
Handle of the bag to which the inquiry relates. The bag can be a user bag or a system bag.

***Selector* (MQLONG) - input**
Selector identifying the item to which the inquiry relates.

If the selector is less than zero (a system selector), the selector must be one that is supported by the MQAI; MQRC_SELECTOR_NOT_SUPPORTED results if it is not.

The specified selector must be present in the bag; MQRC_SELECTOR_NOT_PRESENT results if it is not.

The data type of the item must agree with the data type implied by the call; MQRC_SELECTOR_WRONG_TYPE results if it is not.

The following special values can be specified for *Selector*:

MQSEL_ANY_SELECTOR
The item to be inquired about is a user or system item identified by *ItemIndex*.

MQSEL_ANY_USER_SELECTOR
The item to be inquired about is a user item identified by *ItemIndex*.

MQSEL_ANY_SYSTEM_SELECTOR
The item to be inquired about is a system item identified by *ItemIndex*.

***ItemIndex* (MQLONG) - input**
Index of the data item to which the inquiry relates. The value must be zero or greater, or the special value MQIND_NONE. If the value is less than zero and is not MQIND_NONE, MQRC_INDEX_ERROR results. If the item is not already present in the bag, MQRC_INDEX_NOT_PRESENT results. The following special value can be specified:

MQIND_NONE
This specifies that there must be one occurrence only of the selector in the bag. If there is more than one occurrence, MQRC_SELECTOR_NOT_UNIQUE results.

If MQSEL_ANY_SELECTOR is specified for *Selector*, *ItemIndex* is the index relative to the set of items that contains both user items and system items, and must be zero or greater.

If MQSEL_ANY_USER_SELECTOR is specified for *Selector*, *ItemIndex* is the index relative to the set of user items, and must be zero or greater.

If MQSEL_ANY_SYSTEM_SELECTOR is specified for *Selector*, *ItemIndex* is the index relative to the set of system items, and must be zero or greater.

If an explicit selector value is specified, *ItemIndex* is the index relative to the set of items that have that selector value, and can be MQIND_NONE, zero, or greater.

***ItemValue* (MQLONG) - output**
The value of the item in the bag.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error conditions can be returned from the mqInquireInteger call:

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INDEX_ERROR
Index not valid (index negative and not MQIND_NONE, or MQIND_NONE specified with one of the MQSEL_ANY_xxx_SELECTOR values).

MQRC_INDEX_NOT_PRESENT
No item with the specified index is present within the bag for the selector given.

MQRC_ITEM_VALUE_ERROR
ItemValue parameter not valid (invalid parameter address).

MQRC_SELECTOR_NOT_PRESENT
No item with the specified selector is present within the bag.

MQRC_SELECTOR_NOT_SUPPORTED
Specified system selector not supported by the MQAI.

MQRC_SELECTOR_NOT_UNIQUE
MQIND_NONE specified when more than one occurrence of the specified selector is present in the bag.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_SELECTOR_WRONG_TYPE
Data item has wrong data type for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

C language invocation for mqInquireInteger

```
mqInquireInteger (Bag, Selector, ItemIndex, &ItemValue,
&CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   Bag;          /* Bag handle */
MQLONG   Selector;      /* Selector */
MQLONG   ItemIndex;     /* Item index */
MQLONG   ItemValue;     /* Item value */
MQLONG   CompCode;      /* Completion code */
MQLONG   Reason;        /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqInquireInteger

(Supported on Windows only.)

```
mqInquireInteger Bag, Selector, ItemIndex, ItemValue,
CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag       As Long 'Bag handle'
Dim Selector  As Long 'Selector'
Dim ItemIndex As Long 'Item index'
Dim ItemValue As Long 'Item value'
Dim CompCode  As Long 'Completion code'
Dim Reason    As Long 'Reason code qualifying CompCode'
```

mqInquireInteger64

The mqInquireInteger64 call requests the value of a 64-bit integer data item that is present in the bag. The data item can be a user item or a system item.

Syntax for mqInquireInteger64

mqInquireInteger64 *(Bag, Selector, ItemIndex, ItemValue, CompCode, Reason)*

Parameters for mqInquireInteger64

***Bag* (MQHBAG) - input**
Handle of the bag to which the inquiry relates. The bag can be a user bag or a system bag.

***Selector* (MQLONG) - input**
Selector identifying the item to which the inquiry relates.

If the selector is less than zero (a system selector), the selector must be one that is supported by the MQAI; MQRC_SELECTOR_NOT_SUPPORTED results if it is not.

The specified selector must be present in the bag; MQRC_SELECTOR_NOT_PRESENT results if it is not.

The data type of the item must agree with the data type implied by the call; MQRC_SELECTOR_WRONG_TYPE results if it is not.

The following special values can be specified for *Selector*:

MQSEL_ANY_SELECTOR
The item to be inquired about is a user or system item identified by *ItemIndex*.

MQSEL_ANY_USER_SELECTOR
The item to be inquired about is a user item identified by *ItemIndex*.

MQSEL_ANY_SYSTEM_SELECTOR
The item to be inquired about is a system item identified by *ItemIndex*.

***ItemIndex* (MQLONG) - input**
Index of the data item to which the inquiry relates. The value must be zero or greater, or the special value MQIND_NONE. If the value is less than zero and is not MQIND_NONE, MQRC_INDEX_ERROR results. If the item is not already present in the bag, MQRC_INDEX_NOT_PRESENT results. The following special value can be specified:

MQIND_NONE
This specifies that there must be one occurrence only of the selector in the bag. If there is more than one occurrence, MQRC_SELECTOR_NOT_UNIQUE results.

If MQSEL_ANY_SELECTOR is specified for *Selector*, *ItemIndex* is the index relative to the set of items that contains both user items and system items, and must be zero or greater.

If MQSEL_ANY_USER_SELECTOR is specified for *Selector*, *ItemIndex* is the index relative to the set of user items, and must be zero or greater.

If MQSEL_ANY_SYSTEM_SELECTOR is specified for *Selector*, *ItemIndex* is the index relative to the set of system items, and must be zero or greater.

If an explicit selector value is specified, *ItemIndex* is the index relative to the set of items that have that selector value, and can be MQIND_NONE, zero, or greater.

***ItemValue* (MQINT64) - output**
The value of the item in the bag.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error conditions can be returned from the mqInquireInteger64 call:

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INDEX_ERROR
Index not valid (index negative and not MQIND_NONE, or MQIND_NONE specified with one of the MQSEL_ANY_xxx_SELECTOR values).

MQRC_INDEX_NOT_PRESENT
No item with the specified index is present within the bag for the selector given.

MQRC_ITEM_VALUE_ERROR
ItemValue parameter not valid (invalid parameter address).

MQRC_SELECTOR_NOT_PRESENT
No item with the specified selector is present within the bag.

MQRC_SELECTOR_NOT_SUPPORTED
Specified system selector not supported by the MQAI.

MQRC_SELECTOR_NOT_UNIQUE
MQIND_NONE specified when more than one occurrence of the specified selector is present in the bag.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_SELECTOR_WRONG_TYPE
Data item has wrong data type for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

C language invocation for mqInquireInteger64

```
mqInquireInteger64 (Bag, Selector, ItemIndex, &ItemValue,
&CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   Bag;          /* Bag handle */
MQLONG   Selector;      /* Selector */
MQLONG   ItemIndex;     /* Item index */
MQINT64  ItemValue;     /* Item value */
MQLONG   CompCode;      /* Completion code */
MQLONG   Reason;        /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqInquireInteger64

(Supported on Windows only.)

```
mqInquireInteger64 Bag, Selector, ItemIndex, ItemValue,
CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag       As Long 'Bag handle'
Dim Selector  As Long 'Selector'
```

```
Dim ItemIndex As Long 'Item index'
Dim ItemValue As Long 'Item value'
Dim CompCode  As Long 'Completion code'
Dim Reason    As Long 'Reason code qualifying CompCode'
```

mqInquireIntegerFilter

The mqInquireIntegerFilter call requests the value and operator of an integer filter item that is present in the bag. The data item can be a user item or a system item.

Syntax for mqInquireIntegerFilter

mqInquireIntegerFilter *(Bag, Selector, ItemIndex, ItemValue, Operator, CompCode, Reason)*

Parameters for mqInquireIntegerFilter

***Bag* (MQHBAG) - input**
Handle of the bag to which the inquiry relates. The bag can be a user bag or a system bag.

***Selector* (MQLONG) - input**
Selector identifying the item to which the inquiry relates.

If the selector is less than zero (a system selector), the selector must be one that is supported by the MQAI; MQRC_SELECTOR_NOT_SUPPORTED results if it is not.

The specified selector must be present in the bag; MQRC_SELECTOR_NOT_PRESENT results if it is not.

The data type of the item must agree with the data type implied by the call; MQRC_SELECTOR_WRONG_TYPE results if it is not.

The following special values can be specified for *Selector*:

MQSEL_ANY_SELECTOR
The item to be inquired about is a user or system item identified by *ItemIndex*.

MQSEL_ANY_USER_SELECTOR
The item to be inquired about is a user item identified by *ItemIndex*.

MQSEL_ANY_SYSTEM_SELECTOR
The item to be inquired about is a system item identified by *ItemIndex*.

***ItemIndex* (MQLONG) - input**
Index of the data item to which the inquiry relates. The value must be zero or greater, or the special value MQIND_NONE. If the value is less than zero and is not MQIND_NONE, MQRC_INDEX_ERROR results. If the item is not already present in the bag, MQRC_INDEX_NOT_PRESENT results. The following special value can be specified:

MQIND_NONE
This specifies that there must be one occurrence only of the selector in the bag. If there is more than one occurrence, MQRC_SELECTOR_NOT_UNIQUE results.

If MQSEL_ANY_SELECTOR is specified for *Selector*, *ItemIndex* is the index relative to the set of items that contains both user items and system items, and must be zero or greater.

If MQSEL_ANY_USER_SELECTOR is specified for *Selector*, *ItemIndex* is the index relative to the set of user items, and must be zero or greater.

If MQSEL_ANY_SYSTEM_SELECTOR is specified for *Selector*, *ItemIndex* is the index relative to the set of system items, and must be zero or greater.

If an explicit selector value is specified, *ItemIndex* is the index relative to the set of items that have that selector value, and can be MQIND_NONE, zero, or greater.

***ItemValue* (MQLONG) - output**
The condition value.

***Operator* (MQLONG) - output**
Integer filter operator in the bag.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error conditions can be returned from the mqInquireIntegerFilter call:

MQRC_FILTER_OPERATOR_ERROR
Filter operator not valid.

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INDEX_ERROR
Index not valid (index negative and not MQIND_NONE, or MQIND_NONE specified with one of the MQSEL_ANY_xxx_SELECTOR values).

MQRC_INDEX_NOT_PRESENT
No item with the specified index is present within the bag for the selector given.

MQRC_ITEM_VALUE_ERROR
ItemValue parameter not valid (invalid parameter address).

MQRC_SELECTOR_NOT_PRESENT
No item with the specified selector is present within the bag.

MQRC_SELECTOR_NOT_SUPPORTED
Specified system selector not supported by the MQAI.

MQRC_SELECTOR_NOT_UNIQUE
MQIND_NONE specified when more than one occurrence of the specified selector is present in the bag.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_SELECTOR_WRONG_TYPE
Data item has wrong data type for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

C language invocation for mqInquireIntegerFilter

```
mqInquireIntegerFilter (Bag, Selector, ItemIndex, &ItemValue,
&Operator, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   Bag;          /* Bag handle */
MQLONG   Selector;      /* Selector */
MQLONG   ItemIndex;     /* Item index */
MQLONG   ItemValue;     /* Item value */
MQLONG   Operator;      /* Item operator */
```

```
MQLONG   CompCode;      /* Completion code */
MQLONG   Reason;        /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqInquireIntegerFilter

(Supported on Windows only.)

```
mqInquireIntegerFilter Bag, Selector, ItemIndex, ItemValue,
Operator, CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag       As Long 'Bag handle'
Dim Selector  As Long 'Selector'
Dim ItemIndex As Long 'Item index'
Dim ItemValue As Long 'Item value'
Dim Operator  As Long 'Item operator'
Dim CompCode  As Long 'Completion code'
Dim Reason    As Long 'Reason code qualifying CompCode'
```

mqInquireItemInfo

The mqInquireItemInfo call returns information about a specified item in a bag. The data item can be a user item or a system item.

Syntax for mqInquireItemInfo

mqInquireItemInfo *(Bag, Selector, ItemIndex, ItemType, OutSelector, CompCode, Reason)*

Parameters for mqInquireItemInfo

***Bag* (MQHBAG) - input**
Handle of the bag to be inquired.

The bag can be a user bag or a system bag.

***Selector* (MQLONG) - input**
Selector identifying the item to be inquired.

If the selector is less than zero (that is, a system selector), the selector must be one that is supported by the MQAI; MQRC_SELECTOR_NOT_SUPPORTED results if it is not.

The specified selector must be present in the bag; MQRC_SELECTOR_NOT_PRESENT results if it is not.

The following special values can be specified for `Selector`:

MQSEL_ANY_SELECTOR
The item to be inquired is a user or system item identified by the `ItemIndex` parameter.

MQSEL_ANY_USER_SELECTOR
The item to be inquired is a user item identified by the `ItemIndex` parameter.

MQSEL_ANY_SYSTEM_SELECTOR
The item to be inquired is a system item identified by the `ItemIndex` parameter.

***ItemIndex* (MQLONG) - input**
Index of the data item to be inquired.

The item must be present within the bag; MQRC_INDEX_NOT_PRESENT results if it is not. The value must be zero or greater, or the following special value:

MQIND_NONE
This specifies that there must be one occurrence only of the selector in the bag. If there is more than one occurrence, MQRC_SELECTOR_NOT_UNIQUE results.

If MQSEL_ANY_SELECTOR is specified for the `Selector` parameter, the `ItemIndex` parameter is the index relative to the set of items that contains both user items and system items, and must be zero or greater.

If MQSEL_ANY_USER_SELECTOR is specified for the `Selector` parameter, the `ItemIndex` parameter is the index relative to the set of system items, and must be zero or greater.

If MQSEL_ANY_SYSTEM_SELECTOR is specified for the `Selector` parameter, the `ItemIndex` parameter is the index relative to the set of system items, and must be zero or greater. If an explicit selector value is specified, the `ItemIndex` parameter is the index relative to the set of items that have that selector value and can be MQIND_NONE, zero, or greater.

***ItemType* (MQLONG) - output**
The data type of the specified data item.

The following can be returned:

MQITEM_BAG
Bag handle item.

MQITEM_BYTE_STRING
Byte string.

MQITEM_INTEGER
Integer item.

MQITEM_INTEGER_FILTER
Integer filter.

MQITEM_INTEGER64
64-bit integer item.

MQITEM_STRING
Character-string item.

MQITEM_STRING_FILTER
String filter.

***OutSelector* (MQLONG) - output**
Selector of the specified data item.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error conditions can be returned from the mqInquireItemInfo call:

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INDEX_ERROR
MQIND_NONE specified with one of the MQSEL_ANY_XXX_SELECTOR values.

MQRC_INDEX_NOT_PRESENT
No item with the specified index is present within the bag for the selector given.

MQRC_ITEM_TYPE_ERROR
`ItemType` parameter not valid (invalid parameter address).

MQRC_OUT_SELECTOR_ERROR
`OutSelector` parameter not valid (invalid parameter address).

MQRC_SELECTOR_NOT_PRESENT
No item with the specified selector is present within the bag.

MQRC_SELECTOR_NOT_SUPPORTED
Specified system selector not supported by the MQAI.

MQRC_SELECTOR_NOT_UNIQUE
MQIND_NONE specified when more than one occurrence of the specified selector is present in the bag.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

C language invocation for mqInquireItemInfo

```
mqInquireItemInfo (Bag, Selector, ItemIndex, &OutSelector, &ItemType,
&CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   Bag;           /* Bag handle */
MQLONG   Selector;      /* Selector identifying item */
MQLONG   ItemIndex;     /* Index of data item */
MQLONG   OutSelector;   /* Selector of specified data item */
MQLONG   ItemType;      /* Data type of data item */
MQLONG   CompCode;      /* Completion code */
MQLONG   Reason;        /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqInquireItemInfo

(Supported on Windows only.)

```
mqInquireItemInfo Bag, Selector, ItemIndex, OutSelector, ItemType,
CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag         As Long 'Bag handle'
Dim Selector    As Long 'Selector identifying item'
Dim ItemIndex   As Long 'Index of data item'
Dim OutSelector As Long 'Selector of specified data item'
Dim ItemType    As Long 'Data type of data item'
Dim CompCode    As Long 'Completion code'
Dim Reason      As Long 'Reason code qualifying CompCode'
```

mqInquireString

The mqInquireString call requests the value of a character data item that is present in the bag. The data item can be a user item or a system item.

Syntax for mqInquireString

mqInquireString *(Bag, Selector, ItemIndex, Bufferlength, Buffer, StringLength, CodedCharSetId, CompCode, Reason)*

Parameters for mqInquireString

***Bag* (MQHBAG) - input**
Handle of the bag to which the inquiry relates. The bag can be a user bag or a system bag.

***Selector* (MQLONG) - input**
Selector of the item to which the inquiry relates.

If the selector is less than zero (that is, a system selector), the selector must be one that is supported by the MQAI; MQRC_SELECTOR_NOT_SUPPORTED results if it is not.

The specified selector must be present in the bag; MQRC_SELECTOR_NOT_PRESENT results if it is not.

The data type of the item must be the same as the data type implied by the call; MQRC_SELECTOR_WRONG_TYPE results if it is not.

The following special values can be specified for *Selector*:

MQSEL_ANY_SELECTOR
The item to be inquired about is a user or system item identified by *ItemIndex*.

MQSEL_ANY_USER_SELECTOR
The item to be inquired about is a user item identified by *ItemIndex*.

MQSEL_ANY_SYSTEM_SELECTOR
The item to be inquired about is a system item identified by *ItemIndex*.

***ItemIndex* (MQLONG) - input**
Index of the data item to which the inquiry relates. The value must be zero or greater, or the special value MQIND_NONE. If the value is less than zero and not MQIND_NONE, MQRC_INDEX_ERROR results. If the item is not already present in the bag, MQRC_INDEX_NOT_PRESENT results. The following special value can be specified:

MQIND_NONE
This specifies that there must be one occurrence only of the selector in the bag. If there is more than one occurrence, MQRC_SELECTOR_NOT_UNIQUE results.

If MQSEL_ANY_SELECTOR is specified for the *Selector* parameter, *ItemIndex* is the index relative to the set of items that contains both user items and system items, and must be zero or greater.

If MQSEL_ANY_USER_SELECTOR is specified for the *Selector* parameter, *ItemIndex* is the index relative to the set of user items, and must be zero or greater.

If MQSEL_ANY_SYSTEM_SELECTOR is specified for *Selector*, *ItemIndex* is the index relative to the set of system items, and must be zero or greater.

If an explicit selector value is specified, *ItemIndex* is the index relative to the set of items that have that selector value, and can be MQIND_NONE, zero, or greater.

***BufferLength* (MQLONG) - input**
Length in bytes of the buffer to receive the string. Zero is a valid value.

***Buffer* (MQCHAR × *BufferLength*) - output**
Buffer to receive the character string. The length is given by the *BufferLength* parameter. If zero is specified for *BufferLength*, the null pointer can be specified for the address of the *Buffer* parameter; in all other cases, a valid (nonnull) address must be specified for the *Buffer* parameter.

The string is padded with blanks to the length of the buffer; the string is not null-terminated. If the string is longer than the buffer, the string is truncated to fit; in this case *StringLength* indicates the size of the buffer needed to accommodate the string without truncation.

***StringLength* (MQLONG) - output**
The length in bytes of the string contained in the bag. If the *Buffer* parameter is too small, the length of the string returned is less than *StringLength*.

***CodedCharSetId* (MQLONG) - output**
The coded character set identifier for the character data in the string. This parameter can be set to a null pointer if not required.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error and warning conditions can be returned from the mqInquireString call:

MQRC_BUFFER_ERROR
Buffer parameter not valid (invalid parameter address or buffer not completely accessible).

MQRC_BUFFER_LENGTH_ERROR
Buffer length not valid.

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INDEX_ERROR
Index not valid (index negative and not MQIND_NONE, or MQIND_NONE specified with one of the MQSEL_ANY_xxx_SELECTOR values).

MQRC_INDEX_NOT_PRESENT
No item with the specified index is present within the bag for the selector given.

MQRC_SELECTOR_NOT_PRESENT
No item with the specified selector is present within the bag.

MQRC_SELECTOR_NOT_SUPPORTED
Specified system selector not supported by the MQAI.

MQRC_SELECTOR_NOT_UNIQUE
MQIND_NONE specified when more than one occurrence of the specified selector is present in the bag.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_SELECTOR_WRONG_TYPE
Data item has wrong data type for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

MQRC_STRING_LENGTH_ERROR
StringLength parameter not valid (invalid parameter address).

MQRC_STRING_TRUNCATED
Data too long for output buffer and has been truncated.

C language invocation for mqInquireString

```
mqInquireString (Bag, Selector, ItemIndex,
```

```
BufferLength, Buffer, &StringLength, &CodedCharSetId,
&CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   Bag;           /* Bag handle */
MQLONG   Selector;      /* Selector */
MQLONG   ItemIndex;     /* Item index */
MQLONG   BufferLength;  /* Buffer length */
PMQCHAR  Buffer;        /* Buffer to contain string */
MQLONG   StringLength;  /* Length of string returned */
MQLONG   CodedCharSetId /* Coded Character Set ID */
MQLONG   CompCode;      /* Completion code */
MQLONG   Reason;        /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqInquireString

(Supported on Windows only.)

```
mqInquireString Bag, Selector, ItemIndex,
BufferLength, Buffer, StringLength, CodedCharSetId,
CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag             As Long   'Bag handle'
Dim Selector        As Long   'Selector'
Dim ItemIndex       As Long   'Item index'
Dim BufferLength    As Long   'Buffer length'
Dim Buffer          As String 'Buffer to contain string'
Dim StringLength    As Long   'Length of string returned'
Dim CodedCharSetId  As Long   'Coded Character Set ID'
Dim CompCode        As Long   'Completion code'
Dim Reason          As Long   'Reason code qualifying CompCode'
```

mqInquireStringFilter

The mqInquireStringFilter call requests the value and operator of a string filter item that is present in the bag. The data item can be a user item or a system item.

Syntax for mqInquireStringFilter

mqInquireStringFilter ***(Bag, Selector, ItemIndex, Bufferlength, Buffer, StringLength, CodedCharSetId, Operator, CompCode, Reason)***

Parameters for mqInquireStringFilter

Bag **(MQHBAG) - input**
Handle of the bag to which the inquiry relates. The bag can be a user bag or a system bag.

Selector **(MQLONG) - input**
Selector of the item to which the inquiry relates.

If the selector is less than zero (that is, a system selector), the selector must be one that is supported by the MQAI; MQRC_SELECTOR_NOT_SUPPORTED results if it is not.

The specified selector must be present in the bag; MQRC_SELECTOR_NOT_PRESENT results if it is not.

The data type of the item must be the same as the data type implied by the call; MQRC_SELECTOR_WRONG_TYPE results if it is not.

The following special values can be specified for *Selector*:

MQSEL_ANY_SELECTOR
The item to be inquired about is a user or system item identified by *ItemIndex*.

MQSEL_ANY_USER_SELECTOR
The item to be inquired about is a user item identified by *ItemIndex*.

MQSEL_ANY_SYSTEM_SELECTOR
The item to be inquired about is a system item identified by *ItemIndex*.

***ItemIndex* (MQLONG) - input**
Index of the data item to which the inquiry relates. The value must be zero or greater, or the special value MQIND_NONE. If the value is less than zero and not MQIND_NONE, MQRC_INDEX_ERROR results. If the item is not already present in the bag, MQRC_INDEX_NOT_PRESENT results. The following special value can be specified:

MQIND_NONE
This specifies that there must be one occurrence only of the selector in the bag. If there is more than one occurrence, MQRC_SELECTOR_NOT_UNIQUE results.

If MQSEL_ANY_SELECTOR is specified for the *Selector* parameter, *ItemIndex* is the index relative to the set of items that contains both user items and system items, and must be zero or greater.

If MQSEL_ANY_USER_SELECTOR is specified for the *Selector* parameter, *ItemIndex* is the index relative to the set of user items, and must be zero or greater.

If MQSEL_ANY_SYSTEM_SELECTOR is specified for *Selector*, *ItemIndex* is the index relative to the set of system items, and must be zero or greater.

If an explicit selector value is specified, *ItemIndex* is the index relative to the set of items that have that selector value, and can be MQIND_NONE, zero, or greater.

***BufferLength* (MQLONG) - input**
Length in bytes of the buffer to receive the condition string. Zero is a valid value.

***Buffer* (MQCHAR × *BufferLength*) - output**
Buffer to receive the character condition string. The length is given by the *BufferLength* parameter. If zero is specified for *BufferLength*, the null pointer can be specified for the address of the *Buffer* parameter; in all other cases, a valid (nonnull) address must be specified for the *Buffer* parameter.

The string is padded with blanks to the length of the buffer; the string is not null-terminated. If the string is longer than the buffer, the string is truncated to fit; in this case *StringLength* indicates the size of the buffer needed to accommodate the string without truncation.

***StringLength* (MQLONG) - output**
The length in bytes of the condition string contained in the bag. If the *Buffer* parameter is too small, the length of the string returned is less than *StringLength*.

***CodedCharSetId* (MQLONG) - output**
The coded character set identifier for the character data in the string. This parameter can be set to a null pointer if not required.

***Operator* (MQLONG) - output**
String filter operator in the bag.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error and warning conditions can be returned from the mqInquireStringFilter call:

MQRC_BUFFER_ERROR
Buffer parameter not valid (invalid parameter address or buffer not completely accessible).

MQRC_BUFFER_LENGTH_ERROR
Buffer length not valid.

MQRC_FILTER_OPERATOR_ERROR
Filter operator not valid.

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INDEX_ERROR
Index not valid (index negative and not MQIND_NONE, or MQIND_NONE specified with one of the MQSEL_ANY_xxx_SELECTOR values).

MQRC_INDEX_NOT_PRESENT
No item with the specified index is present within the bag for the selector given.

MQRC_SELECTOR_NOT_PRESENT
No item with the specified selector is present within the bag.

MQRC_SELECTOR_NOT_SUPPORTED
Specified system selector not supported by the MQAI.

MQRC_SELECTOR_NOT_UNIQUE
MQIND_NONE specified when more than one occurrence of the specified selector is present in the bag.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_SELECTOR_WRONG_TYPE
Data item has wrong data type for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

MQRC_STRING_LENGTH_ERROR
StringLength parameter not valid (invalid parameter address).

MQRC_STRING_TRUNCATED
Data too long for output buffer and has been truncated.

C language invocation for mqInquireStringFilter

```
mqInquireStringFilter (Bag, Selector, ItemIndex,
BufferLength, Buffer, &StringLength, &CodedCharSetId,
&Operator, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   Bag;           /* Bag handle */
MQLONG   Selector;      /* Selector */
MQLONG   ItemIndex;     /* Item index */
MQLONG   BufferLength;  /* Buffer length */
PMQCHAR  Buffer;        /* Buffer to contain string */
MQLONG   StringLength;  /* Length of string returned */
MQLONG   CodedCharSetId /* Coded Character Set ID */
MQLONG   Operator       /* Item operator */
```

```
MQLONG   CompCode;      /* Completion code */
MQLONG   Reason;        /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqInquireStringFilter

(Supported on Windows only.)

```
mqInquireStringFilter Bag, Selector, ItemIndex,
BufferLength, Buffer, StringLength, CodedCharSetId,
Operator, CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag             As Long   'Bag handle'
Dim Selector        As Long   'Selector'
Dim ItemIndex       As Long   'Item index'
Dim BufferLength    As Long   'Buffer length'
Dim Buffer          As String 'Buffer to contain string'
Dim StringLength    As Long   'Length of string returned'
Dim CodedCharSetId  As Long   'Coded Character Set ID'
Dim Operator        As Long   'Item operator'
Dim CompCode        As Long   'Completion code'
Dim Reason          As Long   'Reason code qualifying CompCode'
```

mqPad

The mqPad call pads a null-terminated string with blanks.

Syntax for mqPad

mqPad *(String, BufferLength, Buffer, CompCode, Reason)*

Parameters for mqPad

***String* (PMQCHAR) - input**
Null-terminated string. The null pointer is valid for the address of the *String* parameter, and denotes a string of zero length.

***BufferLength* (MQLONG) - input**
Length in bytes of the buffer to receive the string padded with blanks. Must be zero or greater.

***Buffer* (MQCHAR × *BufferLength*) - output**
Buffer to receive the blank-padded string. The length is given by the *BufferLength* parameter. If zero is specified for *BufferLength*, the null pointer can be specified for the address of the *Buffer* parameter; in all other cases, a valid (nonnull) address must be specified for the *Buffer* parameter.

If the number of characters preceding the first null in the *String* parameter is greater than the *BufferLength* parameter, the excess characters are omitted and MQRC_DATA_TRUNCATED results.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error and warning conditions can be returned from the mqPad call:

MQRC_BUFFER_ERROR
Buffer parameter not valid (invalid parameter address or buffer not completely accessible).

MQRC_BUFFER_LENGTH_ERROR
Buffer length not valid.

MQRC_STRING_ERROR
String parameter not valid (invalid parameter address or buffer not completely accessible).

MQRC_STRING_TRUNCATED
Data too long for output buffer and has been truncated.

Usage notes for mqPad

1. If the buffer pointers are the same, the padding is done in place. If not, at most *BufferLength* characters are copied into the second buffer; any space remaining, including the null-termination character, is overwritten with spaces.
2. If the *String* and *Buffer* parameters partially overlap, the result is undefined.

C language invocation for mqPad

```
mqPad (String, BufferLength, Buffer, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQCHAR   String;           /* String to be padded */
MQLONG   BufferLength;     /* Buffer length */
PMQCHAR  Buffer            /* Buffer to contain padded string */
MQLONG   CompCode;         /* Completion code */
MQLONG   Reason;           /* Reason code qualifying CompCode */
```

Note: This call is not supported in Visual Basic.

mqPutBag

The mqPutBag call converts the contents of the specified bag into a PCF message and sends the message to the specified queue. The contents of the bag are unchanged after the call.

Syntax for mqPutBag

mqPutBag *(Hconn, Hobj, MsgDesc, PutMsgOpts, Bag, CompCode, Reason)*

Parameters for mqPutBag

***Hconn* (MQHCONN) - input**
MQI connection handle.

***Hobj* (MQHOBJ) - input**
Object handle of the queue on which the message is to be placed. This handle was returned by a preceding MQOPEN call issued by the application. The queue must be open for output.

***MsgDesc* (MQMD) - input/output**
Message descriptor. (For more information, see MQMD - Message descriptor .)

If the *Format* field has a value other than MQFMT_ADMIN, MQFMT_EVENT, or MQFMT_PCF, MQRC_FORMAT_NOT_SUPPORTED results.

If the *Encoding* field has a value other than MQENC_NATIVE, MQRC_ENCODING_NOT_SUPPORTED results.

***PutMsgOpts* (MQPMO) - input/output**
Put-message options. (For more information, see MQPMO - Put-message options .)

***Bag* (MQHBAG) - input**
Handle of the data bag to be converted to a message.

If the bag contains an administration message, and mqAddInquiry was used to insert values into the bag, the value of the MQIASY_COMMAND data item must be an INQUIRE command recognized by the MQAI; MQRC_INQUIRY_COMMAND_ERROR results if it is not.

If the bag contains nested system bags, MQRC_NESTED_BAG_NOT_SUPPORTED results.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*. The following reason codes indicating error and warning conditions can be returned from the mqPutBag call:

MQRC_*
Anything from the MQPUT call or bag manipulation.

MQRC_BAG_WRONG_TYPE
Input data bag is a group bag.

MQRC_ENCODING_NOT_SUPPORTED
Encoding not supported (value in *Encoding* field in MQMD must be MQENC_NATIVE).

MQRC_FORMAT_NOT_SUPPORTED
Format not supported (name in *Format* field in MQMD must be MQFMT_ADMIN, MQFMT_EVENT, or MQFMT_PCF).

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INQUIRY_COMMAND_ERROR
mqAddInquiry call used with a command code that is not a recognized INQUIRE command.

MQRC_NESTED_BAG_NOT_SUPPORTED
Input data bag contains one or more nested system bags.

MQRC_PARAMETER_MISSING
Administration message requires a parameter that is not present in the bag. This reason code occurs for bags created with the MQCBO_ADMIN_BAG or MQCBO_REORDER_AS_REQUIRED options only.

MQRC_SELECTOR_WRONG_TYPE
mqAddString or mqSetString was used to add the MQIACF_INQUIRY selector to the bag.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

C language invocation for mqPutBag

```
mqPutBag (HConn, HObj, &MsgDesc, &PutMsgOpts, Bag,
&CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHCONN  HConn;         /* MQI connection handle */
MQHOBJ   HObj;          /* Object handle */
MQMD     MsgDesc;       /* Message descriptor */
```

```
MQPMO    PutMsgOpts;    /* Put-message options */
MQHBAG   Bag;           /* Bag handle */
MQLONG   CompCode;      /* Completion code */
MQLONG   Reason;        /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqPutBag

(Supported on Windows only.)

```
mqPutBag (HConn, HObj, MsgDesc, PutMsgOpts, Bag,
CompCode, Reason);
```

Declare the parameters as follows:

```
Dim HConn      As Long  'MQI connection handle'
Dim HObj       As Long  'Object handle'
Dim MsgDesc    As MQMD  'Message descriptor'
Dim PutMsgOpts As MQPMO 'Put-message options'
Dim Bag        As Long  'Bag handle'
Dim CompCode   As Long  'Completion code'
Dim Reason     As Long  'Reason code qualifying CompCode'
```

mqSetByteString

The mqSetByteString call either modifies a byte string data item that is already present in the bag, or deletes all existing occurrences of the specified selector and adds a new occurrence at the end of the bag. The data item is usually a user item, but certain system-data items can also be modified.

Syntax for mqSetByteString

mqSetByteString *(Bag, Selector, ItemIndex, Bufferlength, Buffer, CompCode, Reason)*

Parameters for mqSetByteString

***Bag* (MQHBAG) - input**
Handle of the bag to be set. This must be the handle of a bag created by the user, not the handle of a system bag; MQRC_SYSTEM_BAG_NOT_ALTERABLE results if you specify the handle of a system bag.

***Selector* (MQLONG) - input**
Selector of the item to be modified.

If the selector is less than zero (that is, a system selector), the selector must be one that is supported by the MQAI; MQRC_SELECTOR_NOT_SUPPORTED results if it is not.

If the selector is a supported system selector, but is one that is read only, MQRC_SYSTEM_ITEM_NOT_ALTERABLE results.

If the selector is an alterable system selector, but is always a single-instance selector and the application attempts to create a second instance in the bag, MQRC_MULTIPLE_INSTANCE_ERROR results.

If the selector is zero or greater (that is, a user selector), and the bag was created with the MQCBO_CHECK_SELECTORS option or as an administration bag (MQCBO_ADMIN_BAG), the selector must be in the range MQBA_FIRST through MQBA_LAST; MQRC_SELECTOR_OUT_OF_RANGE results if it is not. If MQCBO_CHECK_SELECTORS was not specified, the selector can be any value zero or greater.

If MQIND_ALL is *not* specified for the *ItemIndex* parameter, the specified selector must already be present in the bag; MQRC_SELECTOR_NOT_PRESENT results if it is not.

If MQIND_ALL is *not* specified for the *ItemIndex* parameter, the data type of the item must be the same as the data type implied by the call; MQRC_SELECTOR_WRONG_TYPE results if it is not.

***ItemIndex* (MQLONG) - input**
This identifies which occurrence of the item with the specified selector is to be modified. The value must be zero or greater, or one of the special values described in this topic; if it is none of these, MQRC_INDEX_ERROR results.

Zero or greater
The item with the specified index must already be present in the bag; MQRC_INDEX_NOT_PRESENT results if it is not. The index is counted relative to the items in the bag that have the specified selector. For example, if there are five items in the bag with the specified selector, the valid values for *ItemIndex* are 0 through 4.

MQIND_NONE
This specifies that there must be only one occurrence of the specified selector in the bag. If there is more than one occurrence, MQRC_SELECTOR_NOT_UNIQUE results.

MQIND_ALL
This specifies that all existing occurrences of the specified selector (if any) are to be deleted from the bag, and a new occurrence of the selector created at the end of the bag.

***BufferLength* (MQLONG) - input**
The length in bytes of the byte string contained in the *Buffer* parameter. The value must be zero or greater.

***Buffer* (MQBYTE × *BufferLength*) - input**
Buffer containing the byte string. The length is given by the *BufferLength* parameter. If zero is specified for *BufferLength*, the null pointer can be specified for the address of the *Buffer* parameter; in all other cases, a valid (nonnull) address must be specified for the *Buffer* parameter.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error conditions can be returned from the mqSetByteString call:

MQRC_BUFFER_ERROR
Buffer parameter not valid (invalid parameter address or buffer not completely accessible).

MQRC_BUFFER_LENGTH_ERROR
Buffer length not valid.

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INDEX_ERROR
Index not valid (index negative and not MQIND_NONE or MQIND_ALL).

MQRC_INDEX_NOT_PRESENT
No item with the specified index is present within the bag for the selector given.

MQRC_MULTIPLE_INSTANCE_ERROR
Multiple instances of system selector not valid.

MQRC_SELECTOR_NOT_PRESENT
No item with the specified selector is present within the bag.

MQRC_SELECTOR_NOT_SUPPORTED
Specified system selector not supported by the MQAI.

MQRC_SELECTOR_NOT_UNIQUE
MQIND_NONE specified when more than one occurrence of the specified selector is present in the bag.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_SELECTOR_WRONG_TYPE
Data item has wrong data type for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

MQRC_SYSTEM_BAG_NOT_ALTERABLE
System bag cannot be altered or deleted.

MQRC_SYSTEM_ITEM_NOT_ALTERABLE
System item is read-only and cannot be altered.

C language invocation for mqSetByteString

```
mqSetByteString (Bag, Selector, ItemIndex, BufferLength, Buffer,
&CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   Bag;           /* Bag handle */
MQLONG   Selector;      /* Selector */
MQLONG   ItemIndex;     /* Item index */
MQLONG   BufferLength;  /* Buffer length */
PMQBYTE  Buffer;        /* Buffer containing string */
MQLONG  CompCode;       /* Completion code */
MQLONG  Reason;         /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqSetByteString

(Supported on Windows only.)

```
mqSetByteString Bag, Selector, ItemIndex, BufferLength, Buffer,
CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag          As Long   'Bag handle'
Dim Selector     As Long   'Selector'
Dim ItemIndex    As Long   'Item index'
Dim BufferLength As Long   'Buffer length'
Dim Buffer       As Byte 'Buffer containing string'
Dim CompCode     As Long   'Completion code'
Dim Reason       As Long   'Reason code qualifying CompCode'
```

mqSetByteStringFilter

The mqSetByteStringFilter call either modifies a byte string filter item that is already present in the bag, or deletes all existing occurrences of the specified selector and adds a new occurrence at the end of the bag. The data item is usually a user item, but certain system-data items can also be modified.

Syntax for mqSetByteStringFilter

mqSetByteStringFilter ***(Bag, Selector, ItemIndex, Bufferlength, Buffer, Operator, CompCode, Reason)***

Parameters for mqSetByteStringFilter

***Bag* (MQHBAG) - input**
Handle of the bag to be set. This must be the handle of a bag created by the user, not the handle of a system bag; MQRC_SYSTEM_BAG_NOT_ALTERABLE results if you specify the handle of a system bag.

***Selector* (MQLONG) - input**
Selector of the item to be modified.

If the selector is less than zero (that is, a system selector), the selector must be one that is supported by the MQAI; MQRC_SELECTOR_NOT_SUPPORTED results if it is not.

If the selector is a supported system selector, but is one that is read only, MQRC_SYSTEM_ITEM_NOT_ALTERABLE results.

If the selector is an alterable system selector, but is always a single-instance selector and the application attempts to create a second instance in the bag, MQRC_MULTIPLE_INSTANCE_ERROR results.

If the selector is zero or greater (that is, a user selector), and the bag was created with the MQCBO_CHECK_SELECTORS option or as an administration bag (MQCBO_ADMIN_BAG), the selector must be in the range MQBA_FIRST through MQBA_LAST; MQRC_SELECTOR_OUT_OF_RANGE results if it is not. If MQCBO_CHECK_SELECTORS was not specified, the selector can be any value zero or greater.

If MQIND_ALL is *not* specified for the *ItemIndex* parameter, the specified selector must already be present in the bag; MQRC_SELECTOR_NOT_PRESENT results if it is not.

If MQIND_ALL is *not* specified for the *ItemIndex* parameter, the data type of the item must be the same as the data type implied by the call; MQRC_SELECTOR_WRONG_TYPE results if it is not.

***ItemIndex* (MQLONG) - input**
This identifies which occurrence of the item with the specified selector is to be modified. The value must be zero or greater, or one of the special values described in this topic; if it is none of these, MQRC_INDEX_ERROR results.

Zero or greater
The item with the specified index must already be present in the bag; MQRC_INDEX_NOT_PRESENT results if it is not. The index is counted relative to the items in the bag that have the specified selector. For example, if there are five items in the bag with the specified selector, the valid values for *ItemIndex* are 0 through 4.

MQIND_NONE
This specifies that there must be only one occurrence of the specified selector in the bag. If there is more than one occurrence, MQRC_SELECTOR_NOT_UNIQUE results.

MQIND_ALL
This specifies that all existing occurrences of the specified selector (if any) are to be deleted from the bag, and a new occurrence of the selector created at the end of the bag.

***BufferLength* (MQLONG) - input**
The length in bytes of the condition byte string contained in the *Buffer* parameter. The value must be zero or greater.

***Buffer* (MQBYTE × *BufferLength*) - input**
Buffer containing the condition byte string. The length is given by the *BufferLength* parameter. If zero is specified for *BufferLength*, the null pointer can be specified for the address of the *Buffer* parameter; in all other cases, a valid (nonnull) address must be specified for the *Buffer* parameter.

***Operator* (MQLONG × *Operator*) - input**
Byte string filter operator to be placed in the bag. Valid operators are of the form MQCFOP_*.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error conditions can be returned from the mqSetByteStringFilter call:

MQRC_BUFFER_ERROR
Buffer parameter not valid (invalid parameter address or buffer not completely accessible).

MQRC_BUFFER_LENGTH_ERROR
Buffer length not valid.

MQRC_FILTER_OPERATOR_ERROR
Bag handle not valid.

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INDEX_ERROR
Index not valid (index negative and not MQIND_NONE or MQIND_ALL).

MQRC_INDEX_NOT_PRESENT
No item with the specified index is present within the bag for the selector given.

MQRC_MULTIPLE_INSTANCE_ERROR
Multiple instances of system selector not valid.

MQRC_SELECTOR_NOT_PRESENT
No item with the specified selector is present within the bag.

MQRC_SELECTOR_NOT_SUPPORTED
Specified system selector not supported by the MQAI.

MQRC_SELECTOR_NOT_UNIQUE
MQIND_NONE specified when more than one occurrence of the specified selector is present in the bag.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_SELECTOR_WRONG_TYPE
Data item has wrong data type for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

MQRC_SYSTEM_BAG_NOT_ALTERABLE
System bag cannot be altered or deleted.

MQRC_SYSTEM_ITEM_NOT_ALTERABLE
System item is read-only and cannot be altered.

C language invocation for mqSetByteStringFilter

```
mqSetByteStringFilter (Bag, Selector, ItemIndex, BufferLength, Buffer,
Operator, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   Bag;           /* Bag handle */
MQLONG   Selector;      /* Selector */
MQLONG   ItemIndex;     /* Item index */
MQLONG   BufferLength;  /* Buffer length */
PMQBYTE  Buffer;        /* Buffer containing string */
MQLONG   Operator;      /* Operator */
```

```
PMQLONG  CompCode;      /* Completion code */
PMQLONG  Reason;        /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqSetByteStringFilter

(Supported on Windows only.)

```
mqSetByteStringFilter Bag, Selector, ItemIndex, BufferLength, Buffer,
Operator, CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag          As Long   'Bag handle'
Dim Selector     As Long   'Selector'
Dim ItemIndex    As Long   'Item index'
Dim BufferLength As Long   'Buffer length'
Dim Buffer       As String 'Buffer containing string'
Dim Operator     As Long   'Item operator'
Dim CompCode     As Long   'Completion code'
Dim Reason       As Long   'Reason code qualifying CompCode'
```

mqSetInteger

The mqSetInteger call either modifies an integer item that is already present in the bag, or deletes all existing occurrences of the specified selector and adds a new occurrence at the end of the bag. The data item is usually a user item, but specific system-data items can also be modified.

Syntax for mqSetInteger

mqSetInteger *(Bag, Selector, ItemIndex, ItemValue, CompCode, Reason)*

Parameters for mqSetInteger

***Bag* (MQHBAG) - input**
Handle of the bag to be set. This must be the handle of a bag created by the user, and not the handle of a system bag; MQRC_SYSTEM_BAG_NOT_ALTERABLE results if the handle you specify refers to a system bag.

***Selector* (MQLONG) - input**
Selector of the item to be modified. If the selector is less than zero (that is, a system selector), the selector must be one that is supported by the MQAI; MQRC_SELECTOR_NOT_SUPPORTED results if it is not.

If the selector is a supported system selector, but is one that is read-only, MQRC_SYSTEM_ITEM_NOT_ALTERABLE results.

If the selector is an alterable system selector, but is always a single-instance selector and the application attempts to create a second instance in the bag, MQRC_MULTIPLE_INSTANCE_ERROR results.

If the selector is zero or greater (that is, a user selector), and the bag was created with the MQCBO_CHECK_SELECTORS option or as an administration bag (MQCBO_ADMIN_BAG), the selector must be in the range MQIA_FIRST through MQIA_LAST; MQRC_SELECTOR_OUT_OF_RANGE results if it is not. If MQCBO_CHECK_SELECTORS was not specified, the selector can be any value zero or greater.

If MQIND_ALL is *not* specified for the *ItemIndex* parameter, the specified selector must already be present in the bag; MQRC_SELECTOR_NOT_PRESENT results if it is not.

If MQIND_ALL is *not* specified for the *ItemIndex* parameter, the data type of the item must agree with the data type implied by the call; MQRC_SELECTOR_WRONG_TYPE results if it is not.

***ItemIndex* (MQLONG) - input**
This value identifies the occurrence of the item with the specified selector that is to be modified. The value must be zero or greater, or one of the special values described in this topic; if it is none of these, MQRC_INDEX_ERROR results.

Zero or greater
The item with the specified index must already be present in the bag; MQRC_INDEX_NOT_PRESENT results if it is not. The index is counted relative to the items in the bag that have the specified selector. For example, if there are five items in the bag with the specified selector, the valid values for *ItemIndex* are 0 through 4.

MQIND_NONE
This specifies that there must be one occurrence only of the specified selector in the bag. If there is more than one occurrence, MQRC_SELECTOR_NOT_UNIQUE results.

MQIND_ALL
This specifies that all existing occurrences of the specified selector (if any) are to be deleted from the bag, and a new occurrence of the selector created at the end of the bag.

Note: For system selectors, the order is not changed.

***ItemValue* (MQLONG) - input**
The integer value to be placed in the bag.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error and warning conditions can be returned from the mqSetInteger call:

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INDEX_ERROR
Index not valid (index negative and not MQIND_NONE or MQIND_ALL).

MQRC_INDEX_NOT_PRESENT
No item with the specified index is present within the bag for the selector given.

MQRC_MULTIPLE_INSTANCE_ERROR
Multiple instances of system selector not valid.

MQRC_SELECTOR_NOT_PRESENT
No item with the specified selector is present within the bag.

MQRC_SELECTOR_NOT_SUPPORTED
Specified system selector not supported by the MQAI.

MQRC_SELECTOR_NOT_UNIQUE
MQIND_NONE specified when more than one occurrence of the specified selector is present in the bag.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not in valid range for call.

MQRC_SELECTOR_WRONG_TYPE
Data item has wrong data type for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

MQRC_SYSTEM_BAG_NOT_ALTERABLE
System bag cannot be altered or deleted.

MQRC_SYSTEM_ITEM_NOT_ALTERABLE
System item is read only and cannot be altered.

C language invocation for mqSetInteger

```
mqSetInteger (Bag, Selector, ItemIndex, ItemValue, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   Bag;           /* Bag handle */
MQLONG   Selector;      /* Selector */
MQLONG   ItemIndex;     /* Item index */
MQLONG   ItemValue;     /* Integer value */
MQLONG   CompCode;      /* Completion code */
MQLONG   Reason;        /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqSetInteger

(Supported on Windows only.)

```
mqSetInteger Bag, Selector, ItemIndex, ItemValue, CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag       As Long 'Bag handle'
Dim Selector  As Long 'Selector'
Dim ItemIndex As Long 'Item index'
Dim ItemValue As Long 'Integer value'
Dim CompCode  As Long 'Completion code'
Dim Reason    As Long 'Reason code qualifying CompCode'
```

mqSetInteger64

The mqSetInteger64 call either modifies a 64-bit integer item that is already present in the bag, or deletes all existing occurrences of the specified selector and adds a new occurrence at the end of the bag. The data item is usually a user item, but specific system-data items can also be modified.

Syntax for mqSetInteger64

mqSetInteger64 ***(Bag, Selector, ItemIndex, ItemValue, CompCode, Reason)***

Parameters for mqSetInteger64

Bag **(MQHBAG) - input**
Handle of the bag to be set. This must be the handle of a bag created by the user, and not the handle of a system bag; MQRC_SYSTEM_BAG_NOT_ALTERABLE results if the handle you specify refers to a system bag.

Selector **(MQLONG) - input**
Selector of the item to be modified. If the selector is less than zero (that is, a system selector), the selector must be one that is supported by the MQAI; MQRC_SELECTOR_NOT_SUPPORTED results if it is not.

If the selector is a supported system selector, but is one that is read-only, MQRC_SYSTEM_ITEM_NOT_ALTERABLE results.

If the selector is an alterable system selector, but is always a single-instance selector and the application attempts to create a second instance in the bag, MQRC_MULTIPLE_INSTANCE_ERROR results.

If the selector is zero or greater (that is, a user selector), and the bag was created with the MQCBO_CHECK_SELECTORS option or as an administration bag (MQCBO_ADMIN_BAG), the selector must be in the range MQIA_FIRST through MQIA_LAST; MQRC_SELECTOR_OUT_OF_RANGE results if it is not. If MQCBO_CHECK_SELECTORS was not specified, the selector can be any value zero or greater.

If MQIND_ALL is *not* specified for the *ItemIndex* parameter, the specified selector must already be present in the bag; MQRC_SELECTOR_NOT_PRESENT results if it is not.

If MQIND_ALL is *not* specified for the *ItemIndex* parameter, the data type of the item must agree with the data type implied by the call; MQRC_SELECTOR_WRONG_TYPE results if it is not.

***ItemIndex* (MQLONG) - input**
This value identifies the occurrence of the item with the specified selector that is to be modified. The value must be zero or greater, or one of the special values described in this topic; if it is none of these, MQRC_INDEX_ERROR results.

Zero or greater
The item with the specified index must already be present in the bag; MQRC_INDEX_NOT_PRESENT results if it is not. The index is counted relative to the items in the bag that have the specified selector. For example, if there are five items in the bag with the specified selector, the valid values for *ItemIndex* are 0 through 4.

MQIND_NONE
This specifies that there must be one occurrence only of the specified selector in the bag. If there is more than one occurrence, MQRC_SELECTOR_NOT_UNIQUE results.

MQIND_ALL
This specifies that all existing occurrences of the specified selector (if any) are to be deleted from the bag, and a new occurrence of the selector created at the end of the bag.

Note: For system selectors, the order is not changed.

***ItemValue* (MQINT64) - input**
The integer value to be placed in the bag.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error and warning conditions can be returned from the mqSetInteger64 call:

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INDEX_ERROR
Index not valid (index negative and not MQIND_NONE or MQIND_ALL).

MQRC_INDEX_NOT_PRESENT
No item with the specified index is present within the bag for the selector given.

MQRC_MULTIPLE_INSTANCE_ERROR
Multiple instances of system selector not valid.

MQRC_SELECTOR_NOT_PRESENT
No item with the specified selector is present within the bag.

MQRC_SELECTOR_NOT_SUPPORTED
Specified system selector not supported by the MQAI.

MQRC_SELECTOR_NOT_UNIQUE
MQIND_NONE specified when more than one occurrence of the specified selector is present in the bag.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not in valid range for call.

MQRC_SELECTOR_WRONG_TYPE
Data item has wrong data type for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

MQRC_SYSTEM_BAG_NOT_ALTERABLE
System bag cannot be altered or deleted.

MQRC_SYSTEM_ITEM_NOT_ALTERABLE
System item is read only and cannot be altered.

C language invocation for mqSetInteger64

```
mqSetInteger64 (Bag, Selector, ItemIndex, ItemValue, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   Bag;           /* Bag handle */
MQLONG   Selector;      /* Selector */
MQLONG   ItemIndex;     /* Item index */
MQINT64  ItemValue;     /* Integer value */
MQLONG   CompCode;      /* Completion code */
MQLONG   Reason;        /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqSetInteger64

(Supported on Windows only.)

```
mqSetInteger64 Bag, Selector, ItemIndex, ItemValue, CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag       As Long 'Bag handle'
Dim Selector  As Long 'Selector'
Dim ItemIndex As Long 'Item index'
Dim ItemValue As Long 'Integer value'
Dim CompCode  As Long 'Completion code'
Dim Reason    As Long 'Reason code qualifying CompCode'
```

mqSetIntegerFilter

The mqSetIntegerFilter call either modifies an integer filter item that is already present in the bag, or deletes all existing occurrences of the specified selector and adds a new occurrence at the end of the bag. The data item is usually a user item, but specific system-data items can also be modified.

Syntax for mqSetIntegerFilter

mqSetIntegerFilter *(Bag, Selector, ItemIndex, ItemValue, Operator, CompCode, Reason)*

Parameters for mqSetIntegerFilter

***Bag* (MQHBAG) - input**
Handle of the bag to be set. This must be the handle of a bag created by the user, and not the handle of a system bag; MQRC_SYSTEM_BAG_NOT_ALTERABLE results if the handle you specify refers to a system bag.

***Selector* (MQLONG) - input**
Selector of the item to be modified. If the selector is less than zero (that is, a system selector), the selector must be one that is supported by the MQAI; MQRC_SELECTOR_NOT_SUPPORTED results if it is not.

If the selector is a supported system selector, but is one that is read-only, MQRC_SYSTEM_ITEM_NOT_ALTERABLE results.

If the selector is an alterable system selector, but is always a single-instance selector and the application attempts to create a second instance in the bag, MQRC_MULTIPLE_INSTANCE_ERROR results.

If the selector is zero or greater (that is, a user selector), and the bag was created with the MQCBO_CHECK_SELECTORS option or as an administration bag (MQCBO_ADMIN_BAG), the selector must be in the range MQIA_FIRST through MQIA_LAST; MQRC_SELECTOR_OUT_OF_RANGE results if it is not. If MQCBO_CHECK_SELECTORS was not specified, the selector can be any value zero or greater.

If MQIND_ALL is *not* specified for the *ItemIndex* parameter, the specified selector must already be present in the bag; MQRC_SELECTOR_NOT_PRESENT results if it is not.

If MQIND_ALL is *not* specified for the *ItemIndex* parameter, the data type of the item must agree with the data type implied by the call; MQRC_SELECTOR_WRONG_TYPE results if it is not.

***ItemIndex* (MQLONG) - input**
This value identifies the occurrence of the item with the specified selector that is to be modified. The value must be zero or greater, or one of the special values described in this topic; if it is none of these, MQRC_INDEX_ERROR results.

Zero or greater
The item with the specified index must already be present in the bag; MQRC_INDEX_NOT_PRESENT results if it is not. The index is counted relative to the items in the bag that have the specified selector. For example, if there are five items in the bag with the specified selector, the valid values for *ItemIndex* are 0 through 4.

MQIND_NONE
This specifies that there must be one occurrence only of the specified selector in the bag. If there is more than one occurrence, MQRC_SELECTOR_NOT_UNIQUE results.

MQIND_ALL
This specifies that all existing occurrences of the specified selector (if any) are to be deleted from the bag, and a new occurrence of the selector created at the end of the bag.

Note: For system selectors, the order is not changed.

***ItemValue* (MQLONG) - input**
The integer condition value to be placed in the bag.

***Operator* (MQLONG) - input**
The integer filter operator to be placed in the bag. Valid operators are of the form MQCFOP_*.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error and warning conditions can be returned from the mqSetIntegerFilter call:

MQRC_FILTER_OPERATOR_ERROR
Filter operator not valid.

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INDEX_ERROR
Index not valid (index negative and not MQIND_NONE or MQIND_ALL).

MQRC_INDEX_NOT_PRESENT
No item with the specified index is present within the bag for the selector given.

MQRC_MULTIPLE_INSTANCE_ERROR
Multiple instances of system selector not valid.

MQRC_SELECTOR_NOT_PRESENT
No item with the specified selector is present within the bag.

MQRC_SELECTOR_NOT_SUPPORTED
Specified system selector not supported by the MQAI.

MQRC_SELECTOR_NOT_UNIQUE
MQIND_NONE specified when more than one occurrence of the specified selector is present in the bag.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not in valid range for call.

MQRC_SELECTOR_WRONG_TYPE
Data item has wrong data type for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

MQRC_SYSTEM_BAG_NOT_ALTERABLE
System bag cannot be altered or deleted.

MQRC_SYSTEM_ITEM_NOT_ALTERABLE
System item is read only and cannot be altered.

C language invocation for mqSetIntegerFilter

```
mqSetIntegerFilter (Bag, Selector, ItemIndex, ItemValue, Operator,
&CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   Bag;           /* Bag handle */
MQLONG   Selector;      /* Selector */
MQLONG   ItemIndex;     /* Item index */
MQLONG   ItemValue;     /* Integer value */
MQLONG   Operator;      /* Item operator */
MQLONG   CompCode;      /* Completion code */
MQLONG   Reason;        /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqSetIntegerFilter

(Supported on Windows only.)

```
mqSetIntegerFilter Bag, Selector, ItemIndex, ItemValue, Operator,
CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag       As Long 'Bag handle'
Dim Selector  As Long 'Selector'
Dim ItemIndex As Long 'Item index'
Dim ItemValue As Long 'Integer value'
Dim Operator  As Long 'Item operator'
Dim CompCode  As Long 'Completion code'
Dim Reason    As Long 'Reason code qualifying CompCode'
```

mqSetString

The mqSetString call either modifies a character data item that is already present in the bag, or deletes all existing occurrences of the specified selector and adds a new occurrence at the end of the bag. The data item is usually a user item, but certain system-data items can also be modified.

Syntax for mqSetString

mqSetString *(Bag, Selector, ItemIndex, Bufferlength, Buffer, CompCode, Reason)*

Parameters for mqSetString

***Bag* (MQHBAG) - input**
Handle of the bag to be set. This must be the handle of a bag created by the user, not the handle of a system bag; MQRC_SYSTEM_BAG_NOT_ALTERABLE results if you specify the handle of a system bag.

***Selector* (MQLONG) - input**
Selector of the item to be modified.

If the selector is less than zero (that is, a system selector), the selector must be one that is supported by the MQAI; MQRC_SELECTOR_NOT_SUPPORTED results if it is not.

If the selector is a supported system selector, but is one that is read only, MQRC_SYSTEM_ITEM_NOT_ALTERABLE results.

If the selector is an alterable system selector, but is always a single-instance selector and the application attempts to create a second instance in the bag, MQRC_MULTIPLE_INSTANCE_ERROR results.

If the selector is zero or greater (that is, a user selector), and the bag was created with the MQCBO_CHECK_SELECTORS option or as an administration bag (MQCBO_ADMIN_BAG), the selector must be in the range MQCA_FIRST through MQCA_LAST; MQRC_SELECTOR_OUT_OF_RANGE results if it is not. If MQCBO_CHECK_SELECTORS was not specified, the selector can be any value zero or greater.

If MQIND_ALL is *not* specified for the *ItemIndex* parameter, the specified selector must already be present in the bag; MQRC_SELECTOR_NOT_PRESENT results if it is not.

If MQIND_ALL is *not* specified for the *ItemIndex* parameter, the data type of the item must be the same as the data type implied by the call; MQRC_SELECTOR_WRONG_TYPE results if it is not.

***ItemIndex* (MQLONG) - input**
This identifies which occurrence of the item with the specified selector is to be modified. The value must be zero or greater, or one of the special values described in this topic; if it is none of these, MQRC_INDEX_ERROR results.

Zero or greater
The item with the specified index must already be present in the bag; MQRC_INDEX_NOT_PRESENT results if it is not. The index is counted relative to the items in the bag that have the specified selector. For example, if there are five items in the bag with the specified selector, the valid values for *ItemIndex* are 0 through 4.

MQIND_NONE
This specifies that there must be only one occurrence of the specified selector in the bag. If there is more than one occurrence, MQRC_SELECTOR_NOT_UNIQUE results.

MQIND_ALL
This specifies that all existing occurrences of the specified selector (if any) are to be deleted from the bag, and a new occurrence of the selector created at the end of the bag.

***BufferLength* (MQLONG) - input**
The length in bytes of the string contained in the *Buffer* parameter. The value must be zero or greater, or the special value MQBL_NULL_TERMINATED.

If MQBL_NULL_TERMINATED is specified, the string is delimited by the first null encountered in the string.

If MQBL_NULL_TERMINATED is not specified, *BufferLength* characters are inserted into the bag, even if null characters are present; the nulls do not delimit the string.

***Buffer* (MQCHAR × *BufferLength*) - input**
Buffer containing the character string. The length is given by the *BufferLength* parameter. If zero is specified for *BufferLength*, the null pointer can be specified for the address of the *Buffer* parameter; in all other cases, a valid (nonnull) address must be specified for the *Buffer* parameter.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error conditions can be returned from the mqSetString call:

MQRC_BUFFER_ERROR
Buffer parameter not valid (invalid parameter address or buffer not completely accessible).

MQRC_BUFFER_LENGTH_ERROR
Buffer length not valid.

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INDEX_ERROR
Index not valid (index negative and not MQIND_NONE or MQIND_ALL).

MQRC_INDEX_NOT_PRESENT
No item with the specified index is present within the bag for the selector given.

MQRC_MULTIPLE_INSTANCE_ERROR
Multiple instances of system selector not valid.

MQRC_SELECTOR_NOT_PRESENT
No item with the specified selector is present within the bag.

MQRC_SELECTOR_NOT_SUPPORTED
Specified system selector not supported by the MQAI.

MQRC_SELECTOR_NOT_UNIQUE
MQIND_NONE specified when more than one occurrence of the specified selector is present in the bag.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_SELECTOR_WRONG_TYPE
Data item has wrong data type for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

MQRC_SYSTEM_BAG_NOT_ALTERABLE
System bag cannot be altered or deleted.

MQRC_SYSTEM_ITEM_NOT_ALTERABLE
System item is read-only and cannot be altered.

Usage notes for mqSetString

The Coded Character Set ID (CCSID) associated with this string is copied from the current CCSID of the bag.

C language invocation for mqSetString

```
mqSetString (Bag, Selector, ItemIndex, BufferLength, Buffer,
&CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   Bag;           /* Bag handle */
MQLONG   Selector;      /* Selector */
MQLONG   ItemIndex;     /* Item index */
MQLONG   BufferLength;  /* Buffer length */
PMQCHAR  Buffer;        /* Buffer containing string */
MQLONG  CompCode;       /* Completion code */
MQLONG  Reason;         /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqSetString

(Supported on Windows only.)

```
mqSetString Bag, Selector, ItemIndex, BufferLength, Buffer,
CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag          As Long   'Bag handle'
Dim Selector     As Long   'Selector'
Dim ItemIndex    As Long   'Item index'
Dim BufferLength As Long   'Buffer length'
Dim Buffer       As String 'Buffer containing string'
Dim CompCode     As Long   'Completion code'
Dim Reason       As Long   'Reason code qualifying CompCode'
```

mqSetStringFilter

The mqSetStringFilter call either modifies a string filter item that is already present in the bag, or deletes all existing occurrences of the specified selector and adds a new occurrence at the end of the bag. The data item is usually a user item, but certain system-data items can also be modified.

Syntax for mqSetStringFilter

mqSetStringFilter ***(Bag, Selector, ItemIndex, Bufferlength, Buffer, Operator, CompCode, Reason)***

Parameters for mqSetStringFilter

***Bag* (MQHBAG) - input**
Handle of the bag to be set. This must be the handle of a bag created by the user, not the handle of a system bag; MQRC_SYSTEM_BAG_NOT_ALTERABLE results if you specify the handle of a system bag.

***Selector* (MQLONG) - input**
Selector of the item to be modified.

If the selector is less than zero (that is, a system selector), the selector must be one that is supported by the MQAI; MQRC_SELECTOR_NOT_SUPPORTED results if it is not.

If the selector is a supported system selector, but is one that is read only, MQRC_SYSTEM_ITEM_NOT_ALTERABLE results.

If the selector is an alterable system selector, but is always a single-instance selector and the application attempts to create a second instance in the bag, MQRC_MULTIPLE_INSTANCE_ERROR results.

If the selector is zero or greater (that is, a user selector), and the bag was created with the MQCBO_CHECK_SELECTORS option or as an administration bag (MQCBO_ADMIN_BAG), the selector must be in the range MQCA_FIRST through MQCA_LAST; MQRC_SELECTOR_OUT_OF_RANGE results if it is not. If MQCBO_CHECK_SELECTORS was not specified, the selector can be any value zero or greater.

If MQIND_ALL is *not* specified for the *ItemIndex* parameter, the specified selector must already be present in the bag; MQRC_SELECTOR_NOT_PRESENT results if it is not.

If MQIND_ALL is *not* specified for the *ItemIndex* parameter, the data type of the item must be the same as the data type implied by the call; MQRC_SELECTOR_WRONG_TYPE results if it is not.

***ItemIndex* (MQLONG) - input**
This identifies which occurrence of the item with the specified selector is to be modified. The value must be zero or greater, or one of the special values described in this topic; if it is none of these, MQRC_INDEX_ERROR results.

Zero or greater
The item with the specified index must already be present in the bag; MQRC_INDEX_NOT_PRESENT results if it is not. The index is counted relative to the items in the bag that have the specified selector. For example, if there are five items in the bag with the specified selector, the valid values for *ItemIndex* are 0 through 4.

MQIND_NONE
This specifies that there must be only one occurrence of the specified selector in the bag. If there is more than one occurrence, MQRC_SELECTOR_NOT_UNIQUE results.

MQIND_ALL
This specifies that all existing occurrences of the specified selector (if any) are to be deleted from the bag, and a new occurrence of the selector created at the end of the bag.

***BufferLength* (MQLONG) - input**
The length in bytes of the condition string contained in the *Buffer* parameter. The value must be zero or greater, or the special value MQBL_NULL_TERMINATED.

If MQBL_NULL_TERMINATED is specified, the string is delimited by the first null encountered in the string.

If MQBL_NULL_TERMINATED is not specified, *BufferLength* characters are inserted into the bag, even if null characters are present; the nulls do not delimit the string.

***Buffer* (MQCHAR × *BufferLength*) - input**
Buffer containing the character condition string. The length is given by the *BufferLength* parameter. If zero is specified for *BufferLength*, the null pointer can be specified for the address of the *Buffer* parameter; in all other cases, a valid (nonnull) address must be specified for the *Buffer* parameter.

***Operator* (MQLONG × *Operator*) - input**
String filter operator to be placed in the bag. Valid operators are of the form MQCFOP_*.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error conditions can be returned from the mqSetStringFilter call:

MQRC_BUFFER_ERROR
Buffer parameter not valid (invalid parameter address or buffer not completely accessible).

MQRC_BUFFER_LENGTH_ERROR
Buffer length not valid.

MQRC_FILTER_OPERATOR_ERROR
Bag handle not valid.

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_INDEX_ERROR
Index not valid (index negative and not MQIND_NONE or MQIND_ALL).

MQRC_INDEX_NOT_PRESENT
No item with the specified index is present within the bag for the selector given.

MQRC_MULTIPLE_INSTANCE_ERROR
Multiple instances of system selector not valid.

MQRC_SELECTOR_NOT_PRESENT
No item with the specified selector is present within the bag.

MQRC_SELECTOR_NOT_SUPPORTED
Specified system selector not supported by the MQAI.

MQRC_SELECTOR_NOT_UNIQUE
MQIND_NONE specified when more than one occurrence of the specified selector is present in the bag.

MQRC_SELECTOR_OUT_OF_RANGE
Selector not within valid range for call.

MQRC_SELECTOR_WRONG_TYPE
Data item has wrong data type for call.

MQRC_STORAGE_NOT_AVAILABLE
Insufficient storage available.

MQRC_SYSTEM_BAG_NOT_ALTERABLE
System bag cannot be altered or deleted.

MQRC_SYSTEM_ITEM_NOT_ALTERABLE
System item is read-only and cannot be altered.

Usage notes for mqSetStringFilter

The Coded Character Set ID (CCSID) associated with this string is copied from the current CCSID of the bag.

C language invocation for mqSetStringFilter

```
mqSetStringFilter (Bag, Selector, ItemIndex, BufferLength, Buffer,
Operator, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   Bag;           /* Bag handle */
MQLONG   Selector;      /* Selector */
MQLONG   ItemIndex;     /* Item index */
MQLONG   BufferLength;  /* Buffer length */
PMQCHAR  Buffer;        /* Buffer containing string */
MQLONG  Operator;       /* Item operator */
MQLONG  CompCode;       /* Completion code */
MQLONG  Reason;         /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqSetStringFilter

(Supported on Windows only.)

```
mqSetStringFilter Bag, Selector, ItemIndex, BufferLength, Buffer,
Operator, CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag          As Long   'Bag handle'
Dim Selector     As Long   'Selector'
Dim ItemIndex    As Long   'Item index'
Dim BufferLength As Long   'Buffer length'
Dim Buffer       As String 'Buffer containing string'
Dim Operator     As Long   'Item operator'
Dim CompCode     As Long   'Completion code'
Dim Reason       As Long   'Reason code qualifying CompCode'
```

mqTrim

The mqTrim call trims the blanks from a blank-padded string, then terminates it with a null.

Syntax for mqTrim

mqTrim *(BufferLength, Buffer, String, CompCode, Reason)*

Parameters for mqTrim

***BufferLength* (MQLONG) - input**
Length in bytes of the buffer containing the string padded with blanks. Must be zero or greater.

***Buffer* (MQCHAR × *BufferLength*) - input**
Buffer containing the blank-padded string. The length is given by the *BufferLength* parameter. If zero is specified for *BufferLength*, the null pointer can be specified for the address of the *Buffer* parameter; in all other cases, a valid (nonnull) address must be specified for the *Buffer* parameter.

***String* (MQCHAR × (*BufferLength*+1)) - output**
Buffer to receive the null-terminated string. The length of this buffer must be at least one byte greater than the value of the *BufferLength* parameter.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error conditions can be returned from the mqTrim call:

MQRC_BUFFER_ERROR
Buffer parameter not valid (invalid parameter address or buffer not completely accessible).

MQRC_BUFFER_LENGTH_ERROR
Buffer length not valid.

MQRC_STRING_ERROR
String parameter not valid (invalid parameter address or buffer not completely accessible).

Usage notes for mqTrim

1. If the two buffer pointers are the same, the trimming is done in place. If they are not the same, the blank-padded string is copied into the null-terminated string buffer. After copying, the buffer is scanned backwards from the end until a nonspace character is found. The byte following the nonspace character is then overwritten with a null character.
2. If *String* and *Buffer* partially overlap, the result is undefined.

C language invocation for mqTrim

```
mqTrim (BufferLength, Buffer, String, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQLONG   BufferLength;     /* Buffer length */
PMQCHAR  Buffer;           /* Buffer containing blank-padded string */
MQCHAR   String[n+1];      /* String with blanks discarded */
MQLONG   CompCode;         /* Completion code */
MQLONG   Reason;           /* Reason code qualifying CompCode */
```

Note: This call is not supported in Visual Basic.

mqTruncateBag

The mqTruncateBag call reduces the number of user items in a user bag to the specified value, by deleting user items from the end of the bag.

Syntax for mqTruncateBag

mqTruncateBag *(Bag, ItemCount, CompCode, Reason)*

Parameters for mqTruncateBag

***Bag* (MQHBAG) - input**
Handle of the bag to be truncated. This must be the handle of a bag created by the user, not the handle of a system bag; MQRC_SYSTEM_BAG_NOT_ALTERABLE results if you specify the handle of a system bag.

***ItemCount* (MQLONG) - input**
The number of user items to remain in the bag after truncation. Zero is a valid value.

Note: The *ItemCount* parameter is the number of data items, not the number of unique selectors. (If there are one or more selectors that occur multiple times in the bag, there will be fewer selectors than data items before truncation.) Data items are deleted from the end of the bag, in the opposite order to which they were added to the bag.

If the number specified exceeds the number of user items currently in the bag, MQRC_ITEM_COUNT_ERROR results.

***CompCode* (MQLONG) - output**
Completion code.

***Reason* (MQLONG) - output**
Reason code qualifying *CompCode*.

The following reason codes indicating error conditions can be returned from the mqTruncateBag call:

MQRC_HBAG_ERROR
Bag handle not valid.

MQRC_ITEM_COUNT_ERROR
ItemCount parameter not valid (value exceeds the number of user data items in the bag).

MQRC_SYSTEM_BAG_NOT_ALTERABLE
System bag cannot be altered or deleted.

Usage notes for mqTruncateBag

1. System items in a bag are not affected by mqTruncateBag; the call cannot be used to truncate system bags.
2. mqTruncateBag with an *ItemCount* of zero is not the same as the mqClearBag call. The former deletes all of the user items but leaves the system items intact, and the latter deletes all of the user items and resets the system items to their initial values.

C language invocation for mqTruncateBag

```
mqTruncateBag (Bag, ItemCount, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHBAG   hBag;          /* Bag handle */
MQLONG   ItemCount;     /* Number of items to remain in bag */
MQLONG   CompCode;      /* Completion code */
MQLONG   Reason;        /* Reason code qualifying CompCode */
```

Visual Basic invocation for mqTruncateBag

(Supported on Windows only.)

```
mqTruncateBag Bag, ItemCount, CompCode, Reason
```

Declare the parameters as follows:

```
Dim Bag       As Long 'Bag handle'
Dim ItemCount As Long 'Number of items to remain in bag'
Dim CompCode  As Long 'Completion code'
Dim Reason    As Long 'Reason code qualifying CompCode'
```

MQAI Selectors

Items in bags are identified by a *selector* that acts as an identifier for the item. There are two types of selector, *user selector* and *system selector*.

User selectors

User selectors have values that are zero or positive. For the administration of MQSeries objects, valid user selectors are already defined by the following constants:

- MQCA_* and MQIA_* (object attributes)
- MQCACF_* and MQIACF_* (items relating specifically to PCF)
- MQCACH_* and MQIACH_* (channel attributes)

For user messages, the meaning of a user selector is defined by the application.

The following additional user selectors are introduced by the MQAI:

MQIACF_INQUIRY
Identifies an IBM WebSphere MQ object attribute to be returned by an Inquire command.

MQHA_BAG_HANDLE
Identifies a bag handle residing within another bag.

MQHA_FIRST
Lower limit for handle selectors.

MQHA_LAST
Upper limit for handle selectors.

MQHA_LAST_USED
Upper limit for last handle selector allocated.

MQCA_USER_LIST
Default user selector. Supported on Visual Basic only. This selector supports character type and represents the default value used if the *Selector* parameter is omitted on the mqAdd*, mqSet*, or mqInquire* calls.

MQIA_USER_LIST
Default user selector. Supported on Visual Basic only. This selector supports integer type and represents the default value used if the *Selector* parameter is omitted on the mqAdd*, mqSet*, or mqInquire* calls.

System selectors

System selectors have negative values. The following system selectors are included in the bag when it is created:

MQIASY_BAG_OPTIONS
Bag-creation options. A summation of the options used to create the bag. This selector cannot be changed by the user.

MQIASY_CODED_CHAR_SET_ID
Character-set identifier for the character data items in the bag. The initial value is the queue-manager's character set.

The value in the bag is used on entry to the mqExecute call and set on exit from the mqExecute call. This also applies when character strings are added to or modified in the bag.

MQIASY_COMMAND
PCF command identifier. Valid values are the MQCMD_* constants. For user messages, the value MQCMD_NONE should be used. The initial value is MQCMD_NONE.

The value in the bag is used on entry to the mqPutBag and mqBagToBuffer calls, and set on exit from the mqExecute, mqGetBag and mqBufferToBag calls.

MQIASY_COMP_CODE
Completion code. Valid values are the MQCC_* constants. The initial value is MQCC_OK.

The value in the bag is used on entry to the mqExecute, mqPutBag, and mqBagToBuffer calls, and set on exit from the mqExecute, mqGetBag, and mqBufferToBag calls.

MQIASY_CONTROL
PCF control options. Valid values are the MQCFC_* constants. The initial value is MQCFC_LAST.

The value in the bag is used on entry to the mqExecute, mqPutBag, and mqBagToBuffer calls, and set on exit from the mqExecute, mqGetBag, and mqBufferToBag calls.

MQIASY_MSG_SEQ_NUMBER
PCF message sequence number. Valid values are 1 or greater. The initial value is 1.

The value in the bag is used on entry to the mqExecute, mqPutBag, and mqBagToBuffer calls, and set on exit from the mqExecute, mqGetBag, and mqBufferToBag calls.

MQIASY_REASON
Reason code. Valid values are the MQRC_* constants. The initial value is MQRC_NONE.

The value in the bag is used on entry to the mqExecute, mqPutBag, and mqBagToBuffer calls, and set on exit from the mqExecute, mqGetBag, and mqBufferToBag calls.

MQIASY_TYPE
PCF command type. Valid values are the MQCFT_* constants. For user messages, the value MQCFT_USER should be used. The initial value is MQCFT_USER for bags created as user bags and MQCFT_COMMAND for bags created as administration or command bags.

The value in the bag is used on entry to the mqExecute, mqPutBag, and mqBagToBuffer calls, and set on exit from the mqExecute, mqGetBag, and mqBufferToBag calls.

MQIASY_VERSION
PCF version. Valid values are the MQCFH_VERSION_* constants. The initial value is MQCFH_VERSION_1.

If the value in the bag is set to a value other than MQCFH_VERSION_1, the value is used on entry to the mqExecute, mqPutBag, and mqBagToBuffer calls. If the value in the bag in MQCFH_VERSION_1, the PCF version is the lowest value required for the parameter structures that are present in the message.

The value in the bag is set on exit from the mqExecute, mqGetBag, and mqBufferToBag calls.

Example code

Here are some example uses of the mqExecute call.

The example shown in figure Figure 3 on page 1202 creates a local queue (with a maximum message length of 100 bytes) on a queue manager:

```
/* Create a bag for the data you want in your PCF message */
mqCreateBag(MQCBO_ADMIN_BAG, &hbagRequest)

/* Create a bag to be filled with the response from the command server */
mqCreateBag(MQCBO_ADMIN_BAG, &hbagResponse)

/* Create a queue    */
/* Supply queue name */
mqAddString(hbagRequest, MQCA_Q_NAME, "QBERT")

/* Supply queue type */
mqAddString(hbagRequest, MQIA_Q_TYPE, MQQT_LOCAL)

/* Maximum message length is an optional parameter */
mqAddString(hbagRequest, MQIA_MAX_MSG_LENGTH, 100)

/* Ask the command server to create the queue */
mqExecute(MQCMD_CREATE_Q, hbagRequest, hbagResponse)

/* Tidy up memory allocated */
mqDeleteBag(hbagRequest)
mqDeleteBag(hbagResponse)
```

Figure 3. Using mqExecute to create a local queue

The example shown in figure Figure 4 on page 1202 inquires about all attributes of a particular queue. The mqAddInquiry call identifies all WebSphere MQ object attributes of a queue to be returned by the Inquire parameter on mqExecute.

```
/* Create a bag for the data you want in your PCF message */
mqCreateBag(MQCBO_ADMIN_BAG, &hbagRequest)

/* Create a bag to be filled with the response from the command server */
mqCreateBag(MQCBO_ADMIN_BAG, &hbagResponse)

/* Inquire about a queue by supplying its name */
/* (other parameters are optional) */
mqAddString(hbagRequest, MQCA_Q_NAME, "QBERT")

/* Request the command server to inquire about the queue */
mqExecute(MQCMD_INQUIRE_Q, hbagRequest, hbagResponse)

/* If it worked, the attributes of the queue are returned */
/* in a system bag within the response bag */
mqInquireBag(hbagResponse, MQHA_BAG_HANDLE, 0, &hbagAttributes)

/* Inquire the name of the queue and its current depth */
mqInquireString(hbagAttributes, MQCA_Q_NAME, &stringAttribute)
mqInquireString(hbagAttributes, MQIA_CURRENT_Q_DEPTH, &integerAttribute)

/* Tidy up memory allocated */
mqDeleteBag(hbagRequest)
mqDeleteBag(hbagResponse)
```

Figure 4. Using mqExecute to inquire about queue attributes

Using mqExecute is the simplest way of administering WebSphere MQ, but lower-level calls, mqBagToBuffer and mqBufferToBag, can be used. For more information about the use of these calls, see Introduction to the WebSphere MQ Administration Interface (MQAI).

For sample programs, see Examples of using the MQAI.

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