7.5

Installing IBM WebSphere MQ

Note

Before using this information and the product it supports, read the information in “Notices” on page 181.

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.

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Contents

Installing and uninstalling

Before you start installing IBM WebSphere MQ, consider how you want to use it. Use these topics to help you to prepare for installation, install the product, and verify the installation. There is also information to help you to uninstall the product.

Windows UNIX Linux Completing the following topics in sequence will help you to correctly install and uninstall IBM WebSphere MQ and its components on distributed platforms:

1. Planning your installation
2. Checking requirements
3. Preparing your system
4. Installing components
5. Verifying your installation
6. Uninstalling

You can also apply and remove maintenance to IBM WebSphere MQ. See Maintenance tasks in the Migrating and upgrading section.

Planning your installation

Before you install IBM WebSphere MQ, you must choose which components to install and where to install them. You must also make some platform-specific choices.

Before you start installing, consider how you want to use IBM WebSphere MQ and review the general planning section. See Planning.

There are a number of choices you must make before you start installing:

- Choosing an installation name
- Making multiple installations
- Choosing a primary installation
- Uninstalling, upgrading, and maintaining the primary installation
- Choosing an installation location
- Choosing what to install
- Installing WebSphere MQ Telemetry
- Windows Planning your installation on Windows systems

When you have finished planning your installation, check your system requirements. See Checking requirements.

Choosing an installation name

Each installation of IBM WebSphere MQ on UNIX, Linux, and Windows, has a unique identifier known as an installation name. The installation name is used to associate things such as queue managers and configuration files with an installation.

You can choose the installation name and make it meaningful to you. For example, you might call a test system *testMQ*.

If you do not specify an installation name when the product is installed, a default installation name is automatically assigned. For the first installation, this name is *Installation1*. For the second installation, the name is *Installation2*, and so on. The installation name *Installation0* is reserved for an installation of IBM WebSphere MQ Version 7.0.1. The installation name cannot be changed after the product is installed.

On UNIX and Linux systems, the first IBM WebSphere MQ installation is automatically given an installation name of *Installation1*. For subsequent installations, you can use the **crtmqinst** command to set the installation name before installing the product.

On Windows systems, you can choose the installation name during the installation process.

The installation name can be up to 16 bytes and must be a combination of alphabetic and numeric characters in the ranges a-z, A-Z, and 0-9. You cannot use blank characters. 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.

You can find out what installation name is assigned to an installation in a particular location using the **dspmqinst** command.

Installation descriptions

Each installation can also have an installation description. This description can give more detailed information about an installation in cases where the installation name cannot provide enough information. These descriptions can be up to 64 single-byte characters, or 32 double-byte characters. The default installation description is blank. You can set the installation description using the **setmqinst** command.

Related concepts

"Planning your installation" on page 5
Before you install IBM WebSphere MQ, you must choose which components to install and where to install them. You must also make some platform-specific choices.

"Choosing a primary installation" on page 8
On systems that support multiple installations of IBM WebSphere MQ (UNIX, Linux, and Windows), the primary installation is the one to which IBM WebSphere MQ system-wide locations refer. Having a primary installation is optional, but convenient.

"Choosing an installation location" on page 13
You can install IBM WebSphere MQ to a custom location during the installation process. Alternatively, you can install to the default location. The location where IBM WebSphere MQ is installed is known as the *MQ_INSTALLATION_PATH*.

"Choosing what to install" on page 15
You can select the components or features that you require when you install IBM WebSphere MQ.

Related reference

dspmqinst
setmqinst
crtmqinst

Multiple installations

On UNIX, Linux, and Windows, it is possible to have more than one copy of IBM WebSphere MQ on a system.

You can choose where each copy of IBM WebSphere MQ is installed, but each copy must be in a separate installation location. A maximum of 128 installations of IBM WebSphere MQ can exist on a single machine at a time. One installation can be an installation of IBM WebSphere MQ Version 7.0.1 at fix pack 6, or later. You now have a choice:

- Keep the simplicity of maintaining and managing a single installation of IBM WebSphere MQ on a machine.
- Take advantage of the flexibility offered by enabling multiple IBM WebSphere MQ installations.

Before you install multiple copies of IBM WebSphere MQ, you must make several decisions:

- Will you have a copy of IBM WebSphere MQ Version 7.0.1 on the system?

  When IBM WebSphere MQ Version 7.0.1 at fix pack 6, or later, is installed on the system, there are a number of restrictions to consider:

  - On UNIX and Linux systems, IBM WebSphere MQ Version 7.0.1 must be installed in the default location.
  - IBM WebSphere MQ Version 7.0.1 must be the first installation on a system. You cannot install IBM WebSphere MQ Version 7.0.1 after installing version 7.1, or later. If you uninstall version 7.0.1, it cannot be reinstalled while a later version of WebSphere MQ is installed.
  - IBM WebSphere MQ Version 7.0.1 is automatically the primary installation. You cannot select another installation as the primary installation while IBM WebSphere MQ Version 7.0.1 is installed.
- Where will you install each copy of IBM WebSphere MQ?

  You can choose the installation location for your installations at version 7.1, or later. For more information, see "Choosing an installation location" on page 13.
- Do you need a primary installation?

  A primary installation is an installation to which system-wide locations refer. For more information, see "Choosing a primary installation" on page 8.
- How will your applications connect?

  You need to consider how your applications locate the appropriate IBM WebSphere MQ libraries. For more information, see Connecting applications in a multiple installation environment, and Connecting .NET applications in a multiple installation environment.
- Do your existing exits need changing?

  If IBM WebSphere MQ is not installed in the default location, your exits need to be updated. For more information, see Writing and compiling exits and installable services .
- Which queue manager will be associated with which installation?

  Each queue manager is associated with a particular installation. The installation that a queue manager is associated with limits that queue manager so that it can be administered only by commands from that installation. For more information, see Associating a queue manager with an installation.
- How will you set up your environment to work with each installation?

  With multiple installations on a system, you need to consider how you will work with particular installations, and how you will issue commands from that installation. You can either specify the full path to the command, or you can use the **setmqenv** or **crtmqenv** command to set environment variables. Setting the environment variables allows you to omit the path to the commands for that installation. For more information, see setmqenv, and crtmqenv.

When you have answered these questions, you can install IBM WebSphere MQ using the steps provided in "Installing IBM WebSphere MQ" on page 68.

If you have existing installations of IBM WebSphere MQ and you want to use the multiple installation capability to migrate from one version of IBM WebSphere MQ to another version, see Multi-installation queue manager coexistence on UNIX, Linux, and Windows .

The IBM message service client for .NET support pack and multiple installations

For multiple version support, the *Java and .NET Messaging and Web Services* feature must be installed with the IBM WebSphere MQ product. This feature contains all the functionality included in the *IBM Message Service Client for .NET* support pack (IA9H). If the support pack is installed on the system, multiple versions are not supported. You must uninstall the support pack before installing IBM WebSphere MQ. For more information about installing the .NET feature, see Installing WebSphere MQ classes for .NET.

Related concepts

UNIX, Linux, and Windows: Side-by-side migration from version 7.0.1 to version 7.5

UNIX, Linux, and Windows: Multi-stage migration from version 7.0.1 to version 7.5

Related tasks

Configuring multiple installations

Finding installations of WebSphere MQ on a system

Choosing a primary installation

On systems that support multiple installations of IBM WebSphere MQ (UNIX, Linux, and Windows), the primary installation is the one to which IBM WebSphere MQ system-wide locations refer. Having a primary installation is optional, but convenient.

Before IBM WebSphere MQ Version 7.1, only one instance of the product could be installed at any time. On Windows systems, several global environment variables were set to point to that installation. On UNIX and Linux systems, symbolic links were added to `/usr/lib`, `/usr/bin`, and `/usr/include`, also pointing at that single installation.

From Version 7.1, you can install multiple versions of IBM WebSphere MQ on UNIX, Linux, and Windows. It is possible to have more than one installation of IBM WebSphere MQ on one of these systems at any time and, optionally, to configure one of these installations as the primary installation. Environment variables and symbolic links pointing to a single installation are less meaningful when multiple versions exist. However, some functions require these system-wide locations to work. For example, custom user scripts for administering IBM WebSphere MQ, and third party products. These functions work only on the primary installation.

On UNIX and Linux systems, if you set an installation as the primary installation, symbolic links to the external libraries and control commands of that installation are added into `/usr/lib`, and `/usr/bin`. If you do not have a primary installation, the symbolic links are not created. For a list of the symbolic links that are made to the primary installation, see “External library and control command links to primary installation on UNIX and Linux” on page 10.

On Windows systems, the global environmental variables point to the directories into which the primary installation was installed. These environment variables are used to locate IBM WebSphere MQ libraries, control commands, and header files. Additionally, on Windows systems, some features of the operating system require the central registration of interface libraries that are then loaded into a single process. With multiple versions of IBM WebSphere MQ, there would be conflicting sets of IBM WebSphere MQ libraries. The features would try to load these conflicting sets of libraries into a single process. Therefore, such features can be used only with the primary installation. For details about some of the features that are limited to use with the primary installation, see “Features that can be used only with the primary installation on Windows” on page 12.

If you have an installation of IBM WebSphere MQ Version 7.0.1 on the system, this installation is automatically the primary installation. The primary installation cannot be changed while Version 7.0.1 is installed. If all the installations on the system are at Version 7.1, or later, you can choose whether to have a primary installation. Consider the options in Table 1 on page 8.

Table 1. Primary installation options.

This table shows the valid installation configurations for primary installations. With a single Version 7.1, or later, it can be either primary, or non-primary. With multiple installations, one at Version 7.0.1 and one or more at Version 7.1, or later,Version 7.0.1 must be the primary, and the other installations must be non-primary. With multiple installations at Version 7.1, or later, one installation can be primary, or all installations can be non-primary.

Options	**Valid installation configurations**		**More information**
	Primary	Non-primary	

Table 1. Primary installation options.

This table shows the valid installation configurations for primary installations. With a single Version 7.1, or later, it can be either primary, or non-primary. With multiple installations, one at Version 7.0.1 and one or more at Version 7.1, or later,Version 7.0.1 must be the primary, and the other installations must be non-primary. With multiple installations at Version 7.1, or later, one installation can be primary, or all installations can be non-primary.

(continued)

Options	**Valid installation configurations**		**More information**
Single installation of Version 7.1, or later.	Version 7.1, or later.	None	If you want to continue working with a single installation in the same way as previous releases, configure your installation as the primary installation. For information about this option, see Single installation of IBM WebSphere MQ Version 7.1, or later, configured as the primary installation
	None	Version 7.1, or later.	If you want to continue working with a single installation, but do not want symbolic links or global environment variables created for you, configure your installation as non-primary. For information about the implications of this option, see Single installation of IBM WebSphere MQ Version 7.1, or later, configured as non-primary
Multiple installations: Version 7.0.1 and Version 7.1, or later.	Version 7.0.1	Version 7.1, or later.	If you want to have multiple installations of IBM WebSphere MQ, with one at version 7.0.1, the version 7.0.1 installation is automatically the primary installation. While IBM WebSphere MQ version 7.0.1 is installed, you cannot change which installation is the primary installation. For information about this option and its implications, see Multiple installations of IBM WebSphere MQ, one at Version 7.0.1
Multiple installations: Version 7.1, or later.	Version 7.1, or later.	Version 7.1, or later.	If you want to have multiple installations of WebSphere MQ at version 7.1 or greater, you can choose whether to make one of the installations primary. For information about this option, see Multiple installations of IBM WebSphere MQ Version 7.1, or later
	None	Version 7.1, or later.	

Related concepts

Single installation of WebSphere MQ Version 7.1, or later, configured as the primary installation

Single installation of WebSphere MQ Version 7.1, or later, configured as non-primary

Multiple installations of WebSphere MQ Version 7.1, or later

Multiple installations of WebSphere MQ, one at version 7.0.1

“Choosing an installation location” on page 13

You can install IBM WebSphere MQ to a custom location during the installation process. Alternatively, you can install to the default location. The location where IBM WebSphere MQ is installed is known as the *MQ_INSTALLATION_PATH*.

“Planning your installation” on page 5

Before you install IBM WebSphere MQ, you must choose which components to install and where to install them. You must also make some platform-specific choices.

“Choosing an installation name” on page 5

Each installation of IBM WebSphere MQ on UNIX, Linux, and Windows, has a unique identifier known as an installation name. The installation name is used to associate things such as queue managers and configuration files with an installation.

Related tasks

Changing the primary installation

External library and control command links to primary installation on UNIX and Linux

On UNIX and Linux platforms the primary installation is the one to which links from the `/usr` file system are made. However, only a subset of those links created with previous releases are now made.

No links are created from `/usr/include` to any installation and only links to external libraries and documented control commands are made from `/usr/lib` (external libraries) and `/usr/bin` (control commands).

In order to run these commands you must complete the following steps:

1. provide a full path to the command in an available IBM WebSphere MQ installation,
2. use the `setmqenv` script to update your shell environment,
3. manually add the bin directory from an IBM WebSphere MQ installation directory to your PATH,
4. run the **setmqinst** command as root to make one of your existing IBM WebSphere MQ installations the primary installation.

External libraries

Links are made to the following external libraries, both 32-bit and 64-bit:

- libmqm
- libmqm_r
- libmqmxa
- libmqmxa_r
- libmqmax
- libmqmax_r
- libmqmcb
- libmqmcb_r
- libmqic
- libmqic_r
- libmqcxa
- libmqcxa_r
- libmqicb
- libmqicb_r
- libimqb23ia
- libimqb23ia_r
- libimqc23ia
- libimqc23ia_r
- libimqs23ia
- libimqs23ia_r
- libmqmzf
- libmqmzf_r

The following 64-bit only libraries are also linked to:

- libmqmxa64
- libmqmxa64_r
- libmqcxa64
- libmqcxa64_r

Control commands

The following control commands are linked to from `/usr/bin`:

- addmqinf
- amqcrs6a
- amqcrsta
- amqmfsck
- crtmqinst
- dltmqinst
- dspmqinst
- setmqinst
- crtmqcvx
- crtmqm
- dltmqm
- dmpmqaut
- dmpmqlog
- dspmq
- dspmqaut
- dspmqcsv
- dspmqfls
- dspmqinf
- dspmqrte
- dspmqtrc
- dspmqtrn
- dspmqver
- endmqcsv
- endmqlsr
- endmqm
- endmqtrc
- migmbbrk
- rcdmqimg
- rcrmqobj
- rmvmqinf
- rsvmqtrn
- runmqchi
- runmqchl
- runmqckm
- runmqdlq

- runmqlsr
- runmqsc
- runmqtmc
- runmqtrm
- setmqaut
- setmqenv
- setmqm
- setmqprd
- strmqbrk
- strmqcsv
- strmqikm
- strmqm
- strmqtrc

Related concepts

"Choosing a primary installation" on page 8
On systems that support multiple installations of IBM WebSphere MQ (UNIX, Linux, and Windows), the primary installation is the one to which IBM WebSphere MQ system-wide locations refer. Having a primary installation is optional, but convenient.

"Features that can be used only with the primary installation on Windows" on page 12
Some Windows operating-system features can be used only with the primary installation. This restriction is due to the central registration of interface libraries, which might conflict as a result of multiple versions of IBM WebSphere MQ being installed.

Features that can be used only with the primary installation on Windows

Some Windows operating-system features can be used only with the primary installation. This restriction is due to the central registration of interface libraries, which might conflict as a result of multiple versions of IBM WebSphere MQ being installed.

The .NET monitor

The IBM WebSphere MQ .NET monitor can run in two different modes: transactional and non-transactional. The transactional mode uses MSDTC transaction coordination and requires that the .NET monitor is registered with COM+. The .NET monitor from the primary installation is the only .NET monitor that is registered with COM+.

Any attempt to run the .NET monitor in transactional mode with a non-primary installation results in the failure of the .NET monitor to enlist with MSDTC. The .NET monitor receives an `MQRC_INSTALLATION_MISMATCH` error, which in turn results in an AMQ8377 error message on the console.

COM/ActiveX interface classes

The COM/ActiveX interface classes are registered only for the primary installation. If there is an installation of IBM WebSphere MQ Version 7.0.1 on the system, the COM/ActiveX interface classes registered are not capable of connecting to queue managers running under other installations. If the primary installation is an installation of IBM WebSphere MQ Version 7.1 or later, the interface classes can connect to queue managers associated with any installation. Server COM/ActiveX applications are limited by this restriction, but client applications can connect to any queue manager.

Any attempt to start a COM/ActiveX application that uses libraries from installations other than the primary installation results in failure with an `MQRC_Q_MGR_NOT_AVAILABLE` error.

Related concepts

"Choosing a primary installation" on page 8
On systems that support multiple installations of IBM WebSphere MQ (UNIX, Linux, and Windows), the primary installation is the one to which IBM WebSphere MQ system-wide locations refer. Having a primary installation is optional, but convenient.

"External library and control command links to primary installation on UNIX and Linux" on page 10
On UNIX and Linux platforms the primary installation is the one to which links from the `/usr` file system are made. However, only a subset of those links created with previous releases are now made.

Uninstalling, upgrading, and maintaining the primary installation

On all platforms, if you uninstall the primary installation, it ceases to be the primary installation. You must run the **setmqinst** command to select a new primary installation. On Windows, if you update the primary installation, it continues to be the primary installation. If you apply a fix pack to the primary installation, it continues to be the primary installation.

Be cautious about the effect uninstalling or upgrading the primary installation has on applications. Applications might be using the linkage library of the primary installation to switch to the linkage library of another installation. If such an application is running, you might not be able to uninstall the primary installation. The operating system might have locked the link library of the primary installation on behalf of the application. If the primary installation has been uninstalled, an application that loads the IBM WebSphere MQ libraries it requires by linking to the primary installation is not able to start.

The solution is to switch the primary installation to another installation before uninstalling. Stop, and restart applications that are linked through the previous primary installation before uninstalling it.

Windows

If you update the primary installation, it stops being the primary installation at the beginning of the update procedure. If, by the end of the update procedure, you have not made another installation primary, the upgraded installation is made primary again.

Maintenance

If you apply a fix pack to the primary installation, it stops being the primary installation at the beginning of the maintenance procedure. If, by the end of the maintenance procedure, you have not made another installation primary, the upgraded installation is made primary again.

Related concepts

"Choosing a primary installation" on page 8
On systems that support multiple installations of IBM WebSphere MQ (UNIX, Linux, and Windows), the primary installation is the one to which IBM WebSphere MQ system-wide locations refer. Having a primary installation is optional, but convenient.

"Uninstalling IBM WebSphere MQ components" on page 165
The topics in this section provide instructions on how to uninstall components.

Related tasks

Changing the primary installation

WebSphere MQ maintenance tasks

Choosing an installation location

You can install IBM WebSphere MQ to a custom location during the installation process. Alternatively, you can install to the default location. The location where IBM WebSphere MQ is installed is known as the *MQ_INSTALLATION_PATH*.

The default location for the IBM WebSphere MQ product code is shown in the following table:

Table 2. Installation location of IBM WebSphere MQ	
Platform	**Installation Location**
Linux, HP-UX, and Solaris	`/opt/mqm`
AIX®	`/usr/mqm`
Windows 32-bit	`C:\Program Files\IBM\WebSphere MQ`
Windows 64-bit	`C:\Program Files (x86)\IBM\WebSphere MQ`

On UNIX and Linux systems, working data is stored in `/var/mqm`, but you cannot change this location; for more information about the directory structure of UNIX and Linux systems, see Directory structure on UNIX and Linux systems .

Custom location installation

For an installation into a custom location, the path specified must either be an empty directory, the root of an unused file system, or a path that does not exist. The length of the path is limited to 256 bytes. On UNIX and Linux systems, the path must not contain spaces.

- On AIX, the product is installed into a User Specified Install Location (USIL), which can be either an existing USIL or a new USIL that is automatically created by the installation process. If a custom location is specified, the product location is the path specified during installation, plus `/usr/mqm`.

  For example, the path specified is `/usr/custom_location`. The *MQ_INSTALLATION_PATH* is `/usr/custom_location/usr/mqm`.

  Access permissions for the USIL directory should be set to rwx for user and r-x for group and others (755).
- On Windows, Linux, HP-UX, and Solaris, the product location is the same path as specified during installation.

  For example, on Linux, the path specified is `/opt/custom_location`. The *MQ_INSTALLATION_PATH* is `/opt/custom_location`.

For each installation, all of the IBM WebSphere MQ components that you require must be installed in the same location.

For more information about how to install to a custom location, see the installation topics for the appropriate platform.

Additional location restrictions

New WebSphere MQ installations should not be located in the following paths:

- In a path that is a subdirectory of another existing installation.
- In a path that is part of the direct path to an existing installation.
- In a path that is a subdirectory of the default location, for example:
  - /usr/mqm on AIX
  - /opt/mqm on Linux, Solaris and HP-UX platforms
- In a directory or subdirectory that is, or might later be used by another product, for example, an IBM DB2® installation, or operating system component.

An installation should not be located in /opt/mqm/v80, /opt/mqm/v75, /opt/mqm/inst2/mq71, or other directory located under /opt/mqm on Linux, Solaris and HP-UX platforms.

If WebSphere MQ is installed in /opt/IBM/MQ/installations/1, you can not install in /opt/IBM/MQ/installations/1/a. Additionally, you should not install a new installation to /opt/IBM/MQ. However, you

can install a new installation in /opt/IBM/MQ/installations/2 or /opt/IBM/MQnew because neither of these is a part of the direct path /opt/IBM/MQ/installations/1.

You must not install to any directory located under /opt/IBM/db2.

The reason an installation should not be located in a path that is a subdirectory of the default location is to avoid the risk if you later decide to install WebSphere MQ into the default location, and cannot then do so. If you do subsequently install into the default location, because WebSphere MQ has full access rights over the installation directory, existing files might be replaced or deleted. Scripts that you might subsequently run to uninstall WebSphere MQ might remove the installation directory at the end of the script.

Related concepts

"Planning your installation" on page 5
Before you install IBM WebSphere MQ, you must choose which components to install and where to install them. You must also make some platform-specific choices.

"Choosing an installation name" on page 5
Each installation of IBM WebSphere MQ on UNIX, Linux, and Windows, has a unique identifier known as an installation name. The installation name is used to associate things such as queue managers and configuration files with an installation.

"Choosing a primary installation" on page 8
On systems that support multiple installations of IBM WebSphere MQ (UNIX, Linux, and Windows), the primary installation is the one to which IBM WebSphere MQ system-wide locations refer. Having a primary installation is optional, but convenient.

"Choosing what to install" on page 15
You can select the components or features that you require when you install IBM WebSphere MQ.

Related tasks

"Installing an IBM WebSphere MQ server" on page 68
After preparing your system for installation you may install IBM WebSphere MQ by following the appropriate instructions for your platform. After installation, you might want to verify your installation to check that installation has been successful.

Choosing what to install

You can select the components or features that you require when you install IBM WebSphere MQ.

IBM WebSphere MQ can be installed as a server or a client. The installation images can be downloaded, or IBM WebSphere MQ can be installed from a DVD.

An IBM WebSphere MQ server is an installation of one or more queue managers that provide queueing services to one or more clients. All the IBM WebSphere MQ objects, for example queues, exist only on the queue manager machine (the IBM WebSphere MQ server machine), and not the client. An IBM WebSphere MQ server can also support local IBM WebSphere MQ applications. To install an IBM WebSphere MQ server see, "Installing an IBM WebSphere MQ server" on page 68.

An IBM WebSphere MQ MQI client is a component that allows an application running on one system to communicate with a queue manager running on another system. The output from the call is sent back to the client, which passes it back to the application. To install a IBM WebSphere MQ MQI client see, Installing a IBM WebSphere MQ client.

It is possible to have both a server and a client installation on the same system. See, "Installing an IBM WebSphere MQ client" on page 116.

IBM WebSphere MQ Advanced Message Security is a separately installed and licensed component of WebSphere MQ and is another option on the IBM WebSphere MQ installer. To install IBM WebSphere MQ Advanced Message Security, see "Installing IBM WebSphere MQ Advanced Message Security" on page 137.

For detailed explanations of all the components that you can install, see the following platform-specific topics:

- "IBM WebSphere MQ components for AIX" on page 16
- "IBM WebSphere MQ components for HP-UX" on page 19
- "IBM WebSphere MQ components for Linux" on page 22
- "Installing IBM WebSphere MQ server on Linux Ubuntu " on page 79
- "IBM WebSphere MQ components for Solaris" on page 26
- "IBM WebSphere MQ features for Windows" on page 31

Related concepts

"Planning your installation" on page 5
Before you install IBM WebSphere MQ, you must choose which components to install and where to install them. You must also make some platform-specific choices.

"Choosing an installation location" on page 13
You can install IBM WebSphere MQ to a custom location during the installation process. Alternatively, you can install to the default location. The location where IBM WebSphere MQ is installed is known as the *MQ_INSTALLATION_PATH*.

"Choosing a primary installation" on page 8
On systems that support multiple installations of IBM WebSphere MQ (UNIX, Linux, and Windows), the primary installation is the one to which IBM WebSphere MQ system-wide locations refer. Having a primary installation is optional, but convenient.

"Choosing an installation name" on page 5
Each installation of IBM WebSphere MQ on UNIX, Linux, and Windows, has a unique identifier known as an installation name. The installation name is used to associate things such as queue managers and configuration files with an installation.

IBM WebSphere MQ components for AIX

You can select the components that you require when you install IBM WebSphere MQ.

Table 3 on page 16 shows the components that are available when installing an IBM WebSphere MQ server or client on an AIX system:

Table 3. IBM WebSphere MQ components for AIX systems.

A six-column table listing the available product components, what source they are available from, and the name of the component.

Component	Description	Server DVD	Client DVD	Hypervisor	Component name
Runtime	Contains files that are common to both server and client installations. **Note:** This component must be installed.	✓	✓	✓	mqm.base.runtime
Server	You can use the server to run queue managers on your system and connect to other systems over a network. Provides messaging and queuing services to applications, and support for IBM WebSphere MQ client connections.	✓		✓	mqm.server

Table 3. IBM WebSphere MQ components for AIX systems.

A six-column table listing the available product components, what source they are available from, and the name of the component.

(continued)

Component	Description	Server DVD	Client DVD	Hypervisor	Component name
Standard Client	The IBM WebSphere MQ MQI client is a small subset of IBM WebSphere MQ, without a queue manager, that uses the queue manager and queues on other (server) systems. It can be used only when the system it is on is connected to another system that is running a full server version of IBM WebSphere MQ. The client and the server can be on the same system if required.	✓	✓	✓	mqm.client.rte
SDK	The SDK is required for compiling applications. It includes sample source files, and the bindings (files .H, .LIB, .DLL, and others), that you need to develop applications to run on IBM WebSphere MQ.	✓	✓	✓	mqm.base.sdk
Sample programs	The sample application programs are needed if you want to check your IBM WebSphere MQ installation using the verification procedures.	✓	✓	✓	mqm.base.samples
Java messaging	The files needed for messaging using Java (includes Java Messaging Service).	✓	✓	✓	mqm.java.rte
Man pages	UNIX man pages, in U.S. English, for: control commands MQI commands MQSC commands	✓	✓	✓	mqm.man.en_US.data
Java JRE	A Java Runtime Environment, Version 6.0, that is used by those parts of IBM WebSphere MQ that are written in Java.	✓	✓	✓	mqm.jre.rte
Message Catalogs	For available languages, see the table of message catalogs that follows.	✓	✓	✓	
IBM Global Security Kit	IBM Global Security Kit V8 Certificate and SSL Base Runtime.	✓	✓	✓	mqm.gskit.rte

Table 3. IBM WebSphere MQ components for AIX systems.

A six-column table listing the available product components, what source they are available from, and the name of the component.

(continued)

Component	Description	Server DVD	Client DVD	Hypervisor	Component name
MQ Telemetry	MQ Telemetry supports the connection of Internet Of Things (IOT) devices (that is, remote sensors, actuators and telemetry devices) that use the MQ Telemetry Transport (MQTT) protocol. The MQ Telemetry component comprises: • The telemetry (MQXR) service enables a queue manager to act as an MQTT server, and communicate with MQTT client apps. • A set of MQTT client libraries. These libraries help you write the MQTT client apps that IOT devices use to communicate with MQTT servers. The most up-to-date version of the MQTT client libraries is available in the free download Mobile Messaging and M2M Client Pack. See also Installing IBM WebSphere MQ Telemetry.	✓	✓	✓	mqm.xr.service mqm.xr.clients
Managed File Transfer	MQ Managed File Transfer transfers files between systems in a managed and auditable way, regardless of file size or the operating systems used. For information about the function of each component, see WebSphere MQ Managed File Transfer product options.	✓		✓	mqm.ft.agent mqm.ft.base mqm.ft.logger mqm.ft.service mqm.ft.tools
Advanced Message Security	Provides a high level of protection for sensitive data flowing through the IBM WebSphere MQ network, while not impacting the end applications. You must install this component on all IBM WebSphere MQ installations that host queues you want to protect. You must install the IBM Global Security Kit component on any IBM WebSphere MQ installation that is used by a program that puts or gets messages to or from a protected queue, unless you are using only Java client connections.	✓		✓	mqm.ams.rte

Table 4. IBM WebSphere MQ message catalogs for AIX systems.

A two-column table listing the available message catalogs.

Message catalog language	Component name
Brazilian Portuguese	mqm.msg.pt_BR
Czech	mqm.msg.cs_CZ
French	mqm.msg.fr_FR
German	mqm.msg.de_DE
Hungarian	mqm.msg.hu_HU
Italian	mqm.msg.it_IT
Japanese	mqm.msg.ja_JP, mqm.msg.Ja_JP
Korean	mqm.msg.ko_KR
Polish	mqm.msg.pl_PL
Russian	mqm.msg.ru_RU
Spanish	mqm.msg.es_ES
Simplified Chinese	mqm.msg.zh_CN, mqm.msg.Zh.CN
Traditional Chinese	mqm.msg.zh_TW, mqm.msg.Zh_TW
U.S. English	mqm.msg.en_US

Related concepts

"Choosing what to install" on page 15
You can select the components or features that you require when you install IBM WebSphere MQ.

"Planning your installation" on page 5
Before you install IBM WebSphere MQ, you must choose which components to install and where to install them. You must also make some platform-specific choices.

IBM WebSphere MQ client components for HP Integrity NonStop Server

There are no optional components within the client installer when you install the IBM WebSphere MQ client for HP Integrity NonStop Server.

An installation of the IBM WebSphere MQ client for HP Integrity NonStop Server contains product binary files, command utilities, and samples.

Related concepts

"Choosing what to install" on page 15
You can select the components or features that you require when you install IBM WebSphere MQ.

"Planning your installation" on page 5
Before you install IBM WebSphere MQ, you must choose which components to install and where to install them. You must also make some platform-specific choices.

IBM WebSphere MQ components for HP-UX

You can select the components that you require when you install IBM WebSphere MQ.

Table 5 on page 20 shows the components that are available when installing an IBM WebSphere MQ server or client on an HP-UX system:

Table 5. IBM WebSphere MQ components for HP-UX systems.

A six-column table listing the available product components, what source they are available from, and the name of the component.

Component	Description	Server DVD	Client DVD	Hypervisor	Component name
Runtime	Contains files that are common to both server and client installations. **Note:** This component must be installed.	✓	✓		MQSERIES.MQM-RUNTIME
Server	You can use the server to run queue managers on your system and connect to other systems over a network. Provides messaging and queuing services to applications, and support for IBM WebSphere MQ client connections.	✓			MQSERIES.MQM-SERVER
Standard Client	The IBM WebSphere MQ MQI client is a small subset of IBM WebSphere MQ, without a queue manager, that uses the queue manager and queues on other (server) systems. It can be used only when the system it is on is connected to another system that is running a full server version of IBM WebSphere MQ. The client and the server can be on the same system if required.	✓	✓		MQSERIES.MQM-CL-HPUX
SDK	The SDK is required for compiling applications. It includes sample source files, and the bindings (files .H, .LIB, .DLL, and others), that you need to develop applications to run on IBM WebSphere MQ.	✓	✓		MQSERIES.MQM-BASE
Sample programs	The sample application programs are needed if you want to check your IBM WebSphere MQ installation using the verification procedures.	✓	✓		MQSERIES.MQM-SAMPLES
Java messaging	The files needed for messaging using Java (includes Java Messaging Service).	✓	✓		MQSERIES.MQM-JAVA
Man pages	UNIX man pages, in U.S. English, for: control commands MQI commands MQSC commands	✓	✓		MQSERIES.MQM-MAN

Table 5. IBM WebSphere MQ components for HP-UX systems.

A six-column table listing the available product components, what source they are available from, and the name of the component.

(continued)

Component	Description	Server DVD	Client DVD	Hypervisor	Component name
Java JRE	A Java Runtime Environment, Version 6.0, that is used by those parts of IBM WebSphere MQ that are written in Java.	✓	✓		MQSERIES.MQM-JAVAJRE
Message Catalogs	For available languages, see the table of message catalogs that follows.	✓	✓		
IBM Global Security Kit	IBM Global Security Kit V8 Certificate and SSL Base Runtime.	✓	✓		MQSERIES.MQM-GSKIT
Managed File Transfer	MQ Managed File Transfer transfers files between systems in a managed and auditable way, regardless of file size or the operating systems used. For information about the function of each component, see WebSphere MQ Managed File Transfer product options.	✓			MQSERIES.MQM-FTAGENT MQSERIES.MQM-FTBASE MQSERIES.MQM-FTLOGGER MQSERIES.MQM-FTSERVICE MQSERIES.MQM-FTTOOLS
Advanced Message Security	Provides a high level of protection for sensitive data flowing through the IBM WebSphere MQ network, while not impacting the end applications. You must install this component on all IBM WebSphere MQ installations that host queues you want to protect. You must install the IBM Global Security Kit component on any IBM WebSphere MQ installation that is used by a program that puts or gets messages to or from a protected queue, unless you are using only Java client connections.	✓			MQSERIES.MQM-AMS

Table 6. IBM WebSphere MQ message catalogs for HP-UX systems.

A two-column table listing the available message catalogs.

Message catalog language	Component name
Brazilian Portuguese	MQSERIES.MQM-MC-PORT
Czech	MQSERIES.MQM-MC-CZECH
French	MQSERIES.MQM-MC-FRENCH

Table 6. IBM WebSphere MQ message catalogs for HP-UX systems.

A two-column table listing the available message catalogs.

(continued)

Message catalog language	Component name
German	MQSERIES.MQM-MC-GERMAN
Hungarian	MQSERIES.MQM-MC-HUNGARIAN
Italian	MQSERIES.MQM-MC-ITALIAN
Japanese	MQSERIES.MQM-MC-JAPAN
Korean	MQSERIES.MQM-MC-KOREAN
Polish	MQSERIES.MQM-MC-POLISH
Russian	MQSERIES.MQM-MC-RUSSIAN
Spanish	MQSERIES.MQM-MC-SPANISH
Simplified Chinese	MQSERIES.MQM-MC-CHINES
Traditional Chinese	MQSERIES.MQM-MC-CHINET
U.S. English	not applicable

Related concepts

"Choosing what to install" on page 15
You can select the components or features that you require when you install IBM WebSphere MQ.

"Planning your installation" on page 5
Before you install IBM WebSphere MQ, you must choose which components to install and where to install them. You must also make some platform-specific choices.

IBM WebSphere MQ components for Linux

You can select the components that you require when you install IBM WebSphere MQ.

Table 7 on page 22 shows the components that are available when installing a IBM WebSphere MQ server or client on a Linux system:

Table 7. IBM WebSphere MQ components for Linux systems.

A six-column table listing the available product components, what source they are available from, and the name of the component.

Component	Description	Server DVD	Client DVD	Hypervisor	Component name
Runtime	Contains files that are common to both server and client installations. **Note:** This component must be installed.	✓	✓	✓	MQSeriesRuntime
Server	You can use the server to run queue managers on your system and connect to other systems over a network. Provides messaging and queuing services to applications, and support for IBM WebSphere MQ client connections.	✓		✓	MQSeriesServer

Table 7. IBM WebSphere MQ components for Linux systems.

A six-column table listing the available product components, what source they are available from, and the name of the component.

(continued)

Component	Description	Server DVD	Client DVD	Hypervisor	Component name
Standard Client	The IBM WebSphere MQ MQI client is a small subset of IBM WebSphere MQ, without a queue manager, that uses the queue manager and queues on other (server) systems. It can be used only when the system it is on is connected to another system that is running a full server version of IBM WebSphere MQ. The client and the server can be on the same system if required.	✓	✓	✓	MQSeriesClient
SDK	The SDK is required for compiling applications. It includes sample source files, and the bindings (files .H, .LIB, .DLL, and others), that you need to develop applications to run on IBM WebSphere MQ.	✓	✓	✓	MQSeriesSDK
Sample programs	The sample application programs are needed if you want to check your IBM WebSphere MQ installation using the verification procedures.	✓	✓	✓	MQSeriesSamples
Java messaging	The files needed for messaging using Java (includes Java Messaging Service).	✓	✓	✓	MQSeriesJava
Man pages	UNIX man pages, in U.S. English, for: control commands MQI commands MQSC commands	✓	✓	✓	MQSeriesMan
Java JRE	A Java Runtime Environment, Version 6.0, that is used by those parts of IBM WebSphere MQ that are written in Java.	✓	✓	✓	MQSeriesJRE
Message Catalogs	For available languages, see the table of message catalogs that follows.	✓	✓	✓	
IBM Global Security Kit	IBM Global Security Kit V8 Certificate and SSL Base Runtime.	✓	✓	✓	MQSeriesGSKit

Table 7. IBM WebSphere MQ components for Linux systems.

A six-column table listing the available product components, what source they are available from, and the name of the component.

(continued)

Component	Description	Server DVD	Client DVD	Hypervisor	Component name
MQ Telemetry	MQ Telemetry supports the connection of Internet Of Things (IOT) devices (that is, remote sensors, actuators and telemetry devices) that use the MQ Telemetry Transport (MQTT) protocol. The MQ Telemetry component comprises: • The telemetry (MQXR) service. It enables a queue manager to act as an MQTT server, and communicate with MQTT client apps. • A set of MQTT client libraries. These libraries help you write the MQTT client apps that IOT devices use to communicate with MQTT servers. MQ Telemetry is only available on Linux for System x (64 bit) and Linux for System z. The most up-to-date version of the MQTT client libraries is available in the free download Mobile Messaging and M2M Client Pack. See also Installing IBM WebSphere MQ Telemetry.	✓	✓	✓	MQSeriesXRService MQSeriesXRClients
MQ Explorer	Use IBM WebSphere MQ MQ Explorer to administer and monitor resources on Linux x86 and x86-64 systems.	✓		✓	MQSeriesExplorer
Managed File Transfer	MQ Managed File Transfer transfers files between systems in a managed and auditable way, regardless of file size or the operating systems used. For information about the function of each component, see WebSphere MQ Managed File Transfer product options.	✓		✓	MQSeriesFTAgent MQSeriesFTBase MQSeriesFTLogger MQSeriesFTService MQSeriesFTTools

Table 7. IBM WebSphere MQ components for Linux systems.

A six-column table listing the available product components, what source they are available from, and the name of the component.

(continued)

Component	Description	Server DVD	Client DVD	Hypervisor	Component name
Advanced Message Security	Provides a high level of protection for sensitive data flowing through the IBM WebSphere MQ network, while not impacting the end applications. You must install this component on all IBM WebSphere MQ installations that host queues you want to protect. You must install the IBM Global Security Kit component on any IBM WebSphere MQ installation that is used by a program that puts or gets messages to or from a protected queue, unless you are using only Java client connections.	✓		✓	MQSeriesAMS

Table 8. IBM WebSphere MQ message catalogs for Linux systems.

A two-column table listing the available message catalogs.

Message catalog language	Component name
Brazilian Portuguese	MQSeriesMsg_pt
Czech	MQSeriesMsg_cs
French	MQSeriesMsg_fr
German	MQSeriesMsg_de
Hungarian	MQSeriesMsg_hu
Italian	MQSeriesMsg_it
Japanese	MQSeriesMsg_ja
Korean	MQSeriesMsg_ko
Polish	MQSeriesMsg_pl
Russian	MQSeriesMsg_ru
Spanish	MQSeriesMsg_es
Simplified Chinese	MQSeriesMsg_Zh_CN
Traditional Chinese	MQSeriesMsg_Zh_TW
U.S. English	not applicable

Related concepts

"Choosing what to install" on page 15
You can select the components or features that you require when you install IBM WebSphere MQ.

"Planning your installation" on page 5

Before you install IBM WebSphere MQ, you must choose which components to install and where to install them. You must also make some platform-specific choices.

IBM WebSphere MQ components for Solaris

You can select the components that you require when you install IBM WebSphere MQ.

Table 9 on page 26 shows the components that are available when installing an IBM WebSphere MQ server or client on a Solaris system.

Note: When you install interactively on Solaris systems, the options that are available install various combinations of the components listed in this table. Details are given in the "Interactive installation" on page 28 section.

Table 9. IBM WebSphere MQ components for Solaris systems.

A six-column table listing the available product components, what source they are available from, and the names of the components.

Component	Description	Server DVD	Client DVD	Hypervisor	Component name
Runtime	Contains files that are common to both server and client installations. **Note:** This component must be installed.	✓	✓		runtime
Server	You can use the server to run queue managers on your system and connect to other systems over a network. Provides messaging and queuing services to applications, and support for IBM WebSphere MQ client connections.	✓			server
Standard Client	The IBM WebSphere MQ MQI client is a small subset of IBM WebSphere MQ, without a queue manager, that uses the queue manager and queues on other (server) systems. It can be used only when the system it is on is connected to another system that is running a full server version of IBM WebSphere MQ. The client and the server can be on the same system if required.	✓	✓		sol_client
SDK	The SDK is required for compiling applications. It includes sample source files, and the bindings (files .H, .LIB, .DLL, and others), that you need to develop applications to run on IBM WebSphere MQ.	✓	✓		base
Sample programs	The sample application programs are needed if you want to check your IBM WebSphere MQ installation using the verification procedures.	✓	✓		samples

Table 9. IBM WebSphere MQ components for Solaris systems.

A six-column table listing the available product components, what source they are available from, and the names of the components.

(continued)

Component	Description	Server DVD	Client DVD	Hypervisor	Component name
Java messaging	The files needed for messaging using Java (includes Java Messaging Service).	✓	✓		java
Man pages	UNIX man pages, in U.S. English, for: control commands MQI commands MQSC commands	✓	✓		man
Java JRE	A Java Runtime Environment, Version 6.0, that is used by those parts of IBM WebSphere MQ that are written in Java.	✓	✓		jre
Message Catalogs	For available languages, see the table of message catalogs that follows.	✓	✓		
IBM Global Security Kit	IBM Global Security Kit V8 Certificate and SSL Base Runtime.	✓	✓		gskit
Managed File Transfer	MQ Managed File Transfer transfers files between systems in a managed and auditable way, regardless of file size or the operating systems used. For information about the function of each component, see WebSphere MQ Managed File Transfer product options.	✓			ftagent ftbase ftlogger ftservice fttools
Advanced Message Security	Provides a high level of protection for sensitive data flowing through the IBM WebSphere MQ network, while not impacting the end applications. You must install this component on all IBM WebSphere MQ installations that host queues you want to protect. You must install the IBM Global Security Kit component on any IBM WebSphere MQ installation that is used by a program that puts or gets messages to or from a protected queue, unless you are using only Java client connections.	✓			mqams

Table 10. IBM WebSphere MQ message catalogs for Solaris systems.

A two-column table listing the available message catalogs.

Message catalog language	Component name
Brazilian Portuguese	Pt_BR

Table 10. IBM WebSphere MQ message catalogs for Solaris systems.

A two-column table listing the available message catalogs.

(continued)

Message catalog language	Component name
Czech	Cs_CZ
French	Fr_FR
German	De_DE
Hungarian	Hu_HU
Italian	It_IT
Japanese	Ja_JP
Korean	Ko_KR
Polish	Pl_PL
Russian	Ru_RU
Spanish	Es_ES
Simplified Chinese	Zh_CN
Traditional Chinese	Zh_TW
U.S. English	not applicable

Interactive installation

The options available with interactive installation install various combinations of the product components described in the previous tables. The following table shows you what will be installed for each option, together with the option number on the server and client DVDs:

Table 11. IBM WebSphere MQ interactive installation options for Solaris systems.

A four-column table listing interactive installation options and the components installed with each one. Server and client option numbers are also listed.

Interactive installation option	Components installed	Server DVD option number	Client DVD option number
IBM WebSphere MQ Server	base runtime server java gskit	1	
Man pages	runtime man	2	1
Sample programs	base runtime samples	3	2

Table 11. IBM WebSphere MQ interactive installation options for Solaris systems.

A four-column table listing interactive installation options and the components installed with each one. Server and client option numbers are also listed.

(continued)

Interactive installation option	Components installed	Server DVD option number	Client DVD option number
IBM WebSphere MQ MQI client libraries (including Java, JMS, and Web Services support)	base runtime sol_client java gskit	4	3
IBM Java runtime for Solaris, Java 2 Technology Edition, Version 6	jre runtime	5	
IBM Global Security Kit for IBM WebSphere MQ	gskit jre runtime	6	
IBM WebSphere MQ Managed File Transfer Service	ftservice ftbase jre java runtime ftagent	7	
IBM WebSphere MQ Managed File Transfer Tools	fttools ftbase jre java runtime	8	
IBM WebSphere MQ Managed File Transfer Agent	ftagent ftbase jre java runtime	9	
IBM WebSphere MQ Managed File Transfer Logger	ftlogger ftbase jre java runtime server	10	
Advanced Message Security	runtime mqams	11	

Table 11. IBM WebSphere MQ interactive installation options for Solaris systems.

A four-column table listing interactive installation options and the components installed with each one. Server and client option numbers are also listed.

(continued)

Interactive installation option	Components installed	Server DVD option number	Client DVD option number
Spanish message catalog	runtime Es_ES	12	4
French message catalog	runtime Fr_FR	13	5
German message catalog	runtime De_DE	14	6
Japanese message catalog	runtime Ja_JP	15	7
Italian message catalog	runtime It_IT	16	8
Brazilian Portuguese message catalog	runtime Pt_BR	17	9
Traditional Chinese message catalog	runtime Zh_TW	18	10
Simplified Chinese message catalog	runtime Zh_CN	19	11
Korean message catalog	runtime Ko_KR	20	12
Russian message catalog	runtime Ru_RU	21	13
Hungarian message catalog	runtime Hu_HU	22	14
Polish message catalog	runtime Pl_PL	23	15
Czech message catalog	runtime Cs_CZ	24	16

Related concepts

"Choosing what to install" on page 15

You can select the components or features that you require when you install IBM WebSphere MQ.

"Planning your installation" on page 5
Before you install IBM WebSphere MQ, you must choose which components to install and where to install them. You must also make some platform-specific choices.

IBM WebSphere MQ features for Windows

You can select the features that you require when you install IBM WebSphere MQ.

The following table shows the features that are available when installing an IBM WebSphere MQ server or client on a Windows system.

A five-column table listing the available product components on Windows systems and what source they are available from.

Interactive displayed name	Non-interactive displayed name	Description	Server DVD	Client DVD
Server	Server	You can use the server to run queue managers on your system and connect to other systems over a network. Provides messaging and queuing services to applications, and support for IBM WebSphere MQ client connections.	✓	
MQ Explorer	Explorer	IBM WebSphere MQ Explorer allows you to administer and monitor resources in IBM WebSphere MQ.	✓	

A five-column table listing the available product components on Windows systems and what source they are available from.

(continued)

Interactive displayed name	Non-interactive displayed name	Description	Server DVD	Client DVD
Managed File Transfer Service	MFT_Service	The IBM WebSphere MQ Managed File Transfer Service install option installs a file transfer agent that has additional capabilities beyond those provided by the file transfer agent installed via the IBM WebSphere MQ Managed File Transfer Agent install option. These additional capabilities are:- • Create protocol bridge agents which are used to send and receive files with legacy FTP, FTPS or SFTP servers • Deploy the Web Gateway feature which provides RESTful interfaces for building web applications that transfer files The IBM WebSphere MQ Managed File Transfer Service install option must be installed on systems where the IBM WebSphere MQ Server install option is already installed.	✓	

A five-column table listing the available product components on Windows systems and what source they are available from.

(continued)

Interactive displayed name	Non-interactive displayed name	Description	Server DVD	Client DVD
Managed File Transfer Logger	MFT_Logger	The IBM WebSphere MQ Managed File Transfer Logger install option installs a file transfer logger which connects to an IBM WebSphere MQ queue manager, often the queue manager designated as the coordination queue manager. It logs file transfer audit related data to either a database or a file. It must be installed on systems where the IBM WebSphere MQ Server install option is already installed.	✓	
Managed File Transfer Agent	MFT_Agent	The IBM WebSphere MQ Managed File Transfer Agent install option installs a file transfer agent which connects to an IBM WebSphere MQ queue manager and transfers file data, as messages, to other file transfer agents. These must be installed either as part of the IBM WebSphere MQ Managed File Transfer Agent or IBM WebSphere MQ Managed File Transfer Service install options.	✓	

A five-column table listing the available product components on Windows systems and what source they are available from.

(continued)

Interactive displayed name	Non-interactive displayed name	Description	Server DVD	Client DVD
Managed File Transfer Tools	MFT_Tools	The IBM WebSphere MQ Managed File Transfer Tools install option installs command line tools that are used to interact with file transfer agents. You can use these tools to start file transfers, schedule file transfers and create resource monitors from the command line. The IBM WebSphere MQ Managed File Transfer Tools can be installed and used on either a system where file transfer agents are installed, or on a system where no file transfer agents are installed.	✓	

A five-column table listing the available product components on Windows systems and what source they are available from.

(continued)

Interactive displayed name	Non-interactive displayed name	Description	Server DVD	Client DVD
Windows Client	Client	The IBM WebSphere MQ client is a small subset of IBM WebSphere MQ, without a queue manager, that uses the queue manager and queues on other (server) systems. It can be used only when the system it is on is connected to another system that is running a full server version of IBM WebSphere MQ. The client and server can be on the same system if required.	✓	✓
Java and .NET Messaging and Web Services	JavaMsg	The files needed for messaging using Java (includes Java Message Service support) and IBM WebSphere MQ Web Services.	✓	✓

A five-column table listing the available product components on Windows systems and what source they are available from.

(continued)

Interactive displayed name	Non-interactive displayed name	Description	Server DVD	Client DVD
Development Toolkit	Toolkit	This feature includes sample source files, and the bindings (files .H, .LIB, .DLL, and others), that you need to develop applications to run on IBM WebSphere MQ . Bindings and samples are provided for the following languages: C, C++, Visual Basic, ActiveX, Cobol, and .NET (including C#). Java and Java Message Service support is included and samples are provided for MTS (COM+), and MQSC.	✓	✓

A five-column table listing the available product components on Windows systems and what source they are available from.

(continued)

Interactive displayed name	Non-interactive displayed name	Description	Server DVD	Client DVD
MQ Telemetry	XR_Service XR_Clients	MQ Telemetry supports the connection of Internet Of Things (IOT) devices (that is, remote sensors, actuators and telemetry devices) that use the MQ Telemetry Transport (MQTT) protocol. The MQ Telemetry component comprises: • The telemetry (MQXR) service enables a queue manager to act as an MQTT server, and communicate with MQTT client apps. • A set of MQTT client libraries. These libraries help you write the MQTT client apps that IOT devices use to communicate with MQTT servers. The most up-to-date version of the MQTT client libraries is available in the free download Mobile Messaging and M2M Client Pack. See also “Installing IBM WebSphere MQ Telemetry” on page 38.	✓	✓

A five-column table listing the available product components on Windows systems and what source they are available from.

(continued)

Interactive displayed name	Non-interactive displayed name	Description	Server DVD	Client DVD
Advanced Message Security	AMS	Provides a high level of protection for sensitive data flowing through the IBM WebSphere MQ network, while not impacting the end applications. You must install this component on all IBM WebSphere MQ installations that host queues you want to protect. You must install the IBM Global Security Kit component on any IBM WebSphere MQ installation that is used by a program that puts or gets messages to or from a protected queue, unless you are using only Java client connections.	✓	

Related concepts

"Choosing what to install" on page 15
You can select the components or features that you require when you install IBM WebSphere MQ.

"Planning your installation" on page 5
Before you install IBM WebSphere MQ, you must choose which components to install and where to install them. You must also make some platform-specific choices.

Installing IBM WebSphere MQ Telemetry

From IBM WebSphere MQ Version 7.1, IBM WebSphere MQ Telemetry is a component of the main IBM WebSphere MQ product, and is no longer a separate plug-in. You can choose to install IBM WebSphere MQ Telemetry when you first install IBM WebSphere MQ, or when you modify an existing IBM WebSphere MQ installation.

If IBM WebSphere MQ Version 7.0.1 is installed with the IBM WebSphere MQ Telemetry plug-in, you must migrate the installation to IBM WebSphere MQ Version 7.5. See Migrating IBM WebSphere MQ Telemetry from Version 7.0.1 to Version 7.5.

IBM WebSphere MQ Telemetry overview

See Introduction to IBM WebSphere MQ Telemetry for general details about IBM WebSphere MQ Telemetry.

IBM WebSphere MQ Telemetry clients

The IBM WebSphere MQ Telemetry installer creates a directory called `mqxr` in which all IBM WebSphere MQ Telemetry components are installed. Two IBM WebSphere MQ Telemetry clients, called basic and advanced, are automatically installed in the `mqxr/SDK` sub-folder. For Windows, the clients by default are installed in `Program Files\IBM\WebSphere MQ\mqxr\SDK`. For Linux and AIX, the clients by default are installed in `/opt/mqm/mqxr/SDK`.

IBM WebSphere MQ Telemetry runtime

IBM WebSphere MQ Telemetry runtime is an extension to theIBM WebSphere MQ queue manager. The IBM WebSphere MQ Telemetry feature supports the connection of telemetry devices from the edge of a network to IBM WebSphere MQ. This connection is made possible by the IBM WebSphere MQ Telemetry Transport (MQTT) protocol.

IBM WebSphere MQ Telemetry runtime can be configured using the IBM WebSphere MQ Explorer. For a queue manager to accept connections from a telemetry device, one or more telemetry channels are needed. To enable MQTT there is a define sample configuration wizard that can be run from IBM WebSphere MQ Explorer. The wizard runs through a series of steps including defining and starting the telemetry (MQXR) service, setting up the default transmission queue, and configuring a telemetry channel. For more information about using the define sample configuration wizard, and any implications, see “Verifying the installation of IBM WebSphere MQ Telemetry using IBM WebSphere MQ Explorer” on page 161.

Support for IBM WebSphere MQ Explorer

You can use IBM WebSphere MQ Explorer to configure and manage the IBM WebSphere MQ Telemetry runtime component. The extension provides the following capabilities:

- Telemetry node and content panel - providing welcome information, define sample configuration wizard, run MQTT client utility, Help on IBM WebSphere MQ Telemetry, and status information about the IBM WebSphere MQ Telemetry Service.
- Define sample configuration wizard - quickly configures a queue manager to support MQTT.
- New Telemetry Channel wizard - gathers information required to create a telemetry channel object.
- Telemetry Channels node and content panel - displays telemetry channels in the IBM WebSphere MQ Explorer Content view.
- Telemetry Channel Status node and content panel - displays telemetry channel status in the IBM WebSphere MQ Explorer Content view.
- MQTT Client Utility - provides a simple GUI for publishing and subscribing to topics.
- Help on IBM WebSphere MQ Telemetry.

You can administer IBM WebSphere MQ Telemetry Version 7.0.1 only from the Version 7.0.1 IBM WebSphere MQ Explorer. If you connect the Version 7.5 explorer remotely to a Version 7.0.1 queue manager, no telemetry resources are displayed. You cannot connect a Version 7.5 IBM WebSphere MQ Explorer locally to a Version 7.0.1 queue manager on the same server.

IBM WebSphere MQ Telemetry client libraries and SDK

You can develop your applications using the IBM WebSphere MQ Telemetry client libraries and the development SDK that are supplied with the product in the Client Software Development Kit (SDK). The client libraries and the development SDK can be imported into a development environment (for example WebSphere Eclipse Platform). After relevant applications are developed, these applications, and

client libraries can then be deployed together to the appropriate system. The SDK includes the following features:

- Client documentation.
- MQTT client libraries
  - Java MQTT libraries
  - Native C MQTT libraries
- Advanced function components
  - MQ Telemetry Daemon for Devices

Two copies of the `com.ibm.micro.client.mqttv3.jar` JAR file are installed.
One copy has a version number as part of the file name. For example:
`com.ibm.micro.client.mqttv3_3.0.2.0-20100723.jar`. Use the versioned copy in OSGi applications. The content of the JAR files is the same.

The IBM WebSphere MQ Telemetry Server and Client components can be installed together, or you can install each component on a separate system. You can install the IBM WebSphere MQ Telemetry runtime component on one system and configure and manage it using the IBM WebSphere MQ Explorer installed on another system. However, the components can be installed only on systems with the appropriate prerequisites. If you have the prerequisites for the IBM WebSphere MQ Telemetry runtime on your system, then both components are installed. There is an option to select not to install the IBM WebSphere MQ Telemetry client libraries and SDK. For information about these prerequisites, see IBM WebSphere MQ Telemetry system requirements.

Related concepts

WebSphere MQ Telemetry

Telemetry concepts and scenarios for monitoring and control

Related tasks

Migrating WebSphere MQ Telemetry from version 7.0.1 to version 7.5

Administering WebSphere MQ Telemetry

Migration of telemetry applications from using WebSphere Message Broker version 6 to use WebSphere MQ Telemetry and WebSphere Message Broker version 7.0

Developing applications for WebSphere MQ Telemetry

Troubleshooting for WebSphere MQ Telemetry

Related reference

WebSphere MQ Telemetry reference

Planning your installation on Windows systems

This topic describes the different methods available to install IBM WebSphere MQ on Windows systems and the different installation types.

If you are migrating from an earlier version of IBM WebSphere MQ, see Windows: Planning for migration from IBM WebSphere MQ Version 7.1 to IBM WebSphere MQ Version 7.5 . To modify an existing installation, see “Modifying your installation” on page 104.

Interactive or Non-Interactive installation

IBM WebSphere MQ for Windows is installed using the Microsoft Installer (MSI). You can use the Installation Launchpad to invoke MSI, this process is called an attended or interactive installation. Or, you can invoke MSI directly for a silent installation, without using the IBM WebSphere MQ Installation Launchpad. This means that you can install IBM WebSphere MQ on a system without interaction. This process is called unattended, silent, or non-interactive installation, and is useful for installing IBM WebSphere MQ over a network on a remote system.

For a list of interactive and non-interactive features, see “IBM WebSphere MQ features for Windows” on page 31.

Interactive installation

If you choose an interactive installation, before you install, you must decide what type of installation you require. Table 12 on page 41 shows the installation types available, and the features that are installed with each option. For the prerequisites required for each feature, see System Requirements for IBM WebSphere MQ .

The installation types are:

- Typical installation
- Compact installation
- Custom Installation

You can also:

- Specify the installation location, name, and description.
- Have multiple installations on the same computer.

See “Choosing a primary installation” on page 8 for important information about these features, including whether to designate your installation as the *primary installation*.

Table 12. Features installed with each type of interactive installation

Installation type	Server Features installed	Client Features installed	Comments
Typical	• Server • IBM WebSphere MQ Explorer • Development Toolkit • Java and .NET Messaging and Web Services	• Windows client • Development Toolkit • Java and .NET Messaging	The default option. Features are installed to default locations with a default installation name. Java and .NET Messaging and Web Services includes WebSphere MQ classes for .NET and support for the Microsoft Windows Communication Foundation (WCF) for use with Microsoft .NET 3.
Compact	• Server only	• Windows client only	The feature is installed to the default location with a default installation name.

Table 12. Features installed with each type of interactive installation (continued)			
Installation type	**Server Features installed**	**Client Features installed**	**Comments**
Custom	By default, the following features are preselected: • Server • IBM WebSphere MQ Explorer • Development Toolkit • Java and .NET Messaging and Web Services A custom installation can also install: • Windows client • Client Extended Transaction Support • Java Extended Transaction Support • Telemetry (MQXR) Service • Telemetry Clients	By default, the following features are preselected: • Windows client • Development Toolkit • Java and .NET Messaging and Web Services A custom installation can also install: • Telemetry Clients	A server custom installation can be used if you want to install the Windows client from within the server image. All the available features are listed and you can select which ones to install, and where to install them. You can also name and provide a description for the installation. Use a custom installation when you want to specify that the installation is primary. Java and .NET Messaging and Web Services includes WebSphere MQ classes for .NET and support for the Microsoft Windows Communication Foundation (WCF) for use with Microsoft .NET 3 or later.

If Microsoft .NET is not installed before IBM WebSphere MQ and you add it, rerun **setmqinst -i -n Installationname** if this is a primary installation.

The following table describes which level of .NET is required for which function:

Table 13. Required levels of Microsoft .NET	
WebSphere MQ function	**.NET version required**
WebSphere MQ classes for .NET. For more information, see: Getting started with WebSphere MQ classes for .NET 2	.NET 2
The WebSphere MQ custom channel for WCF. For more information, see: WebSphere MQ custom channel for WCF To build the sample solution files, either the Microsoft .NET 3.5 SDK, or Microsoft Visual Studio 2008 is needed. For more information, see: Software requirements for the WCF custom channel for WebSphere MQ	.NET 3.0 or later

For instructions on how to install IBM WebSphere MQ on Windows systems, see Installing WebSphere MQ Server on Windows systems and “Installing an IBM WebSphere MQ client on Windows” on page 125.

Non-interactive installation

If you choose a non-interactive installation the system on which you want to install must be able to access the IBM WebSphere MQ image, or a copy of the files, and you must be able to access the system.

If you are running IBM WebSphere MQ Version 7.5 or later, with User Account Control (UAC) enabled, you must invoke the non-interactive installation from an elevated command prompt. Elevate a command prompt by using a right-click to start the command prompt and choose **Run as administrator**. If you try to silently install from a non-elevated command prompt, the installation fails with an error of AMQ4353 in the installation log.

There are several ways to invoke MSI:

- Using the `msiexec` command with command-line parameters.
- Using the `msiexec` command with a parameter that specifies a response file. The response file contains the parameters that you normally supply during an interactive installation. See "Advanced installation using msiexec" on page 90.
- Use the `MQParms` command with command-line parameters, a parameter file, or both. The parameter file can contain many more parameters than a response file. See "Using the MQParms command" on page 99.

If the system belongs to a Windows domain you may need a special domain ID for the IBM WebSphere MQ service, see "Security considerations when installing WebSphere MQ server on a Windows system" on page 43 for more information.

Related concepts

"Security considerations when installing WebSphere MQ server on a Windows system" on page 43
Use this information to learn about the security considerations when installing IBM WebSphere MQ server on a Windows system.

Security considerations when installing WebSphere MQ server on a Windows system

Use this information to learn about the security considerations when installing IBM WebSphere MQ server on a Windows system.

- If you are installing IBM WebSphere MQ on a Windows domain network running Active Directory Server, you probably need to obtain a special domain account from your domain administrator. For further information, and the details that the domain administrator needs to set up this special account, see Configuring WebSphere MQ accounts.
- When you are installing IBM WebSphere MQ server on a Windows system you must have local administrator authority .
- In order to administer any queue manager on that system, or to run any of the IBM WebSphere MQ control commands your user ID must belong to the *local* `mqm` or `Administrators` group . If the local `mqm` group does not exist on the local system, it is created automatically when IBM WebSphere MQ is installed. A user ID can either belong to the local `mqm` group directly, or belong indirectly through the inclusion of global groups in the local `mqm` group.
- Windows versions with a User Account Control (UAC) feature restricts the actions users can perform on certain operating system facilities, even if they are members of the Administrators group. If your user ID is in the Administrators group but not the mqm group you must use an elevated command prompt to issue IBM WebSphere MQ admin commands such as crtmqm, otherwise the error AMQ7077 is generated. To open an elevated command prompt, right-click the start menu item, or icon, for the command prompt, and select **Run as administrator**
- Some commands can be run without being a member of the mqm group (see Authority to administer WebSphere MQ).
- If you intend to administer queue managers on a remote system, your user ID must be authorized on the target system.
- As with other versions of Windows, the object authority manager (OAM) gives members of the Administrators group the authority to access all IBM WebSphere MQ objects even when UAC is enabled.

Additional restrictions for installing on Windows

There are some additional points to consider when installing IBM WebSphere MQ Version 7.5 or later on Windows. First, Windows has some rules regarding the naming of objects created and used by IBM WebSphere MQ . Second, you can set up logging during installation which assists you in troubleshooting any problems you might have with the installation.

Naming considerations

- Ensure that the machine name does not contain any spaces. IBM WebSphere MQ does not support machine names that include spaces. If you install IBM WebSphere MQ on such a machine, you cannot create any queue managers.
- For IBM WebSphere MQ authorizations, names of user IDs and groups must be no longer than 64 characters (spaces are not allowed).
- An IBM WebSphere MQ for Windows server does not support the connection of a Windows client if the client is running under a user ID that contains the @ character, for example, abc@d. Similarly, the client user ID should not be the same as local group.
- A user account that is used to run the IBM IBM WebSphere MQ Windows service is set up by default during the installation process; the default user ID is MUSR_MQADMIN. This account is reserved for use by IBM WebSphere MQ. Refer to Configuring WebSphere MQ accounts.
- When a IBM WebSphere MQ client connects to a queue manager on the server, the username under which the client runs must not be same as the domain or machine name. If the user has the same name as the domain or machine, the connection fails with return code 2035(MQRC_NOT_AUTHORIZED).

Logging

Logging is enabled by default from the Launchpad. You can also enable complete logging, for more information, see How to enable Windows Installer logging

Planning your installation on HP Integrity NonStop Server

This section describes what to do to prepare your system for installing IBM WebSphere MQ client for HP Integrity NonStop Server.

Understanding multiple installations

IBM WebSphere MQ client for HP Integrity NonStop Server can be installed more than once on an HP Integrity NonStop Server system. In addition, multiple different versions of IBM WebSphere MQ can be installed on a single HP Integrity NonStop Server system, and be maintained independently. Each installation can be of any supported version of IBM WebSphere MQ. There are no requirements for installations to be either the same, or different versions.

To install IBM WebSphere MQ, you must specify two locations; one in the OSS file system, and one in the Guardian file system, which is used by the installer to store the results of the installation. These locations must not contain or overlap with any other IBM WebSphere MQ installation. The locations must also be free of other files.

Each installation is independent and self-contained, with all data, such as configuration logs, or trace and program files located within the installation directory hierarchy. All commands and libraries use an embedded runtime search path (RPath) to ensure that they load their dependencies from the same installation.

As several installations might be present, each application must locate and load the IBM WebSphere MQ client libraries from the correct installation.

- For native applications, an application that is linked with the IBM WebSphere MQ MQIC.LIB installation library inherits the IBM WebSphere MQ installation RPATH, and can run without environment variables. Environment variables in OSS, for example, *_RLD_LIB_PATH* or DEFINEs in Guardian, are only required if you want to run the application using a different IBM WebSphere MQ installation.

- For Java applications using the Java Messaging Service (JMS) API, the client Java archive (JAR) must be from the correct installation, and must be included on the class path. For more information, see Environment variables used by IBM WebSphere MQ classes for JMS.

Product packaging and delivery

IBM WebSphere MQ client for HP Integrity NonStop Server is downloaded to the OSS file system as a single file.

The IBM WebSphere MQ client for HP Integrity NonStop Server package file is a self-extracting archive (SFX) that contains an installer and all files that are required to create installations.

The SFX for IBM WebSphere MQ client for HP Integrity NonStop Server has a file extension of `.run`. There is no concept of placed files. When run, the SFX creates a single installation, directly from the archive, into the OSS and Guardian file systems.

The SFX can be used to create as many installations of the IBM WebSphere MQ client for HP Integrity NonStop Server as you require. No information about installations is retained in the SFX, and no tools are provided for extracting individual files from the SFX.

File system

Before you install the IBM WebSphere MQ client for HP Integrity NonStop Server, make sure that the file system is set up correctly.

Review “Hardware and software requirements on HP Integrity NonStop Server systems” on page 53 to make sure that you understand the approximate amount of disk space in the OSS and Guardian file systems that is required for an installation. The OSS file set that is used for the installation requires enough free space for the installation files and the files you create in the installation. The Guardian volume that you use for installation does not require auditing.

Work with your systems administrator to verify the OSS file set and Guardian file system storage requirements, at least for an initial estimate of the storage. The best way to determine more precisely how much storage you would eventually need in production is to produce a prototype configuration and model the message storage requirements, scaling up as necessary for your production system.

OSS file system objects

For the OSS file system objects, this section concentrates on the differences between the HP Integrity NonStop Server installation, and the standard UNIX installation. Multiple independent installations are supported.

The `opt` and `var` trees must be present in a common root directory, which is selected at installation time. The opt tree contains files that do not change. For example, this tree contains program, library, dll, header files, and "static" data files. The `var` tree contains files that might change, and do hold status about the installation itself. Examples of files that this tree holds are configuration files, and log files.

Both the `opt` and `var` directories contain a single directory named `mqm`. The content of both trees is rooted in the `opt/mqm` and `var/mqm` directories.

This table shows a summary of the contents at the top level of `opt/mqm`:

Table 14.

Directory	Purpose	Contents
`bin`	Contains the OSS programs and libraries for an installation	• `G` is a symbolic link file that locates the Guardian installation subvolume • `amq*` files, containing the product executables for the client • `lib*` files, containing product dll files • Files containing control commands, and other utilities and scripts
`inc`	Contains the header files for building IBM WebSphere MQ applications	• `.h` files, which are C language header files • `.tal` files which are pTAL header files • `.cpy` files which are COBOL copy file • `cobcpy32` and `cobcpy64` directories for the individual COBOL copy files
`lib`	Contains the import libraries needed to link applications	• `G` is a symbolic link file that locates the Guardian installation subvolume • `amq*` files, containing product dll files • `iconv` is a directory that contains data conversion tables • `lib*` files, which are product dll files • `mqicb` used for supplying to a CONSULT directive for compiling COBOL programs
`license`	Contains text versions of the IBM License for the IBM WebSphere MQ client for HP Integrity NonStop Server product, which is translated into each supported national language	• `Lic_.txt` files, which are the individual national language translations of the license. • `notices.txt` is a file that contains any additional license terms from non-IBM software that is included with IBM WebSphere MQ, if any
`mq.id`	Single file that contains information about the build level and install package	All contents in this directory might be used by IBM Support personnel.

Table 14. (continued)

Directory	Purpose	Contents
`msg`	Contains globalization files for use by IBM WebSphere MQ, in logging and displaying output in the supported national language translations	The contents include: • `amq.cat` globalization message catalog currently in use by the installation, created by the OSS utility "gencat" • `amq.msg` unprocessed globalization data that is used as input by `gencat` to create the catalog • Other minor files and directories that support the different translations
`samp`	Contains sample code and executables to illustrate the use of IBM WebSphere MQ	• `*.cbl` sample COBOL language source files • `*.c` sample 'C' language source files • `*.tal` sample pTAL language source files • `ccsid.new` backup file of `ccsid.tbl` • `ccsid.tbl` file that contains a table of supported CCSIDs • `*.ini` sample configuration files • `java` directory that contains source for sample Java applications • `jms` directory that contains source for sample JMS applications • `bin` directory that contains executable versions of the samples • `dlq` directory that contains a source for the sample Dead Letter Queue Handler • `preconnect` directory that contains source for preconnect exit

For more information about the samples that are provided with IBM WebSphere MQ client for HP Integrity NonStop Server, see Samples for IBM WebSphere MQ client for HP Integrity NonStop Server.

This table shows a summary of the contents at the top level of `var/mqm`:

Table 15.		
Directory	**Purpose**	**Contents**
`conv`	Contains data conversion files	Binary data that supports the data conversion function for IBM WebSphere MQ
`errors`	Contains installation-wide error logs and FDC files	Standard content, for example: • `AMQERR01.LOG` - current system-wide error log file • `AMQERR02.LOG` - previous system-wide error log file • `AMQERR03.LOG` - oldest system-wide error log file • `*.FDC` FFST files
`exits`	Stores DLLs containing exit code that is loaded by the queue managers in the installation	This file is empty at installation
`log`	Contains log files for recording and controlling units of work	Standard content
`mqs.ini`	The installation configuration file	Standard content
`qmgrs`	Directory beneath the location where all of the queue manager directories are created	Standard content
`sockets`	Directory tree that contains various queue manager control files	Standard content
`trace`	Defined location to which trace data is written by IBM WebSphere MQ	Standard content

Guardian installation subvolume

The Guardian single installation subvolume contains both the programs and libraries needed at runtime.

This table shows the contents of the Guardian installation subvolume:

Table 16.	
File	**Description**
`AMQINST`	Internal file that describes installation configuration
`AMQS*`	Samples that are built for Guardian
`B*SAMP`	Sample build files for the various supported languages

Table 16. (continued)	
File	**Description**
CMQ*	Header files for the various supported languages, where files ending in: • h are C headers • T are pTAL headers • L are COBOL headers
MQ*	Product libraries
MQS*C	Sample C language source files
MQS*T	Sample pTAL language source files
MQS*L	Sample COBOL language source files

Control commands are also included, for a list, see HP Integrity NonStop Server client commands.

Checking requirements

Before you install IBM WebSphere MQ, you must check for the latest information and system requirements.

About this task

A summary of the tasks that you must complete to check system requirements are listed here with links to further information.

Procedure

1. Check that you have the latest information, including information on hardware and software requirements. See “Finding the latest information” on page 50.
2. Check that your systems meet the initial hardware and software requirements on your platform:
   - UNIX Linux “Hardware and software requirements on UNIX and Linux systems” on page 50
   - Windows “Hardware and software requirements on Windows systems” on page 52

   The supported hardware and software environments are occasionally updated. See the System Requirements for IBM WebSphere MQ website for the latest information.
3. Check that your systems have sufficient disk space for the installation. See Disk space requirements.
4. Check that you have the correct license requirements. See “License requirements” on page 55.

What to do next

When you have completed these tasks, you are ready to start preparing your systems for installation. For the next steps in installing IBM WebSphere MQ, see “Preparing the system” on page 55.

Related concepts

“Installing IBM WebSphere MQ” on page 68
The topics in this section provide instructions on how to install IBM WebSphere MQ.

“Uninstalling IBM WebSphere MQ components” on page 165
The topics in this section provide instructions on how to uninstall components.

Related tasks

WebSphere MQ maintenance tasks

Finding the latest information

Access the latest information for IBM WebSphere MQ.

Requirements website
For details of the supported operating systems, and the prerequisites, supported software, and hardware requirements for each supported operating system for IBM WebSphere MQ Version 7.5, see System Requirements for WebSphere MQ V7.5.

For links to the system requirements web pages for other versions of IBM WebSphere MQ, see System Requirements for IBM WebSphere MQ.

readme.html
The product readme file is frequently updated and includes information about last minute changes and known problems and workarounds. The file is included on the product media and is installed when you install product components. The latest version is always on the product readmes web page. Always check to see that you have the latest copy.

Support information
The IBM WebSphere MQ support web page is regularly updated with the latest product support information. For example, if you are migrating from an earlier version, look under the heading *Solve a problem* for the document *Problems and solutions when migrating*.

Related concepts
"Installing IBM WebSphere MQ" on page 68
The topics in this section provide instructions on how to install IBM WebSphere MQ.

Related tasks
WebSphere MQ maintenance tasks
Troubleshooting and support

Hardware and software requirements on UNIX and Linux systems

Before you install IBM WebSphere MQ, check that your system meets the hardware and operating system software requirements for the particular components you intend to install.

Hardware and software requirements are set out at System Requirements for IBM WebSphere MQ.

IBM WebSphere MQ does not support host names that contain spaces. If you install IBM WebSphere MQ on a system with a host name that contains spaces, you are unable to create any queue managers.

Java Message Service and SOAP transport

If you want to use Java Message Service and SOAP support, you need an IBM Java 2 SDK and Runtime Environment Version 5.0 or later.

On Linux: Apache Axis V1.4 provides support for SOAP and is shipped on the server DVD, but not installed.

For a list of supported JDKs, see System Requirements for IBM WebSphere MQ.

For further information about using Java with IBM WebSphere MQ, see Using WebSphere MQ classes for Java.

For further information about SOAP with IBM WebSphere MQ, see WebSphere MQ transport for SOAP.

If you use a JDK that is not in the list of supported JDKs be aware that:

- The JDK might not be FIPS level 140-2 compliant. By using it with IBM WebSphere MQ, any SSL or TLS connections which use the unsupported Java runtime environment might not comply with FIPS 140-2 standards.
- SOAP is not supported.
- The IBM WebSphere MQ web service deployment utility, amqwdeployWMQService, requires IBM Java 2 SDK.

On HP-UX: To run a 64-bit or 32-bit JVM use the -d64 or -d32 parameters on the command line when running a Java application to ensure the correct JVM is used.

On Linux: On the Power® platform, the 32-bit and 64-bit JDKs are typically installed to different locations, for example, the 32-bit JDK is located in `/opt/IBMJava2-ppc-50` and the 64-bit JDK is located in `/opt/IBMJava2-ppc64-50`. Ensure that the PATH variable is correctly set for your applications that use Java. To use the Postcard application described in "Verifying a server installation using the Postcard application" on page 147, you must use a 32-bit JDK.

On Solaris: The 32-bit and 64-bit JDKs are typically installed to the same directory. To run a 64-bit JVM use the -d64 or -d32 parameters on the command line when running a Java application to ensure the correct JVM is used.

You can check the version installed using the following command:

```
java -version
```

Secure Sockets Layer (SSL)

If you want to use the SSL support, you need the IBM Global Security Kit (GSKit) V8 package. This package is supplied with IBM WebSphere MQ as one of the components available for installation.

HP-UX

To use SSL, IBM WebSphere MQ clients on HP-UX must be built using POSIX threads.

Linux

Installing the g++ version runtime support

If you intend to run SSL channels then you must have the g++ runtime libraries installed. The GNU g++ libraries are called `libgcc_s.so` and `libstdc++.so.6` and, on a Red Hat system with `libgcc` and `libstdc++` RPMs installed, are found in the directory `/usr/lib`. Check that the release level of the libraries meets IBM WebSphere MQ requirements, found at System Requirements for IBM WebSphere MQ.

If you have a distribution that does not install libgcc_s.so and libstdc++.so.6 into `/usr/lib`, then you must do one of the following tasks:

- Locate and install the packages from your distribution vendor that contain these libraries.
- Install the GNU gcc and g++ compilers from another location, for example the home page for the GNU compiler collection at http://gcc.gnu.org/.

Ensure that the libraries listed are included in `/usr/lib` after installation.

The required packages for SSL support for IBM WebSphere MQ are set out at System Requirements for IBM WebSphere MQ.

On 64 bit platforms, install both the 32 bit and the 64 bit versions of the package so that 32 bit and 64 bit processes can both use SSL functions.

IBM WebSphere MQ Explorer requirements

Linux

If you want to use the IBM WebSphere MQ Explorer (available for use with IBM WebSphere MQ for Linux, (x86 and x86-64 platforms) only), your system requires the following things, as a minimum:

- 512 MB RAM
- 1 GHz processor
- 800 MB for Eclipse Platform code and data
- A suitable monitor for the operating system with a screen size of at least 1024x768
- Bitstream-vera-fonts

If you need to convert data to and from Unicode on your system, you must install the following file sets:

```
bos.iconv.ucs.com     Unicode converters for AIX sets
bos.iconv.ucs.ebcdic  Unicode converters for EBCDIC sets
bos.iconv.ucs.pc      Unicode converters for PC sets
```

Solaris 11 operating system

If you are installing on the Solaris 11 operating system, ensure that the IPS package (package/svr4) that supports pkgadd and equivalent utilities is installed.

Related concepts

"Hardware and software requirements on Windows systems" on page 52
Check that the server environment meets the prerequisites for installing IBM WebSphere MQ for Windows and install any prerequisite software that is missing from your system from the server DVD.

Related tasks

"Checking requirements" on page 49
Before you install IBM WebSphere MQ, you must check for the latest information and system requirements.

Hardware and software requirements on Windows systems

Check that the server environment meets the prerequisites for installing IBM WebSphere MQ for Windows and install any prerequisite software that is missing from your system from the server DVD.

Before installing IBM WebSphere MQ, you must check that your system meets the hardware and software requirements set out on the IBM WebSphere MQ system requirements page at System Requirements for IBM WebSphere MQ.

You must also review the release notes file, which is on the product DVD in the `\Readmes` folder for each national language, and check the `READADD.txt` file for any changes made between translation and the manufacturing of the installation DVD. `READADD.txt` is found in the root directory of the server installation DVD. During installation, the release notes file is copied to the IBM WebSphere MQ program files folder.

Storage requirements for IBM WebSphere MQ server

The storage requirements depend on which components you install, and how much working space you need. The storage requirements also depend on the number of queues that you use, the number and size of the messages on the queues, and whether the messages are persistent. You also require archiving capacity on disk, tape, or other media. For more information, see the IBM WebSphere MQ system requirements page at, System Requirements for IBM WebSphere MQ.

Disk storage is also required:

- Prerequisite software
- Optional software
- Your application programs

Requirements for IBM WebSphere MQ Explorer

If you want to use the IBM WebSphere MQ Explorer, the following minimum requirements apply:

- 512 MB of RAM
- A 1 GHz processor
- A monitor with a screen resolution of at least 1024 x 768 pixels

Install directory used for 64 bit Windows operating systems

On 64 bit Windows systems, IBM WebSphere MQ is installed into the default 32 bit installation location: `C:\Program Files (x86)\IBM\WebSphere MQ`.

If you select a non-default directory for installing Windows, do not try to install into `C:\Program Files\IBM\WebSphere MQ`. `C:\Program Files` can only contain 64 bit programs.

If you are doing a silent installation and you select `C:\Program Files\IBM\WebSphere MQ` as the installation directory, the installer writes an error to the error log and the installation fails.

Wherever the default installation location occurs in the documentation or `C:\Program Files\IBM\WebSphere MQ` is documented, for 64 bit operating systems the file path is `C:\Program Files (x86)\IBM\WebSphere MQ`.

Installing prerequisite software

To install the prerequisite software provided on the IBM WebSphere MQ Server DVD (which does not include service packs or web browsers), do one of the following:

- Use the IBM WebSphere MQ installation procedure.

  When you install using the IBM WebSphere MQ Server DVD, there is a **Software Prerequisites** option in the IBM WebSphere MQ Installation Launchpad window. You can use this option to check what prerequisite software is already installed and which is missing, and to install any missing software.
- Use Windows Explorer:

  1. Use Windows Explorer to select the `Prereqs` folder on the IBM WebSphere MQ Server DVD.
  2. Select the folder for the software item to be installed.
  3. Start the installation program.

Related concepts

"Hardware and software requirements on UNIX and Linux systems" on page 50
Before you install IBM WebSphere MQ, check that your system meets the hardware and operating system software requirements for the particular components you intend to install.

Related tasks

"Checking requirements" on page 49
Before you install IBM WebSphere MQ, you must check for the latest information and system requirements.

Hardware and software requirements on HP Integrity NonStop Server systems

Check that the server environment meets the prerequisites for installing the IBM WebSphere MQ client for HP Integrity NonStop Server. Check the product readme files and install missing prerequisite software supplied on the server CD.

Hardware

The IBM WebSphere MQ client for HP Integrity NonStop Server typically requires certain hardware specifications to run:

- HP Integrity NonStop Server H and J series
- Two or more processors
- At least 1 GB, and ideally 4 GB of memory per processor
- 500 MB of free disk space in the Guardian and OSS file systems

Operating system

Two operating systems are supported by the IBM WebSphere MQ client for HP Integrity NonStop Server:

- HP Integrity NonStop Server running H06.24 or later NonStop OS
- HP Integrity NonStop BladeSystem running J06.13 or later NonStop OS

You must be running one of these operating systems to install the IBM WebSphere MQ client for HP Integrity NonStop Server.

Other software requirements

IBM WebSphere MQ client for HP Integrity NonStop Server has some additional software requirements:

- The operating system software, Open System Services (OSS), must be active, with file systems and a local sockets subsystem that is configured and running.
- Safeguard must be active.
- If two-phase commit transaction support is required, then TMF must be active and Pathway must be configured and available. The connected queue manager must be at IBM WebSphere MQ Version 7.1 or later.
- If the Java Message Service (JMS) API is required, then HP Integrity NonStop Server for Java V6 must be available.
- You might require compatible compilers, linkers, and maybe other tools for the C, C++, COBOL, JMS, or pTAL languages if you want to build and use applications.

File system requirements

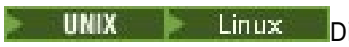
In the selected installation root directory, in the OSS file system, an installation creates:

- `opt` - a directory tree that contains the "static" files for an installation in OSS.
- `var` - a directory tree that contains the "variable" files for an installation in OSS.

An installation also creates a single subvolume in the Guardian file system, which is selected during installation.

Related concepts

“Finding the latest information” on page 50
Access the latest information for IBM WebSphere MQ.



Disk space requirements

“License requirements” on page 55
You must have purchased sufficient licenses for your installation. The details of the license agreement is stored on your system at installation time so that you can read it at any time. IBM WebSphere MQ supports ITLM (IBM Tivoli License Manager).

Verifying system software prerequisites

Use the HP Integrity NonStop Server TACL utility, SYSINFO, to verify the base OS level of the HP Integrity NonStop Server.

Procedure

From a TACL command prompt, enter **SYSINFO**.

Results

The system information is displayed as shown in the following example:

```
SYSINFO - T9268H01 - (01 OCT 2004)  SYSTEM \NODE1  Date 05 Nov 2010, 11:56:51
Copyright 2003 Hewlett-Packard Development Company, L.P.

         System name    \NODE1
  EXPAND node number    025
       Current SYSnn    SYS00
       System number    nnnnnn
 Software release ID    J06.10.00
```

In this example, the base OS level is J06.10.00.

What to do next

Compare the base OS level with the “Hardware and software requirements on HP Integrity NonStop Server systems” on page 53. Verify any other HP Integrity NonStop Server software prerequisites or recommendations identified in the documentation or the product README; for example, SPRs to particular products.

License requirements

You must have purchased sufficient licenses for your installation. The details of the license agreement is stored on your system at installation time so that you can read it at any time. IBM WebSphere MQ supports ITLM (IBM Tivoli License Manager).

License files

At installation, the license agreement files are copied into the `/licenses` directory under the *MQ_INSTALLATION_PATH*. You can read them at any time.

ITLM

If you are using ITLM, IBM WebSphere MQ automatically detects ITLM and checks with it each time a queue manager is started. You do not need to take any further action. You can install ITLM before or after IBM WebSphere MQ.

The automatic detection of ITLM applies to both the IBM WebSphere MQ server, and IBM WebSphere MQ Java products.

Related concepts

“Hardware and software requirements on UNIX and Linux systems” on page 50
Before you install IBM WebSphere MQ, check that your system meets the hardware and operating system software requirements for the particular components you intend to install.

“Hardware and software requirements on Windows systems” on page 52
Check that the server environment meets the prerequisites for installing IBM WebSphere MQ for Windows and install any prerequisite software that is missing from your system from the server DVD.

Related tasks

“Checking requirements” on page 49
Before you install IBM WebSphere MQ, you must check for the latest information and system requirements.

Preparing the system

On some operating systems, you might have to complete several tasks before you install IBM WebSphere MQ depending on your installation platform. You might also want to complete other tasks, depending on your installation intentions.

About this task

The tasks that you perform to prepare your systems for installation are listed here. Complete the appropriate tasks for your platform before installing.

Procedure

1. UNIX Linux
   On UNIX and Linux systems, set up the user and group. See “Setting up the user and group on UNIX and Linux systems” on page 56
2. UNIX Linux

On UNIX and Linux, create file systems. See “Creating file systems on UNIX and Linux systems” on page 58

3. Configure additional settings for your platform:

- AIX “Additional settings for installing on AIX” on page 60
- HP-UX “Additional settings for installing on HP-UX” on page 61
- Linux “Additional settings for IBM WebSphere MQ on Linux” on page 63
- Solaris “Additional settings for installing on Solaris” on page 66
- Windows “Additional restrictions for installing on Windows” on page 44

What to do next

When you have completed the tasks to prepare the system, you are ready to start installing IBM WebSphere MQ. To install a server, see “Installing an IBM WebSphere MQ server” on page 68. To install a client, see “Installing an IBM WebSphere MQ client” on page 116.

Related tasks

Planning

Migrating and upgrading WebSphere MQ

WebSphere MQ maintenance tasks

Setting up the user and group on UNIX and Linux systems

On UNIX and Linux systems, IBM WebSphere MQ requires a user ID of the name `mqm`, with a primary group of `mqm`. The `mqm` user ID owns the directories and files that contain the resources associated with the product.

Using Active Directory on Linux systems

If you are using Active Directory to provide centralized user and group definitions to your Linux system, it is not possible to have both an `mqm` user and `mqm` group definition in Active Directory because that service does not permit users and groups to have the same name.

You should:

- Put an `mqm` group definition in the Active Directory before installing IBM WebSphere MQ, so that other users in the directory can later be made part of the shared group definition.
- Create the `mqm` user locally, or allow it to be created during the installation process.

Creating the user ID and group on UNIX and Linux systems

Set the primary group of the `mqm` user to the group `mqm`.

If you are installing IBM WebSphere MQ on multiple systems you might want to ensure each UID and GID of `mqm` has the same value on all systems. If you are planning to configure multi-instance queue managers, it is essential the UID and GID are the same from system to system. It is also important to have the same UID and GID values in virtualization scenarios.

AIX

You can use the System Management Interface Tool (`smit`), for which you require root authority.

1. To create the `mqm` group, display the required window using this sequence:

```
Security & Users
  Groups
    Add a Group
```

Set the group name field to `mqm`.

2. To create the user mqm, display the required window using this sequence:

```
Security & Users
  Users
    Add a User
```

   Set the user name field to mqm .

3. To add a password to the new user ID, display the required window using this sequence:

```
Security & Users
   Passwords
    Change a User's Password
```

   Set the password as required.

HP-UX

The user ID value for user mqm must be less than 60,000 to avoid problems with the maintenance update process.

You can use the System Management Homepage (SMH), or the **groupadd** and **useradd** commands to work with user IDs.

Linux

RPM creates the mqm user ID and group ID as part of the installation procedure if they do not exist.

If you have special requirements for these IDs (for example they need to have the same values as other machines you are using, or your users and group ID are centrally managed) you should create the IDs before running the installation procedure, using the **groupadd** and **useradd** commands to set the UID and GID the same on each machine.

Note: The only IBM WebSphere MQ requirement, is that the mqm user should have the mqm group as its primary group.

Solaris

The user ID value for user mqm must be less than 262,143 to avoid problems with the maintenance update process.

Create the IDs using the **groupadd** and **useradd** commands to set the UID and GID the same on each machine.

Adding existing user IDs to the group on UNIX and Linux systems

If you want to run administration commands, for example **crtmqm** (create queue manager) or **strmqm** (start queue manager), your user ID must be a member of the mqm group. This user ID must not be longer than 12 characters.

Users do not need mqm group authority to run applications that use the queue manager; it is needed only for the administration commands.

AIX

You can use smit to add an existing user ID to the mqm group. Display the required menu using this sequence:

```
Security & Users
  Users
    Change / Show Characteristics of a User
```

Type the name of the user in the **User Name** field and press **Enter**. Add mqm to the **Group SET** field, which is a comma-separated list of the groups to which the user belongs. Users do not need to have their primary group set to mqm. If mqm is in their set of groups, they can use the administration commands.

Log files created by IBM WebSphere MQ Telemetry service

The **umask** setting of the user ID that creates a queue manager will determine the permissions of the Telemetry log files generated for that queue manager. Even though the ownership of the log files will be set to `mqm` .

Related concepts

"Creating file systems on UNIX and Linux systems" on page 58
Before installing IBM WebSphere MQ Version 7.5, you might need to create file systems for both the product code and working data to be stored. There are minimum storage requirements for these file systems. The default installation directory for the product code can be changed at installation time, but the working data location cannot be changed.

"Additional settings for installing on AIX" on page 60

"Additional settings for installing on HP-UX" on page 61
Before you install IBM WebSphere MQ on an HP-UX system, you must check that the kernel is configured correctly.

"Additional settings for IBM WebSphere MQ on Linux" on page 63
Use this topic to when configuring IBM WebSphere MQ on Linux systems.

Related information

"Additional settings for installing on Solaris" on page 66
Configure Solaris systems with the resource limits required by IBM WebSphere MQ.

Setting up the user and group on HP Integrity NonStop Server

The administrator user ID must be used to administer the IBM WebSphere MQ client for HP Integrity NonStop Server.

Ensure that you have access to a IBM WebSphere MQ client for HP Integrity NonStop Server user ID in the user group called MQM. The MQM group must be created before the client can be installed. All user IDs that are used to install the client must have MQM as their primary group. If this user group does not exist, or you do not have access to such a user, contact your systems administrator.

Creating file systems on UNIX and Linux systems

Before installing IBM WebSphere MQ Version 7.5, you might need to create file systems for both the product code and working data to be stored. There are minimum storage requirements for these file systems. The default installation directory for the product code can be changed at installation time, but the working data location cannot be changed.

Determining the size of a server installations file system

To determine the size of the `/var/mqm` file system for a server installation, consider:

- The maximum number of messages in the system at one time.
- Contingency for message buildups, if there is a system problem.
- The average size of the message data, plus 500 bytes for the message header.
- The number of queues.
- The size of log files and error messages.
- The amount of trace that is written to the `/var/mqm/trace` directory.

Storage requirements for IBM WebSphere MQ also depend on which components you install, and how much working space you need. For more details, see Disk space requirements.

Creating a file system for the working data

Before you install IBM WebSphere MQ, create and mount a file system called `/var/mqm` which is owned by the user `mqm` in the group `mqm`; see "Setting up the user and group on UNIX and Linux systems" on

page 56. This file system is used by all installations of IBM WebSphere MQ on a system. If possible, use a partition strategy with a separate volume for the IBM WebSphere MQ data. This means that other system activity is not affected if a large amount of IBM WebSphere MQ work builds up. Configure the directory permissions to permit the `mqm` user to have full control, for example, file mode 755. These permissions will then be updated during the WebSphere MQ installation to match the permissions required by the queue manager.

Creating separate file systems for errors and logs

You can also create separate file systems for your log data (`/var/mqm/log`) and error files (`/var/mqm/errors`). If possible, place these directories on different physical disks from the queue manager data (`/var/mqm/qmgrs`) and from each other.

If you create separate file systems the `/var/mqm/errors` directory can be NFS mounted. However, if you choose to NFS-mount `/var/mqm/errors`, the error logs might be lost if the network fails.

You can protect the stability of your queue manager by having separate file systems for:

- `/var/mqm/errors`
- `/var/mqm/trace`
- `/var/mqm/qmgrs`
- `/var/mqm/log`

In the case of `/var/mqm/errors`, it is rare that this directory receives large quantities of data. But it is sometimes seen, particularly if there is a severe system problem leading to IBM WebSphere MQ writing a lot of diagnostic information in to `.FDC` files. In the case of `/var/mqm/trace`, files are only written here when you use **strmqtrc** to start tracing IBM WebSphere MQ.

You can obtain better performance of normal IBM WebSphere MQ operations (for example, syncpoints, MQPUT, MQGET of persistent messages) by placing the following on separate disks:

- `/var/mqm/qmgrs`
- `/var/mqm/log`

In the rare event that you need to trace a IBM WebSphere MQ system for problem determination, you can reduce performance impact by placing the `/var/mqm/trace` file system on a separate disk.

If you are creating separate file systems, allow a minimum of 30 MB of storage for `/var/mqm`, 100 MB of storage for `/var/mqm/log`, and 10 MB of storage for `/var/mqm/errors`. The 100 MB minimum allowance of storage for `/var/mqm/log` is the absolute minimum required for a single queue manager and is not a recommended value. The size of a file system must be scaled according to the number of queue managers that you intend to use, the number of pages per log file, and the number of log files per queue manager.

For more information about file systems, see File system support.

The size of the log file depends on the log settings that you use. The minimum sizes are for circular logging using the default settings. For more information about log sizes, see Calculating the size of the log.

Linux and Solaris

For a client installation, the file system can be mounted on a remote network device, for example NFS.

If you are performing both a client and a server installation, the requirements of the server installation take precedence over the requirements of the client installation.

Allow 15 MB as a minimum for a IBM WebSphere MQ client.

A new sample IBM WebSphere MQ MQI client configuration file is created in the `var/mqm` directory, by the client package, during installation, but only if this file does not exist. This file contains the `ClientExitPath` stanza. An example `mqclient.ini` file is shown in Configuring a client using a configuration file IBM WebSphere MQ MQI client configuration file.

If you are using a common configuration file for multiple clients, either in the IBM WebSphere MQ installation directory or in another location using the MQCLNTCF environment variable, you must grant

read access to all user identifiers under which the IBM WebSphere MQ client applications run. If, for any reason, the file cannot be read, the failure is traced, and the search logic continues as if the file had not existed.

Related concepts

"Setting up the user and group on UNIX and Linux systems" on page 56
On UNIX and Linux systems, IBM WebSphere MQ requires a user ID of the name `mqm`, with a primary group of `mqm`. The `mqm` user ID owns the directories and files that contain the resources associated with the product.

"Additional settings for installing on AIX" on page 60

"Additional settings for installing on HP-UX" on page 61
Before you install IBM WebSphere MQ on an HP-UX system, you must check that the kernel is configured correctly.

"Additional settings for IBM WebSphere MQ on Linux" on page 63
Use this topic to when configuring IBM WebSphere MQ on Linux systems.

Related tasks

"Preparing the system" on page 55
On some operating systems, you might have to complete several tasks before you install IBM WebSphere MQ depending on your installation platform. You might also want to complete other tasks, depending on your installation intentions.

Related information

"Additional settings for installing on Solaris" on page 66
Configure Solaris systems with the resource limits required by IBM WebSphere MQ.

Additional settings for installing on UNIX and Linux systems

Some UNIX and Linux and Linux systems require you to make additional settings.

- "Additional settings for installing on AIX" on page 60
- "Additional settings for installing on HP-UX" on page 61
- "Additional settings for IBM WebSphere MQ on Linux" on page 63
- "Additional settings for installing on Solaris" on page 66

Additional settings for installing on AIX

File descriptors

When running a multi-threaded process such as the agent process, you might reach the soft limit for file descriptors. This limit gives you the IBM WebSphere MQ reason code `MQRC_UNEXPECTED_ERROR (2195)` and, if there are enough file descriptors, an IBM WebSphere MQ FFST file.

To avoid this problem, increase the process limit for the number of file descriptors. You must alter the `nofiles` attribute in `/etc/security/limits` to 10,000 for the `mqm` user ID, or in the default stanza. To alter the number of file descriptors do these steps:

1. In a command prompt, check the maximum number of file descriptors available to a process running as `mqm`:

   ```
   lsuser -a nofiles mqm
   ```

2. Set the value to at least 10240:

   ```
   chuser nofiles=10240 mqm
   chuser nofiles_hard=10240 mqm
   ```

System Resource Limits

Set the system resource limit for data segment and stack segment to unlimited using the following commands in a command prompt:

```
ulimit -d unlimited
ulimit -s unlimited
```

For more information on configuring your system, see How to configure UNIX and Linux systems for WebSphere MQ.

Related concepts

"Setting up the user and group on UNIX and Linux systems" on page 56
On UNIX and Linux systems, IBM WebSphere MQ requires a user ID of the name `mqm`, with a primary group of `mqm`. The `mqm` user ID owns the directories and files that contain the resources associated with the product.

"Creating file systems on UNIX and Linux systems" on page 58
Before installing IBM WebSphere MQ Version 7.5, you might need to create file systems for both the product code and working data to be stored. There are minimum storage requirements for these file systems. The default installation directory for the product code can be changed at installation time, but the working data location cannot be changed.

Related tasks

"Preparing the system" on page 55
On some operating systems, you might have to complete several tasks before you install IBM WebSphere MQ depending on your installation platform. You might also want to complete other tasks, depending on your installation intentions.

Additional settings for installing on HP-UX

Before you install IBM WebSphere MQ on an HP-UX system, you must check that the kernel is configured correctly.

Kernel configuration

It is possible that the default kernel configuration is not adequate because IBM WebSphere MQ uses semaphores and shared memory.

Before installation, review the configuration of the machine and increase the values if necessary. Consider using the values of the tunable kernel parameters given in Figure 1 on page 62. These values might need to be increased if you obtain any First Failure Support Technology (FFST) records.

Note:

1. Semaphore and swap usage do not vary significantly with message rate or message persistence.
2. WebSphere MQ queue managers are independent of each other. Therefore system tunable kernel parameters, for example `shmmni`, `semmni`, `semmns` , and `semmnu` need to allow for the number of queue managers in the system.

See the HP-UX documentation for information about changing these values.

```
shmmax           536870912
shmseg           1024
shmmni           1024
semaem           16384
semvmx           32767
semmns           16384
semmni           1024 (semmni < semmns)
semmnu           16384
semume           256
max_thread_proc  66
maxfiles         10000
maxfiles_lim     10000
```

Figure 1. Minimum tunable kernel parameters values

You must restart the system after you change any of the tunable kernel parameters.

System resource limits

You can set global limits for the size of process data segments and the size of process stack segments for the whole system. These limits are set by altering the tunable kernel parameters.

The tunable kernel parameters are:

Parameter	What it controls	Consider minimum value
maxdsiz	Maximum size of the data segment for 32-bit processes	1073741824
maxdsiz_64bit	Maximum size of the data segment for 64-bit processes	1073741824
maxssiz	Maximum size of the stack segment for 32-bit processes	8388608
maxssiz_64bit	Maximum size of the stack segment for 64-bit processes	8388608

If other software on the same machine needs higher values, then the operation of IBM WebSphere MQ is not adversely affected if those higher values are used.

For the full documentation for these parameters see the HP-UX product documentation.

To apply the settings to an HP-UX 11i system which has the System Administration Manager (SAM) utility, you can use SAM to achieve the following steps:

- Select and alter the parameters
- Process the new kernel
- Apply the changes and restart the system

Other releases of HP-UX might provide different facilities to set the tunable kernel parameters. Consult your HP-UX product documentation for the relevant information.

The `ulimit` shell command

On a per-shell basis, the available limits can be tuned down from the values stored for the “System resource limits” on page 62 preceding parameters. Use the **`ulimit`** shell command to tune the values of the parameters with a combination of the following switches:

Switch	Meaning
-H	The hard limit
-S	The soft limit
-d	The data segments size

Switch	Meaning
-s	The stack segment size

Verifying that the kernel settings are applied

You can verify that the resource limits have not been lowered by a **ulimit** command and that the queue manager experiences the correct limits. To do so, go to the shell from which the queue manager is started and enter the following command:

```
ulimit -Ha
ulimit -Sa
```

Among the console output you can see:

```
data(kbytes)   1048576
stack(kbytes)  8192
```

If lower numbers are returned, then a **ulimit** command has been issued in the current shell to lower the limits. Consult with your system administrator to resolve the issue.

For more information on configuring your system, see How to configure UNIX and Linux systems for WebSphere MQ.

Related concepts

"Setting up the user and group on UNIX and Linux systems" on page 56
On UNIX and Linux systems, IBM WebSphere MQ requires a user ID of the name `mqm`, with a primary group of `mqm`. The `mqm` user ID owns the directories and files that contain the resources associated with the product.

"Creating file systems on UNIX and Linux systems" on page 58
Before installing IBM WebSphere MQ Version 7.5, you might need to create file systems for both the product code and working data to be stored. There are minimum storage requirements for these file systems. The default installation directory for the product code can be changed at installation time, but the working data location cannot be changed.

Related tasks

"Preparing the system" on page 55
On some operating systems, you might have to complete several tasks before you install IBM WebSphere MQ depending on your installation platform. You might also want to complete other tasks, depending on your installation intentions.

Additional settings for IBM WebSphere MQ on Linux

Use this topic to when configuring IBM WebSphere MQ on Linux systems.

Installation DVD

Ensure that you have the correct 32-bit or 64-bit server DVD. If you want to install the 64-bit Server, you must mount the 64-bit Server DVD.

Shell interpreter

Ensure that `/bin/sh` shell is a valid shell interpreter compatible with the Bourne shell, otherwise the post-installation configuration of IBM WebSphere MQ does not complete successfully. If the shell was not installed by using RPM, you might see a prerequisites failure of `/bin/sh` shell when you try to install IBM WebSphere MQ. The failure is because the RPM tables do not recognize that a valid shell interpreter is installed. If the failure occurs, you can reinstall the `/bin/sh` shell by using RPM, or specify the RPM option `--nodeps` to disable dependency checking during installation of IBM WebSphere MQ.

Note: The **--dbpath** option is not supported when installing IBM WebSphere MQ on Linux.

Kernel configuration

IBM WebSphere MQ uses System V IPC resources, in particular shared memory and semaphores.

The minimum configuration for IBM WebSphere MQ for these resources is as follows:

```
kernel.shmmni = 4096
kernel.shmall = 2097152
kernel.shmmax = 268435456
kernel.sem = 500 256000 250 1024
fs.file-max = 524288
kernel.pid_max = 12000
kernel.threads-max = 48000
```

If you plan to run more than one queue manager of moderate size on the server, increase the file-max parameter, **fs.file-max**.

To view the kernel parameters for your system, enter the following commands:

```
cat /proc/sys/kernel/shmmni
cat /proc/sys/kernel/shmall
cat /proc/sys/kernel/shmmax
cat /proc/sys/kernel/sem
cat /proc/sys/fs/file-max
```

Each of these commands returns the value of the corresponding kernel parameter. For example, `cat /proc/sys/kernel/shmmni` returns the value for *kernel.shmmni*. If any of the values is less than the minimum value, you need to increase it to at least the minimum value.

To add or alter these values, log on as a user with root authority. Open the file `/etc/sysctl.conf` with a text editor, then add or change the following entries to the values shown:

```
kernel.shmmni = 4096
kernel.shmall = 2097152
kernel.shmmax = 268435456
kernel.sem = 500 256000 250 1024
fs.file-max = 524288
```

Then save and close the file.

To load these **sysctl** values immediately, enter the following command:

```
sysctl -p
```

If you do not issue the `sysctl -p` command, the new values are loaded when the system is rebooted.

By default the Linux kernel has a maximum process identifier, that can also be used with threads, and might limit the allowed number of threads.

The operating system reports when the system lacks the necessary resources to create another thread, or the system-imposed limit on the total number of threads in a process {PTHREAD_THREADS_MAX} would be exceeded.

For more information on `kernel.threads-max` and `kernel.pid-max`, see Resource shortage in WebSphere MQ queue manager when running a large number of clients

Maximum open files

If the system is heavily loaded, you might need to increase the maximum possible number of open files. If your distribution supports the `proc` file system you can query the current limit by issuing the following command:

```
cat /proc/sys/fs/file-max
```

.

To report on the current maximum, and in-use, number of file descriptors for your system, enter the following commands:

```
/sbin/sysctl fs.file-max
/sbin/sysctl fs.file-nr
```

If you are using a pluggable security module such as PAM (Pluggable Authentication Module), ensure that this module does not unduly restrict the number of open files for the `mqm` user. To report the maximum number of open file descriptors per process for the `mqm` user, login as the `mqm` user and enter the following values:

```
ulimit -n
```

For a standard IBM WebSphere MQ queue manager, set the *nofile* value for the `mqm` user to 10240 or more. To set the maximum number of open file descriptors for processes running under the `mqm` user, add the following information to the `/etc/security/limits.conf` file:

```
mqm              hard    nofile          10240
mqm              soft    nofile          10240
```

Maximum processes

A running IBM WebSphere MQ queue manager consists of a number of thread programs. Each connected application increases the number of threads running in the queue manager processes. It is normal for an operating system to limit the maximum number of processes that a user runs. The limit prevents operating system failures due to an individual user or subsystem creating too many processes. You must ensure that the maximum number of processes that the `mqm` user is allowed to run is sufficient. The number of processes must include the number of channels and applications that connect to the queue manager.

The following calculation is useful when determining the number of processes for the `mqm` user:

```
nproc = 2048 + clientConnections * 4 + qmgrChannels * 4 +
    localBindingConnections
```

where:

- *clientConnections* is the maximum number of connections from clients on other machines connecting to queue managers on this machine.
- *qmgrChannels* is the maximum number of running channels (as opposed to channel definitions) to other queue managers. This includes cluster channels, sender/receiver channels, and so on.
- *localBindingConnections* does not include application threads.

The following assumptions are made in this algorithm:

- 2048 is a large enough contingency to cover the queue manager threads. This might need to be increased if a lot of other applications are running.
- When settting nproc, take into account the maximum number of applications, connections, channels and queue managers that might be run on the machine in the future.
- This algorithm takes a pessimistic view and the actual nproc needed might be slightly lower for later versions of IBM WebSphere MQ and fastpath channels.

- V 7.5.0.8 In Linux, each thread is implemented as a light-weight process (LWP) and each LWP is counted as one process against nproc.

You can use the `PAM_limits` security module to control the number of processes that users run. You can configure the maximum number of processes for the `mqm` user as follows:

```
mqm             hard    nproc           4096
mqm             soft    nproc           4096
```

For more details on how to configure the `PAM_limits` security module type, enter the following command:

```
man limits.conf
```

For more information on configuring your system, see How to configure UNIX and Linux systems for WebSphere MQ.

Related concepts

"Setting up the user and group on UNIX and Linux systems" on page 56
On UNIX and Linux systems, IBM WebSphere MQ requires a user ID of the name `mqm`, with a primary group of `mqm`. The `mqm` user ID owns the directories and files that contain the resources associated with the product.

"Creating file systems on UNIX and Linux systems" on page 58
Before installing IBM WebSphere MQ Version 7.5, you might need to create file systems for both the product code and working data to be stored. There are minimum storage requirements for these file systems. The default installation directory for the product code can be changed at installation time, but the working data location cannot be changed.

Related tasks

"Preparing the system" on page 55
On some operating systems, you might have to complete several tasks before you install IBM WebSphere MQ depending on your installation platform. You might also want to complete other tasks, depending on your installation intentions.

Additional settings for installing on Solaris

Configure Solaris systems with the resource limits required by IBM WebSphere MQ.

IBM WebSphere MQ uses semaphores, shared memory, and file descriptors, and it is probable that the default resource limits are not adequate.

For further information on **`maxusers`**, and other process-sizing parameters, on Solaris 10, see Process sizing parameters.

If you are using Solaris 10, or later versions, you must change the default resource limits for each zone IBM WebSphere MQ will be installed in. To set new default limits for all users in the *mqm* group, set up a project for the *mqm* group in each zone.

To find out if you already have a project for the *mqm* group, log in as root and enter the following command:

```
projects -l
```

If you do not already have a *group.mqm* project defined, enter the following command:

```
projadd -c "WebSphere MQ default settings"
        -K "process.max-file-descriptor=(basic,10000,deny)"
        -K "project.max-shm-memory=(priv,4GB,deny)"
        -K "project.max-shm-ids=(priv,1024,deny)"
        -K "project.max-sem-ids=(priv,1024,deny)" group.mqm
```

If a project called *group.mqm* is listed, review the attributes for that project. The attributes must include the following minimum values:

```
process.max-file-descriptor=(basic,10000,deny)
project.max-sem-ids=(priv,1024,deny)
project.max-shm-ids=(priv,1024,deny)
project.max-shm-memory=(priv,4294967296,deny)
```

If you need to change any of these values, enter the following command:

```
projmod -s -K "process.max-file-descriptor=(basic,10000,deny)"
           -K "project.max-shm-memory=(priv,4GB,deny)"
           -K "project.max-shm-ids=(priv,1024,deny)"
           -K "project.max-sem-ids=(priv,1024,deny)" group.mqm
```

Note that you can omit any attributes from this command that are already correct.

For example, to change only the number of file descriptors, enter the following command:

```
projmod -s -K "process.max-file-descriptor=(basic,10000,deny)" group.mqm
```

(To set only the limits for starting the queue manager under the mqm user, login as mqm and enter the command `projects` . The first listed project is likely to be `default` , and so you can use `default` instead of `group.mqm`, with the `projmod` command.)

You can find out what the file descriptor limits for the current project are, by compiling and running the following program.

Before running the program you must create the `tryfd` file in the current directory:

```
/*********************************************************
You must make the tryfd file in the current directory first
before running this program..
*********************************************************/
#include <stdio.h>
#include <sys/types.h>
#include <sys/stat.h>
#include <fcntl.h>

main() {
int b=0;
int fd;
  for (;;) {
    fd = open ("./tryfd", O_RDONLY);
    if (fd == -1) {
        printf ("fd is %d\n", b);
        perror("fd");
          break;
        }
        b++;
  }
}
```

To ensure that the attributes for the project `group.mqm` are used by a user session when running Websphere MQ, make sure that the primary group of that user ID is mqm. In the examples in this topic, the `group.mqm` project ID will be used. For further information on how projects are associated with user sessions, see Sun's *System Administration Guide: Solaris Containers-Resource Management and Solaris Zones* for your release of Solaris.

For more information on configuring your system, see How to configure UNIX and Linux systems for WebSphere MQ.

Related concepts

“Setting up the user and group on UNIX and Linux systems” on page 56
On UNIX and Linux systems, IBM WebSphere MQ requires a user ID of the name `mqm`, with a primary group of `mqm`. The `mqm` user ID owns the directories and files that contain the resources associated with the product.

“Creating file systems on UNIX and Linux systems” on page 58

Before installing IBM WebSphere MQ Version 7.5, you might need to create file systems for both the product code and working data to be stored. There are minimum storage requirements for these file systems. The default installation directory for the product code can be changed at installation time, but the working data location cannot be changed.

Related tasks

"Preparing the system" on page 55
On some operating systems, you might have to complete several tasks before you install IBM WebSphere MQ depending on your installation platform. You might also want to complete other tasks, depending on your installation intentions.

Installing IBM WebSphere MQ

The topics in this section provide instructions on how to install IBM WebSphere MQ.

See "Finding the latest information" on page 50 for details about how to check that you have access to the most recent information available.

If product fixes or updates are made available, see IBM WebSphere MQ maintenance tasks for information about how to apply these changes.

To prepare for installation and to install the IBM WebSphere MQ components, complete the following tasks:

- "Planning your installation" on page 5
- "Checking requirements" on page 49
- "Preparing the system" on page 55
- "Installing an IBM WebSphere MQ server" on page 68
- "Installing an IBM WebSphere MQ client" on page 116
- "Installing IBM WebSphere MQ Telemetry" on page 38

Related concepts

"Verifying an IBM WebSphere MQ server installation" on page 141
You can verify a local (stand-alone) installation or a server-to-server installation of the IBM WebSphere MQ server. A local installation has no communication links with other IBM WebSphere MQ installations while a server-to-server installation does have links to other installations.

"Verifying an IBM WebSphere MQ client installation" on page 151
You can verify that your IBM WebSphere MQ MQI client installation completed successfully and that the communication link is working.

"Multiple installations " on page 6
On UNIX, Linux, and Windows, it is possible to have more than one copy of IBM WebSphere MQ on a system.

WebSphere MQ Managed File Transfer product options

Related tasks

Migrating and upgrading WebSphere MQ

Installing Advanced Message Security
Install and uninstall the IBM WebSphere MQ Advanced Message Security component.

Installing an IBM WebSphere MQ server

After preparing your system for installation you may install IBM WebSphere MQ by following the appropriate instructions for your platform. After installation, you might want to verify your installation to check that installation has been successful.

Before you begin

Make sure that you have prepared your system. See Preparing the system.

About this task

It is possible to have both a server and a client installation on the same machine, for instructions on how to do this see, “Installing an IBM WebSphere MQ client” on page 116.

IBM WebSphere MQ Telemetry is installed as part of the IBM WebSphere MQ Server installation. It must be selected as part of a custom installation. For more information, see “Installing IBM WebSphere MQ Telemetry” on page 38

Procedure

To begin the installation procedure, select the appropriate platform and installation method.

- Interactive installation
  a) “Installing IBM WebSphere MQ server on AIX ” on page 70
  b) “Installing IBM WebSphere MQ server on HP-UX” on page 73
  c) “Installing IBM WebSphere MQ server on Linux” on page 77
  d) “Installing IBM WebSphere MQ server on Linux Ubuntu ” on page 79
  e) “Installing IBM WebSphere MQ server on Solaris” on page 84
  f) “Installing IBM WebSphere MQ server on Windows” on page 88
- Non-interactive installation
  a) “Installing IBM WebSphere MQ server silently on AIX” on page 72
  b) “Installing IBM WebSphere MQ server silently on HP-UX” on page 75
  c) “Installing IBM WebSphere MQ server silently on Solaris” on page 86
  d) Non-interactive installation of WebSphere MQ server on Windows systems

Related concepts

“Planning your installation” on page 5
Before you install IBM WebSphere MQ, you must choose which components to install and where to install them. You must also make some platform-specific choices.

“Installing an IBM WebSphere MQ client” on page 116

“Installing IBM WebSphere MQ Telemetry” on page 38
From IBM WebSphere MQ Version 7.1, IBM WebSphere MQ Telemetry is a component of the main IBM WebSphere MQ product, and is no longer a separate plug-in. You can choose to install IBM WebSphere MQ Telemetry when you first install IBM WebSphere MQ, or when you modify an existing IBM WebSphere MQ installation.

Related tasks

“Displaying messages in your national language on UNIX and Linux systems” on page 114
To display messages from a different national language message catalog, you must install the appropriate catalog and set the **LANG** environment variable.

“Checking requirements” on page 49
Before you install IBM WebSphere MQ, you must check for the latest information and system requirements.

“Preparing the system” on page 55
On some operating systems, you might have to complete several tasks before you install IBM WebSphere MQ depending on your installation platform. You might also want to complete other tasks, depending on your installation intentions.

“Converting a trial license on UNIX, Linux, and Windows” on page 114

Installing IBM WebSphere MQ server on AIX

You can install IBM WebSphere MQ server on an AIX system.

Before you begin

- Before you start the installation procedure, make sure that you have completed the necessary steps outlined in "Preparing the system" on page 55.
- IBM WebSphere MQ can be installed into System Workload Partitions (WPARs) with both shared and private file systems. For installation into private file systems, IBM WebSphere MQ can be installed directly into the System WPAR using the procedure outlined in this topic. For installation into shared file systems, see Installing IBM WebSphere MQ in AIX Workload Partitions. There are some limitations for shared `/usr` file systems:
  - The **dspmqinst** and **dspmqver** commands might report the primary installation incorrectly when compared with the symbolic links in `/usr/bin`. To synchronize the reporting of the primary installation in a System WPAR and the global environment, run **setmqinst** with the **-i** or **-x** parameter, on the individual zones.
  - You cannot change the primary installation within a WPAR. You must change the primary installation through the global environment which has appropriate write access to `/usr/bin`.

  Note: During installation to a non-default location, ATTENTION messages that relate to **errupdate** or **trcupdate** are produced. These messages are not errors. However, AIX system trace for IBM WebSphere MQ is not supported for installations in a non-default location, and IBM WebSphere MQ trace must be used for problem determination.
- If you install a copy of IBM WebSphere MQ server for AIX obtained from Passport Advantage®, you need to:
  - Uncompress the tar file, by using the following command:

    ```
    uncompress  WS_MQ_V7.5_TRIAL_FOR_AIX_ML.tar.z
    ```
  - Extract the installation files from the tar file, by using the following command:

    ```
    tar -xvf  WS_MQ_V7.5_TRIAL_FOR_AIX_ML.tar
    ```
  - Use the installation tools, **installp** or **smit**, to install the IBM WebSphere MQ server for AIX.

About this task

IBM WebSphere MQ is supplied as a set of filesets that are installed using the standard AIX installation tools. The procedure uses the system management interface tool (SMIT), but you can choose to use **installp**, **geninstall** or the web-based System Manager. You can select which components you want to install. The components and file sets are listed in "Choosing what to install" on page 15.

This procedure installs IBM WebSphere MQ into the default location of `/usr/mqm`.

If you want to install IBM WebSphere MQ in any one of the following situations:

- As the first installation on your system using **installp**
- As the first installation on your system, and you are installing the product to a location that is not the default
- Alongside an existing installation

use the procedure described in "Installing IBM WebSphere MQ server silently on AIX" on page 72.

If you want to carry out a side-by-side installation, alongside an existing installation of IBM WebSphere MQ in the default location, the existing installation must be IBM WebSphere MQ Version 7.0.1.6, or later.

You must install the second version of the product in a location that is not the default, using **installp** (see "Installing IBM WebSphere MQ server silently on AIX" on page 72).

If you want to carry out a single stage migration, see UNIX, Linux, and Windows: Single-stage migration to a later version.

Procedure

1. Log in as root, or switch to the superuser using the **su** command.
2. Set your current directory to the location of the installation file. The location might be the mount point of the DVD, a network location, or a local file system directory.
3. List the software in the **SOFTWARE to install** field:
   a) Enter `.`
   b) Press **F4**
4. Select the required `smit` window using the following sequence:

```
Software Installation and Maintenance
    Install and Update Software
        Install and Update from ALL Available Software
```

5. Select the filesets to install from the list. Ensure that you include the appropriate message catalog if you require messages in a language different from the language specified by the locale selected on your system. Enter **ALL** to install all applicable filesets.
6. View the license agreement:
   a) Change **Preview new LICENSE agreements?** to **yes**
   b) Press **Enter**
7. Accept the license agreements and install IBM WebSphere MQ:
   a) Change **ACCEPT new license agreements?** to **yes**
   b) Change **Preview new LICENSE agreements?** to **no**
   c) Press **Enter**

What to do next

- If you have chosen this installation to be the primary installation on the system, you must now set it as the primary installation. Enter the following command at the command prompt:

```
MQ_INSTALLATION_PATH/bin/setmqinst -i -p MQ_INSTALLATION_PATH
```

  where *MQ_INSTALLATION_PATH* represents the directory where IBM WebSphere MQ is installed.

  You can have only one primary installation on a system. If there is already a primary installation on the system, you must unset it before you can set another installation as the primary installation. For more information, see Changing the primary installation .
- You might want to set up the environment to work with this installation. You can use the **setmqenv** or **crtmqenv** command to set various environment variables for a particular installation of IBM WebSphere MQ. For more information, see setmqenv and crtmqenv.
- If you want to confirm that the installation was successful, you can verify your installation. See “Verifying an IBM WebSphere MQ server installation” on page 141, for more information.

Related concepts

“Choosing an installation location” on page 13
You can install IBM WebSphere MQ to a custom location during the installation process. Alternatively, you can install to the default location. The location where IBM WebSphere MQ is installed is known as the *MQ_INSTALLATION_PATH*.

“Multiple installations ” on page 6
On UNIX, Linux, and Windows, it is possible to have more than one copy of IBM WebSphere MQ on a system.

“Choosing a primary installation” on page 8

On systems that support multiple installations of IBM WebSphere MQ (UNIX, Linux, and Windows), the primary installation is the one to which IBM WebSphere MQ system-wide locations refer. Having a primary installation is optional, but convenient.

Related tasks

"Installing IBM WebSphere MQ server silently on AIX" on page 72
Install IBM WebSphere MQ server from the command line using the AIX **installp** command.

"Uninstalling IBM WebSphere MQ on AIX" on page 165
On AIX, you can uninstall theIBM WebSphere MQ server or client using the System Management Interface Tool (SMIT) or the **installp** command.

Changing the primary installation

Related reference

setmqinst

Installing IBM WebSphere MQ server silently on AIX

Install IBM WebSphere MQ server from the command line using the AIX **installp** command.

Before you begin

Before you start the installation procedure, make sure that you have completed the necessary steps outlined in "Preparing the system" on page 55.

Note: During installation, errors relating to **errupdate** or **trcupdate** might occur. This can caused by installing to a non-default location, if so these errors can be safely ignored. However, native trace for IBM WebSphere MQ is only supported when installed in the default location.

About this task

You can use this method to install to a non-default location, and can select which components you want to install. The components and filesets are listed in "Choosing what to install" on page 15.

Procedure

1. Log in as root, or switch to the superuser using the **su** command.
2. Set your current directory to the location of the installation file. The location might be the mount point of the CD, a network location, or a local file system directory.
3. Install the product in one of the following ways:
   - Install the whole product in the default location:

     ```
     installp -acgXYd . all
     ```
   - Install selected filesets in the default location:

     ```
     installp -acgXYd . list of file sets
     ```
   - Install the whole product in a non-default location using the -R flag:

     ```
     installp -R USIL_Directory -acgXYd . all
     ```
   - Install selected filesets in a non-default location using the -R flag:

     ```
     installp -R USIL_Directory -acgXYd . list of file sets
     ```

   where *USIL_Directory* is a directory which exists before the command is run; it must not contain any spaces or `usr/mqm`. IBM WebSphere MQ is installed underneath the directory specified. For example, if `/USIL1` is specified, the IBM WebSphere MQ product files are located in `/USIL1/usr/mqm`. This location is known as the *MQ_INSTALLATION_PATH*.

What to do next

- If you have chosen this installation to be the primary installation on the system, you must now set it as the primary installation. Enter the following command at the command prompt:

  ```
  MQ_INSTALLATION_PATH/bin/setmqinst -i -p MQ_INSTALLATION_PATH
  ```

  where *MQ_INSTALLATION_PATH* represents the directory where IBM WebSphere MQ is installed.

  You can have only one primary installation on a system. If there is already a primary installation on the system, you must unset it before you can set another installation as the primary installation. For more information, see Changing the primary installation .
- You might want to set up the environment to work with this installation. You can use the **setmqenv** or **crtmqenv** command to set various environment variables for a particular installation of IBM WebSphere MQ. For more information, see setmqenv and crtmqenv.
- If you want to confirm that the installation was successful, you can verify your installation. See "Verifying an IBM WebSphere MQ server installation" on page 141, for more information.

Related concepts

"Multiple installations " on page 6
On UNIX, Linux, and Windows, it is possible to have more than one copy of IBM WebSphere MQ on a system.

"Choosing a primary installation" on page 8
On systems that support multiple installations of IBM WebSphere MQ (UNIX, Linux, and Windows), the primary installation is the one to which IBM WebSphere MQ system-wide locations refer. Having a primary installation is optional, but convenient.

Related tasks

"Installing IBM WebSphere MQ server on AIX " on page 70
You can install IBM WebSphere MQ server on an AIX system.

"Uninstalling IBM WebSphere MQ on AIX" on page 165
On AIX, you can uninstall theIBM WebSphere MQ server or client using the System Management Interface Tool (SMIT) or the **installp** command.

Related reference

setmqinst

Related information

Changing the primary installation

User Specified Installation Location (USIL)

Installing IBM WebSphere MQ server on HP-UX

Before you begin

Before you start the installation procedure, make sure that you have completed the necessary steps outlined in "Preparing the system" on page 55.

About this task

This task describes the installation of a server, using the `swinstall` program to select which components you want to install. The components are listed in "Choosing what to install" on page 15.

Note: If you are using a screen reader, use the non-interactive installation option "Installing IBM WebSphere MQ server silently on HP-UX" on page 75, so that you can accept the license without viewing it.

If you are installing IBM WebSphere MQ from a depot that contains service update packages, read HP-UX: Applying maintenance level updates on IBM WebSphere MQ Version 7.5 before installing the service update packages.

Procedure

1. Log in as root, or switch to the superuser using the **su** command.
2. Set your current directory to the location of the installation file. The location might be the mount point of the DVD, a network location, or a local file system directory.
3. Accept the license by running the `mqlicense` script:

   ```
   ./mqlicense.sh
   ```

   The license is displayed. If you accept the license, you can continue the installation.
4. Start the interactive installation procedure by typing the following command,

   ```
   swinstall -s /installation_file
   ```

   /installation_file is the absolute path to the installation file. The path must begin with a / and end with the name of the installation file.

   In the resulting menu screen, select **MQSERIES**.

   a) If you do not want to install all IBM WebSphere MQ components, open **MQSERIES**

      i) Mark the components you want to install. The installer resolves dependencies automatically.

      ii) Review the information displayed by the installer.
5. Optional: To install IBM WebSphere MQ to a non-default location, select **Actions > Change Product Location**. The default installation location is `/opt/mqm`.

   For each installation, all of the IBM WebSphere MQ components that you require must be installed in the same location.

   The installation path specified must either be an empty directory, the root of an unused file system, or a path that does not exist. The length of the path is limited to 256 bytes and must not contain spaces.

   Note: Ensure that you do not select **Actions > Change Target** by accident, they are not the same.
6. If this installation is not the first installation on the system, select **Options > Allow creation of multiple versions**
7. Select **Actions > Install**. The log file tells you if there are any problems that need fixing.
8. Fix any problems, and click **OK** to install. You are informed when the installation has finished.
9. If this installation is not the first installation on the system, you must enter the following command to configure IBM WebSphere MQ:

   ```
   swconfig -x allow_multiple_versions=true MQSERIES,l=MQ_INSTALLATION_PATH
   ```

   where *MQ_INSTALLATION_PATH* is the path where you have just installed IBM WebSphere MQ. If you do not enter this command, the **swlist** command reports the installation as installed instead of configured. You must not use IBM WebSphere MQ unless the installation is configured.

What to do next

- If you have chosen this installation to be the primary installation on the system, you must now set it as the primary installation. Enter the following command at the command prompt:

  ```
  MQ_INSTALLATION_PATH/bin/setmqinst -i -p MQ_INSTALLATION_PATH
  ```

  where *MQ_INSTALLATION_PATH* represents the directory where IBM WebSphere MQ is installed.

  You can have only one primary installation on a system. If there is already a primary installation on the system, you must unset it before you can set another installation as the primary installation. For more information, see Changing the primary installation .
- You might want to set up the environment to work with this installation. You can use the **setmqenv** or **crtmqenv** command to set various environment variables for a particular installation of IBM WebSphere MQ. For more information, see setmqenv and crtmqenv.

- If you want to confirm that the installation was successful, you can verify your installation. See "Verifying an IBM WebSphere MQ server installation" on page 141, for more information.

Related concepts

"Multiple installations " on page 6
On UNIX, Linux, and Windows, it is possible to have more than one copy of IBM WebSphere MQ on a system.

"Choosing a primary installation" on page 8
On systems that support multiple installations of IBM WebSphere MQ (UNIX, Linux, and Windows), the primary installation is the one to which IBM WebSphere MQ system-wide locations refer. Having a primary installation is optional, but convenient.

Related tasks

"Installing IBM WebSphere MQ server silently on HP-UX" on page 75
You can perform a non-interactive installation of IBM WebSphere MQ using the **swinstall** command. A non-interactive installation is also known as a silent, or unattended installation.

"Uninstalling IBM WebSphere MQ on HP-UX" on page 167
On HP-UX, you can uninstall theIBM WebSphere MQ server or client using the **swremove** command.

Changing the primary installation

Related reference

setmqinst

Installing IBM WebSphere MQ server silently on HP-UX

You can perform a non-interactive installation of IBM WebSphere MQ using the **swinstall** command. A non-interactive installation is also known as a silent, or unattended installation.

Before you begin

Before you start the installation procedure, make sure that you have completed the necessary steps outlined in "Preparing the system" on page 55.

About this task

This topic describes the non-interactive installation of a server, using the **swinstall** program to select which components you want to install. The components and are listed in "Choosing what to install" on page 15.

Procedure

1. Log in as root, or switch to the superuser using the **su** command.
2. Set your current directory to the location of the installation file. The location might be the mount point of the CD, a network location, or a local file system directory.
3. Accept the IBM WebSphere MQ license agreement without an interactive prompt by entering the following command:

   ```
   ./mqlicense.sh -accept
   ```

4. Install WebSphere MQ using the **swinstall** command:
   a) If this installation is not the first installation on the system, you must add `-x allow_multiple_versions=true` to the **swinstall** command.
   b) Add the names of the components to install as parameters of the **swinstall** command.
   The installer automatically resolves any dependencies.
   c) Optional: Identify the installation location by adding `,l=`*`MQ_INSTALLATION_PATH`* as a parameter of the **swinstall** command. For each installation, all of the IBM WebSphere MQ components that you require must be installed in the same location.

The installation path specified must either be an empty directory, the root of an unused file system, or a path that does not exist. The length of the path is limited to 256 bytes and must not contain spaces.

For example, to install all IBM WebSphere MQ components, in a non-default location, as the first installation, enter the following command:

```
swinstall -s /installation_file.v11 MQSERIES,l=/opt/customLocation
```

To perform a partial installation, providing a list of components, in the default location, as the second installation, enter the following command:

```
swinstall -x allow_multiple_versions=true -s /installation_file.v11
MQSERIES.MQM-RUNTIME MQSERIES.MQM-BASE MQSERIES.MQM-SERVER
```

/installation_file.v11 is the absolute path to the installation file. The path must begin with a / and end with the name of the installation file. The installation file has the extension .v11.

5. If this installation is not the first installation on the system, you must enter the following command to configure the installation:

```
swconfig -x allow_multiple_versions=true MQSERIES,l=MQ_INSTALLATION_PATH
```

where *MQ_INSTALLATION_PATH* is the path where you have just installed IBM WebSphere MQ. If you do not enter this command, the **swlist** command reports the installation as installed instead of configured. You must not use IBM WebSphere MQ unless the installation is configured.

Example

The example shows the command to run a silent, full installation in the default location. Notice that all the language features are installed. Run a partial installation to install your chosen languages.

```
cd /downloads/WMQInstallFiles
swinstall -v -x source_directory=$PWD/hpUxxxxx.v11 MQSERIES
```

What to do next

- If you have chosen this installation to be the primary installation on the system, you must now set it as the primary installation. Enter the following command at the command prompt:

```
MQ_INSTALLATION_PATH/bin/setmqinst -i -p MQ_INSTALLATION_PATH
```

where *MQ_INSTALLATION_PATH* represents the directory where IBM WebSphere MQ is installed.

You can have only one primary installation on a system. If there is already a primary installation on the system, you must unset it before you can set another installation as the primary installation. For more information, see Changing the primary installation .

- You might want to set up the environment to work with this installation. You can use the **setmqenv** or **crtmqenv** command to set various environment variables for a particular installation of IBM WebSphere MQ. For more information, see setmqenv and crtmqenv.
- If you want to confirm that the installation was successful, you can verify your installation. See “Verifying an IBM WebSphere MQ server installation” on page 141, for more information.

Related concepts

“Multiple installations ” on page 6
On UNIX, Linux, and Windows, it is possible to have more than one copy of IBM WebSphere MQ on a system.

“Choosing a primary installation” on page 8

On systems that support multiple installations of IBM WebSphere MQ (UNIX, Linux, and Windows), the primary installation is the one to which IBM WebSphere MQ system-wide locations refer. Having a primary installation is optional, but convenient.

Related tasks

"Installing IBM WebSphere MQ server on HP-UX" on page 73

"Uninstalling IBM WebSphere MQ on HP-UX" on page 167

On HP-UX, you can uninstall theIBM WebSphere MQ server or client using the **swremove** command.

Changing the primary installation

Related reference

setmqinst

Installing IBM WebSphere MQ server on Linux

You can install a IBM WebSphere MQ server on either a 32-bit or 64-bit Linux system.

Before you begin

- Before you start the installation procedure, ensure that you have completed the necessary steps outlined in "Preparing the system" on page 55.
- If this installation is not the first installation on the system, you must ensure that the **crtmqpkg** command can write to a temporary location. By default, the **crtmqpkg** command will write to the `/var/tmp` directory. To use a different location, you can set the *TMPDIR* environment variable before you run the **crtmqpkg** command.
- To run the **crtmqpkg** command used in this task, you must have the **pax** command or **rpmbuild** installed.

  Important: pax and **rpmbuild** are not supplied as part of the product. You must obtain these from your Linux distribution supplier.

About this task

Install the server by using the RPM Package Manager installer to select the components you want to install. The components and package names are listed in "Choosing what to install" on page 15.

Procedure

1. Log in as `root`, or switch to the superuser by using the **su** command.
2. Set your current directory to the location of the installation file. The location might be the mount point of the server DVD, a network location, or a local file system directory.
3. Run the `mqlicense.sh` script.

   If you want to view a text-only version of the license, which can be read by a screen reader, type the following message:

   ```
   ./mqlicense.sh -text_only
   ```

   The license number is displayed.

   You must accept the license agreement before you can proceed with the installation.
4. If this installation is not the first installation of IBM WebSphere MQ on the system, you must run the **crtmqpkg** command to create a unique set of packages to install on the system. To run the **crtmqpkg** command to run on Linux, you must install the **pax** command and **rpmbuild**, which is located in the rpm-build package.

   Note: The **crtmqpkg** command is required only if this is not the first installation of IBM WebSphere MQ on the system. If you have earlier versions of IBM WebSphere MQ installed on your system then installing IBM WebSphere MQ version 7.5 will work correctly if you install it in a different location.

   To run the **crtmqpkg** command on a Linux system:

a) Enter the following command:

```
./crtmqpkg suffix
```

where *suffix* is a name of your choosing that uniquely identifies the installation packages on the system. *suffix* is not the same as an installation name, although the names can be identical. *suffix* is limited to 16 characters in the ranges A-Z, a-z, and 0-9.

Note: This command creates a full copy of the installation packages in a temporary directory. By default, the temporary directory is located at `/var/tmp`. You must ensure that the system has enough free space before you run this command. To use a different location, you can set the *TMPDIR* environment variable before you run the **crtmqpkg** command. For example:

```
$ TMPDIR=/test ./crtmqpkg
```

b) Set your current directory to the location specified when the **crtmqpkg** command operation completes successfully.

This directory is a subdirectory of the `/var/tmp/mq_rpms` directory, in which the unique set of packages is created. The packages have the *suffix* value contained within the file name. In the following example, the suffix of "1"`./crtmqpkg 1` means that there is :a subdirectory named `/var/tmp/mq_rpms/1/i386`.

The packages are renamed according to the subdirectory, for example:

```
From: MQSeriesRuntime-7.5.0-0.i386.rpm
To: MQSeriesRuntime_1-7.5.0-0.i386.rpm
```

5. Install IBM WebSphere MQ.

At a minimum, you must install the MQSeriesRuntime and the MQSeriesServer components.

- To install to the default location, `/opt/mqm`, use the **rpm -ivh** command to install each component that you require.

  For example, to install the runtime and server components to the default location, use the following command:

  ```
  rpm -ivh MQSeriesRuntime-*.rpm MQSeriesServer-*.rpm
  ```

  To install all components to the default location use the following command:

  ```
  rpm -ivh MQSeries*.rpm
  ```

- To install to a non-default location, use the **rpm --prefix** option. For each installation, all of the IBM WebSphere MQ components that you require must be installed in the same location.

  The installation path specified must be either an empty directory, the root of an unused file system, or a path that does not exist. The length of the path is limited to 256 bytes and must not contain spaces.

  For example, enter the following installation path to install the runtime and server components to the `/opt/customLocation` directory on a 32-bit Linux system:

  ```
  rpm --prefix /opt/customLocation -ivh MQSeriesRuntime_*.rpm
  MQSeriesServer_*.rpm
  ```

What to do next

- If you have chosen this installation to be the primary installation on the system, you must now set it as the primary installation. Enter the following command at the command prompt:

  ```
  MQ_INSTALLATION_PATH/bin/setmqinst -i -p MQ_INSTALLATION_PATH
  ```

  where *MQ_INSTALLATION_PATH* represents the directory where IBM WebSphere MQ is installed.

You can have only one primary installation on a system. If there is already a primary installation on the system, you must unset it before you can set another installation as the primary installation. For more information, see Changing the primary installation .

- You might want to set up the environment to work with this installation. You can use the **setmqenv** or **crtmqenv** command to set various environment variables for a particular installation of IBM WebSphere MQ. For more information, see setmqenv and crtmqenv.
- If you want to confirm that the installation was successful, you can verify your installation. See "Verifying an IBM WebSphere MQ server installation" on page 141, for more information.

Related concepts

"Multiple installations " on page 6
On UNIX, Linux, and Windows, it is possible to have more than one copy of IBM WebSphere MQ on a system.

"Choosing a primary installation" on page 8
On systems that support multiple installations of IBM WebSphere MQ (UNIX, Linux, and Windows), the primary installation is the one to which IBM WebSphere MQ system-wide locations refer. Having a primary installation is optional, but convenient.

Related tasks

"Uninstalling IBM WebSphere MQ on Linux" on page 168
On Linux, you can uninstall theIBM WebSphere MQ server or client using the **rpm** command.

Related reference

setmqinst

Related information

Changing the primary installation

Installing IBM WebSphere MQ server on Linux Ubuntu

You can install a IBM WebSphere MQ server on a Linux Ubuntu system.

Before you begin

- Before you start the installation procedure, make sure that you have completed the necessary steps outlined in "Preparing the system" on page 55.
- Ensure that RPM is installed on your system, as the installation procedure uses the same RPM packages used by the other RPM based distributions. Technologies that convert these RPM packages into other forms, such as alien to convert RPMs to Debian packages, are not compatible with the IBM WebSphere MQ RPM packages and must not be used.

  IBM WebSphere MQ for Linux is installed by using RPM, which is not installed by default on Ubuntu. To determine if RPM is installed on you system, use the **dpkg** command. For example:

  ```
  dpkg -l rpm
  ```

  If the response from this command is of the form:

  ```
  ii  rpm      4.9.1.1-1ubuntu0.1     package manager for RPM
  ```

  Then RPM is already installed on your system and no further action is required.

  If the **dpkg** command returns output of the form:

  ```
  $ dpkg -l rpm
  No packages found matching rpm
  ```

  Then you must install the RPM package before you install IBM WebSphere MQ. For example:

  ```
  sudo apt-get install rpm
  ```

If this command does not complete successfully, consult your Ubuntu administrator for instructions specific to your system to install the RPM package.

About this task

Install the server by using the RPM Package Manager installer to select the components you want to install. The components and package names are listed in “Choosing what to install” on page 15.

Procedure

1. Open a shell terminal and set your current directory to the location of the installation packages. The location might be the mount point of the server DVD, a network location, or a local file system directory. You must have root authority to run the following commands. You can do so by adding **sudo** before the following commands, or by changing to the root user in the shell with the **su** command.
2. Run the `mqlicense.sh` script.

   If you want to view a text-only version of the license, which can be read by a screen reader, type the following message:

   ```
   ./mqlicense.sh -text_only
   ```

   The license is displayed.

   You must accept the license agreement before you can proceed with the installation.
3. If this installation is not the first installation of IBM WebSphere MQ version 7.5 on the system, you must run the **crtmqpkg** command to create a unique set of packages to install on the system. To run the **crtmqpkg** command to run on Linux, you must install the **pax** command and **rpmbuild**, which is located in the rpm-build package.

   Note: If you want to install IBM WebSphere MQ in a non-default installation location, apply the code fix provided in the technote, Installing WebSphere MQ on the Linux Ubuntu Distribution. Without this update, the **crtmqpkg** command will abort without creating the rebuilt RPM packages.

   a) Enter the following command:

   ```
   ./crtmqpkg suffix
   ```

   where *suffix* is a name of your choosing, that uniquely identifies the installation packages on the system. *suffix* is not the same as an installation name, although the names can be identical. *suffix* is limited to 16 characters in the ranges A-Z, a-z, and 0-9.

   Note: This command creates a full copy of the installation packages in a temporary directory. By default, the temporary directory is located at `/var/tmp`. You must ensure that the system has enough free space before you run this command. To use a different location, you can set the *TMPDIR* environment variable before you run the **crtmqpkg** command. For example:

   ```
   TMPDIR=/test ./crtmqpkg
   ```

   b) Set your current directory to the location specified when the **crtmqpkg** command completes.

   This directory is a subdirectory of the `/var/tmp/mq_rpms` directory, in which the unique set of packages is created. The packages have the *suffix* value contained within the file name. In the following example, the suffix of "1"`./crtmqpkg 1` means that there is :a subdirectory named `/var/tmp/mq_rpms/1/i386`.

   The packages are renamed according to the subdirectory, for example:

   ```
   From: MQSeriesRuntime-7.5.0-0.i386.rpm
   To: MQSeriesRuntime_1-7.5.0-0.i386.rpm
   ```
4. Install IBM WebSphere MQ.

   At a minimum, you must install the MQSeriesRuntime and the MQSeriesServer components.

   Two additional flags are required over the RPM based distribution installations:

- **--nodeps**: You must use this option as the RPM database on Ubuntu is empty or sparsely populated, and the operating system package dependencies requested by the IBM WebSphere MQ packages are not listed within the RPM package database.

  Important: This option disables the safety checks contained within the IBM WebSphere MQ RPM packages to ensure that all WebSphere MQ packages contain their necessary prerequisite packages. If you are not installing all the components, you must ensure that appropriate sets are installed, as listed in Table 17 on page 81.
- **--force-debian**: You must use this option to prevent warning messages from Ubuntu's version of RPM, which indicate that the RPM packages are not intended to be directly installed using RPM on Ubuntu.

  As dependency checking is disabled during the Ubuntu IBM WebSphere MQ installation, install the MQSeriesRuntime package before any other package as all other packages depend on the MQSeriesRuntime package.

  For example:

  ```
  rpm -ivh --nodeps --force-debian MQSeriesRuntime-*.rpm
  ```

  You can now choose other components to install, such as MQSeriesServer, MQSeriesJava, and MQSeriesJRE. These components provide your system with queue manager functionality, the IBM WebSphere MQ classes for Java and JMS APIs for using with Java applications, and a JRE to run the applications with. Use the following command:

  ```
  rpm -ivh --nodeps --force-debian MQSeriesServer-*.rpm MQSeriesJRE-*.rpm MQSeriesJava-*.rpm
  ```

  describes the package component dependencies. To install and use the package listed in the package name column you must also install the components listed in the package dependencies column.

Table 17. Package component dependencies

Package Name	Component Function	Package Dependencies
MQSeriesRuntime	Common function for all other components	None
MQSeriesServer	Queue Manager	MQSeriesRuntime
MQSeriesClient	C WebSphere MQ client libraries	MQSeriesRuntime
MQSeriesJava	Java and JMS WebSphere MQ APIs	MQSeriesRuntime
MQSeriesJRE	Java Runtime Environment	MQSeriesRuntime
MQSeriesExplorer	WebSphere MQ Explorer **Note:** There is no IBM support for this component on Ubuntu	MQSeriesRuntime MQSeriesJRE
MQSeriesGSKit	IBM Global Security Kit **Note:** There is no IBM support for this component on Ubuntu	MQSeriesRuntime MQSeriesJRE
MQSeriesSDK	Header files and libraries for non-Java APIs	MQSeriesRuntime
MQSeriesMan	UNIX man pages for WebSphere MQ	MQSeriesRuntime

Table 17. Package component dependencies (continued)

Package Name	Component Function	Package Dependencies
MQSeriesSamples	WebSphere MQ application samples	MQSeriesRuntime
MQSeriesMsg_cs MQSeriesMsg_de MQSeriesMsg_es MQSeriesMsg_fr MQSeriesMsg_hu MQSeriesMsg_it MQSeriesMsg_ja MQSeriesMsg_ko MQSeriesMsg_pl MQSeriesMsg_pt MQSeriesMsg_ru MQSeriesMsg_Zh_CN MQSeriesMsg_Zh_TW	Language specific message catalog files	MQSeriesRuntime
MQSeriesXRService	(64-bit Linux only) Telemetry queue manager component	MQSeriesRuntime MQSeriesJRE MQSeriesServer MQSeriesRuntime
MQSeriesXRClient	(64-bit Linux only) Telemetry client APIs	MQSeriesRuntime
MQSeriesFTBase	MQ Managed File Transfer component	MQSeriesRuntime MQSeriesJava MQSeriesJRE
MQSeriesFTLogger	MQ Managed File Transfer component	MQSeriesRuntime MQSeriesServer MQSeriesFTBase MQSeriesJava MQSeriesJRE
MQSeriesFTTools MQSeriesFTAgent	MQ Managed File Transfer components	MQSeriesRuntime MQSeriesFTBase MQSeriesJava MQSeriesJRE

Table 17. Package component dependencies (continued)		
Package Name	**Component Function**	**Package Dependencies**
MQSeriesFTService	MQ Managed File Transfer component	MQSeriesRuntime MQSeriesServer MQSeriesFTAgent MQSeriesFTBase MQSeriesJava MQSeriesJRE
MQSeriesAMS	Advanced Message Security component **Note:** There is no IBM support for this component on Ubuntu	MQSeriesRuntime MQSeriesServer

What to do next

- If you have chosen this installation to be the primary installation on the system, you must now set it as the primary installation. Enter the following command at the command prompt:

  ```
  MQ_INSTALLATION_PATH/bin/setmqinst -i -p MQ_INSTALLATION_PATH
  ```

  where *MQ_INSTALLATION_PATH* represents the directory where IBM WebSphere MQ is installed.

  You can have only one primary installation on a system. If there is already a primary installation on the system, you must unset it before you can set another installation as the primary installation. For more information, see Changing the primary installation .
- You might want to set up the environment to work with this installation. You can use the **setmqenv** or **crtmqenv** command to set various environment variables for a particular installation of IBM WebSphere MQ. For more information, see setmqenv and crtmqenv.
- If you want to confirm that the installation was successful, you can verify your installation. See “Verifying an IBM WebSphere MQ server installation” on page 141, for more information.

Related concepts

“Multiple installations ” on page 6
On UNIX, Linux, and Windows, it is possible to have more than one copy of IBM WebSphere MQ on a system.

“Choosing a primary installation” on page 8
On systems that support multiple installations of IBM WebSphere MQ (UNIX, Linux, and Windows), the primary installation is the one to which IBM WebSphere MQ system-wide locations refer. Having a primary installation is optional, but convenient.

Related tasks

“Uninstalling IBM WebSphere MQ on Linux” on page 168
On Linux, you can uninstall theIBM WebSphere MQ server or client using the **rpm** command.

Changing the primary installation

Related reference

setmqinst

Installing IBM WebSphere MQ server on Solaris

You can install an IBM WebSphere MQ server on Solaris either interactively or silently.

Before you begin

- Before you start the installation procedure, make sure that you complete the necessary steps that are outlined in "Preparing the system" on page 55.
- If you are using Solaris zones, you have a choice between installing IBM WebSphere MQ into the global zone, or installing IBM WebSphere MQ into a non-global zone. For details on how to install IBM WebSphere MQ into Solaris zones, see the following technote: IBM WebSphere MQ V6.0 support position regarding Solaris zones. The technote is applicable to IBM WebSphere MQ Version 7.1 or later with the following changes:
  - You do not need the `-G` option on the **pkgadd** command as GSKit is now installed as part of the WebSphere MQ installation.
  - If you install IBM WebSphere MQ into the global zone for use in sparse zones, you must copy the `/var/mqm` file system into the sparse zone. You must also copy the `/etc/opt/mqm/mqinst.ini` installation entry into the sparse zone.
  - Limitations for shared `/usr` file systems: the **dspmqinst** and **dspmqver** commands might report the primary installation incorrectly when compared with the symbolic links in `/usr/bin`. To synchronize the reporting of the primary installation in a Solaris zone and the global zone, run **setmqinst** with the **-i** or **-x** parameter, on the individual zones.
  - You cannot change the primary installation within a non-global zone. You must change the primary installation through the global zone, which has the appropriate write access to `/usr/bin` .

About this task

This task describes the installation of the IBM WebSphere MQ for Solaris server, using the pkgadd program. You can choose which components you want to install. The components are listed in "Choosing what to install" on page 15.

Note: If you are installing on the Solaris 11 operating system, ensure that the IPS package (package/svr4) that supports pkgadd and equivalent utilities is installed.

Procedure

1. Log in as root, or switch to the superuser using the **su** command.
2. Set your current directory to the location of the installation file. The location might be the mount point of the server DVD, a network location, or a local file system directory.
3. Run the `mqlicense.sh` script to accept the license:

   ```
   ./mqlicense.sh
   ```

   If you want to view a text-only version of the license, which can be read by a screen reader, type:

   ```
   ./mqlicense.sh -text_only
   ```

   The license is displayed. Follow the instructions to accept the license. If you accept the license, the installation continues. If you do not accept the license, you cannot continue the installation process.
4. If this installation is not the first installation on the system, you must run **crtmqpkg** to create a unique set of packages to install on the system:
   a) Enter the following command:

   ```
   ./crtmqpkg
   suffix
   ```

where *suffix* is a name of your choosing that uniquely identifies the installation packages on the system. *suffix* is not the same as an installation name, although the names can be identical. *suffix* is limited to 16 characters in the ranges A-Z, a-z, and 0-9.

The **crtmqpkg** script can use two environment variables which are useful when you are installing from a non-disk media location:

- *CDROOT*, the root of the installation media or downloaded installation files.
- *TMPDIR*, the output location of the modified installation files.

No environment variables are required if you are running the image as `./crtmqpkg`.

b) Set your current directory to the location specified when the **crtmqpkg** command completes.

This directory is a subdirectory of `/var/spool`, in which the unique set of packages is created. The packages have the *suffix* value contained within the file name.

5. Start the installation process:
   - If the installation is the first installation on the system, enter the following command to start the installation process:

     ```
     pkgadd -d.
     ```

   - If the installation is not the first installation on the system, enter the following command to start the installation process:

     ```
     pkgadd mqm-suffix
     ```

     where *suffix* is the suffix chosen in the previous step.
6. You are prompted to choose a location for installation.
   - To install to the default location, `/opt/mqm`, enter `y`.
   - To install to a non-default directory, enter `n`. Then, enter the required installation path, and confirm your choice.
7. When the list of components is displayed, enter the numbers of the components that you require, separated by spaces or commas.

   When you are installing (adding) an IBM WebSphere MQ component to an existing installation, choose option `yes` when you are asked whether to overwrite.

   Note: During the IBM WebSphere MQ base version installation, you can choose to install all components or a subset of the components. When you install a fix pack, only the currently installed components are upgraded. If, at a later stage, you want to add further IBM WebSphere MQ components that are not already installed, these components can be installed (added) to the IBM WebSphere MQ base version only. If your current version of IBM WebSphere MQ is not the base version, you must first uninstall all the fix packs before you add the required components to the existing installation, and then install the required fix packs. Also, when you are adding IBM WebSphere MQ components to an existing installation, you must choose option `yes` when you are asked whether to overwrite by the installation process.
8. If the path chosen in step 6 does not exist, you are asked if you want to create it. You must enter `y` to proceed.
9. Answer any questions appropriately for your system.

   If you are prompted to choose whether to install certain IBM WebSphere MQ files as `setuid/setgid` files, you must enter `y`.
10. A message is issued when the installation is complete. Enter `q` to exit the `pkgadd` program.

What to do next

- If you have chosen this installation to be the primary installation on the system, you must now set it as the primary installation. Enter the following command at the command prompt:

```
MQ_INSTALLATION_PATH/bin/setmqinst -i -p MQ_INSTALLATION_PATH
```

where *MQ_INSTALLATION_PATH* represents the directory where IBM WebSphere MQ is installed.

You can have only one primary installation on a system. If there is already a primary installation on the system, you must unset it before you can set another installation as the primary installation. For more information, see Changing the primary installation .

- You might want to set up the environment to work with this installation. You can use the **setmqenv** or **crtmqenv** command to set various environment variables for a particular installation of IBM WebSphere MQ. For more information, see setmqenv and crtmqenv.
- If you want to confirm that the installation was successful, you can verify your installation. See "Verifying an IBM WebSphere MQ server installation" on page 141, for more information.

Related concepts

"Multiple installations " on page 6
On UNIX, Linux, and Windows, it is possible to have more than one copy of IBM WebSphere MQ on a system.

"Choosing a primary installation" on page 8
On systems that support multiple installations of IBM WebSphere MQ (UNIX, Linux, and Windows), the primary installation is the one to which IBM WebSphere MQ system-wide locations refer. Having a primary installation is optional, but convenient.

Related tasks

"Installing IBM WebSphere MQ server silently on Solaris" on page 86

"Uninstalling IBM WebSphere MQ on Solaris" on page 170
On Solaris, you can uninstall theIBM WebSphere MQ server or client using the **pkgrm** command.

Changing the primary installation

Related reference

setmqinst

Installing IBM WebSphere MQ server silently on Solaris

Before you begin

Before you start the installation procedure, make sure that you have completed the necessary steps outlined in "Preparing the system" on page 55.

About this task

You can perform a silent installation of IBM WebSphere MQ. A sample script file called `silent.sh` is supplied in the `silent` directory on the DVD. You can use this script to perform a non-interactive installation that requires no input and shows nothing on the screen. It must be run as root.

The installation script `silent.sh` uses an `admin` file and a `response` file, both of which are supplied in the `silent` directory. You can use these files as supplied to perform a silent installation of all the components, including all the national language features, to the default location.

Note: If you are installing on the Solaris 11 operating system, ensure that the IPS package (package/svr4) that supports pkgadd and equivalent utilities is installed.

Procedure

1. Copy the `silent.sh` script into a writeable directory.
2. If this installation is not the first installation on the system, you must run **crtmqpkg** to create a unique set of packages to install on the system:
   a) Enter the following command:

```
./crtmqpkg suffix
```

where *suffix* is a name of your choosing, that will uniquely identify the installation packages on the system. *suffix* is not the same as an installation name, although the names can be identical. *suffix* is limited to 16 characters in the ranges A-Z, a-z, and 0-9.

b) Set your current directory to the location specified when the **crtmqpkg** command completes.

This directory is a sub-directory of `/var/spool`, in which the unique set of packages is created. The packages have the *suffix* value contained within the filename.

Once a new package has been generated for the second installation the `silent.sh` script needs to have its MQ_PACKAGE_NAME variable modified so that its value is not `mqm` but the new package name.

Also the MQ_PACKAGE_LOCATION variable needs to be modified so that its value is not $MQ_MEDIA_LOCATION but the location of the new package (which by default is `/var/spool/pkg`).

3. Optional: If you want to change where the IBM WebSphere MQ server DVD is mounted, you must update the values in the `silent.sh` script. By default, the script assumes that the server DVD has been mounted at `/CD7FVML`.
4. Optional: If you want to change where the output and logs are written to, update the values in the `silent.sh` script. By default, output and logs are written to the file `/var/tmp/mq.install`.
5. Optional: If you want to install to a non-default location, you must update the *MQ_INSTALLATION_PATH* variable in the `silent.sh` script.

   Note:

   - The installation path specified must either be an empty directory, the root of an unused file system, or a path that does not exist. The length of the path is limited to 256 bytes and must not contain spaces.
   - The directory specified must exist before running the **pkgadd** command.
6. Optional: If you want to change the components that are installed, you must edit the `response` file.

   A list of all the installable IBM WebSphere MQ components can be found at: "Choosing what to install" on page 15.

   Solaris does not check, during a silent installation, that prerequisite components are installed. You can use the following procedure to create a response file interactively, before using it to install the product. **pkgask** prompts you for the names of the components to install.

   a. Run the **mqlicense.sh** command to accept the license agreement for the product.

   b. `pkgask -d` *path_to_install_image* `-r` *response_file* `mqm`

   The inputs to **pkgask** are the same as those inputs documented for **pkgadd**, but instead of the product being installed a response file is created.
7. If you have edited the `response` file, you must then edit the `silent.sh` to use your custom response file.
8. To start the installation, run `silent.sh`.
9. Check the log file for any errors.

What to do next

- If you have chosen this installation to be the primary installation on the system, you must now set it as the primary installation. Enter the following command at the command prompt:

  ```
  MQ_INSTALLATION_PATH/bin/setmqinst -i -p MQ_INSTALLATION_PATH
  ```

  where *MQ_INSTALLATION_PATH* represents the directory where IBM WebSphere MQ is installed.

  You can have only one primary installation on a system. If there is already a primary installation on the system, you must unset it before you can set another installation as the primary installation. For more information, see Changing the primary installation .

- You might want to set up the environment to work with this installation. You can use the **setmqenv** or **crtmqenv** command to set various environment variables for a particular installation of IBM WebSphere MQ. For more information, see setmqenv and crtmqenv.
- If you want to confirm that the installation was successful, you can verify your installation. See "Verifying an IBM WebSphere MQ server installation" on page 141, for more information.

Related concepts

"Multiple installations " on page 6
On UNIX, Linux, and Windows, it is possible to have more than one copy of IBM WebSphere MQ on a system.

"Choosing a primary installation" on page 8
On systems that support multiple installations of IBM WebSphere MQ (UNIX, Linux, and Windows), the primary installation is the one to which IBM WebSphere MQ system-wide locations refer. Having a primary installation is optional, but convenient.

Related tasks

"Installing IBM WebSphere MQ server on Solaris" on page 84
You can install an IBM WebSphere MQ server on Solaris either interactively or silently.

"Uninstalling IBM WebSphere MQ on Solaris" on page 170
On Solaris, you can uninstall theIBM WebSphere MQ server or client using the **pkgrm** command.

Related reference

setmqinst

Related information

Changing the primary installation

Installing IBM WebSphere MQ server on Windows

This topic describes how to install IBM WebSphere MQ server on Windows systems by using the Launchpad. This procedure can be used for installing a first or a subsequent installation.

Installing using the Launchpad

About this task

These instructions cover how to display the installation Launchpad window. You can use the launchpad to make a compact, typical, or custom installation of IBM WebSphere MQ. You can reuse the launchpad multiple times to install further installations. It automatically selects the next available installation name, instance, and location to use. To view all the installation types and the features that are installed with each option, see "Planning your installation on Windows systems" on page 40.

Note that if you have previously uninstalled IBM WebSphere MQ from your system (see "Uninstalling IBM WebSphere MQ on Windows" on page 171), some configuration information might remain, and some default values might be changed.

Procedure

1. Access the IBM WebSphere MQ installation image. The location might be the mount point of the DVD, a network location, or a local file system directory.
2. Locate `setup.exe` in the base directory of the IBM WebSphere MQ installation image.
   - From a DVD, this location might be `E:\setup.exe`
   - From a network location, this location might be `m:\instmqs\setup.exe`
   - From a local file system directory, this location might be `C:\instmqs\setup.exe`
3. Double-click the **Setup** icon to start the installation process. It is possible to run either by:
   - Running `setup.exe` from the command prompt. Or
   - Double-clicking `setup.exe` from Windows Explorer.

If you are installing on a Windows system with UAC enabled, accept the Windows prompt to allow the launchpad to run as elevated. During installation, you might also see **Open File - Security Warning** dialog boxes that list International Business Machines Limited as the publisher. Click **Run** to allow the installation to continue.

The IBM WebSphere MQ Installation Launchpad window is displayed.

4. Continue to follow the Launchpad instructions as shown on screen.

What to do next

- If you have chosen this installation to be the primary installation on the system, you must now set it as the primary installation. Enter the following command at the command prompt:

  ```
  MQ_INSTALLATION_PATH/bin/setmqinst -i -p MQ_INSTALLATION_PATH
  ```

  You can have only one primary installation on a system. If there is already a primary installation on the system, you must unset it before you can set another installation as the primary installation. For more information, see Changing the primary installation .
- You might want to set up the environment to work with this installation. You can use the **setmqenv** or **crtmqenv** command to set various environment variables for a particular installation of IBM WebSphere MQ. For more information, see setmqenv and crtmqenv.
- For instructions on how to verify your installation, see "Verifying an IBM WebSphere MQ client installation" on page 151.

Known problem: The installation of IBM WebSphere MQ on Windows might fail while installing Microsoft Visual C++ runtime due to a conflict between the runtime merge modules that are installed by IBM WebSphere MQ and the run time that is already installed on the machine by another product.

If this issue occurs, a message like the one shown in the following example is recorded in the IBM WebSphere MQ installation logs:

```
MSI (s) (34:48) [12:07:26:083]: Product: IBM WebSphere MQ 64bitSupport -- Error 1935.
An error occurred during the installation of assembly component {844EFBA7-1C24-93B2-A01F-
C8B3B9A1E18E}. HRESULT: 0x80073715. assembly interface: IAssemblyCacheItem, function: Commit,
assembly name:
Microsoft.VC80.CRT,type="win32",version="8.0.50727.4053",publicKeyToken="1fc8b3b9a1e18e3b",process
orArchitecture="amd64"
```

This problem is due to a known Microsoft issue that is documented in the following Microsoft Support article: https://support.microsoft.com/kb/2643995.

The solution is to download and install latest Microsoft Visual C++ 2005 from https://www.microsoft.com/en-us/download/details.aspx?id=26347 and then try the IBM WebSphere MQ installation again.

Related concepts

"Modifying your installation" on page 104
Find out how to modify an IBM WebSphere MQ server installation interactively using the launchpad or non-interactively using msiexec.

"Post installation tasks" on page 105
Find out what tasks can be undertaken once IBM WebSphere MQ has been successfully installed. Begin by following the related pages below:

Related tasks

"Advanced installation using msiexec" on page 90

Installing IBM WebSphere MQ using SCCM

You can install IBM WebSphere MQ using the System Center Configuration Manager (SCCM).

Procedure

1. Create a folder on the SCCM server and copy the IBM WebSphere MQ DVD image into that folder.
2. Make the folder the X drive of the SCCM client systems.

3. Using the Configuration Manager Console for SCCM, create a package:
   a) Click **Computer Management > Software Distribution > Packages**.
   b) Right-click on **Packages** and click **New > Package from Definition**.
   c) In the wizard, select the `WebSphere MQ.SMS` file from the folder that you copied the IBM WebSphere MQ DVD image into.

      If you chose to use a drive letter other than X for the client systems, you must modify the commands in the `WebSphere MQ.SMS` file to use the appropriate drive letter.
4. Optional: To install IBM WebSphere MQ to a non-default location, you must add the following two parameters to the command line under Program Properties:

   ```
   PGMFOLDER="MQ_INSTALLATION_PATH"
   DATFOLDER="MQ_INSTALLATION_PATH\data"
   ```

   where *MQ_INSTALLATION_PATH* refers to the path where you want to install IBM WebSphere MQ.
5. Under the package you created, Right click **Distribution Points** and then click **New distribution Points**.
6. In the wizard, select the SCCM server as the distribution point.
7. Using the Configuration Manager Console for SCCM, distribute the software:
   a) Right-click the package you created and click **Distribute > Software**.
   b) In the wizard, select **All Systems for Collections**.
8. Once the Advertisement Status for the package shows as Received, manually initiate the IBM WebSphere MQ unattended installation:
   a) Log on to the SCCM client system
   b) Click **Control Panel > Run Advertised Program** and select the package to run

Advanced installation using msiexec

Before you begin

If you are running IBM WebSphere MQ on Windows systems with User Account Control (UAC) enabled, you must invoke the installation with elevated privileges. If you are using the Command prompt or IBM WebSphere MQ Explorer elevate privileges by using a right-click to start the program and selecting Run as administrator. If you try to run **msiexec** without using elevated privileges, the installation fails with an error of AMQ4353 in the installation log.

About this task

WebSphere MQ on Windows uses the MSI technology to install software. MSI provides both an interactive installation and a non interactive installation. An interactive installation displays panels and ask questions.

The **msiexec** command uses parameters to give MSI some or all of the information that can also be specified through panels during an interactive installation. This means that a user can create a reusable automated or semi-automated installation configuration. Parameters can be given through the command line, a transform file, a response file, or a combination of the three.

Procedure

To install using msiexec, at the command line, enter the **msiexec** command in the following format:

```
msiexec parameters [USEINI="response-file"] [TRANSFORMS="transform_file"]
```

Where:

parameters
are either command-line parameters preceded by a / character, or property=value pairs (if using both forms of parameter always put the command-line parameters first). For further information, see "Specifying command line parameters with msiexec" on page 91, which contains a link to the web site that lists all the command line parameters that are available.

For an unattended installation, you must include the /q or /qn parameter in the command line. Without this parameter, the installation is interactive.

Note: You must include the **/i** parameter and the file location of the IBM WebSphere MQ installer package.

response-file
is the full path and file name of the file that contains the [Response] stanza and the required property=value pairs, for example `C:\MyResponseFile.ini`. An example response file, `Response.ini`, is supplied with IBM WebSphere MQ. This file contains default installation parameters. For further information, see "Using a response file with msiexec" on page 93.

transform_file
is the full path and file name of a transform file. For further information, see "Using transforms with msiexec" on page 97 and "Multiple installation using MSI Instance ID" on page 96.

Note: For a silent installation to succeed, the AGREETOLICENSE=?YES? property must be defined either on the command line or in the response file.

Results

After the command has been entered, the command prompt immediately reappears. IBM WebSphere MQ is installing as a background process. If you have entered parameters to produce a log, check this file to see how the installation is progressing. If the installation completes successfully, you see the message `Installation operation completed successfully` in the log file.

Specifying command line parameters with msiexec

About this task

The **msiexec** command can accept two types of parameters on the command line, as follows:

- Standard command line parameters, preceded by a / character.

  For a table of the **msiexec** command line parameters, see the MSDN Command-Line Options web page.
- Property=value pair parameters on the command line. All the parameters available for use in a response file can be used on the command line, for a list of these, see Table 19 on page 93. In addition there are some extra property=value pair parameters that are only for use on the command line, for details see Table 18 on page 92.

  When using the property=value pair parameters note that:

  – Property strings must be in uppercase.
  – Value strings are not case-sensitive, except for feature names. You can enclose value strings in double quotation marks. If a value string includes a blank, enclose the blank value string in double quotation marks.
  – For a property that can take more than one value, use the format:

  ```
  ADDLOCAL="Server,Client"
  ```

  When using property=value pair and command line parameters with the **msiexec** command, enter command line parameters first.

  If a parameter is specified both on the command line and in a response file, the setting on the command line takes precedence.

Example

Here is an example of a typical **msiexec** command. All parameters, separated by one or more spaces, must be typed on the same line as the **msiexec** call.

```
msiexec
 /i "path\MSI\IBM WebSphere MQ.msi"
 /l*v c:\install.log
 /q
 TRANSFORMS="1033.mst"
 AGREETOLICENSE="yes"
 ADDLOCAL="Server"
```

Here is an example of a typical **msiexec** command when you are installing a second copy of IBM WebSphere MQ Version 7.5. All parameters, separated by one or more spaces, must be typed on the same line as the **msiexec** call.

```
msiexec
 /i "path\MSI\IBM WebSphere MQ.msi"
 /l*v c:\install.log
 /q
 TRANSFORMS=":InstanceId2.mst;1033.mst"
 AGREETOLICENSE="yes"
 ADDLOCAL="Server"
 MSINEWINSTANCE=1
```

Where `/l*v c:\install.log` writes installation log to file `c:\install.log`.

The following table shows the parameters which can only be provided on the command line and not in a response file.

Table 18. msiexec property=value parameters

Property	Values	Meaning
USEINI	*path**file_name*	Use the specified response file. See “Using a response file with msiexec” on page 93
SAVEINI	*path**file_name*	Generate a response file during installation. The file contains those parameters selected for this installation that a user might make during an interactive installation.
ONLYINI	1|yes|**""**	1, yes or any value other than null. End the installation before updating the target system, but after generating a response file, if this is specified. "". Continue the installation and update the target system (the default).
TRANSFORMS	:InstanceId*x*.mst| *path**file_name*| :InstanceId*x*.mst;*path**file_name*	The :InstanceId*x*.mst value is only required for a subsequent installation of IBM WebSphere MQ Version 7.5. The *path**file_name* specifies what transform (.mst) files must be applied to the product. For example, `"1033.mst"` specifies the supplied U.S. English transform file.
MSINEWINSTANCE	1	This property is only required for subsequent installations of IBM WebSphere MQ Version 7.5

About this task

You can use the **msiexec** command with a parameter which specifies additional properties are defined in a response file. You can combine the `msiexec` command-line parameters described in “Specifying command line parameters with msiexec” on page 91 .

A response file is an ASCII text file, with a format like a Windows `.ini` file, that contains the stanza [Response]. The [Response] stanza contains some or all the parameters that would normally be specified as part of an interactive installation. The parameters are given in a property=value pair format. Any other stanzas in the response file are ignored by **msiexec**. An example response file, `Response.ini`, is supplied with IBM WebSphere MQ. It contains the default installation parameters.

Procedure

A typical example of an `msiexec` command is: `msiexec /i "path\MSI\IBM WebSphere MQ.msi" /l*v c:\install.log TRANSFORMS="1033.mst" USEINI="C:\MQ\Responsefile"`

If a parameter is specified both on the command line and in a response file, the setting on the command line takes precedence. All the parameters available for use in a response file can also be used on the command line, for a list of these see Table 19 on page 93.

In the response file, all text is in English, and comments begin with a `;` character.

For information about creating a response file, see “Creating a response file” on page 98.

Example

An example of a typical response file:

```
[Response]
PGMFOLDER="c:\mqm"
DATFOLDER="c:\mqm\data"
LOGFOLDER="c:\mqm\log"
AGREETOLICENSE="yes"
LAUNCHWIZ=""
WIZPARMFILE="d:\MQParms.ini"
ADDLOCAL="Server,Client"
REMOVE="Toolkit"
```

Table 19. Response file parameters

Property	Values	Meaning
PGMFOLDER	*path*	Folder for the IBM WebSphere MQ program files. For example, `c:\mqm`.
DATFOLDER	*path*	Folder for the IBM WebSphere MQ data files. For example, `c:\mqm\data`. **Note:** Multiple installations of IBM WebSphere MQ all use the same **DATFOLDER**.
LOGFOLDER	*path*	Folder for the IBM WebSphere MQ queue manager log files. For example, `c:\mqm\log`. **Note:** Multiple installations of IBM WebSphere MQ all use the same **LOGFOLDER**.

Table 19. Response file parameters (continued)

Property	Values	Meaning
USERCHOICE	0|no	If the command line or response file specifies parameters to install features, a dialog can be displayed to prompt the user to accept the preselected options, or review and possibly change them. 0 or no. Suppresses display of the dialog. Anything else. Dialog is displayed. Not used for a silent installation.
AGREETOLICENSE	yes	Accept the terms of the license. Set to yes before a silent installation. If the installation is not silent, this parameter is ignored.
KEEPQMDATA	**keep** |delete	If the Server feature is to be uninstalled, whether to delete any existing queue managers. delete removes any existing queue managers. keep, or any other value, keeps them. **Note:** This property is only valid on a final server uninstall. If used on any other server unistalls this property is ignored.
LAUNCHWIZ	0|1|yes|no|**""**	0 or no. Do not launch the Prepare IBM WebSphere MQ wizard after IBM WebSphere MQ is installed. 1 or yes. Launch the Prepare IBM WebSphere MQ wizard if the Server feature is installed. "". Launch the Prepare IBM WebSphere MQ wizard to install the Server (the default). If this option is to launch the Prepare IBM WebSphere MQ wizard, you can specify the WIZPARMFILE, either in this file, or on the command line. The Prepare WebSphere MQ wizard must be run to make your IBM WebSphere MQ installation operational. If you choose not to launch it here, you must run it before using IBM WebSphere MQ.
WIZPARMFILE	*path\file_name*	When specified, the file that contains the parameters to pass to the Prepare IBM WebSphere MQ wizard when it is launched. These are in the [Services].

Table 19. Response file parameters (continued)

Property	Values	Meaning
ADDLOCAL	*feature*, *feature, All*|**""**	A comma-separated list of features to install locally. For a list of valid feature names, see "IBM WebSphere MQ features for Windows" on page 31. All installs all features "" installs the typical features. If you do not want a feature use REMOVE="*feature*" **Note:** If this is a new installation the typical features (Server, Explorer, Java Messaging and SOAP Transport, and Development Toolkit) are installed by default irrespective of the feature list provided in the ADDLOCAL property. If you do not want a feature use REMOVE="feature"
REMOVE	*feature*, *feature*, |All|**""**	A comma-separated list of features to remove. For a list of valid feature names, see "IBM WebSphere MQ features for Windows" on page 31. All uninstalls all features "" uninstalls no features (the default).
STARTSERVICE	0|no|**""**	0 or no. Do not start the IBM WebSphere MQ Service at the end of installation. "" (the default). Start the IBM WebSphere MQ Service at the end of installation if it was running at the start, or if this is a new installation. Anything else. Start the Service at the end of the installation. Ignored if the server feature is not installed. If you do not start the WebSphere MQ Service, WebSphere MQ will not be operational and queue managers will not start. You must run the Prepare WebSphere MQ wizard for the service to be correctly configured. This parameter is only valid if LAUNCHWIZ is set to no.

Table 19. Response file parameters (continued)		
Property	**Values**	**Meaning**
STARTTASKBAR	0|no|**""**	0 or no. Do not start the IBM WebSphere MQ taskbar application at the end of installation. "" (the default). Start the IBM WebSphere MQ taskbar application at the end of installation if it was running at the start, or if this is a new installation. Anything else. Start the taskbar application at the end of the installation. Ignored if the server feature is not installed. This parameter is only valid if LAUNCHWIZ is set to no.
INSTALLATIONDESC	?Description of installation?	Sets the installation description from the command line. Subject to the documented installation description length limitations
INSTALLATIONNAME	[INSTALLATION0,]?Name?	Sets the installation name from the command line. Subject to the documented installation name character and length limitations. **Note:** Supply INSTALLATION0,Name only when upgrading from versions of IBM WebSphere MQ before Version 7.5.
MAKEPRIMARY	0|1|**""**	Makes the installation primary, if possible, or removes the primary flag. 1 = Make primary, 0 = Make non-primary, - use default algorithm **Note:** This option is ignored if a version of IBM WebSphere MQ before Version 7.5 is installed, or if another installation of IBM WebSphere MQ Version 7.5 is present and set as the primary.

Related tasks

"Multiple installation using MSI Instance ID" on page 96
This topic describes how to choose the MSI instance ID you require for non-interactive multiple installations.

"Creating a response file" on page 98
A response file is used with **msiexec**. You can create it in three ways.

"Using the MQParms command" on page 99

Related reference

"Using transforms with msiexec" on page 97

Multiple installation using MSI Instance ID

This topic describes how to choose the MSI instance ID you require for non-interactive multiple installations.

About this task

In order to support non-interactive multiple installations, you need to find out whether the instance ID you want to use is already in use or not and choose the appropriate one. For each installation media (for example, each 7.5 client and 7.5 server), Instance ID 1 is the default ID which is used for single installations. If you want to install alongside Instance ID 1 you need to specify which instance you want

to use. If you have already installed instance 1, 2, and 3 then you need to find out what the next available instance is, for instance, Instance ID 4. Similarly, if instance 2 has been removed, you need to find out that there is a gap that can be reused. You can find out which Instance ID is currently in use using the **dspmqinst** command.

Procedure

1. Type **dspmqinst** to find a free MSI Instance in the media being installed by reviewing the MSIMedia and MSIInstanceId values for the versions already installed. For example:

```
InstName:      Installation1
InstDesc:
Identifier:    2
InstPath:      C:\mq\install1
Version:       7.5.0.0
Primary:       Yes
State:         Available
MSIProdCode:   {0730749B-080D-4A2E-B63D-85CF09AE0EF0}
MSIMedia:      7.5 Server
MSIInstanceId: 1
```

2. If MSI Instance ID 1 is in use and you want to use MSI Instance ID 2, the following parameters must be added to the msiexec call:

```
MSINEWINSTANCE=1 TRANSFORMS=:InstanceId2.mst
```

What to do next

For multiple installations, the **INSTALLATIONNAME** or **PGMFOLDER** must be supplied as an additional parameter on any non-interactive installation command. Supplying the **INSTALLATIONNAME** or **PGMFOLDER** ensures that you do not work with the wrong installation in case you omit or incorrectly specify the **TRANSFORMS** parameter.

Using transforms with msiexec

MSI can use transforms to modify an installation. During IBM WebSphere MQ installation, transforms can be used to support different national languages. IBM WebSphere MQ is supplied with transform files in the `\MSI` folder of the Server image. These files are also embedded in the IBM WebSphere MQ Windows installer package, `IBM WebSphere MQ.msi`.

On the **msiexec** command line, you can specify the required language by using the TRANSFORMS property in a property=value pair. For example:

```
TRANSFORMS="1033.mst"
```

You can also specify the full path and file name of the transform file. Again, the quotation marks surrounding the value are optional. For example:

```
TRANSFORMS="D:\Msi\1033.mst"
```

Table 20 on page 98 shows the locale identifier, language, and the transform file name to use in the **msiexec** command line.

You might need to merge transforms to install multiple installations of the same version, for example:

```
TRANSFORMS=":InstanceId2.mst;D:\Msi\1033.mst"
```

You can also specify the required language by using the MQLANGUAGE property with the **MQParms** command. For information about the msiexec property=value parameters, see “MQParms parameter file” on page 100 .

Parameters

Table 20. Supplied transform files for various language support. This table shows the supplied transform files, the resulting language, and the numeric value to use in the **msiexec** command line.

Language	Transform File name	Value
U.S. English	1033.mst	1033
German	1031.mst	1031
French	1036.mst	1036
Spanish	1034.mst	1034
Italian	1040.mst	1040
Brazilian Portuguese	1046.mst	1046
Japanese	1041.mst	1041
Korean	1042.mst	1042
Simplified Chinese	2052.mst	2052
Traditional Chinese	1028.mst	1028
Czech	1029.mst	1029
Russian	1049.mst	1049
Hungarian	1038.mst	1038
Polish	1045.mst	1045

Creating a response file
A response file is used with **msiexec**. You can create it in three ways.

About this task

A response file is used with the **msiexec** command, for further information see "Using a response file with msiexec" on page 93.

Procedure

There are three ways to create a response file for installation:

- Copy and edit the file `Response.ini` that is supplied on the IBM WebSphere MQ Windows Server CD, using an ASCII file editor.
- Create your own response file using an ASCII file editor.
- Use the **msiexec** command with the **SAVEINI** (and optionally, the **ONLYINI**) command line parameters to generate a response file that contains the same installation options. See Table 18 on page 92.

Example

A typical example of using **msiexec** with the **SAVEINI** parameter is here:

```
msiexec /i "path\IBM WebSphere MQ.msi" /q SAVEINI="response_file"
TRANSFORMS="1033.mst" AGREETOLICENSE="yes"
```

Before you begin

You can use the `MQParms` command to invoke installation or uninstallation. This command can use parameters on a command line, or those specified in a parameter file. The parameter file is an ASCII text file that contains the parameter values that you want to set for the installation. The `MQParms` command takes the specified parameters and generates the corresponding `msiexec` command line.

This means that you can save all the parameters that you want to use with the `msiexec` command in a single file.

If you are running IBM WebSphere MQ on Windows systems with User Account Control (UAC) enabled, you must invoke the installation with elevated privileges. If you are using the Command prompt or IBM WebSphere MQ Explorer elevate privileges by using a right-click to start the program and selecting **Run as administrator**. If you try to run the `MQParms` program without using elevated privileges, the installation fails with an error of AMQ4353 in the installation log.

For silent operations, this must include the **/q** or **/qn** parameter, either on the command line, or in the [MSI] stanza of the parameter file. You must also set the AGREETOLICENSE parameter to "yes".

You can specify many more parameters in the parameter file that you use with the `MQParms` command than you can in the response file that you use directly with the `msiexec` command. Also, as well as parameters that the IBM WebSphere MQ installation uses, you can specify parameters that can be used by the Prepare IBM WebSphere MQ wizard.

If you do not complete the **Prepare WebSphere MQ Wizard** directly after IBM WebSphere MQ installations or if for any reason your machine is rebooted between completing IBM WebSphere MQ installation and completing the **Prepare WebSphere MQ Wizard**, ensure that the wizard is run with Administrator privilege afterward, otherwise the installation is incomplete, and might fail. You might also see **Open File - Security Warning** dialog boxes that list International Business Machines Limited as the publisher. Click **Run** to allow the wizard to continue

An example of the file MQParms.ini is supplied with IBM WebSphere MQ. This file contains default installation parameters.

There are two ways to create a parameter file for installation:

- Copy and edit the file MQParms.ini that is supplied with the product, using an ASCII file editor.
- Create your own parameter file using an ASCII file editor.

About this task

To invoke installation using the `MQParms` command:

Procedure

1. From a command line, change to the root folder of the IBM WebSphere MQ Server DVD (that is, the location of the file MQParms.exe).
2. Enter the following command:

   ```
   MQParms parameter_file parameters]
   ```

   where:

   parameter_file
   is the file that contains the required parameter values. If this file is not in the same folder as MQParms.exe, specify the full path and file name. If you do not specify a parameter file, the default is `MQParms.ini`. For a silent install, the `MQParms_silent.ini` parameter file can be used. For further details, see “MQParms parameter file” on page 100.

parameters
are one or more command-line parameters, for a list of these, see the MSDN Command-Line Options web page.

Example

A typical example of an MQParms command is:

```
MQParms "c:\MyParamsFile.ini" /l*v c:\install.log
```

A typical example of an MQParms command when you are installing a second copy of IBM WebSphere MQ Version 7.5 is:

```
MQParms "c:\MyParamsFile.ini" /l*v c:\install.log TRANSFORMS=":InstanceId2.mst;1033.mst"
MSINEWINSTANCE=1
```

Alternatively, TRANSFORMS and MSINEWINSTANCE can be specified in the MSI stanza of the parameter file.

If you specify a parameter both on the command line and in the parameter file, the setting on the command line takes precedence.

If you specify a parameter file, you might want to run the encryption utility before you use the `MQParms` command (see “Encrypting a parameter file” on page 103).

If you do not specify `/i`, `/x`, `/a`, or `/j`, MQParms defaults to standard installation using the IBM WebSphere MQ Windows Installer package, IBM WebSphere MQ.msi. That is, it generates the following part of the command line:

```
/i "current_folder\MSI\IBM WebSphere MQ.msi"
```

If you do not specify a WIZPARMFILE parameter, MQParms defaults to the current parameter file. That is, it generates the following part of the command:

```
WIZPARMFILE="current_folder\current_parameter_file"
```

MQParms parameter file
A parameter file is an ASCII text file that contains sections (stanzas) with parameters that can be used by the `MQParms` command. Typically, this is an initialization file such as MQParms.ini.

The `MQParms` command takes parameters from the following stanzas in the file:

[MSI]
Contains general properties related to how the `MQParms` command runs and to the installation of IBM WebSphere MQ.

The properties that you can set in this stanza are listed in “Advanced installation using msiexec” on page 90, and Table 21 on page 101.

[Services]
Contains properties related to IBM WebSphere MQ account configuration, in particular, the user account required for IBM WebSphere MQ Services. If you are installing IBM WebSphere MQ on a network where the domain controller is on a Windows 2003 server, you probably need details of a special domain account. For further information, see “Configuring IBM WebSphere MQ accounts” on page 109 and “Configuring IBM WebSphere MQ with the Prepare IBM WebSphere MQ wizard” on page 106.

The properties that you can set in this stanza are listed in Table 23 on page 102.

`MQParms` ignores any other stanzas in the file.

The stanza parameters are in the form property=value, where property is always interpreted as uppercase, but value is case sensitive. If a value string includes a blank, it must be enclosed in double

quotation marks. Most other values can be enclosed in double quotation marks. Some properties can take more than one value, for example:

```
ADDLOCAL="Server,Client"
```

To clear a property, set its value to an empty string, for example:

```
REINSTALL=""
```

The following tables show the properties that you can set. The default is shown in bold.

For the [MSI] stanza, you can enter standard MSI command line options and properties. For example:

```
- /q
- ADDLOCAL="server"
- REBOOT=Suppress
```

Refer to Table 21 on page 101, Table 22 on page 101, and Table 23 on page 102 for the properties used to install IBM WebSphere MQ.

Table 21 on page 101 shows additional properties in the stanza that affect how the `MQParms` command runs, but that do not affect the installation.

Table 21. Properties used by MQParms in the MSI stanza

Property	Values	Description
MQPLOG	*path*|*file_name*	MQParms generates a text log file with the specified name and location.
MQPLANGUAGE	**system**|user| *transform_value*|existing	The installation language. system. Install using the language of the default system locale (the default). user. Install using the language of the default locale of the user. *transform_value*. Install using the language specified by this value. See Table 22 on page 101. existing. If MQ already exists on the system, the same language will be used by default, otherwise system is used.
MQPSMS	**0**|no	0 or no. MQParms does not wait for the `msiexec` command to end (the default). Any other value. MQParms waits for the `msiexec` command to end.
MQPINUSE	**0**|1	If MQPINUSE is set to 1, MQParams continues installing even if IBM WebSphere MQ files are in use. If this option is used a reboot will be required to complete the installation.

Table 22. Valid values for the MQPLANGUAGE property

Language	Valid values		
U.S. English	English	en_us	1033

Table 22. Valid values for the MQPLANGUAGE property (continued)			
Language	**Valid values**		
German	German	de_de	1031
French	French	fr_fr	1036
Spanish	Spanish	es_es	1034
Italian	Italian	it_it	1040
Brazilian Portuguese	Brazilian Portuguese	pt_br	1046
Japanese	Japanese	ja_jp	1041
Korean	Korean	ko_kr	1042
Simplified Chinese	Simplified Chinese	zh_cn	2052
Traditional Chinese	Traditional Chinese	zh_tw	1028
Czech	Czech	cs_cz	1029
Russian	Russian	ru_ru	1049
Hungarian	Hungarian	hu_hu	1038
Polish	Polish	pl_pl	1045

For the [Services] stanza, you can enter parameters in property=value format. You might want to encrypt the values in this stanza. See "Encrypting a parameter file" on page 103.

Table 23. Properties in the Services stanza		
Property	**Values**	**Description**
USERTYPE	**local** | domain | onlydomain	The type of user account to use: **local** Creates a local user account. **domain** Creates a local user account. If this does not have the required security authorities, it uses the domain user account specified by DOMAINNAME, USERNAME, and PASSWORD. **onlydomain** Does not create a local user account, but immediately uses the domain user account specified by DOMAINNAME, USERNAME and PASSWORD. If any of these three properties are missing, a USERTYPE of local is assumed. The properties DOMAINNAME, USERNAME, and PASSWORD are required if USERTYPE is set to onlydomain.
DOMAINNAME	*domain_name*[1]	The domain for the domain user account. Required if USERTYPE is set to domain or onlydomain.

Table 23. Properties in the Services stanza (continued)		
Property	**Values**	**Description**
USERNAME	*user_name*[1]	The user name for the domain user account. Required if USERTYPE is set to domain or onlydomain..
PASSWORD	*password*[1]	The password for the domain user account. Required if USERTYPE is set to domain or onlydomain.
1. Do not enclose this value in double quotation marks.		

A typical example of a parameter file is:

```
[MSI]
MQPLANGUAGE=1033
MQPLOG=%temp%\MQParms.log
MQPSMS=no
ADDLOCAL=Server
/m miffile
REMOVE=""
/l*v c:\install.log

[Services]
USERTYPE=domain
DOMAINNAME=mqm*df349edfcab12
USERNAME=mqm*a087ed4b9e9c
PASSWORD=mqm*d7eba3463bd0a3
```

Encrypting a parameter file

About this task

Use the `setmqipw` utility to encrypt the DOMAINNAME, USERNAME, and PASSWORD values in the [Services] stanza of a parameter file, if they are not already encrypted. (These values might be encrypted if you have run the utility before.) `setmqipw` will also encrypt the QMGRPASSWORD and CLIENTPASSWORD values in the [SSLMigration] stanza of a parameter file.

This encryption means that, if you need a special domain account to configure IBM WebSphere MQ (see “Configuring IBM WebSphere MQ accounts” on page 109), or you need to keep key database passwords secret, details are kept secure. Otherwise, these values, including the domain account password, flow across the network as clear text. You do not have to use this utility, but it is useful if security in your network is an issue.

To run the script:

Procedure

1. From a command line, change to the folder that contains your parameter file.
2. Enter the following command:

   ```
   CD_drive:\setmqipw
   ```

   Note: You can run the command from a different folder, by entering the following command, where *parameter_file* is the full path and file name of the parameter file:

   ```
   CD_drive:\setmqipw parameter_file
   ```

Results

If you view the resulting parameter file, the encrypted values start with the string `mqm*`. Do not use this prefix for any other values; passwords or names that begin with this prefix are not supported.

The utility creates a log file, `setmqipw.log`, in the current directory. This file contains messages related to the encryption process. When encryption is successful, messages are similar to:

```
Encryption complete
Configuration file closed
Processing complete
```

What to do next

After you encrypt the parameter file, you can use it in the normal way with the `MQParms` command (see "Using the MQParms command" on page 99).

Modifying your installation

Find out how to modify an IBM WebSphere MQ server installation interactively using the launchpad or non-interactively using msiexec.

Related concepts

"Silently modifying an IBM WebSphere MQ server installation using msiexec" on page 105

Related tasks

"Modifying the installation using IBM WebSphere MQ Installation Launchpad" on page 104

Modifying the installation using IBM WebSphere MQ Installation Launchpad

Before you begin

To modify an installation, some features of IBM WebSphere MQ must already be installed.

About this task

To remove or install IBM WebSphere MQ features follow the instructions. This procedure is the only way to interactively remove or install IBM WebSphere MQ features on Windows Vista and Windows Server 2008:

Procedure

1. Insert the IBM WebSphere MQ for Windows Server DVD into the DVD drive.
2. If autorun is installed, the installation process starts.

   Otherwise, double-click the **Setup** icon in the root folder of the DVD to start the installation process.

   The **WebSphere MQ Installation Launchpad** window is displayed.
3. Click the **WebSphere MQ Installation** option.
4. Click **Launch WebSphere MQ Installer**. Wait until the IBM WebSphere MQ Setup window is displayed with a welcome message.
5. If you have multiple installations on your system, you must choose the installation you want to modify. Do this by selecting the **Maintain or upgrade an existing instance** option and choosing the appropriate instance.

   If you are upgrading a IBM WebSphere MQ Version 7.0.1 installation (or earlier) to Version 7.1.0, and you already have a Version 7.1.0 or greater installation, you need to select **Install a new instance**. A subsequent panel then allows you to choose the installation you would like to upgrade.
6. Click **Next** to continue. The Program Maintenance panel is displayed.
7. Select **Modify**, then click **Next**.

   The Features panel is displayed.
8. Click the **+** symbol next to a feature to show any dependent features (subfeatures).

9. To change the installation of a feature:
   a) Click the symbol next to the feature name to display a menu.
   b) Select the required option from:
      - Install this feature
      - Install this feature and all its subfeatures (if any)
      - Do not install this feature (remove if already installed)

      The symbol next to the the feature name changes to show the current installation option.
10. When your selections are complete, click **Next**. IBM WebSphere MQ installation begins.

Silently modifying an IBM WebSphere MQ server installation using msiexec

To silently modify an installation using msiexec, set the ADDLOCAL parameter to include the features you want to add, and set the REMOVE parameter to the features you want to remove.

For example if you use ADDLOCAL="JavaMsg" and REMOVE="" it modifies the installation to include the Java Messaging and Web Services feature.

```
msiexec /i {PRODUCT CODE} /q ADDLOCAL="JavaMsg" REMOVE="" INSTALLATIONNAME="Installation1"
```

The instructions for msiexec begin here: “Advanced installation using msiexec” on page 90

Post installation tasks

Find out what tasks can be undertaken once IBM WebSphere MQ has been successfully installed. Begin by following the related pages below:

Related concepts

“Configuring an IBM WebSphere MQ server” on page 105

“Configuring IBM WebSphere MQ accounts” on page 109

The IBM WebSphere MQ service and queue managers check that any users attempting to access queue managers or queue manager resources such as queues, have the permission to access them.

“Using IBM WebSphere MQ remotely” on page 106

“Using the Help Center” on page 113

Related tasks

“Configuring IBM WebSphere MQ with the Prepare IBM WebSphere MQ wizard” on page 106

“Using the Default Configuration wizard” on page 113

“Checking for problems after installing” on page 108

These are optional tasks that you can use to check the installation if you believe there was a problem, or to verify installation messages after an unattended (silent) installation for example.

Related reference

“Using the Welcome to IBM WebSphere MQ Explorer Content view page” on page 113

The Welcome to IBM WebSphere MQ Explorer **Content** view page points you to any relevant applications, documentation, tutorials, and education. This page is displayed the first time you launch IBM WebSphere MQ Explorer.

Configuring an IBM WebSphere MQ server

After installing IBM WebSphere MQ, it is necessary to configure it. The configuration described in this topic is for an environment that uses TCP/IP. The configuration procedure is the same for environments that use other communications protocols (for example, SNA, SPX, or NetBIOS). However, not all of the functions and facilities of IBM WebSphere MQ for Windows are available in these environments. The items that are **not** available are:

- IBM WebSphere MQ Postcard
- IBM WebSphere MQ Explorer

If you are setting up IBM WebSphere MQ for use with the Microsoft Cluster Service (MSCS), see Supporting the Microsoft Cluster Service (MSCS) for more information.

Using IBM WebSphere MQ remotely

If you are connecting to a Windows machine using either Terminal Services or a Remote Desktop Connection and you have problems creating, starting or deleting a queue manager this might be because of the user right **Create global objects**.

The **Create global objects** user right limits the users authorized to create objects in the global namespace. In order for an application to create a global object, it must either be running in the global namespace, or the user under which the application is running must have the **Create global objects** user right applied to it.

When you connect remotely to a Windows machine using either Terminal Services or Remote Desktop Connection, applications run in their own local namespace. If you attempt to create or delete a queue manager using IBM WebSphere MQ Explorer or the **crtmqm** or **dltmqm** command, or to start a queue manager using the **strmqm** command, it results in an authorization failure. This creates an IBM WebSphere MQ FDC with Probe ID XY132002.

Starting a queue manager using the IBM WebSphere MQ Explorer, or using the **amqmdain qmgr start** command works correctly because these commands do not directly start the queue manager. Instead the commands send the request to start the queue manager to a separate process running in the global namespace.

If you need to perform any of these operations on a queue manager when connected remotely to a Windows machine, you must have the **Create global objects** user right. For information on how to assign a user this right, see your operating system documentation.

Administrators have the **Create global objects** user right by default, so if you are an administrator you can create and start queue managers when connected remotely without altering your user rights.

Configuring IBM WebSphere MQ with the Prepare IBM WebSphere MQ wizard

About this task

The Prepare IBM WebSphere MQ wizard helps you to configure IBM WebSphere MQ files and a user account for your network, and migrate any queue managers and data from a previous installation. You must run the wizard to configure the WebSphere MQ Service before you can start any queue managers.

The Prepare IBM WebSphere MQ wizard window is displayed when IBM WebSphere MQ installation completes. Follow the instructions given by the wizard to configure IBM WebSphere MQ. At any time while the wizard is running you can click **More Information** in the wizard to view online help about the task you are doing.

Note: On Windows systems with UAC enabled, if you do not complete the **Prepare WebSphere MQ Wizard** directly after WebSphere MQ is installed, or if for any reason your machine is rebooted between completing WebSphere MQ installation and completing the **Prepare WebSphere MQ Wizard**, you must accept the Windows prompt when it appears to allow the wizard to run as elevated.

Procedure

1. When WebSphere MQ installation completes, the **Prepare WebSphere MQ Wizard** window is displayed with a welcome message.

   To continue, click **Next**
2. If you have run the Prepare IBM WebSphere MQ wizard before, this step is skipped. If you have not run the Prepare IBM WebSphere MQ wizard before, the Prepare IBM WebSphere MQ Wizard window displays a progress bar with the following message:

   ```
   Status: Setting up WebSphere MQ Configuration
   ```

   Wait until the progress bar completes.
3. The Prepare IBM WebSphere MQ Wizard window displays a progress bar with the following message:

```
Status: Setting up the WebSphere MQ Service.
```

Wait until the progress bar completes.

4. IBM WebSphere MQ attempts to detect whether you must configure IBM WebSphere MQ for use with Windows Active Directory Server or later domain users. Depending on the results of the detection, IBM WebSphere MQ does one of the following things:

   - If IBM WebSphere MQ detects that you need to configure IBM WebSphere MQ for Windows Active Directory Server or later domain users, the Prepare IBM WebSphere MQ Wizard window displays a message that starts:

     ```
     WebSphere MQ does not have the authority to query information about
     your user account
     ```

     Optionally, to see online help about configuring the domain account, select More Information. When you are finished, close the IBM WebSphere MQ Help Center window to return to the current window.

     Click **Next**, and go to step 5.

   - If you are not installing on a Windows Active Directory Server or later domain server and IBM WebSphere MQ cannot detect whether you need to configure IBM WebSphere MQ for Windows Active Directory Server or later domain users, the Prepare IBM WebSphere MQ Wizard window displays the following message:

     ```
     Are any of the domain controllers in your network running
     Windows 2000 or later domain server?
     ```

     If you select Yes, click **Next**, then go to step 5.

     If you select No, click **Next**, then go to step 9.

     If you select **Don't know**, you cannot continue. Select one of the other options, or click **Cancel** and contact your domain administrator.

   - If IBM WebSphere MQ detects that you do not need to configure IBM WebSphere MQ for Windows Active Directory Server or later domain users, go to step 9.

   Note: At any time, you can click **More Information** to view online help about configuring the domain account, or see “Configuring IBM WebSphere MQ accounts” on page 109. When you are finished, close the IBM WebSphere MQ Help Center window to return to the current window.

5. The Prepare IBM WebSphere MQ Wizard window displays the following message:

   ```
   Do you need to configure WebSphere MQ for users defined on Windows 2000
   or later domain controllers?
   ```

   If you select Yes, click **Next**, then go to step 6.

   If you select No, click **Next**, then go to step 9.

   If you select Don't know, you cannot continue. Select one of the other options, or click **Cancel** and contact your domain administrator.

   Note: At any time, you can click **More Information** to view online help about configuring the domain account, or see “Configuring IBM WebSphere MQ accounts” on page 109. When you are finished, close the IBM WebSphere MQ Help Center window to return to the current window.

6. Give the domain user that you obtained from your domain administrator the right to run as a service.

   a) Click **Start** > **Run...**, type the command **`secpol.msc`** and click **OK**.

   b) Open **Security Settings** > **Local Policies** > **User Rights Assignments**. In the list of policies, right-click **Log on as a service** > **Properties**.

   c) Click **Add User or Group...** and type the name of the user you obtained from your domain administrator, and click **Check Names**

d) If prompted by a Windows Security window, type the user name and password of an account user or administrator with sufficient authority, and click **OK** > **Apply** > **OK**. Close the Local Security Policy window.

7. In the next window, enter the Domain and user ID of the domain user account that you obtained from your domain administrator. Either enter the Password for this account, or select the option **This account does not have a password**. Click **Next**.
8. The Prepare IBM WebSphere MQ Wizard window displays a progress bar with the following message:

   ```
   Status: Configuring WebSphere MQ with the special domain user account
   ```

   Wait until the progress bar completes.

   If there are any problems with the domain user account, a further window is displayed. Follow the advice on this window before you continue with this procedure.
9. The Prepare IBM WebSphere MQ Wizard window displays a progress bar with the following message:

   ```
   Status: Starting WebSphere MQ services
   ```

   Wait until the progress bar completes.
10. Next, select the options that you require.

    The Prepare IBM WebSphere MQ Wizard window displays the following message:

    ```
    You have completed the Prepare WebSphere MQ Wizard
    ```

    Select the options that you require, then click **Finish**. Select one or more from:

    - **Remove the shortcut to this wizard from the desktop**

      This option is available only if you have previously attempted installation, but you canceled the procedure from the Prepare IBM WebSphere MQ wizard and you created a desktop shortcut to this wizard. Select this option to remove the shortcut. You do not need it now that you have completed the Prepare IBM WebSphere MQ wizard.
    - **Launch IBM WebSphere MQ Explorer**

      The IBM WebSphere MQ Explorer allows you to view and administer your IBM WebSphere MQ network.
    - **Launch Notepad to view the release notes**

      The release notes contain information about installing IBM WebSphere MQ and also late-breaking news that is available after the published documentation is produced.
11. Follow the procedure described in "Checking for problems after installing" on page 108.

Related concepts

User rights required for a WebSphere MQ Windows Service

Checking for problems after installing

These are optional tasks that you can use to check the installation if you believe there was a problem, or to verify installation messages after an unattended (silent) installation for example.

About this task

Use these steps as a guide to check the following files for messages:

Procedure

1. `MSI`*nnnnn*`.LOG`. This file is in your user `Temp` folder. It is an application log that contains English messages written during installation. The log includes a message indicating whether the installation was successful and complete.

   This file is created if you have set up default logging.

2. If you used the launchpad to install IBM WebSphere MQ, check `MQv7_Install_YYYY-MM-DDTHH-MM-SS.log` in your user `Temp` folder, where:

   YYYY
   This is the year that you installed WebSphere MQ Version 7.0

   MM
   This is the month that you installed IBM WebSphere MQ, for example this would be 09 if you installed in September

   DD
   This is the day that you installed IBM WebSphere MQ

   HH-MM-SS
   This is the time at which IBM WebSphere MQ was installed

   You can get to your user Temp directory by entering the following command at the command prompt:

   ```
   cd %TEMP%
   ```

3. `amqmjpse.txt`. This file is in the IBM WebSphere MQ data files folder (default `c:\Program Files\IBM\WebSphere MQ`). It is an application log that contains English messages written during installation by the Prepare IBM WebSphere MQ wizard.

What to do next

1. Verify your installation, as described in "Verifying an IBM WebSphere MQ server installation" on page 141

Configuring IBM WebSphere MQ accounts
The IBM WebSphere MQ service and queue managers check that any users attempting to access queue managers or queue manager resources such as queues, have the permission to access them.

Most networked Windows systems are members of a Windows domain where user accounts, other security principals, and security groups are maintained and managed by a directory service, Active Directory, running on a number of domain controllers. IBM WebSphere MQ checks that only authorized users can access queue managers or queues.

In such networks, IBM WebSphere MQ queue manager processes access the Active Directory information to find the security group membership of any users attempting to use IBM WebSphere MQ resources. The accounts under which IBM WebSphere MQ services run must be authorized to look up such information from the directory. In most Windows domains, local accounts defined at individual Windows servers cannot access directory information, so the IBM WebSphere MQ services must run under a domain account that has the appropriate permission.

If the Windows server is not a member of a Windows domain or the domain has a reduced security or functional level, then the IBM WebSphere MQ services can run under a local account that was created during installation.

Assuming that a domain account is needed, provide the information described in the Information for domain administrator to your domain administrator, and ask for one of the special accounts it describes. When you install the product, towards the end of the installation procedure, in the **Prepare** IBM WebSphere MQ wizard, you are asked to enter details of this account (domain, user name, and password).

If a domain account is needed and you install IBM WebSphere MQ without a special account (or without entering its details), many or all parts of IBM WebSphere MQ do not work, depending upon the particular user accounts involved. Also, IBM WebSphere MQ connections to queue managers that run under domain accounts on other systems might fail. The account can be changed by running the **Prepare** IBM WebSphere MQ wizard and specifying the details of the account to be used.

For information about the user rights required to take advantage of the Active Directory support, see Using Active directory (Windows only).

For information about the user rights required to take advantage of the Kerberos authentication support, see Security.

Information for domain administrators
Use this topic to understand how IBM WebSphere MQ services check the authorization of user accounts attempting to access IBM WebSphere MQ.

The user account must either have an individual IBM WebSphere MQ authorisation set or belong to a local group that has been authorized. A domain account can also be authorized through membership of a domain group included under an authorized local group through a single level of nesting.

The account under which the IBM WebSphere MQ services are run must have the ability to query group memberships of domain accounts and have the authority to administer IBM WebSphere MQ. Without the ability to query group memberships the access checks made by the services fail.

On most Windows domains, with domain controllers running Windows Active Directory, local accounts do not have the required authorization and a special domain user account with the required permissions must be used. The IBM WebSphere MQ installer must be given the userid and password details so that they can be used to configure the IBM WebSphere MQ service after the product is installed.

Typically, this special account has the IBM WebSphere MQ administrator rights through membership of the domain group `DOMAIN\Domain mqm`. The domain group is automatically nested by the installation program under the local mqm group of the system on which IBM WebSphere MQ is being installed.

See “Creating and setting up domain accounts for IBM WebSphere MQ” on page 110 for instructions on creating a suitable domain account.

Note: If an installer configures IBM WebSphere MQ without a special account, many or all parts of IBM WebSphere MQ do not work, depending upon the particular user accounts involved, as follows:

- An installer currently logged on with a domain user account is not be able to complete the Default Configuration, and the Postcard application does not work.
- IBM WebSphere MQ connections to queue managers running under domain accounts on other systems might fail.
- Typical errors include "AMQ8066: Local mqm group not found" and "AMQ8079: Access was denied when attempting to retrieve group membership information for user 'abc@xyz'".

Creating and setting up domain accounts for IBM WebSphere MQ
The following information is intended at Domain Administrators. Use this information to create and setup domain accounts for IBM WebSphere MQ.

About this task

Repeat Steps “1” on page 110 and “8” on page 111 for each domain that has user names that will install IBM WebSphere MQ, to create an account for IBM WebSphere MQ on each domain:

Procedure

Create a domain group with a special name that is known to IBM WebSphere MQ (see “4” on page 110) and give members of this group the authority to query the group membership of any account.

1. Log on to the domain controller as an account with domain administrator authority.
2. From the Start menu, open Active Directory Users and Computers.
3. Find the domain name in the navigation pane, right-click it and select **New Group**.
4. Type a group name into the **Group name** field.

   Note: The preferred group name is `Domain mqm`. Type it exactly as shown.

   - Calling the group `Domain mqm` modifies the behavior of the Prepare IBM MQ Wizard on a domain workstation or server. It causes the Prepare IBM MQ Wizard automatically to add the group `Domain mqm` to the local `mqm` group on each new installation of IBM WebSphere MQ in the domain.
   - You can install workstations or servers in a domain with no `Domain mqm` global group. If you do so, you must define a group with the same properties as `Domain mqm` group. You must make that group, or the users that are members of it, members of the local `mqm` group wherever IBM WebSphere MQ is installed in a domain. You can place domain users into multiple groups. Create

multiple domain groups, each group corresponding to a set of installations that you want to manage separately. Split domain users, according to the installations they manage, into different domain groups. Add each domain group or groups to the local `mqm` group of different IBM WebSphere MQ installations. Only domain users in the domain groups that are members of a specific local `mqm` group can create, administer, and run queue managers for that installation.

- The domain user that you nominate when installing IBM WebSphere MQ on a workstation or server in a domain must be a member of the `Domain mqm` group, or of an alternative group you defined with same properties as the `Domain mqm` group.

5. Leave **Global** clicked as the **Group scope**, or change it to **Universal**. Leave **Security** clicked as the **Group type**. Click **OK**.
6. Follow these steps to assign permissions to the group based on the Windows version of the domain controller:

   On Windows Server 2008 and later versions:

   a. In the Server Manager action bar, click **View** > **Advanced features**.
   b. In the Server Manager navigation tree, click **Users**.
   c. In the Users window, right-click **Domain mqm** > **Properties**.
   d. Click **Security** > **Advanced** > **Add**. Type `Domain mqm` and click **Check names** > **OK**.

      The **Name** field is pre-filled with the string, `Domain mqm (`*`domain name`*`\Domain mqm)`.
   e. Click **Properties**. In the **Apply to** list, select **Descendant User Objects**.
   f. From the **Permissions** list, select the **Read group membership** and **Read groupMembershipSAM Allow** check boxes; click **OK** > **Apply** > **OK** > **OK**.

   On Windows 2003 Server:

   a. In the Server Manager action bar, click **View** > **Advanced features** > **Active Directory Users and Computers**.
   b. In the Server Manager navigation tree, search for the domain name. Select the domain name, right-click and select **Properties**.
   c. Click **Security** > **Advanced** > **Add**. Type `Domain mqm` and click **Check names** > **OK**.
   d. Click **Properties**. In the **Apply to** list, select **User Objects**
   e. From the **Permissions** list, select the **Read group membership** and **Read groupMembershipSAM Allow** check boxes; click **OK** > **Apply** > **OK** > **OK**.

   On Windows 2000 Server:

   a. In the Server Manager navigation tree, search for the domain name. Select the domain name, right-click and select **Delegate Control Next**.
   b. Click **Selected Groups and Users** > **Add...**. Select `Domain mqm` and click **Add** > **OK**.
   c. Select `Domain mqm` and click **Next**.
   d. Click **Create a custom task to delegate** and click **Next**.
   e. Select **Only the following objects in the folder**, and then check `User Objects` in the alphabetical list. Click **Next**.
   f. Check **Property-specific**, then select the **Read group membership** and **Read groupMembershipSAM** check boxes.

      Note: The list is in alphabetical order by the second word.
   g. Click **OK** to close each window.

Create one or more accounts, and add them to the group.

7. In **Active Directory Users and Computers**, create a user account with a name of your choosing and add it to group `Domain mqm` (or a group that is a member of the local `mqm` group).
8. Repeat for all the accounts you want to create.

Create an account for IBM WebSphere MQ on each domain.

9. Repeat step sections “1” on page 110 and “8” on page 111 for each domain that has user names that will install IBM WebSphere MQ, to create an account for IBM WebSphere MQ on each domain.

Use the accounts to configure each installation of IBM WebSphere MQ.

10. Either use the same domain user account (as created in Step “1” on page 110) for each installation of IBM WebSphere MQ, or create a separate account for each one, adding each to the `Domain mqm` group (or a group that is a member of the local `mqm` group).
11. When you have created the account or accounts, give one to each person configuring an installation of IBM WebSphere MQ. They must enter the account details (domain name, user name, and password) into the Prepare IBM WebSphere MQ wizard. Give them the account that exists on the same domain as their installing userid.
12. When you install IBM WebSphere MQ on any system on the domain, the IBM WebSphere MQ install program detects the existence of the `Domain mqm` group on the LAN, and automatically adds it to the local `mqm` group. (The local `mqm` group is created during installation; all user accounts in it have authority to manage IBM WebSphere MQ). Thus all members of the "`Domain mqm`" group will have authority to manage IBM WebSphere MQ on this system.
13. However, you do still need to provide a domain user account (as created in Step “1” on page 110) for each installation, and configure IBM WebSphere MQ to use it when making its queries. The account details must be entered into the Prepare IBM WebSphere MQ wizard that runs automatically at the end of installation (the wizard can also be run at any time from the **start** menu).

Set the password expiry periods.

14. Choices:

    - If you use just one account for all users of IBM WebSphere MQ, consider making the password of the account never expire, otherwise all instances of IBM WebSphere MQ will stop working at the same time when the password expires.
    - If you give each user of IBM WebSphere MQ their own user account you will have more user accounts to create and manage, but only one instance of IBM WebSphere MQ will stop working at a time when the password expires.

    If you set the password to expire, warn the users that they will see a message from IBM WebSphere MQ each time it expires - the message warns that the password has expired, and describes how to reset it.

Run IBM WebSphere MQ as a service, and then give the domain user (that you obtained from your domain administrator) the right to run as a service.

15. Click **Start > Run...**.

    Type the command `secpol.msc` and click **OK**.
16. Open **Security Settings > Local Policies > User Rights Assignments**.

    In the list of policies, right-click **Log on as a service > Properties**.
17. Click **Add User or Group...**

    Type the name of the user you obtained from your domain administrator, and click **Check Names**
18. If prompted by a Windows Security window, type the user name and password of an account user or administrator with sufficient authority, and click **OK > Apply > OK**.

    Close the Local Security Policy window.

    Note: On Windows Vista and Windows Server 2008 the User Account Control (UAC) is enabled by default.

    The UAC feature restricts the actions users can perform on certain operating system facilities, even if they are members of the Administrators group. You must take appropriate steps to overcome this restriction.

Using the Default Configuration wizard

About this task

You can use the Default Configuration wizard to add the first configured queue manager to this system. This enables you to connect easily with other queue managers in the same IBM WebSphere MQ cluster. You can use the Default Configuration wizard to create, view, or alter your default configuration. You can also use this wizard to alter or display details of an existing queue manager that was created by the default configuration.

For a new installation of IBM WebSphere MQ, creating a default configuration enables you to explore features of IBM WebSphere MQ using the Postcard application, and the IBM WebSphere MQ Explorer.

The Postcard application provides a fast and simple way to verify that your IBM WebSphere MQ installation completed successfully. It uses the default queue manager that is created during the default configuration. If you want to use the Postcard application for verification, and you do not have any existing queue managers, run the Default Configuration wizard first.

If you have migrated existing queue managers, or created any queue managers since installing IBM WebSphere MQ, you might not want to run the Default Configuration wizard. This is because you cannot create the default configuration if other queue managers already exist. If you have previously created any other queue managers on this system and you still want to set up a default configuration, you must delete them before you run the Default Configuration wizard.

Start the Default Configuration wizard by selecting **Create the Default Configuration** on the Welcome to WebSphere MQ Explorer **Content** view page.

*Using the Welcome to IBM WebSphere MQ Explorer **Content** view page*

The Welcome to IBM WebSphere MQ Explorer **Content** view page points you to any relevant applications, documentation, tutorials, and education. This page is displayed the first time you launch IBM WebSphere MQ Explorer.

You can use the items in the Welcome to IBM WebSphere MQ Explorer **Content** view page to explore the facilities in IBM WebSphere MQ. This page is launched the first time the IBM WebSphere MQ Explorer is launched. The Welcome page can be viewed at any time from the Explorer by clicking **IBM WebSphere MQ** in the **Navigator** view. There are links to the following subjects from this page:

Create the Default Configuration

Allows you to add a configured queue manager to this system for connecting easily with other queue managers in the same IBM WebSphere MQ cluster. You can also use it to alter or display details of an existing queue manager created by the default configuration. This feature is available only using TCP/IP.

Note: If you migrated existing queue managers, or if you have created any queue managers after you installed IBM WebSphere MQ, you might not want to use this facility. This is because you can only set up a default configuration if there are no queue managers already, and you might not want to delete your existing queue managers.

Launch Postcard

Allows you to try out IBM WebSphere MQ messaging quickly and easily. You can send a message either to your own machine or to another named user's machine. It is described in detail in “Verifying a server installation using the Postcard application” on page 147.

Using the Help Center

The Help Center gives you access to all task-oriented help, information on the IBM website, and a link to the IBM WebSphere MQ product documentation if you have installed it from the IBM WebSphere MQ Documentation CD.

The IBM WebSphere MQ Help Center can be accessed from the IBM WebSphere MQ Explorer by selecting **Help** > **Help Contents**.

Converting a trial license on UNIX, Linux, and Windows

Convert a trial license to a full license without reinstalling IBM WebSphere MQ.

When the trial license expires, the "count-down" displayed by the **strmqm** command informs you the license has expired, and the command does not run.

Before you begin

1. IBM WebSphere MQ is installed with a trial license.
2. You have access to the installation media of a fully licensed copy of IBM WebSphere MQ.

About this task

Run the **setmqprd** command to convert a trial license to a full license.

If you do not want to apply a full license to your trial copy of IBM WebSphere MQ, you can uninstall it at any time.

Procedure

1. Obtain the full license from the fully licensed installation media.

   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.
2. Run the **setmqprd** command from the installation that you are upgrading:

   ```
   $MQ_INSTALLATION_PATH/bin/setmqprd /MediaRoot/licenses/amqpcert.lic
   ```

Related reference

setmqprd

Displaying messages in your national language on UNIX and Linux systems

To display messages from a different national language message catalog, you must install the appropriate catalog and set the **LANG** environment variable.

About this task

Non-AIX platforms

Messages in U.S. English are automatically installed with WebSphere MQ.

AIX

Messages in the language specified by the locale selected on your machine at install time are installed by default.

To find out which language is currently in use, run the **locale** command.

If this returns a language which is not one of the national languages provided by WebSphere MQ, you must select a national language, otherwise you will not get a message catalog installed on your system.

Message catalogs for all languages are installed in *MQ_INSTALLATION_PATH*`/msg/`*language identifier*, where *language identifier* is one of the identifiers in Table 24 on page 115.

If you require messages in a different language, perform the following steps:

Procedure

1. Install the appropriate message catalog (see “Choosing what to install” on page 15).
2. To select messages in a different language, ensure the **LANG** environment variable is set to the identifier for the language you want to install:

Table 24. Language identifiers	
Identifier	**Language**
cs_CZ	Czech
de_DE	German
es_ES	Spanish
fr_FR	French
hu_HU	Hungarian
it_IT	Italian
ja_JP	Japanese
ko_KR	Korean
pl_PL	Polish
pt_BR	Brazilian Portuguese
zh_CN	Simplified Chinese
zh_TW	Traditional Chinese

AIX has some additional message catalogs:

Table 25. AIX specific language identifiers	
Identifier	**Language**
Ja_JP	Japanese
Zh_CN	Simplified Chinese
Zh_TW	Traditional Chinese

Windows Displaying messages in your national language on Windows systems

To display messages from a different national language message catalog, you must either set the **MQS_FORCE_NTLANGID** environment variable, or change a Regional setting.

About this task

Messages in U.S. English are automatically installed with IBM WebSphere MQ

Messages in the national languages that IBM WebSphere MQ supports are automatically installed. Messages are displayed in the national language, based on the following order:

1. The value of the **MQS_FORCE_NTLANGID** environment variable, if set.
2. The Region Format of the user that is displaying the message, if the language specified by the Region Format is supported by IBM WebSphere MQ.

3. The Administrative system locale if the language specified by the system locale is supported by IBM WebSphere MQ.
4. US English, if no other supported language can be determined.

Note: The queue manager is usually launched by a service on the machine, and hence is running under its own user account (for example MUSR_MQADMIN) or a specific domain account provided during install time. See Security on Windows for more information.

If you require messages in a language other than the one associated with the Region Format of a user account, perform the following steps:

Procedure

1. Globally set the **MQS_FORCE_NTLANGID** environment variable, to the language identifier of the desired language, for messages displayed by the queue manager.

   You should set the **MQS_FORCE_NTLANGID** system wide. Otherwise, every user displaying messages needs to have the environment variable set individually.

   The language identifier values, represented in hexadecimal notation, are listed in the following Microsoft document: Language Identifier Constants and Strings
2. Reboot machines where queue managers are running as a service, for the environment variable to take effect.

Installing an IBM WebSphere MQ client

After preparing your system for installation, you can install an IBM WebSphere MQ client by following the appropriate instructions for your platform. After installation, you might want to verify your installation to check that installation has been successful.

Before you start the installation procedure, make sure that you have prepared your system as described in Preparing the system

To begin the installing procedure, select the appropriate platform:

- “Installing an IBM WebSphere MQ client on AIX” on page 117
- “Installing an IBM WebSphere MQ client on HP-UX” on page 120
- “Installing an IBM WebSphere MQ client on Linux” on page 122
- “Installing an IBM WebSphere MQ client on Solaris” on page 124
- “Installing an IBM WebSphere MQ client on Windows” on page 125

Installing IBM WebSphere MQ clients and servers on the same system

To install an IBM WebSphere MQ client on a system that is already running an IBM WebSphere MQ server, use the appropriate Server DVD. Use a Client DVD to install an IBM WebSphere MQ client only on a system that is not running an IBM WebSphere MQ server.

If you install an IBM WebSphere MQ client from a Client DVD and later decide to install the IBM WebSphere MQ server on the same system, you must first remove all the client components from the system. Then use the appropriate Server DVD to install both the server and client components. You cannot install an IBM WebSphere MQ server on a system that already has client components installed from a Client DVD.

Remember that even if your client and server are installed on the same system, you must still define the MQI channel between them. See Defining MQI channels for details.

Installing an IBM WebSphere MQ client on AIX

You can interactively install the IBM WebSphere MQ client for AIX using `smit`.

Before you begin

Before you start the installation procedure, make sure that you have completed the necessary steps outlined in "Preparing the system" on page 55.

About this task

IBM WebSphere MQ is supplied as a set of filesets that are installed using the standard AIX installation tools. The procedure uses the System Management Interface Tool (`smit`), but you can choose to use **installp**, **geninstall** or the web-based System Manager. You can select which components you want to install. The components and filesets are listed in "Choosing what to install" on page 15. You must install at least the Runtime and Client components.

This procedure installs IBM WebSphere MQ into the default location. If you want to install to a non-default location, you must use **installp**, see "Installing an IBM WebSphere MQ client silently on AIX" on page 118.

Procedure

1. Log in as root, or switch to the superuser using the **su** command.
2. Make your current directory the location of the installation file. The location might be the mount point of the DVD, a network location, or a local file system directory.
3. Select the required `smit` window using the following sequence:

```
Software Installation and Maintenance
    Install and Update Software
        Install and Update from ALL Available Software
```

4. Click **List** to display the input device or directory for the software and select the location that contains the installation images.
5. Select the **SOFTWARE to install** field to obtain a list of available filesets, and select the filesets you want to install. Ensure that you include the appropriate message catalog if you require messages in a language different from the language specified by the locale specified on your system. Enter **ALL** to install all applicable filesets.
6. Change **Preview new LICENSE agreements?** to **yes** and press Enter to view the license agreements.
7. If you have a previous version of the product on your system, change the **Automatically install requisite software** to **no**.
8. Change **ACCEPT new license agreements?** to **yes** and press Enter to accept the license agreements.
9. Change **Preview new LICENSE agreements?** to **no** and press Enter to install IBM WebSphere MQ.

What to do next

- If you have chosen this installation to be the primary installation on the system, you must now set it as the primary installation. Enter the following command at the command prompt:

```
MQ_INSTALLATION_PATH/bin/setmqinst -i -p MQ_INSTALLATION_PATH
```

  You can have only one primary installation on a system. If there is already a primary installation on the system, you must unset it before you can set another installation as the primary installation. For more information, see Changing the primary installation .
- You might want to set up the environment to work with this installation. You can use the **setmqenv** or **crtmqenv** command to set various environment variables for a particular installation of IBM WebSphere MQ. For more information, see setmqenv and crtmqenv.

- For instructions on how to verify your installation, see "Verifying an IBM WebSphere MQ client installation" on page 151.

Installing an IBM WebSphere MQ client silently on AIX

Silently install IBM WebSphere MQ client from the command line using the AIX **installp** command.

Before you begin

Before you start the installation procedure, make sure that you have completed the necessary steps outlined in "Preparing the system" on page 55.

Note: Installation to a non-default location is *not* supported on systems that have the AIX Trusted Computing Base (TCB) enabled.

About this task

You can use this method to install to a non-default location, and can select which components you want to install. The components and filesets are listed in "Choosing what to install" on page 15. You must install at least the Runtime and Client components.

Procedure

1. Log in as root, or switch to the superuser using the **su** command.
2. Make your current directory the location of the installation file. The location might be the mount point of the CD, a network location, or a local file system directory.
3. Install the product in one of the following ways:
   - Install the whole product in the default location:

     ```
     installp -acgXYd . all
     ```

   - Install selected filesets in the default location:

     ```
     installp -acgXYd . list of file sets
     ```

   - Install the whole product in a non-default location using the -R flag:

     ```
     installp -R MQ_INSTALLATION_PATH -acgXYd . all
     ```

   - Install selected filesets in a non-default location using the -R flag:

     ```
     installp -R MQ_INSTALLATION_PATH -acgXYd . list of file sets
     ```

   The directory specified with the `-R` flag is an AIX User Specified Install Location (USIL). WebSphere MQ is installed underneath the directory specified. For example, if `-R /USIL1` is specified, the WebSphere MQ product files are located in `/USIL1/usr/mqm`.

What to do next

- If you have chosen this installation to be the primary installation on the system, you must now set it as the primary installation. Enter the following command at the command prompt:

  ```
  MQ_INSTALLATION_PATH/bin/setmqinst -i -p MQ_INSTALLATION_PATH
  ```

  You can have only one primary installation on a system. If there is already a primary installation on the system, you must unset it before you can set another installation as the primary installation. For more information, see Changing the primary installation .
- You might want to set up the environment to work with this installation. You can use the **setmqenv** or **crtmqenv** command to set various environment variables for a particular installation of IBM WebSphere MQ. For more information, see setmqenv and crtmqenv.

- For instructions on how to verify your installation, see “Verifying an IBM WebSphere MQ client installation” on page 151.

Installing IBM WebSphere MQ client on HP Integrity NonStop Server

Installing a IBM WebSphere MQ client on a HP Integrity NonStop Server system.

Before you begin

Before you start the installation procedure, make sure that you complete the necessary steps that are outlined in “Setting up the user and group on HP Integrity NonStop Server” on page 58.

About this task

After preparing your system for installation, install the IBM WebSphere MQ client for HP Integrity NonStop Server by following the instructions. After installation, you might want to verify your installation to check that it installed successfully. There are three steps to the installation:

1. Downloading the installation package.
2. Running the installer.
3. Setting the environment.

Procedure

1. Log in to the OSS user ID that owns the installation. The OSS user ID must have MQM as its primary group.
2. Download the installation package file. Ensure that you use "binary mode" when you download the installation package file to OSS. Any corruption in the file causes the self-extracting archive to fail to run. After you have downloaded the package file, ensure that it has read and execute permissions for the user ID that is installing the package.
3. Set the *_RLD_FIRST_LIB_PATH* variable to `<install path>/opt/mqm/bin`
4. Optional: Make your current directory the location of the installation file.
5. Type the following command to start the interactive installation procedure:

   ```
   ./<name of package file> -i <OSS install_root> -g <Guardian install_root>
   ```

   where

   `<name of package file>` is the name of the installation package.

   `<OSS install_root>` is the OSS root directory of the new installation.

   `<Guardian install_root>` is the Guardian subvolume for the new installation.

   Both `-i` and `-g` options are mandatory.

   - `-i` specifies the new or empty OSS directory that contains the `opt/mqm` and `var/mqm` directories of the installation.
   - `-g` specifies the subvolume into which the Guardian components of the IBM WebSphere MQ client on a HP Integrity NonStop Server are installed. The Guardian subvolume can be specified in either OSS-form or Guardian-form and can be abbreviated. The Guardian subvolume specification is not case sensitive. The following are examples of valid Guardian subvolume specifications:
     - `/G/vol/subvol`
     - `vol/subvol`
     - `\$VOL.SUBVOL`
     - `vol.subvol`
6. Optional: For OSS, set your environment by installing the binaries into your path. To do this, type the following command:

```
export PATH=$PATH:<OSS_install_root>/opt/mqm/bin
```

where <OSS_install_root> is the OSS root directory of the new installation.

Example

To install the IBM WebSphere MQ client for HP Integrity NonStop Server from package `mat1.run`, type the following command:

```
./mat1.run -i ~install/mq75client -g /G/data04/mqm
```

The command installs the OSS components into new `opt/mqm` and `var/mqm` directories in `~install/mq75client`. It installs the Guardian components into `/G/data04/mqm`.

What to do next

For instructions on how to verify your installation, see "Verifying an IBM WebSphere MQ client installation" on page 151.

Installing an IBM WebSphere MQ client on HP-UX

Before you begin

Before you start the installation procedure, make sure that you have completed the necessary steps outlined in "Preparing the system" on page 55.

About this task

This topic describes the installation of a client, using the `swinstall` program to select which components you want to install. The components and are listed in "Choosing what to install" on page 15; you must install at least the Runtime and Client components.

Procedure

1. Log in as root, or switch to the superuser using the **su** command.
2. Make your current directory the location of the installation file. The location might be the mount point of the DVD, a network location, or a local file system directory.
3. Accept the license by running the `mqlicense` script:

   ```
   ./mqlicense.sh
   ```

   The license is displayed. If you accept the license, you can continue the installation.
4. Type the following command to start the interactive installation procedure:

   ```
   swinstall -s installation_file
   ```

   installation_file is the absolute path to the installation file. The path must begin with a / and end with the name of the installation file. The installation file has the extension `.v11`.

   If the files on your DVD are in uppercase with a ";1" suffix, use this name for the depot.
5. In the resulting menu screen, select **MQSERIES**.
   a) If you do not want to install all IBM WebSphere MQ components, open **MQSERIES**
      i) Mark the components you want to install. The installer resolves dependencies automatically.
      ii) Review the information displayed by the installer.
6. Optional: To install IBM WebSphere MQ to a non-default location, select **Actions > Change Product Location**.

For each installation, all of the IBM WebSphere MQ components that you require must be installed in the same location.

The installation path specified must either be an empty directory, the root of an unused file system, or a path that does not exist. The length of the path is limited to 256 bytes and must not contain spaces.

7. Select **Actions > Install**. The log file tells you if there are any problems that need fixing.
8. Fix any problems, and click **OK** to install. You are informed when the installation has finished.
9. If this installation is not the first installation on the system, you must enter the following command:

```
swconfig -x allow_multiple_versions=true MQSERIES,l=MQ_INSTALLATION_PATH
```

where *MQ_INSTALLATION_PATH* is the path where you have just installed IBM WebSphere MQ. If you do not enter this command, the **swlist** command reports the installation as installed instead of configured. You must not use IBM WebSphere MQ unless the installation is configured.

What to do next

- If you have chosen this installation to be the primary installation on the system, you must now set it as the primary installation. Enter the following command at the command prompt:

```
MQ_INSTALLATION_PATH/bin/setmqinst -i -p MQ_INSTALLATION_PATH
```

You can have only one primary installation on a system. If there is already a primary installation on the system, you must unset it before you can set another installation as the primary installation. For more information, see Changing the primary installation .

- You might want to set up the environment to work with this installation. You can use the **setmqenv** or **crtmqenv** command to set various environment variables for a particular installation of IBM WebSphere MQ. For more information, see setmqenv and crtmqenv.
- For instructions on how to verify your installation, see "Verifying an IBM WebSphere MQ client installation" on page 151.

Installing an IBM WebSphere MQ client silently on HP-UX

You can perform a non-interactive installation of the IBM WebSphere MQ client using the **swinstall** command. A non-interactive installation is also known as a silent, or unattended installation.

Before you begin

Before you start the installation procedure, make sure that you have completed the necessary steps outlined in "Preparing the system" on page 55.

About this task

This topic describes the non-interactive installation of a client, using the **swinstall** program to select which components you want to install. The components and are listed in "Choosing what to install" on page 15; you must install at least the Runtime and client components.

Procedure

1. Log in as root, or switch to the superuser using the **su** command.
2. Make your current directory the location of the installation file. The location might be the mount point of the CD, a network location, or a local file system directory.
3. Accept the WebSphere MQ license agreement without an interactive prompt by entering the following command:

```
./mqlicense.sh -accept
```

4. Install WebSphere MQ using the **swinstall** command:
   a) If this installation is not the first installation on the system, you must add `-x allow_multiple_versions=true` to the **swinstall** command.

b) Add the names of the components to install as parameters of the **swinstall** command.

The installer automatically resolves any dependencies.

c) Optional: Identify the installation location by adding `,l=`*MQ_INSTALLATION_PATH* as a parameter of the **swinstall** command. For each installation, all of the IBM WebSphere MQ components that you require must be installed in the same location.

The installation path specified must either be an empty directory, the root of an unused file system, or a path that does not exist. The length of the path is limited to 256 bytes and must not contain spaces.

For example, to install all IBM WebSphere MQ components, in a non-default location, as the first installation, enter the following command:

```
swinstall -s /installation_file.v11 MQSERIES,l=/opt/customLocation
```

To perform a partial installation, providing a list of components, in the default location, as the second installation, enter the following command:

```
swinstall -s /installation_file.v11
MQSERIES.MQM-RUNTIME MQSERIES.MQM-BASE MQSERIES.MQM-CL-HPUX -x allow_multiple_versions=true
```

/installation_file.v11 is the absolute path to the installation file. The path must begin with a `/` and end with the name of the installation file. The installation file has the extension `.v11`.

5. If this installation is not the first installation on the system, you must enter the following command:

```
swconfig -x allow_multiple_versions=true MQSERIES,l=MQ_INSTALLATION_PATH
```

where *MQ_INSTALLATION_PATH* is the path where you have just installed IBM WebSphere MQ. If you do not enter this command, the **swlist** command reports the installation as installed instead of configured. You must not use IBM WebSphere MQ unless the installation is configured.

What to do next

For instructions on how to verify your installation, see “Verifying an IBM WebSphere MQ client installation” on page 151.

Installing an IBM WebSphere MQ client on Linux

Installing a WebSphere MQ client on a 32 bit or 64 bit Linux system.

Before you begin

- Before you start the installation procedure, make sure that you have completed the necessary steps outlined in “Preparing the system” on page 55.
- If this installation is not the first installation on the system, you must ensure that you have write access to `/var/tmp`.

About this task

This task describes the installation of the client, using the RPM Package Manager installer to select which components you want to install. You must install at least the Runtime and Client components. The components are listed in “Choosing what to install” on page 15.

Procedure

1. Log in as root, or switch to the superuser using the **su** command.
2. Make your current directory the location of the installation file. The location might be the mount point of the DVD, a network location, or a local file system directory.
3. Run the `mqlicense.sh` script.

   If you want to view a text-only version of license, which can be read by a screen-reader, type:

```
./mqlicense.sh -text_only
```

The license is displayed.

If want to accept the license without it being displayed, you can run the `mqlicense.sh` script with the `-accept` option.

```
./mqlicense.sh -accept
```

You must accept the license agreement before you can proceed with the installation.

4. If this installation is not the first installation on the system, you must run **crtmqpkg** to create a unique set of packages to install on the system:
   a) Enter the following command:

   ```
   crtmqpkg suffix
   ```

   where *suffix* is a name of your choosing, that will uniquely identify the installation packages on the system. *suffix* is not the same as an installation name, although the names can be identical. *suffix* is limited to 16 characters in the ranges A-Z, a-z, and 0-9.

   b) Set your current directory to the location specified when the **crtmqpkg** command completes.

   This directory is a sub-directory of `/var/tmp/mq_rpms`, in which the unique set of packages is created. The packages have the *suffix* value contained within the filename.
5. Install IBM WebSphere MQ.

   The minimum components you must install are the MQSeriesRuntime and the MQSeriesClient.

   - To install to the default location, `/opt/mqm`, use the `rpm -ivh` command to install each component that you require.

     For example, to install all components to the default location use the following command:

     ```
     rpm -ivh MQSeries*.rpm
     ```

   - To install to a non-default location use the **rpm --prefix** option. For each installation, all of the IBM WebSphere MQ components that you require must be installed in the same location.

     The installation path specified must either be an empty directory, the root of an unused file system, or a path that does not exist. The length of the path is limited to 256 bytes and must not contain spaces.

     For example, to install the runtime and server components to `/opt/customLocation` on a 32-bit Linux system:

     ```
     rpm --prefix /opt/customLocation -ivh MQSeriesRuntime-7.5.0-0.i386.rpm
     MQSeriesClient-7.5.0-0.i386.rpm
     ```

What to do next

- If you have chosen this installation to be the primary installation on the system, you must now set it as the primary installation. Enter the following command at the command prompt:

  ```
  MQ_INSTALLATION_PATH/bin/setmqinst -i -p MQ_INSTALLATION_PATH
  ```

  You can have only one primary installation on a system. If there is already a primary installation on the system, you must unset it before you can set another installation as the primary installation. For more information, see Changing the primary installation .
- You might want to set up the environment to work with this installation. You can use the **setmqenv** or **crtmqenv** command to set various environment variables for a particular installation of IBM WebSphere MQ. For more information, see setmqenv and crtmqenv.
- For instructions on how to verify your installation, see “Verifying an IBM WebSphere MQ client installation” on page 151

Installing an IBM WebSphere MQ client on Solaris

Before you begin

- Before you start the installation procedure, make sure that you have completed the necessary steps outlined in “Preparing the system” on page 55.
- This procedure is for the installation of a standard IBM WebSphere MQ client, from the client DVD. If you are using a server DVD, follow the steps in “Installing IBM WebSphere MQ server on Solaris” on page 84, and select the appropriate client components in step 8.

About this task

This task describes the installation of the IBM WebSphere MQ for Solaris client, using the `pkgadd` program. You can choose which components you want to install. The components (or file sets) are listed in “Choosing what to install” on page 15; you must install at least the Client component.

Note: If you are installing on the Solaris 11 operating system, ensure that the IPS package (package/svr4) that supports `pkgadd` and equivalent utilities is installed.

Procedure

1. Log in as root, or switch to the superuser using the **su** command.
2. Make your current directory the location of the installation file. The location might be the mount point of the DVD, a network location, or a local file system directory.
3. Run the `mqlicense.sh` script to accept the license:

   ```
   ./mqlicense.sh
   ```

   If you want to view a text-only version of the license, which can be read by a screen-reader, type:

   ```
   ./mqlicense.sh -text_only
   ```

   The license is displayed. Follow the instructions to accept the license. If you accept the license, the installation continues. If you do not accept the license, you cannot continue the installation process.
4. If this installation is not the first installation on the system, you must run **crtmqpkg** to create a unique set of packages to install on the system:
   a) Enter the following command:

      ```
      ./crtmqpkg suffix
      ```

      where *suffix* is a name of your choosing, that will uniquely identify the installation packages on the system. *suffix* is not the same as an installation name, although the names can be identical. *suffix* is limited to 16 characters in the ranges A-Z, a-z, and 0-9.
   b) Set your current directory to the location specified when the **crtmqpkg** command completes.

      This directory is a sub-directory of `/var/spool`, in which the unique set of packages is created. The packages have the *suffix* value contained within the filename.
5. Start the installation process:
   - If the installation is the first installation on the system, enter the following command to start the installation process:

     ```
     pkgadd -d ./mqclient.img
     ```
   - If the installation is not the first installation on the system, enter the following command to start the installation process:

     ```
     pkgadd mqm-suffix
     ```

     where *suffix* is the suffix chosen in the previous step.

6. You are presented with a list of the packages that are available. Enter the number of the `mqm` package.
7. You are prompted to choose a location for installation.
   - To install to the default location, enter `y`.
   - To install to a non-default directory, enter `n`. Then enter the required installation path, and confirm your choice.
8. You receive a number of messages, after which a list of components is displayed. Enter the numbers of the components that you require separated by spaces or commas.
9. If the path chosen in step 7 does not exist, you are asked if you want to create it. You must enter `y` to proceed.
10. Answer any questions appropriately for your system.
11. A message tells you when installation is complete. Enter `q` to exit the `pkgadd` program.

What to do next

- If you have chosen this installation to be the primary installation on the system, you must now set it as the primary installation. Enter the following command at the command prompt:

  ```
  MQ_INSTALLATION_PATH/bin/setmqinst -i -p MQ_INSTALLATION_PATH
  ```

  You can have only one primary installation on a system. If there is already a primary installation on the system, you must unset it before you can set another installation as the primary installation. For more information, see Changing the primary installation .
- You might want to set up the environment to work with this installation. You can use the **setmqenv** or **crtmqenv** command to set various environment variables for a particular installation of IBM WebSphere MQ. For more information, see setmqenv and crtmqenv.
- For instructions on how to verify your installation, see “Verifying an IBM WebSphere MQ client installation” on page 151.

Installing an IBM WebSphere MQ client on Windows

This topic describes how to install IBM WebSphere MQ client on Windows systems. This procedure can be used for installing a first or a subsequent installation.

Before you begin

To install an IBM WebSphere MQ client, you must be logged on to Windows as an administrator.

About this task

Follow these instructions to perform an interactive compact, typical, or custom installation of IBM WebSphere MQ. To view all the installation types and the features that are installed with each option consult Table 12 on page 41.

Note: To install the extended transactional client use the server installation image.

Procedure

1. Access the IBM WebSphere MQ installation image. The location might be the mount point of the DVD, a network location, or a local file system directory.
2. Locate `setup.exe` in the Windows directory of the IBM WebSphere MQ installation image.
   - From a DVD, this location might be:

     ```
     E:\Windows\setup.exe
     ```

   - From a network location, this location might be:

```
m:\instmqs\Windows\setup.exe
```

- From a local file system directory, this location might be:

```
C:\instmqs\Windows\setup.exe
```

3. Double-click the **Setup** icon to start the installation process. It is possible to run either by:
   - Running `setup.exe` from the command prompt. Or
   - Double-clicking `setup.exe` from Windows Explorer.

   If you are installing on a Windows system with UAC enabled, accept the Windows prompt to allow the launchpad to run as elevated. During installation, you might also see **Open File - Security Warning** dialog boxes that list International Business Machines Limited as the publisher. Click **Run** to allow the installation to continue.

   The IBM WebSphere MQ Installation window is displayed.
4. Continue to follow the instructions as shown on screen.

Results

A new sample IBM WebSphere MQ MQI client configuration file is created in the IBM WebSphere MQ installation directory (for example `C:\Program Files\IBM\WebSphere MQ\`, by the IBM WebSphere MQ MQI client package, during installation, but only if this file does not exist. This file contains the `ClientExitPath` stanza. An example `mqclient.ini` file is shown in Configuring a client using a configuration file.

Note:

If you are using a common configuration file for multiple clients, either in the IBM WebSphere MQ installation directory or in another location using the MQCLNTCF environment variable, you must grant read access to all user identifiers under which the IBM WebSphere MQ client applications run. If the file cannot be read, the failure is traced and the search logic continues as if the file had not existed.

What to do next

- If you have chosen this installation to be the primary installation on the system, you must now set it as the primary installation. Enter the following command at the command prompt:

```
MQ_INSTALLATION_PATH/bin/setmqinst -i -p MQ_INSTALLATION_PATH
```

  You can have only one primary installation on a system. If there is already a primary installation on the system, you must unset it before you can set another installation as the primary installation. For more information, see Changing the primary installation .
- You might want to set up the environment to work with this installation. You can use the **setmqenv** or **crtmqenv** command to set various environment variables for a particular installation of IBM WebSphere MQ. For more information, see setmqenv and crtmqenv.
- For instructions on how to verify your installation, see “Verifying an IBM WebSphere MQ client installation” on page 151.

Related concepts

“Modifying the client installation on Windows using Add/Remove Programs” on page 137
On some versions of Windows, you can modify an installation by using Add/Remove Programs.

Related tasks

“Advanced installation using msiexec” on page 127

“Using the MQParms command” on page 133

Advanced installation using msiexec

About this task

WebSphere MQ on Windows uses the MSI technology to install software. MSI provides both an interactive installation and a non interactive installation. An interactive installation displays panels and ask questions.

The **msiexec** command uses parameters to give MSI some or all of the information that can also be specified through panels during an interactive installation. This means that a user can create a reusable automated or semi-automated installation configuration. Parameters can be given through the command line, a transform file, a response file, or a combination of the three.

Procedure

To install using msiexec, at the command line, enter the **msiexec** command in the following format:

```
msiexec parameters [USEINI="response-file"] [TRANSFORMS="transform_file"]
```

Where:

parameters
are either command-line parameters preceded by a / character, or property=value pairs (if using both forms of parameter always put the command-line parameters first). For further information, see “Specifying command line parameters with msiexec” on page 127.

For an unattended installation, you must include the /q or /qn parameter in the command line. Without this parameter, the installation is interactive.

Note: You must include the **/i** parameter and the file location of the IBM WebSphere MQ installer package.

response-file
is the full path and file name of the file that contains the [Response] stanza and the required property=value pairs, for example `C:\MyResponseFile.ini`. An example response file, `Response.ini`, is supplied with IBM WebSphere MQ. This file contains default installation parameters. For further information, see “Using a response file with msiexec” on page 129.

transform_file
is the full path and file name of a transform file. For further information, see “Using transforms with msiexec” on page 132 and “Multiple installation using MSI Instance ID” on page 96.

Note: For a silent installation to succeed, the AGREETOLICENSE=?YES? property must be defined either on the command line or in the response file.

Results

After the command has been entered, the command prompt immediately reappears. IBM WebSphere MQ is installing as a background process. If you have entered parameters to produce a log, check this file to see how the installation is progressing. If the installation completes successfully, you see the message `Installation operation completed successfully` in the log file.

Specifying command line parameters with msiexec

About this task

The **msiexec** command can accept two types of parameters on the command line, as follows:

- Standard command line parameters, preceded by a / character.

  For a table of the **msiexec** command line parameters, see the MSDN Command-Line Options web page.

- Property=value pair parameters on the command line. All the parameters available for use in a response file can be used on the command line, for a list of these, see Table 27 on page 130. In addition there are some extra property=value pair parameters that are only for use on the command line, for details see Table 26 on page 128.

  When using the property=value pair parameters note that:

  – Property strings must be in uppercase.
  – Value strings are not case-sensitive, except for feature names. You can enclose value strings in double quotation marks. If a value string includes a blank, enclose the blank value string in double quotation marks.
  – For a property that can take more than one value, use the format:

    ```
    ADDLOCAL="Server,Client"
    ```

  When using property=value pair and command line parameters with the **msiexec** command, enter command line parameters first.

  If a parameter is specified both on the command line and in a response file, the setting on the command line takes precedence.

Example

A typical example of an **msiexec** command is:

```
msiexec /i "path\MSI\IBM WebSphere MQ.msi" /l*v c:\install.log
/q TRANSFORMS="1033.mst" AGREETOLICENSE="yes" ADDLOCAL="Client"
```

A typical example of an **msiexec** command when you are installing a second copy of IBM WebSphere MQ Version 7.1 is:

```
msiexec /i "path\MSI\IBM WebSphere MQ.msi" /l*v c:\install.log
/q TRANSFORMS=":InstanceId2.mst;1033.mst" AGREETOLICENSE="yes"
ADDLOCAL="Client" MSINEWINSTANCE=1
```

The following table shows the parameters which can only be provided on the command line and not in a response file.

Table 26. msiexec property=value parameters

Property	Values	Meaning
USEINI	*path\file_name*	Use the specified response file. See “Using a response file with msiexec” on page 129
SAVEINI	*path\file_name*	Generate a response file during installation. The file contains those parameters selected for this installation that a user might make during an interactive installation.
ONLYINI	1|yes|**""**	1, yes or any value other than null. End the installation before updating the target system, but after generating a response file, if this is specified. "". Continue the installation and update the target system (the default).

Table 26. msiexec property=value parameters (continued)		
Property	**Values**	**Meaning**
TRANSFORMS	:InstanceId*x*.mst|*path**file_name*| :InstanceId*x*.mst;*path**file_name*	The :InstanceId*x*.mst value is only required for a subsequent installation of IBM WebSphere MQ Version 7.1 or greater. The *path**file_name* specifies what transform (.mst) files must be applied to the product. For example, `"1033.mst"` specifies the supplied U.S. English transform file.
MSINEWINSTANCE	1	This property is only required for subsequent installations of IBM WebSphere MQ Version 7.1 or greater.
REMOVEFEATURES	yes	Required with value "yes" for a silent installation, otherwise ignored. Allows obsolete features, no longer part of IBM WebSphere MQ, to be deleted.

Using a response file with msiexec

About this task

You can use the **msiexec** command with a parameter which specifies additional properties are defined in a response file. You can combine the `msiexec` command-line parameters described in “Specifying command line parameters with msiexec” on page 127 .

A response file is an ASCII text file, with a format like a Windows `.ini` file, that contains the stanza [Response]. The [Response] stanza contains some or all the parameters that would normally be specified as part of an interactive installation. The parameters are given in a property=value pair format. Any other stanzas in the response file are ignored by **msiexec**. An example response file, `Response.ini`, is supplied with IBM WebSphere MQ. It contains the default installation parameters.

Procedure

A typical example of an `msiexec` command is: `msiexec /i "path\MSI\IBM WebSphere MQ.msi" /l*v c:\install.log TRANSFORMS="1033.mst" USEINI="C:\MQ\Responsefile"`

If a parameter is specified both on the command line and in a response file, the setting on the command line takes precedence. All the parameters available for use in a response file can also be used on the command line, for a list of these see Table 27 on page 130.

In the response file, all text is in English, and comments begin with a `;` character.

For information about creating a response file, see “Creating a response file” on page 98.

Example

An example of a typical response file:

```
[Response]
PGMFOLDER="c:\mqm"
DATFOLDER="c:\mqm\data"
AGREETOLICENSE="yes"
ADDLOCAL="Client"
REMOVE="Toolkit"
```

Table 27. Response file parameters		
Property	**Values**	**Meaning**
PGMFOLDER	*path*	Folder for the IBM WebSphere MQ program files. For example, `c:\mqm`.
DATFOLDER	*path*	Folder for the IBM WebSphere MQ data files. For example, `c:\mqm\data`.
USERCHOICE	0|no	If the command line or response file specifies parameters to install features, a dialog can be displayed to prompt you to accept the preselected options, or review and possibly change them. 0 or no. Suppresses display of the dialog. Anything else. Dialog is displayed and you can amend the options. Not used for a silent installation.
AGREETOLICENSE	yes	Accept the terms of the license. Set to `yes` before a silent installation. If the installation is not silent, this parameter is ignored.
ADDLOCAL	*feature*, *feature, All*|**""**	A comma-separated list of features to install locally. For a list of valid feature names, see "IBM WebSphere MQ features for Windows" on page 31. All installs all features "" installs the typical features. If you do not want a feature use REMOVE="*feature*" **Note:** If this is a new installation the typical features (Client, Java™, .NET Messaging, and Development Toolkit) are installed by default irrespective of the feature list provided in the ADDLOCAL property. If you do not want a feature use REMOVE="feature"
REMOVE	*feature*, *feature*, |All|**""**	A comma-separated list of features to remove. For a list of valid feature names, see "IBM WebSphere MQ features for Windows" on page 31. All uninstalls all features "" uninstalls no features (the default).
INSTALLATIONDESC	?Description of installation?	Sets the installation description from the command line. Subject to the documented installation description length limitations

Table 27. Response file parameters (continued)		
Property	**Values**	**Meaning**
INSTALLATIONNAME	[INSTALLATION0,]?Name?	Sets the installation name from the command line. Subject to the documented installation name character and length limitations. **Note:** Supply INSTALLATION0,Name only when upgrading from pre-IBM WebSphere MQ Version 7.1.
MAKEPRIMARY	0|1|**""**	Makes the installation primary, if possible, or removes the primary flag. 1 = Make primary, 0 = Make non-primary, - use default algorithm **Note:** This option is ignored if a pre-Version 7.1 IBM WebSphere MQ is installed, or if another Version 7.1 or greater installation is present and set as the primary.

Related tasks

"Using the MQParms command" on page 133

Related reference

"Using transforms with msiexec" on page 132

Multiple installation using MSI Instance ID

This topic describes how to choose the MSI instance ID you require for non-interactive multiple installations.

About this task

In order to support non-interactive multiple installations, you need to find out whether the instance ID you want to use is already in use or not and choose the appropriate one. For each installation media (for example, each 7.5 client and 7.5 server), Instance ID 1 is the default ID which is used for single installations. If you want to install alongside Instance ID 1 you need to specify which instance you want to use. If you have already installed instance 1, 2, and 3 then you need to find out what the next available instance is, for instance, Instance ID 4. Similarly, if instance 2 has been removed, you need to find out that there is a gap that can be reused. You can find out which Instance ID is currently in use using the **dspmqinst** command.

Procedure

1. Type **dspmqinst** to find a free MSI Instance in the media being installed by reviewing the MSIMedia and MSIInstanceId values for the versions already installed. For example:

```
InstName:      Installation1
InstDesc:
Identifier:    2
InstPath:      C:\mq\install1
Version:       7.5.0.0
Primary:       Yes
State:         Available
MSIProdCode:   {0730749B-080D-4A2E-B63D-85CF09AE0EF0}
MSIMedia:      7.5 Server
MSIInstanceId: 1
```

2. If MSI Instance ID 1 is in use and you want to use MSI Instance ID 2, the following parameters must be added to the msiexec call:

```
MSINEWINSTANCE=1 TRANSFORMS=:InstanceId2.mst
```

What to do next

For multiple installations, the **INSTALLATIONNAME** or **PGMFOLDER** must be supplied as an additional parameter on any non-interactive installation command. Supplying the **INSTALLATIONNAME** or **PGMFOLDER** ensures that you do not work with the wrong installation in case you omit or incorrectly specify the **TRANSFORMS** parameter.

Using transforms with msiexec

MSI can use transforms to modify an installation. During IBM WebSphere MQ installation, transforms can be used to support different national languages. IBM WebSphere MQ is supplied with transform files in the `\MSI` folder of the client image. These files are also embedded in the IBM WebSphere MQ Windows installer package, `IBM WebSphere MQ.msi`.

On the **msiexec** command line, you can specify the required language by using the TRANSFORMS property in a property=value pair. For example:

```
TRANSFORMS="1033.mst"
```

You can also specify the full path and file name of the transform file. Again, the quotation marks surrounding the value are optional. For example:

```
TRANSFORMS="D:\Msi\1033.mst"
```

Table 28 on page 132 shows the locale identifier, language, and the transform file name to use in the **msiexec** command line.

You might need to merge transforms to install multiple installations of the same version, for example:

```
TRANSFORMS=":InstanceId2.mst;D:\Msi\1033.mst"
```

You can also specify the required language by using the MQLANGUAGE property with the **MQParms** command. For information about the msiexec property=value parameters, see “MQParms parameter file” on page 134 .

Parameters

Table 28. Supplied transform files for various language support. This table shows the supplied transform files, the resulting language, and the numeric value to use in the **msiexec** command line.

Language	Transform File name	Value
U.S. English	1033.mst	1033
German	1031.mst	1031
French	1036.mst	1036
Spanish	1034.mst	1034
Italian	1040.mst	1040
Brazilian Portuguese	1046.mst	1046
Japanese	1041.mst	1041
Korean	1042.mst	1042
Simplified Chinese	2052.mst	2052
Traditional Chinese	1028.mst	1028
Czech	1029.mst	1029
Russian	1049.mst	1049
Hungarian	1038.mst	1038

Table 28. Supplied transform files for various language support. This table shows the supplied transform files, the resulting language, and the numeric value to use in the **msiexec** command line. *(continued)*		
Language	**Transform File name**	**Value**
Polish	1045.mst	1045

Creating a response file
A response file is used with **msiexec**. You can create it in three ways.

About this task

A response file is used with the **msiexec** command, for further information see "Using a response file with msiexec" on page 93.

Procedure

There are three ways to create a response file for installation:

- Copy and edit the file `Response.ini` that is supplied on the IBM WebSphere MQ Windows Server CD, using an ASCII file editor.
- Create your own response file using an ASCII file editor.
- Use the **msiexec** command with the **SAVEINI** (and optionally, the **ONLYINI**) command line parameters to generate a response file that contains the same installation options. See Table 18 on page 92.

Example

A typical example of using **msiexec** with the **SAVEINI** parameter is here:

```
msiexec /i "path\IBM WebSphere MQ.msi" /q SAVEINI="response_file"
TRANSFORMS="1033.mst" AGREETOLICENSE="yes"
```

Using the MQParms command

Before you begin

You can use the `MQParms` command to invoke installation or uninstallation. This command can use parameters on a command line, or those specified in a parameter file. The parameter file is an ASCII text file that contains the parameter values that you want to set for the installation. The `MQParms` command takes the specified parameters and generates the corresponding `msiexec` command line.

This means that you can save all the parameters that you want to use with the `msiexec` command in a single file.

If you are running IBM WebSphere MQ on Windows systems with User Account Control (UAC) enabled, you must invoke the installation with elevated privileges. If you are using the Command prompt or IBM WebSphere MQ Explorer elevate privileges by using a right-click to start the program and selecting **Run as administrator**. If you try to run the `MQParms` program without using elevated privileges, the installation fails with an error of AMQ4353 in the installation log.

For silent operations, this must include the **/q** or **/qn** parameter, either on the command line, or in the [MSI] stanza of the parameter file. You must also set the AGREETOLICENSE parameter to "yes".

You can specify many more parameters in the parameter file that you use with the `MQParms` command than you can in the response file that you use directly with the `msiexec` command. Also, as well as parameters that the IBM WebSphere MQ installation uses, you can specify parameters that can be used by the Prepare IBM WebSphere MQ wizard.

If you do not complete the **Prepare WebSphere MQ Wizard** directly after IBM WebSphere MQ installations or if for any reason your machine is rebooted between completing IBM WebSphere MQ installation and completing the **Prepare WebSphere MQ Wizard**, ensure that the wizard is run with

Administrator privilege afterward, otherwise the installation is incomplete, and might fail. You might also see **Open File - Security Warning** dialog boxes that list International Business Machines Limited as the publisher. Click **Run** to allow the wizard to continue

An example of the file MQParms.ini is supplied with IBM WebSphere MQ. This file contains default installation parameters.

There are two ways to create a parameter file for installation:

- Copy and edit the file MQParms.ini that is supplied with the product, using an ASCII file editor.
- Create your own parameter file using an ASCII file editor.

About this task

To invoke installation using the `MQParms` command:

Procedure

1. From a command line, change to the root folder of the IBM WebSphere MQ client CD (that is, the location of the file MQParms.exe).
2. Enter the following command:

   ```
   MQParms [parameter_file] [parameters]
   ```

   where:

   parameter_file
   is the file that contains the required parameter values. If this file is not in the same folder as MQParms.exe, specify the full path and file name. If you do not specify a parameter file, the default is MQParms.ini. For further details, see "MQParms parameter file" on page 134.

   parameters
   are one or more command-line parameters, for a list of these, see the MSDN Command-Line Options web page.

Example

A typical example of an MQParms command is:

```
MQParms "c:\MyParamsFile.ini" /l*v c:\install.log
```

If you specify a parameter both on the command line and in the parameter file, the setting on the command line takes precedence.

If you do not specify `/i`, `/x`, `/a`, or `/j`, MQParms defaults to standard installation using the IBM WebSphere MQ Windows Installer package, IBM WebSphere MQ.msi. That is, it generates the following part of the command line:

```
/i "current_folder\MSI\IBM WebSphere MQ.msi"
```

MQParms parameter file
A parameter file is an ASCII text file that contains sections (stanzas) with parameters that can be used by the `MQParms` command. Typically, this is an initialization file such as MQParms.ini.

The `MQParms` command takes parameters from the following stanzas in the file:

[MSI]
Contains general properties related to how the `MQParms` command runs and to the installation of IBM WebSphere MQ.

The properties that you can set in this stanza are listed in "Advanced installation using msiexec" on page 127, and Table 29 on page 135.

MQParms ignores any other stanzas in the file.

The stanza parameters are in the form property=value, where property is always interpreted as uppercase, but value is case sensitive. If a value string includes a blank, it must be enclosed in double quotation marks. Most other values can be enclosed in double quotation marks. Some properties can take more than one value, for example:

```
ADDLOCAL="Server,Client"
```

To clear a property, set its value to an empty string, for example:

```
REINSTALL=""
```

The following tables show the properties that you can set. The default is shown in bold.

For the [MSI] stanza, you can enter standard MSI command line options and properties. For example:

```
- /q
- ADDLOCAL="client"
- REBOOT=Suppress
```

Refer to Table 29 on page 135, and Table 30 on page 136 for the properties used to install IBM WebSphere MQ.

Table 29 on page 135 shows additional properties in the stanza that affect how the MQParms command runs, but that do not affect the installation.

Table 29. Properties used by MQParms in the MSI stanza

Property	Values	Description
MQPLOG	*path*|*file_name*	MQParms generates a text log file with the specified name and location.
MQPLANGUAGE	**system**|user|*transform_value*|existing	The installation language. system. Install using the language of the default system locale (the default). user. Install using the language of the default locale of the user. *transform_value*. Install using the language specified by this value. See Table 30 on page 136. existing. If MQ already exists on the system, the same language will be used by default, otherwise system is used.
MQPSMS	**0**|no	0 or no. MQParms does not wait for the msiexec command to end (the default). Any other value. MQParms waits for the msiexec command to end.
MQPINUSE	**0**|1	If MQPINUSE is set to 1, MQParams continues installing even if IBM WebSphere MQ files are in use. If this option is used a reboot will be required to complete the installation.

Table 30. Valid values for the MQPLANGUAGE property			
Language	**Valid values**		
U.S. English	English	en_us	1033
German	German	de_de	1031
French	French	fr_fr	1036
Spanish	Spanish	es_es	1034
Italian	Italian	it_it	1040
Brazilian Portuguese		pt_br	1046
Japanese	Japanese	ja_jp	1041
Korean	Korean	ko_kr	1042
Simplified Chinese		zh_cn	2052
Traditional Chinese		zh_tw	1028
Czech	Czech	cs_cz	1029
Russian	Russian	ru_ru	1049
Hungarian	Hungarian	hu_hu	1038
Polish	Polish	pl_pl	1045

A typical example of a parameter file is:

```
[MSI]
MQPLANGUAGE=1033
MQPLOG=%temp%\MQParms.log
MQPSMS=no
ADDLOCAL=CLIENT
/m miffile
REMOVE=""
/l*v c:\install.log
```

Modifying the client installation on Windows

You modify the installation when WebSphere MQ for Windows client is installed and you want to remove or install some WebSphere MQ client features.

1. Insert WebSphere MQ client DVD into the DVD drive.
2. If autorun is installed, the installation process starts.

   Otherwise, double-click **Setup** in the root folder of the DVD to start the installation process.

   The WebSphere MQ client Setup window is displayed. Click **Next** to continue.
3. Select **Modify**, then click **Next**.

   The Features panel is displayed.
4. To change the installation of a feature:
   a. Click the symbol next to the feature name to display a menu.
   b. Select the required option from:
      - Install this feature
      - Install this feature and all its subfeatures (if any)
      - Do not install this feature (remove if already installed).

The symbol next to the feature name changes to show the current installation option.

5. When your selections are complete, click **Next**.
6. The WebSphere MQ client Setup window displays a summary of the installation you selected.

   To continue, click **Modify**.
7. Wait until the progress bar is complete.

   When the WebSphere MQ client is successfully installed, the WebSphere MQ client Setup window displays the following message:

   ```
   Installation Wizard Completed Successfully
   ```

   Click **Finish** to close the window.

Modifying the client installation on Windows using Add/Remove Programs
On some versions of Windows, you can modify an installation by using Add/Remove Programs.

For Windows Active Directory Server, Windows XP, or Windows 2003, follow these steps. You cannot use this method to modify an installation on any other version of Windows.

1. From the Windows taskbar, select **Start** > **Settings** > **Control Panel**.
2. Select **Add/Remove Programs**.
3. Select **IBM WebSphere MQ**.
4. Select **Change**.

   The IBM WebSphere MQ Setup window with the Program Maintenance panel is displayed. Follow the procedure for modifying the installation by using the process from step "3" on page 136 to the end.

Silently modifying a WebSphere MQ client installation using msiexec

To silently modify an installation using msiexec, follow the instructions on the installation pages, but set the ADDLOCAL parameter to include the features you want to add, and set the REMOVE parameter to the features you want to remove.

For example if you used ADDLOCAL="JavaMsg" and REMOVE="" it would modify the installation to include the Java Messaging and Web Services feature.

The instructions for msiexec begin here: "Advanced installation using msiexec" on page 127

Silently modifying a WebSphere MQ client installation using MQParms

To silently modify an installation using MQParms, follow the instructions on the installation pages, but set the ADDLOCAL parameter to include the features you want to add, and set the REMOVE parameter to the features you want to remove.

For example if you used ADDLOCAL="JavaMsg" and REMOVE="" it would modify the installation to include the Java Messaging and Web Services feature.

For details of the MQParms command, see "Using the MQParms command" on page 99.

Installing IBM WebSphere MQ Advanced Message Security

Install and uninstall the IBM WebSphere MQ Advanced Message Security component.

Before you begin

Advanced Message Security is a separately installed and licensed component of WebSphere MQ and is another option on the WebSphere MQ installer. Make sure that you purchase a license for using Advanced Message Security before the installation.

Additionally, make sure the following WebSphere MQ components are installed in your environment:

- MQSeriesRuntime
- MQSeriesServer

Related tasks

"Installing IBM WebSphere MQ Advanced Message Security on AIX" on page 138
You can install IBM Advanced Message Security component on AIX platforms using either system management interface tool (SMIT) or the command line.

"Installing IBM WebSphere MQ Advanced Message Security on HP-UX" on page 139
You can install IBM Advanced Message Security component on HP-UX platforms.

"Installing IBM WebSphere MQ Advanced Message Security on Linux" on page 139
You can install IBM Advanced Message Security on Linux platforms.

"Installing IBM WebSphere MQ Advanced Message Security on Windows" on page 140
Once you purchase the IBM Advanced Message Security license, you can install the component on Windows platforms.

"Uninstalling IBM WebSphere MQ Advanced Message Security " on page 176
Information provided guides you through the uninstallation process of IBM Advanced Message Security component.

Installing IBM WebSphere MQ Advanced Message Security on AIX

You can install IBM Advanced Message Security component on AIX platforms using either system management interface tool (SMIT) or the command line.

Installing using SMIT

Procedure

1. Log on as root.
2. Change the directory to the location of the installation packages.
3. Start the system management interface tool (SMIT).

   The system management menu is displayed.
4. Select the required SMIT window using the following sequence:

   ```
   Software Installation and Maintenance
              Install and Update Software
            Install Software
   ```
5. Enter the directory location of the installation package.
6. Press F4 to list the software in the **SOFTWARE name** option.
7. Select the `mqm.ams.rte` and press Enter.
8. Accept the default setting for the remaining options and press Enter.

Results

Advanced Message Security has been installed successfully.

Installing using command line

Procedure

1. Log on as root.
2. Set your current directory to the location of the installation file. The location might be the mount point of the DVD, a network location, or a local file system directory.
3. Run the following command:

   ```
   installp -a -c -Y -d. mqm.ams.rte
   ```

   Note the period, signifying the current directory, following the `-d` parameter.

Results
Advanced Message Security component has been installed successfully.

Installing IBM WebSphere MQ Advanced Message Security on HP-UX

You can install IBM Advanced Message Security component on HP-UX platforms.

Procedure

1. Log on as root.
2. Set your current directory to the location of the installation file. The location might be the mount point of the DVD, a network location, or a local file system directory.
3. In the command line, issue the following command:

```
swinstall -s MQSERIES.MQM-AMS
```

Results
Advanced Message Security component has been installed successfully.

Installing IBM WebSphere MQ Advanced Message Security on Linux

You can install IBM Advanced Message Security on Linux platforms.

Procedure

1. Log on as root.
2. Set your current directory to the location of the installation file. The location might be the mount point of the server CD, a network share, or a local file system directory.
3. If this installation is not the first installation on the system, you must run the **crtmqpkg** command to create a unique set of packages to install on the system.

   In order for the **crtmqpkg** command to run on Linux, the **pax** command or **rpmbuild** must be installed.

   Important: pax and **rpmbuild** are not supplied as part of the product. You must obtain these from your Linux distribution supplier.

   a) Enter the following command:

   ```
   ./crtmqpkg suffix
   ```

   where *suffix* is a name of your choosing, that uniquely identifies the installation packages on the system. *suffix* is not the same as an installation name, although the names can be identical. *suffix* is limited to 16 characters in the ranges A-Z, a-z, and 0-9.

   Note: This command creates a full copy of the installation packages in a subdirectory of `/var/tmp`. You must ensure that the system has enough space before running the command.

   b) Set your current directory to the location specified when the **crtmqpkg** command completes.

   This directory is a subdirectory of `/var/tmp/mq_rpms`, in which the unique set of packages is created. The packages have the *suffix* value contained within the filename. For example, using a suffix of "1":

   ```
   ./crtmqpkg 1
   ```

   there will be a subdirectory named `/var/tmp/mq_rpms/1/i386` and the packages will be renamed, for example:

   ```
   From: MQSeriesAMS-7.5.0-0.i386.rpm
   To: MQSeriesAMS_1-7.5.0-0.i386.rpm
   ```

4. In the command line, issue the following command:

   This example shows a minimum installation:

   ```
   rpm -iv <package_name>
   ```

   where <package_name> is one of the following:

   - MQSeriesAMS-7.5.0-0.i386.rpm
   - MQSeriesAMS-7.5.0-0.x86_64.rpm
   - MQSeriesAMS-7.5.0-0.ppc.rpm
   - MQSeriesAMS-7.5.0-0.s390.rpm

Results
Advanced Message Security has been installed successfully.

Installing IBM WebSphere MQ Advanced Message Security on Windows

Once you purchase the IBM Advanced Message Security license, you can install the component on Windows platforms.

Using the Launchpad

Procedure

1. Access the WebSphere MQ installation image. The location might be the mount point of the DVD, a network location, or a local file system directory.
2. Locate `setup.exe` in the base directory of the WebSphere MQ installation image.
   - From a DVD, this location might be:

     ```
     E:\setup.exe
     ```

   - From a network location, this location might be:

     ```
     m:\instmqs\setup.exe
     ```

   - From a local file system directory, this location might be:

     ```
     C:\instmqs\setup.exe
     ```

3. Double-click the **Setup** icon to start the installation process. It is possible to start the process by either:
   - Running `setup.exe` from the command prompt.
   - Double-clicking `setup.exe` from WebSphere MQ Explorer.

   Note: If you are installing on a Windows system with UAC enabled, accept the Windows prompt to allow the launchpad to run as elevated. During installation, you might also see **Open File - Security Warning** dialog boxes that list International Business Machines Limited as the publisher. Click **Run** to allow the installation to continue.

   The WebSphere MQ Installation Launchpad window is displayed.
4. Continue to follow the Launchpad instructions as shown on screen.

Verifying an IBM WebSphere MQ installation

The topics in this section provide instructions on how to verify a server or a client installation of IBM WebSphere MQ on Windows, UNIX and Linux, and HP Integrity NonStop Server systems.

To verify a server installation, either using the command line or using the postcard application, see “Verifying an IBM WebSphere MQ server installation” on page 141.

To verify a client installation, either using the command line or using the IBM WebSphere MQ Explorer, see “Verifying an IBM WebSphere MQ client installation” on page 151.

Related concepts

“Installing IBM WebSphere MQ” on page 68
The topics in this section provide instructions on how to install IBM WebSphere MQ.

“Uninstalling IBM WebSphere MQ components” on page 165
The topics in this section provide instructions on how to uninstall components.

Verifying an IBM WebSphere MQ server installation

You can verify a local (stand-alone) installation or a server-to-server installation of the IBM WebSphere MQ server. A local installation has no communication links with other IBM WebSphere MQ installations while a server-to-server installation does have links to other installations.

You can use either the command line or the postcard application to verify your installation. The postcard application is Java based and requires a system with the ability to view a graphical display.

A local installation uses a single queue manager while a server-to-server installation has multiple queue managers and queues, and both sender and receiver channels.

For a server-to-server verification, the communication links between the two systems must be checked. Before you can do the verification, you must ensure that the communications protocol is installed and configured on both systems. The examples explain how to verify your installation using TCP.

UNIX systems

IBM WebSphere MQ supports both TCP and SNA. If you do not use TCP, see Setting up communication on UNIX and Linux systems.

Linux

IBM WebSphere MQ for Linux supports TCP on all Linux platforms. On x86 platforms and Power platforms, SNA is also supported. If you want to use the SNA LU6.2 support on these platforms, you need the IBM Communications Server for Linux Version 6.2. The Communications Server is available as a PRPQ product from IBM. For more details, see https://www.ibm.com/software/network/commserver/about.

If you do not use TCP, see Setting up communication on UNIX and Linux systems .

Windows

IBM WebSphere MQ for Windows supports TCP, SNA, NetBios, and SPX. If you do not use TCP, see Setting up communication for Windows.

Related concepts

“Verifying a server installation using the command line” on page 142
You can use the command line to verify a local installation or a server-to-server installation.

“Verifying a server installation using the Postcard application” on page 147
You can set up and use the Postcard application to verify a local installation or a server-to-server installation.

Related tasks

“Verifying a local server installation using the command line ” on page 142
You can verify a local installation by using the command line to create a simple configuration of one queue manager and one queue.

“Verifying a server-to-server installation using the command line” on page 144

You can verify a server-to-server installation using two servers, one as a sender and one as a receiver.

"Verifying a local server installation using the Postcard application" on page 148
Sending messages successfully between two Postcard applications verifies a local installation.

"Verifying a server-to-server installation using the Postcard application" on page 149
You can use two instances of the Postcard application to verify that a server-to-server installation is working.

Verifying a server installation using the command line

You can use the command line to verify a local installation or a server-to-server installation.

Use the command line to verify that IBM WebSphere MQ is successfully installed, and that the associated communication links are working properly.

You can also verify an installation using the postcard application. The postcard application is Java based and requires a system with the ability to view a graphical display. See "Verifying a server installation using the Postcard application" on page 147.

Related tasks

"Verifying a local server installation using the command line " on page 142
You can verify a local installation by using the command line to create a simple configuration of one queue manager and one queue.

"Verifying a server-to-server installation using the command line" on page 144
You can verify a server-to-server installation using two servers, one as a sender and one as a receiver.

Verifying a local server installation using the command line

You can verify a local installation by using the command line to create a simple configuration of one queue manager and one queue.

Before you begin

To verify the installation, you must first install the samples package.

Before beginning the verification procedure, you might want to check that you have the latest fixes for your system. For more information about where to find the latest updates, see "Finding the latest information" on page 50.

About this task

Use the following steps to configure your default queue manager from the command line. After the queue manager is configured, use the `amqsput` sample program to put a message on the queue. You then use the `amqsget` sample program to get the message back from the queue.

This procedure is for Windows, UNIX and Linux systems.

IBM WebSphere MQ object definitions are case-sensitive. Any text entered as an MQSC command in lowercase is converted automatically to uppercase unless you enclose it in single quotation marks. Make sure that you type the examples exactly as shown.

Procedure

1. If you are verifying an installation on a UNIX or Linux system, log in as a user in the `mqm` group.
2. Set up your environment:
   a) Set up environment variables for use with a particular installation by entering one of the following commands:
      - On Windows:

```
MQ_INSTALLATION_PATH/bin/setmqenv -s
```

where *MQ_INSTALLATION_PATH* refers to the location where IBM WebSphere MQ is installed.

- On UNIX systems:

```
. MQ_INSTALLATION_PATH/bin/setmqenv -s
```

where *MQ_INSTALLATION_PATH* refers to the location where IBM WebSphere MQ is installed.

- On Linux systems:

```
. source/ MQ_INSTALLATION_PATH/bin/setmqenv -s
```

where *MQ_INSTALLATION_PATH* refers to the location where IBM WebSphere MQ is installed.

b) Check that the environment is set up correctly by entering the following command:

```
dspmqver
```

If the command completes successfully, and the expected version number and installation name are returned, the environment is set up correctly.

3. Create a queue manager called QMAby entering the following command:

```
crtmqm QMA
```

Messages indicate when the queue manager is created, and when the default IBM WebSphere MQ objects are created.

4. Start the queue manager by entering the following command:

```
strmqm QMA
```

A message indicates when the queue manager starts.

5. Start MQSC by entering the following command:

```
runmqsc QMA
```

A message indicates when MQSC starts. MQSC has no command prompt.

6. Define a local queue called QUEUE1 by entering the following command:

```
DEFINE QLOCAL (QUEUE1)
```

A message indicates when the queue is created.

7. Stop MQSC by entering the following command:

```
end
```

Messages are shown, followed by the command prompt.

Note: Subsequent steps require that the samples package is installed.

8. If you are verifying an installation on a UNIX or Linux system, change into the *MQ_INSTALLATION_PATH*/samp/bin directory, which contains the sample programs. *MQ_INSTALLATION_PATH* represents the high-level directory in which WebSphere MQ is installed.
9. Put a message on the queue by entering one of the following commands:

- On UNIX and Linux systems:

```
./amqsput QUEUE1 QMA
```

- On Windows systems:

```
amqsput QUEUE1 QMA
```

The following messages are shown:

```
Sample AMQSPUT0 start
target queue is QUEUE1
```

10. Type some message text on one or more lines, where each line is a different message. Enter a blank line to end the message input.

    The following message is shown:

    ```
    Sample AMQSPUT0 end
    ```

    Your messages are now on the queue and the command prompt is shown.
11. Get the messages from the queue, by entering one of the following commands:
    - On UNIX and Linux systems:

      ```
      ./amqsget QUEUE1 QMA
      ```

    - On Windows systems:

      ```
      amqsget QUEUE1 QMA
      ```

    The sample program starts, and your messages are displayed.

Results

You have successfully verified your local installation.

Verifying a server-to-server installation using the command line

You can verify a server-to-server installation using two servers, one as a sender and one as a receiver.

Before you begin

- Make sure that TCP/IP and WebSphere MQ are installed on both servers.
- Make sure that you are a member of the WebSphere MQ administrators group (**mqm**) on each server.
- Decide which installation is the sender server and which installation is the receiver server. The installations might be on the same system, or on different systems.

About this task

This procedure provides instructions for Windows, UNIX and Linux systems only.

IBM WebSphere MQ object definitions are case-sensitive. Any text entered as an MQSC command in lowercase is converted automatically to uppercase unless you enclose it in single quotation marks. Make sure that you type the examples exactly as shown.

Procedure

1. On the **receiver** server:
   a) If the receiver server is a UNIX or Linux system, log in as a user in the `mqm` group.
   b) Check which ports are free, for example by running **netstat**. For more information about this command, see the documentation of your operating system.

      If port 1414 is not in use, make a note of 1414 to use as the port number in step 2 h. Use the same number for the port for your listener later in the verification. If it is in use, note a port that is not in use; for example 1415.
   c) Set up the environment for the installation you are using by entering one of the following commands at the command prompt:
      - On Windows:

        ```
        MQ_INSTALLATION_PATH\bin\setmqenv -s
        ```

where *MQ_INSTALLATION_PATH* refers to the location where IBM WebSphere MQ is installed.

- On UNIX and Linux systems:

```
. MQ_INSTALLATION_PATH/bin/setmqenv -s
```

where *MQ_INSTALLATION_PATH* refers to the location where IBM WebSphere MQ is installed.

d) Create a queue manager called QMB by entering the following command at the command prompt:

```
crtmqm QMB
```

Messages tell you that the queue manager has been created, and that the default IBM WebSphere MQ objects have been created.

e) Start the queue manager by entering the following command:

```
strmqm QMB
```

A message tells you when the queue manager has started.

f) Start MQSC by entering the following command:

```
runmqsc QMB
```

A message tells you that MQSC has started. MQSC has no command prompt.

g) Define a local queue called RECEIVER.Q by entering the following command:

```
DEFINE QLOCAL (RECEIVER.Q)
```

A message tells you the queue has been created.

h) Define a listener by entering the following command:

```
DEFINE LISTENER (LISTENER1) TRPTYPE (TCP) CONTROL (QMGR) PORT (PORT_NUMBER)
```

Where *port_number* is the name of the port the listener runs on. This number must be the same as the number used when defining your sender channel.

i) Start the listener by entering the following command:

```
START LISTENER (LISTENER1)
```

Note: Do not start the listener in the background from any shell that automatically lowers the priority of background processes.

j) Define a receiver channel by entering the following command:

```
DEFINE CHANNEL (QMA.QMB) CHLTYPE (RCVR) TRPTYPE (TCP)
```

A message tells you when the channel has been created.

k) End MQSC by typing:

```
 end
```

Some messages are displayed, followed by the command prompt.

2. On the **sender** server:

a) If the sender server is a UNIX or Linux system, log in as a user in the mqm group.

b) Set up the environment for the installation you are using by entering one of the following commands at the command prompt:

- On Windows:

```
MQ_INSTALLATION_PATH\bin\setmqenv -s
```

where *MQ_INSTALLATION_PATH* refers to the location where IBM WebSphere MQ is installed.

- On UNIX and Linux systems:

```
. MQ_INSTALLATION_PATH/bin/setmqenv -s
```

where *MQ_INSTALLATION_PATH* refers to the location where IBM WebSphere MQ is installed.

c) Create a queue manager called QMA by entering the following command at the command prompt:

```
crtmqm QMA
```

Messages tell you that the queue manager has been created, and that the default IBM WebSphere MQ objects have been created.

d) Start the queue manager, by entering the following command:

```
strmqm QMA
```

A message tells you when the queue manager has started.

e) Start MQSC by entering the following command:

```
runmqsc QMA
```

A message tells you that an MQSC session has started. MQSC had no command prompt.

f) Define a local queue called QMB (to be used as a transmission queue) by entering the following command:

```
DEFINE QLOCAL (QMB) USAGE (XMITQ)
```

A message tells you when the queue has been created.

g) Define a local definition of the remote queue with by entering the following command:

```
DEFINE QREMOTE (LOCAL.DEF.OF.REMOTE.QUEUE) RNAME (RECEIVER.Q)
RQMNAME ('QMB') XMITQ (QMB)
```

h) Define a sender channel by entering one of the following commands:

con-name is the TCP/IP address of the receiver system. If both installations are on the same system, the *con-name* is `localhost`. *port* is the port you noted in 1 b. If you do not specify a port, the default value of 1414 is used.

```
DEFINE CHANNEL (QMA.QMB) CHLTYPE (SDR)
CONNAME ('CON-NAME(PORT)') XMITQ (QMB) TRPTYPE (TCP)
```

i) Start the sender channel by entering the following command:

```
START CHANNEL(QMA.QMB)
```

The receiver channel on the receiver server starts automatically when the sender channel starts.

j) Stop MQSC by entering the following command:

```
end
```

Some messages are displayed, followed by the command prompt.

k) If the sender server is a UNIX or Linux system, change into the *MQ_INSTALLATION_PATH*/samp/bin directory. This directory contains the sample programs. *MQ_INSTALLATION_PATH* represents the high-level directory in which WebSphere MQ is installed.

l) If both the sender server and receiver server are installations on the same system, check that the queue managers have been created on different installations by entering the following command:

```
dspmq -o installation
```

If the queue managers are on the same installation, move either QMA to the sender installation or QMB to the receiver installation by using the **setmqm** command. For more information, see setmqm.

m) Put a message on the local definition of the remote queue, which in turn specifies the name of the remote queue. Enter one of the following commands:

- On Windows:

```
amqsput LOCAL.DEF.OF.REMOTE.QUEUE QMA
```

- On UNIX and Linux systems:

```
./amqsput LOCAL.DEF.OF.REMOTE.QUEUE QMA
```

A message tells you that `amqsput` has started.

n) Type some message text on one or more lines, followed by a blank line.

A message tells you that `amqsput` has ended. Your message is now on the queue and the command prompt is displayed again.

3. On the **receiver** server:

a) If your receiver server is a UNIX or Linux system, change into the *MQ_INSTALLATION_PATH*`/samp/bin` directory. This directory contains the sample programs. *MQ_INSTALLATION_PATH* represents the high-level directory in which IBM WebSphere MQ is installed.

b) Get the message from the queue on the receiver by entering one of the following commands:

- On Windows:

```
amqsget RECEIVER.Q QMB
```

- On UNIX and Linux systems:

```
./amqsget RECEIVER.Q QMB
```

The sample program starts, and your message is displayed. After a pause, the sample ends. Then the command prompt is displayed.

Results

You have now successfully verified the server-to-server installation.

Verifying a server installation using the Postcard application

You can set up and use the Postcard application to verify a local installation or a server-to-server installation.

Use the Postcard application to verify that IBM WebSphere MQ is successfully installed, and that the associated communication links are working properly.

The postcard application is Java based and requires a system with the ability to view a graphical display. You can also verify an installation using the command line, see “Verifying a server installation using the command line” on page 142.

Note: Using Postcard to verify a WebSphere MQ installation is only possible if there is one IBM WebSphere MQ installation on that box. The Default Configuration wizard will not create a default configuration if a queue manager already exists on the box. The Default Configuration wizard will run on any installation on a box but only one default configuration can be created per box. Using Postcard to verify second and subsequent installations of IBM WebSphere MQ on the same box is not possible.

Related tasks

“Verifying a local server installation using the Postcard application” on page 148
Sending messages successfully between two Postcard applications verifies a local installation.

“Verifying a server-to-server installation using the Postcard application” on page 149

You can use two instances of the Postcard application to verify that a server-to-server installation is working.

Verifying a local server installation using the Postcard application

Sending messages successfully between two Postcard applications verifies a local installation.

Before you begin

To verify that the local installation is working, you can run two instances of the Postcard application on the same server. The postcard application can send messages to, and receive messages from, other postcard applications. Successful sending and receiving of messages verifies that IBM WebSphere MQ is installed and working correctly on the server.

Note:

- If the system has multiple IBM WebSphere MQ installations, ensure that Postcard has not been run before on any installations on that server. As the default configuration can only exist on one IBM WebSphere MQ installation per system, the Default Configuration wizard and Postcard can not be used for verification of a second or any subsequent installation.
- The Postcard application has a graphical interface. To view this interface, your system requires the ability to view a graphical display.
- Before you can run the Postcard application, you must ensure that you are a member of the IBM WebSphere MQ administrators group (**mqm**).

Procedure

1. If you are verifying an installation on UNIX, Linux or Windows systems, log on as a user in group **mqm**.
2. Start the postcard application in one of the following ways:
   a) From the command line:
      i) Change the directory to *MQ_INSTALLATION_PATH*/java/bin. *MQ_INSTALLATION_PATH* represents the high-level directory in which IBM WebSphere MQ is installed.
      ii) Run the postcard application by entering one of the following commands:
      - UNIX and Linux systems:

        ```
        ./postcard
        ```

      - Windows systems:

        ```
        postcard
        ```

   b) From the IBM WebSphere MQ Explorer: On Windows and Linux systems (x86-64 platforms), you can start MQ Explorer by using the system menu, the **MQExplorer** command (preferred command), or the MQExplorer executable file. The **strmqcfg** command is still usable.
      i) If the Welcome to IBM WebSphere MQ Explorer Content view page does not show, click **IBM WebSphere MQ** in the **Navigator** view to show the Welcome page.
      ii) Click **Launch Postcard** to start the Postcard.
3. At the **Postcard - Sign On** window, type in a nickname to use to send messages within the Postcard application (for example, User1).
4. Select the queue manager to use as the mailbox:
   - If you do not have any queue managers, you are prompted to either launch the Default Configuration or close the Postcard application. Launching the Default Configuration creates a default queue manager.
   - If the only queue manager on your server is the default queue manager, this queue manager is used automatically for the postcard application. The default queue manager is created by running the Default Configuration wizard

- If you have created your own queue managers, but you have not run the Default Configuration wizard, select an appropriate queue manager from the list.
- If you have run the Default Configuration wizard and you want to use the default queue manager, but there are other queue managers on your server, select the **Advanced** check box. Then select **Use Default Configuration as mailbox**.
- If you have run the Default Configuration wizard and also created your own queue managers, and you do not want to use the default queue manager, select the **Advanced** check box. Then select **Choose queue manager as mailbox**, and then select the appropriate queue manager from the list.

When your selection is complete, click **OK** to display your first Postcard window.

5. Run a second instance of the Postcard application by following the steps used to open the first instance of the Postcard application.
6. The **Postcard - Sign On** panel is displayed again. Type in a second nickname to use to send messages within this second Postcard application
(for example, `User2`).
7. Repeat the selection of the queue manager that you want to use as the mailbox (as described in step 4).

   The queue manager you select for this second Postcard must be the same queue manager as used for the first instance of the Postcard application.
8. In the first Postcard, (User1), enter the nickname (`User2`) for the second Postcard application in the **To:** field. Because the sender and receiver are on the same server, you can leave the **On:** field blank.
9. Type a message in the **Message:** field and click **Send**.
10. The **Postcards sent and received** area of the Postcard shows details of the message. In the sending Postcard, the message is displayed as sent. In the receiving Postcard, the message is displayed as received.
11. In the receiving Postcard, (User2), double-click the message in the **Postcards sent and received** area to view it.

    When this message arrives, it verifies that IBM WebSphere MQ is correctly installed.

What to do next

Depending on your situation, you might want to do the following tasks:

- Install IBM WebSphere MQ on other servers. Follow the installation procedure for the appropriate platform. Ensure that you use the **Join Default Cluster** window in the Default Configuration wizard to add the other servers to the cluster on your first server.
- Install the IBM WebSphere MQ MQI client on other servers. See “Installing an IBM WebSphere MQ client” on page 116.
- Continue with further administration tasks, see Administering IBM WebSphere MQ .

Verifying a server-to-server installation using the Postcard application

You can use two instances of the Postcard application to verify that a server-to-server installation is working.

Before you begin

You can use the Postcard application on two servers, one instance of the Postcard application on each server, to verify that a server-to-server installation is working. Successful sending and receiving of messages verifies that IBM WebSphere MQ is successfully installed, and that communication between the two servers is working correctly.

Note:

- If the system has multiple WebSphere MQ installations, ensure that Postcard has not been run before on any installations on that server. As the default configuration can only exist on one WebSphere MQ installation per system, the Default Configuration wizard and Postcard can not be used for verification of a second or any subsequent installation.

- The two server installations must be on different systems to do a server-to-server verification using the postcard application. To verify a server-to-server installation on the same machine, you can use the command line. See "Verifying a server-to-server installation using the command line" on page 144
- Make sure that TCP/IP and IBM WebSphere MQ are installed on both servers.
- Make sure that your systems are able to view a graphical display.
- Make sure that you are a member of the IBM WebSphere MQ administrators group (**mqm**) on each server.
- Check that one of the following scenarios applies:
  - Neither server has had any queue managers created.
  - Use the Default Configuration wizard to create default queue managers on each server and link them to the default cluster. Details on how to use the Default Configuration wizard are provided in this topic.
  - Both servers have existing queue managers and these queue managers are in the same cluster.

    If your queue managers are not in the same cluster, create new queue managers on both servers. Then create a cluster, and ensure that the queue managers that you create on each server belong to that cluster.
  - You have configured channels to communicate between the two servers.

    For instructions on how to set up the channels, see "Verifying a server-to-server installation using the command line" on page 144. After you have set up the channels, follow the instructions in this topic to verify your server-to-server installation.

Procedure

1. If you are verifying an installation on UNIX or Linux systems, log on as a user in group **mqm**.
2. Start the postcard application in one of the following ways:
   a) From the command line:
      i) Change the directory to *MQ_INSTALLATION_PATH*/java/bin. *MQ_INSTALLATION_PATH* represents the high-level directory in which IBM WebSphere MQ is installed.
      ii) Run the postcard application by entering one of the following commands:
      - UNIX and Linux systems:

        ```
        ./postcard
        ```

      - Windows systems:

        ```
        postcard
        ```

   b) From the IBM WebSphere MQ Explorer: On Windows and Linux systems (x86-64 platforms), you can start MQ Explorer by using the system menu, the `MQExplorer` executable file, or the **strmqcfg** command.
      i) If the Welcome to IBM WebSphere MQ Explorer Content view page does not show, click **IBM WebSphere MQ** in the **Navigator** view to show the Welcome page.
      ii) Click **Launch Postcard** to start the Postcard.
3. At the **Postcard - Sign On** window, type a nickname to use to send messages within the Postcard application. For example, `User1` for the first server, and `User2` for the second server.
4. When you have completed the wizard, you are taken back to the **Postcard - Sign On** window.
5. Select the queue manager to use as the mailbox:
   - If you do not have any queue managers, you are prompted to either launch the Default Configuration or close the Postcard application. Work through the Default Configuration wizard. When you get to the option to join the queue manager to the default cluster, tick the check box. On the next screen:
     - For the first server, select **yes, make it the repository for the cluster**.

– For the second server, select **No another computer has already joined the cluster as a repository**. When requested, enter the location of the repository, by typing the name of the sender server.

- If the only queue manager on your server is the default queue manager, this queue manager is used automatically for the postcard application. The default queue manager is created by running the Default Configuration wizard
- If you have created your own queue managers, but you have not run the Default Configuration wizard, select an appropriate queue manager from the list.
- If you have run the Default Configuration wizard and you want to use the default queue manager, but there are other queue managers on your server, select the **Advanced** check box. Then select **Use Default Configuration as mailbox**.
- If you have run the Default Configuration wizard and also created your own queue managers, and you do not want to use the default queue manager, select the **Advanced** check box. Then select **Choose queue manager as mailbox**, and then select the appropriate queue manager from the list.

When your selection is complete, click **OK**.

6. Complete steps 1 - 5 for the second server.
7. In the Postcard on the first server:
   a) Enter the nickname (`user2`) for the Postcard application on the second server in the **To:** field.
   b) Enter the queue manager on the second server in the **On:** field.
   c) Type a message in the **Message:** field and click **Send**.
8. In the Postcard on the second server:
   a) In the **Postcards sent and received**, double-click the message marked as received to view the message from the first server.
   b) Optional: Send a postcard to the first server by adapting the instructions in step 7. You must enter details of the first server in the **To:** field and the **On:** field.

   The messages verify that IBM WebSphere MQ is correctly installed and that your communication link between the two servers is working correctly.

Verifying an IBM WebSphere MQ client installation

You can verify that your IBM WebSphere MQ MQI client installation completed successfully and that the communication link is working.

The verification procedure shows how to create a queue manager called `queue.manager.1`, a local queue called `QUEUE1`, and a server-connection channel called `CHANNEL1` on the server.

It shows how to create the client-connection channel on the IBM WebSphere MQ MQI client workstation. It then shows how to use the sample programs to put a message onto a queue, and get the message from the queue.

The example does not address any client security issues. See Setting up IBM WebSphere MQ MQI client security for details if you are concerned with IBM WebSphere MQ MQI client security issues.

The verification procedure assumes that:

- The full IBM WebSphere MQ server product has been installed on a server.
- The server installation is accessible on your network.
- The IBM WebSphere MQ MQI client software has been installed on a client system.
- The IBM WebSphere MQ sample programs have been installed.
- TCP/IP has been configured on the server and client systems. For more information, see Configuring connections between the server and client.

To begin the verification procedure using the command line, see “Verifying a client installation using the command line” on page 152.

To begin the verification procedure for the Windows and Linux operating systems when you are using the IBM WebSphere MQ Explorer, see “Verifying a client installation on Windows and Linux using IBM WebSphere MQ Explorer” on page 156.

Related tasks

“Setting up the server using the command line” on page 153
Follow these instructions to create a queue manager, queue, and channel on the server. You can then use these objects to verify the installation.

“Connecting a WebSphere MQ MQI client to a queue manager, using the MQSERVER environment variable” on page 155
When an IBM WebSphere MQ application is run on the IBM WebSphere MQ MQI client, it requires the name of the MQI channel, the communication type, and the address of the server to be used. Provide these parameters by defining the MQSERVER environment variable.

“Setting up the server using IBM WebSphere MQ Explorer” on page 157
You can use the IBM WebSphere MQ Explorer to create a queue manager, queue and server-connection channel on Windows and Linux systems.

“Setting up the client using IBM WebSphere MQ Explorer” on page 158
You can use IBM WebSphere MQ Explorer to define the client-connection if you are setting up the client and server on the same workstation on a Windows or Linux system.

“Testing communication between a client and a server” on page 159
On the IBM WebSphere MQ MQI client workstation, use the `amqsputc` sample program to put a message on the queue at the server workstation. Use the `amqsgetc` sample program to get the message from the queue back to the client.

Verifying a client installation using the command line

You can verify a client installation using the command line. On the server you create a queue manager, a local queue, a listener, and a server-connection channel. You must also apply security rules to allow the client to connect and make use of the queue defined. On the client you create a client-connection channel, and then use the sample PUT and GET programs to complete the verification procedure.

First, set up the server using the command line, using the instructions in “Setting up the server using the command line” on page 153.

Once you have set up the server, you must set up the client, using the instructions in “Connecting a WebSphere MQ MQI client to a queue manager, using the MQSERVER environment variable” on page 155.

Finally, you can test the communications between client and server, using the instructions in “Testing communication between a client and a server” on page 159.

Related concepts

“Verifying a client installation on Windows and Linux using IBM WebSphere MQ Explorer” on page 156
You can verify a client installation using the IBM WebSphere MQ Explorer on Windows and Linux. On the server, you create a queue manager, a local queue, a listener and a server-connection channel. On the client system you create a client-connection channel. Then from the command line you use the sample PUT and GET programs to complete the verification procedure.

“Installing an IBM WebSphere MQ client” on page 116

“Verifying an IBM WebSphere MQ server installation” on page 141

You can verify a local (stand-alone) installation or a server-to-server installation of the IBM WebSphere MQ server. A local installation has no communication links with other IBM WebSphere MQ installations while a server-to-server installation does have links to other installations.

Setting up the server using the command line

Follow these instructions to create a queue manager, queue, and channel on the server. You can then use these objects to verify the installation.

About this task

These instructions assume that no queue manager or other IBM WebSphere MQ objects have been defined.

IBM WebSphere MQ object definitions are case-sensitive. Any text entered as an MQSC command in lowercase is converted automatically to uppercase unless you enclose it in single quotation marks. Make sure that you type the examples exactly as shown.

Procedure

1. Create a user ID on the server that is not in the `mqm` group.
2. If your server is on a UNIX or Linux system, log in as a user in the mqm group.
3. If you are verifying an installation on a Windows, UNIX or Linux system, you must set various environment variables so that the installation can be used in the current shell. You can set the environment variables by entering one of the following commands:
   - On Windows:

     ```
     . MQ_INSTALLATION_PATH\bin\setmqenv -s
     ```

     where *MQ_INSTALLATION_PATH* refers to the location where IBM WebSphere MQ is installed.
   - On UNIX and Linux systems:

     ```
     . MQ_INSTALLATION_PATH/bin/setmqenv -s
     ```

     where *MQ_INSTALLATION_PATH* refers to the location where IBM WebSphere MQ is installed.
4. Create a queue manager called `QUEUE.MANAGER.1` by entering the following command:

   ```
   crtmqm QUEUE.MANAGER.1
   ```

   You see messages telling you that the queue manager has been created.
5. Start the queue manager by entering the following command:

   ```
   strmqm QUEUE.MANAGER.1
   ```

   A message tells you when the queue manager has started.
6. Start MQSC by entering the following command:

   ```
   runmqsc QUEUE.MANAGER.1
   ```

   A message tells you that an MQSC session has started. MQSC has no command prompt.
7. Define a local queue called `QUEUE1` by entering the following command:

   ```
   DEFINE QLOCAL (QUEUE1)
   ```

   A message tells you when the queue has been created.
8. Allow the user ID that you created in step 1 to use `QUEUE1` by entering the following command:

   ```
   SET AUTHREC PROFILE(QUEUE1) OBJTYPE(QUEUE) PRINCIPAL('non_mqm_user') AUTHADD(PUT,GET)
   ```

where *non_mqm_user* is the user ID created in step 1. A message tells you when the authorisation has been set. You must also run the following command to give the user ID authority to connect:

```
SET AUTHREC OBJTYPE(QMGR) PRINCIPAL('non_mqm_user') AUTHADD(CONNECT)
```

If this command is not run, a 2305 stop error is returned.

9. Define a server-connection channel by entering the following command:

```
DEFINE CHANNEL (CHANNEL1) CHLTYPE (SVRCONN) TRPTYPE (TCP)
```

A message tells you when the channel has been created.

10. Allow your client channel to connect to the queue manager and run under the user ID that you created in step 1, by entering the following MQSC command:

```
SET CHLAUTH(CHANNEL1) TYPE(ADDRESSMAP) ADDRESS('client_ipaddr') MCAUSER('non_mqm_user')
```

where *client_ipaddr* is the IP address of the client system, and *non_mqm_user* is the user ID created in step 1. A message tells you when the rule has been set.

11. Define a listener by entering the following command:

```
DEFINE LISTENER (LISTENER1) TRPTYPE (TCP) CONTROL (QMGR) PORT (port_number)
```

where *port_number* is the number of the port the listener is to run on. This number must be the same as the number used when defining your client-connection channel in "Installing an IBM WebSphere MQ client" on page 116; see the appropriate HP-UX and Linux sections for more information.

Note: If you omit the port parameter from the command, a default value of 1414 is used for the listener port. If you want to specify a port other than 1414, you must include the port parameter in the command, as shown.

12. Start the listener by entering the following command:

```
START LISTENER (LISTENER1)
```

13. Stop MQSC by entering:

```
end
```

You see some messages, followed by the command prompt.

What to do next

Follow the instructions to set up the client. See "Connecting a WebSphere MQ MQI client to a queue manager, using the MQSERVER environment variable" on page 155.

Related concepts

"Verifying a client installation using the command line" on page 152
You can verify a client installation using the command line. On the server you create a queue manager, a local queue, a listener, and a server-connection channel. You must also apply security rules to allow the client to connect and make use of the queue defined. On the client you create a client-connection channel, and then use the sample PUT and GET programs to complete the verification procedure.

"Verifying a client installation on Windows and Linux using IBM WebSphere MQ Explorer" on page 156
You can verify a client installation using the IBM WebSphere MQ Explorer on Windows and Linux. On the server, you create a queue manager, a local queue, a listener and a server-connection channel. On the client system you create a client-connection channel. Then from the command line you use the sample PUT and GET programs to complete the verification procedure.

"Installing an IBM WebSphere MQ client" on page 116

"Verifying an IBM WebSphere MQ server installation" on page 141

You can verify a local (stand-alone) installation or a server-to-server installation of the IBM WebSphere MQ server. A local installation has no communication links with other IBM WebSphere MQ installations while a server-to-server installation does have links to other installations.

Related tasks

"Testing communication between a client and a server" on page 159
On the IBM WebSphere MQ MQI client workstation, use the `amqsputc` sample program to put a message on the queue at the server workstation. Use the `amqsgetc` sample program to get the message from the queue back to the client.

Connecting a WebSphere MQ MQI client to a queue manager, using the MQSERVER environment variable

When an IBM WebSphere MQ application is run on the IBM WebSphere MQ MQI client, it requires the name of the MQI channel, the communication type, and the address of the server to be used. Provide these parameters by defining the MQSERVER environment variable.

Before you begin

Before you start this task, you must complete the task, "Setting up the server using the command line" on page 153, and save the following information:

- The hostname or IP address of the server and port number that you specified when creating the listener.
- The channel name of the server-connection channel.

About this task

This task describes how to connect a IBM WebSphere MQ MQI client, by defining the MQSERVER environment variable on the client.

If you are using Windows, HP Integrity NonStop Server, UNIX or Linux systems, you can give the client access to the generated client channel definition table, `amqclchl.tab` instead; see Accessing client-connection channel definitions .

Alternatively, on Windows, if Active Directory support is enabled, the client discovers the client-connection information dynamically from the Active Directory.

Procedure

1. Check the TCP/IP connection. From the client, enter one of the following commands:
   - `ping server-hostname`
   - `ping n.n.n.n`

     `n.n.n.n` represents the network address. You can set the network address in IPv4 dotted decimal form, for example, `192.0.2.0`. Alternatively, set the address in IPv6 hexadecimal form, for example `2001:0DB8:0204:acff:fe97:2c34:fde0:3485`.

   If the **ping** command fails, correct your TCP/IP configuration.
2. Set the MQSERVER environment variable. From the client, enter one of the following commands:
   a) On Windows:

   ```
   SET MQSERVER=channelName/TCP/server-address(port)
   ```

   b) On UNIX and Linux , and IBM WebSphere MQ client for HP Integrity NonStop Server OSS systems:

   ```
   export MQSERVER=channelName/TCP/'server-address(port)'
   ```

   c) On IBM WebSphere MQ client for HP Integrity NonStop Server Guardian systems:

   ```
   param MQSERVER CHANNEL1/TCP/server-address(port)
   ```

   d) On IBM i:

```
ADDENVVAR ENVVAR(MQSERVER) VALUE('channelName/TCP/server-address(port)')
```

Where:

- *channelName* is the server-connection channel name.
- *server-address* is the TCP/IP host name of the server.
- *port* is the TCP/IP port number the server is listening on.

If you do not give a port number, IBM WebSphere MQ uses the one specified in the `qm.ini` file, or the client configuration file. If no value is specified in these files, IBM WebSphere MQ uses the port number identified in the TCP/IP services file for the service name `MQSeries`. If an `MQSeries` entry in the services file does not exist, a default value of 1414 is used. It is important that the port number used by the client and the port number used by the server listener program are the same.

What to do next

Use the sample programs to test communication between the client and server; see "Testing communication between a client and a server" on page 159.

Related concepts

"Verifying a client installation on Windows and Linux using IBM WebSphere MQ Explorer" on page 156
You can verify a client installation using the IBM WebSphere MQ Explorer on Windows and Linux. On the server, you create a queue manager, a local queue, a listener and a server-connection channel. On the client system you create a client-connection channel. Then from the command line you use the sample PUT and GET programs to complete the verification procedure.

"Installing an IBM WebSphere MQ client" on page 116

"Verifying an IBM WebSphere MQ server installation" on page 141
You can verify a local (stand-alone) installation or a server-to-server installation of the IBM WebSphere MQ server. A local installation has no communication links with other IBM WebSphere MQ installations while a server-to-server installation does have links to other installations.

Related tasks

"Setting up the server using the command line" on page 153
Follow these instructions to create a queue manager, queue, and channel on the server. You can then use these objects to verify the installation.

"Testing communication between a client and a server" on page 159
On the IBM WebSphere MQ MQI client workstation, use the `amqsputc` sample program to put a message on the queue at the server workstation. Use the `amqsgetc` sample program to get the message from the queue back to the client.

Verifying a client installation on Windows and Linux using IBM WebSphere MQ Explorer

You can verify a client installation using the IBM WebSphere MQ Explorer on Windows and Linux. On the server, you create a queue manager, a local queue, a listener and a server-connection channel. On the client system you create a client-connection channel. Then from the command line you use the sample PUT and GET programs to complete the verification procedure.

To begin the verification setup, see "Setting up the server using IBM WebSphere MQ Explorer" on page 157.

Related concepts

"Verifying a client installation using the command line" on page 152
You can verify a client installation using the command line. On the server you create a queue manager, a local queue, a listener, and a server-connection channel. You must also apply security rules to allow the client to connect and make use of the queue defined. On the client you create a client-connection channel, and then use the sample PUT and GET programs to complete the verification procedure.

"Installing an IBM WebSphere MQ client" on page 116

“Verifying an IBM WebSphere MQ server installation” on page 141
You can verify a local (stand-alone) installation or a server-to-server installation of the IBM WebSphere MQ server. A local installation has no communication links with other IBM WebSphere MQ installations while a server-to-server installation does have links to other installations.

Related tasks

“Setting up the client using IBM WebSphere MQ Explorer” on page 158
You can use IBM WebSphere MQ Explorer to define the client-connection if you are setting up the client and server on the same workstation on a Windows or Linux system.

“Testing communication between a client and a server” on page 159
On the IBM WebSphere MQ MQI client workstation, use the `amqsputc` sample program to put a message on the queue at the server workstation. Use the `amqsgetc` sample program to get the message from the queue back to the client.

Setting up the server using IBM WebSphere MQ Explorer

You can use the IBM WebSphere MQ Explorer to create a queue manager, queue and server-connection channel on Windows and Linux systems.

Procedure

1. Create a queue manager:
   a) Open IBM WebSphere MQ Explorer.
   b) Right-click the folder called **Queue Managers**, select **New** > **Queue Manager**.
   c) In the first entry field, type the queue manager name, *QUEUE.MANAGER.1*, and click **Finish**.
2. Create a local queue:
   a) Expand the queue manager you have just created and right-click **queues**.
   b) Select **New** > **Local Queue**.
   c) Enter the queue name, *QUEUE1*, and click **Finish**.
3. Define the server-connection channel:
   a) Right-click **Channels**.
   b) Select **New** > **Server Connection Channel**.
   c) Enter the channel name, *CHANNEL1*, and click **Next**.
   d) In the dialog navigation pane, click **MCA** to open the MCA page.
   e) In the MCA User ID field, enter a userid that is a member of the mqm group, typically your own.
   f) Click **Finish**.
4. Run the listener.

   The listener is automatically started when the queue manager is configured. To check that the listener is running, open **Listeners** and look for `LISTENER.TCP`.

What to do next

Set up the client. See “Setting up the client using IBM WebSphere MQ Explorer” on page 158.

Related concepts

“Verifying a client installation using the command line” on page 152
You can verify a client installation using the command line. On the server you create a queue manager, a local queue, a listener, and a server-connection channel. You must also apply security rules to allow the client to connect and make use of the queue defined. On the client you create a client-connection channel, and then use the sample PUT and GET programs to complete the verification procedure.

“Installing an IBM WebSphere MQ client” on page 116

“Verifying an IBM WebSphere MQ server installation” on page 141

You can verify a local (stand-alone) installation or a server-to-server installation of the IBM WebSphere MQ server. A local installation has no communication links with other IBM WebSphere MQ installations while a server-to-server installation does have links to other installations.

Related tasks

"Setting up the client using IBM WebSphere MQ Explorer" on page 158
You can use IBM WebSphere MQ Explorer to define the client-connection if you are setting up the client and server on the same workstation on a Windows or Linux system.

"Testing communication between a client and a server" on page 159
On the IBM WebSphere MQ MQI client workstation, use the `amqsputc` sample program to put a message on the queue at the server workstation. Use the `amqsgetc` sample program to get the message from the queue back to the client.

Setting up the client using IBM WebSphere MQ Explorer

You can use IBM WebSphere MQ Explorer to define the client-connection if you are setting up the client and server on the same workstation on a Windows or Linux system.

Procedure

1. Select the queue manager, *QUEUE.MANAGER.1*
2. Open the **Channels** folder, then right click **Client Connections** > **New** > **Client-connection Channel...**
3. Enter the channel name, *CHANNEL1*, for the client connection, and click **Next**.
4. Enter the queue manager name, *QUEUE.MANAGER.1*
5. Enter the following string as the connection name:

   ```
   server-address(port)
   ```

   Where:

   - *server-address* is the TCP/IP host name of the server
   - *port* is the TCP/IP port number the server is listening on
6. Click Finish.
7. From the command line, set the MQCHLLIB environment variable:

   - For Windows clients, enter the following command, where *MQ_INSTALLATION_PATH* represents the high-level directory in which IBM WebSphere MQ is installed:

     ```
     SET MQCHLLIB=MQ_INSTALLATION_PATH\qmgrs\QUEUE!MANAGER!1\@ipcc
     ```

   - For Linux clients, enter the following command:

     ```
     export MQCHLLIB=var/mqm/qmgrs/QUEUE!MANAGER!1/@ipcc
     ```

   Note: The queue manager name contains ".". IBM WebSphere MQ creates the queue manager directory with the name, QUEUE!MANAGER!1

What to do next

Use the sample programs to test communication between the client and server. See "Testing communication between a client and a server" on page 159.

Related concepts

"Verifying a client installation using the command line" on page 152
You can verify a client installation using the command line. On the server you create a queue manager, a local queue, a listener, and a server-connection channel. You must also apply security rules to allow the client to connect and make use of the queue defined. On the client you create a client-connection channel, and then use the sample PUT and GET programs to complete the verification procedure.

"Installing an IBM WebSphere MQ client" on page 116

"Verifying an IBM WebSphere MQ server installation" on page 141

You can verify a local (stand-alone) installation or a server-to-server installation of the IBM WebSphere MQ server. A local installation has no communication links with other IBM WebSphere MQ installations while a server-to-server installation does have links to other installations.

Related tasks

"Testing communication between a client and a server" on page 159
On the IBM WebSphere MQ MQI client workstation, use the `amqsputc` sample program to put a message on the queue at the server workstation. Use the `amqsgetc` sample program to get the message from the queue back to the client.

"Setting up the server using IBM WebSphere MQ Explorer" on page 157
You can use the IBM WebSphere MQ Explorer to create a queue manager, queue and server-connection channel on Windows and Linux systems.

Testing communication between a client and a server

On the IBM WebSphere MQ MQI client workstation, use the `amqsputc` sample program to put a message on the queue at the server workstation. Use the `amqsgetc` sample program to get the message from the queue back to the client.

Before you begin

Complete the previous topics in this section:

- Set up a queue manager, channels, and queue.
- Open a command window.
- Set system environment variables.

About this task

Note that IBM WebSphere MQ object definitions are case-sensitive. Text entered as an MQSC command in lowercase is converted automatically to uppercase unless you enclose it in single quotation marks. Make sure that you type the examples exactly as shown.

Procedure

1. On UNIX and Linux systems, change into the *MQ_INSTALLATION_PATH*`/samp/bin directory`, which contains the sample programs. For IBM WebSphere MQ client for HP Integrity NonStop Server, change into the *MQ_INSTALLATION_PATH*`/opt/mqm/samp/bin` directory, which contains the sample programs. *MQ_INSTALLATION_PATH* represents the high-level directory in which IBM WebSphere MQ is installed.
2. If you are verifying an installation on a UNIX, Linux, or Windows system, you must set certain environment variables so that the installation can be used in the current shell. This step is not applicable to IBM WebSphere MQ client for HP Integrity NonStop Server. You can set the environment variables by entering one of the following commands:
   - Windows:

     ```
     MQ_INSTALLATION_PATH\bin\setmqenv -s
     ```

     where *MQ_INSTALLATION_PATH* refers to the location where IBM WebSphere MQ is installed.
   - UNIX and Linux:

     ```
     . MQ_INSTALLATION_PATH/bin/setmqenv -s
     ```

     where *MQ_INSTALLATION_PATH* refers to the location where IBM WebSphere MQ is installed.
3. Start the PUT program for `QUEUE1` on `QUEUE.MANAGER.1` by entering one of the following commands:
   - Windows:

     ```
     amqsputc QUEUE1 QUEUE.MANAGER.1
     ```

- UNIX and Linux, and IBM WebSphere MQ client for HP Integrity NonStop Server:

```
./amqsputc QUEUE1 QUEUE.MANAGER.1
```

If the command is successful, the following messages are displayed:

```
Sample AMQSPUT0 start target queue is QUEUE1
```

Tip: You might get the error, MQRC_NOT_AUTHORIZED (2035). By default, channel authentication is enabled when a queue manager is created. Channel authentication prevents privileged users accessing a queue manager as a IBM WebSphere MQ MQI client. For verifying the installation, you can either change the MCA user ID to a non-privileged user, or disable channel authentication. To disable channel authentication run the following MQSC command:

```
ALTER QMGR CHLAUTH(DISABLED)
```

When you finish the test, if you do not delete the queue manager, re-enable channel authentication:

```
ALTER QMGR CHLAUTH(ENABLED)
```

4. Type some message text, then press **Enter** twice.
   The following message is displayed:

```
Sample AMQSPUT0 end
```

   Your message is now on the queue that is on the server queue manager.
5. Start the GET program for QUEUE1 on QUEUE.MANAGER.1 by entering one of the following commands:
   - Windows:

```
amqsgetc QUEUE1 QUEUE.MANAGER.1
```

   - UNIX and Linux, and IBM WebSphere MQ client for HP Integrity NonStop Server:

```
./amqsgetc QUEUE1 QUEUE.MANAGER.1
```

   The sample program starts, and your message is displayed. After a short pause (approximately 30 seconds), the sample ends and the command prompt is displayed again.

Results

You have now successfully verified the client installation.

What to do next

1. If your server is a Windows, UNIX, or Linux system, you must set various environment variables so that the installation can be used in the current shell. You can set the environment variables by entering one of the following commands:
   - Windows:

```
MQ_INSTALLATION_PATH\bin\setmqenv -s
```

     where *MQ_INSTALLATION_PATH* refers to the location where IBM WebSphere MQ is installed.
   - UNIX and Linux systems:

```
. MQ_INSTALLATION_PATH/bin/setmqenv -s
```

     where *MQ_INSTALLATION_PATH* refers to the location where IBM WebSphere MQ is installed.
2. On the server, stop the queue manager by entering the following command:

```
endmqm QUEUE.MANAGER.1
```

3. On the server, delete the queue manager by entering the following command:

```
dltmqm QUEUE.MANAGER.1
```

Related concepts

"Verifying a client installation using the command line" on page 152
You can verify a client installation using the command line. On the server you create a queue manager, a local queue, a listener, and a server-connection channel. You must also apply security rules to allow the client to connect and make use of the queue defined. On the client you create a client-connection channel, and then use the sample PUT and GET programs to complete the verification procedure.

"Verifying a client installation on Windows and Linux using IBM WebSphere MQ Explorer" on page 156
You can verify a client installation using the IBM WebSphere MQ Explorer on Windows and Linux. On the server, you create a queue manager, a local queue, a listener and a server-connection channel. On the client system you create a client-connection channel. Then from the command line you use the sample PUT and GET programs to complete the verification procedure.

"Installing an IBM WebSphere MQ client" on page 116

"Verifying an IBM WebSphere MQ server installation" on page 141
You can verify a local (stand-alone) installation or a server-to-server installation of the IBM WebSphere MQ server. A local installation has no communication links with other IBM WebSphere MQ installations while a server-to-server installation does have links to other installations.

Related tasks

"Installing an IBM WebSphere MQ server" on page 68
After preparing your system for installation you may install IBM WebSphere MQ by following the appropriate instructions for your platform. After installation, you might want to verify your installation to check that installation has been successful.

Verifying the installation of IBM WebSphere MQ Telemetry

There are two ways to verify the installation of IBM WebSphere MQ Telemetry. Either one or both can be used, regardless of whether IBM WebSphere MQ Telemetry was installed as a custom installation of IBM WebSphere MQ, or added to an existing installation of IBM WebSphere MQ.

The two ways to verify the installation of IBM WebSphere MQ Telemetry are:

- "Verifying the installation of IBM WebSphere MQ Telemetry using IBM WebSphere MQ Explorer" on page 161
- "Verifying the installation of IBM WebSphere MQ Telemetry using the command line" on page 163

Verifying the installation of IBM WebSphere MQ Telemetry using IBM WebSphere MQ Explorer

Use the Define sample configuration wizard and the MQTT client utility in IBM WebSphere MQ Explorer to verify that the IBM WebSphere MQ Telemetry components have installed. Also check that publish/subscribe works correctly.

Before you begin

The IBM WebSphere MQ Telemetry runtime and support for IBM WebSphere MQ Explorer must be installed. The telemetry folder is part of a queue manager. To view the telemetry folder, you must start a queue manager.

Before running the define sample configuration wizard on an existing queue manager, review the information provided by the wizard about the configuration changes that are made. The changes might have implications for the configuration of the existing queue manager. Alternatively, run the sample configuration wizard on a newly created queue manager to avoid changing any security settings.

About this task

To configure IBM WebSphere MQ Telemetry there is a define sample configuration wizard that can be run from IBM WebSphere MQ Explorer. The wizard runs through a series of steps, including defining and starting the telemetry (MQXR) service, setting up the default transmission queue, and configuring a telemetry channel.

If you would prefer to do this manually, see Configuring a queue manager for telemetry on Linux and AIX. For Windows, see Configuring a queue manager for telemetry on Windows .

You can open the define sample configuration wizard from the IBM WebSphere MQ Telemetry Welcome page in IBM WebSphere MQ Explorer. The wizard determines which steps are required based on the current configuration.

For example, the following actions might be specified by the wizard:

- Define the telemetry (MQXR) service.
- Start the telemetry (MQXR) service.
- Define the telemetry transmit queue.
- Set the default transmit queue of the queue manager to `SYSTEM.MQTT.TRANSMIT.QUEUE`.

If telemetry is already configured for this queue manager, the link to open the wizard is replaced with static text. The text confirms that the sample configuration has been set up.

After the configuration has finished, you can use IBM WebSphere MQ Explorer to open the MQTT client utility. Use the MQTT client utility to verify that IBM WebSphere MQ Telemetry is set up correctly.

The following items summarize the main goals that can be achieved using the MQTT client utility:

- Validation of a basic or custom IBM WebSphere MQ Telemetry configuration by connecting, subscribing to topics and publishing messages.
- Showcases the main features of MQTT protocol.
- Provides a simple tool to aid in debugging IBM WebSphere MQ Telemetry applications.

You can find additional information within the IBM WebSphere MQ Explorer by using the **Help** menu or pressing the **F1** key.

Procedure

1. Start IBM WebSphere MQ Explorer.

   On Windows and Linux systems, you can start IBM WebSphere MQ Explorer by using the system menu, the `MQExplorer` executable file, the **`mqexplorer`** command, or the **`strmqcfg`** command.
2. Open the **Welcome to MQ Telemetry** page.
   - To use an existing queue manager, click on `IBM WebSphere MQ\Queue Managers\`*`qMgrName`*`\Telemetry` folder to open the **Welcome to MQ Telemetry** page.
   - If, for the reasons mentioned, you decide to use a new queue manager,
     a. Click **Queue Managers** > **New** > **Queue Manager**.
     b. Type `MQTTVerification` as the **Queue manager name** > **Next** > **Next** > **Next**.
     c. Change the default port in **Listen on port number**, if the port is in use > **Finish**.
     d. When the queue manager starts, click on `IBM WebSphere MQ\Queue Managers\MQTTVerification\Telemetry` folder to open the **Welcome to MQ Telemetry** page.
3. From the **Welcome to MQ Telemetry** page in IBM WebSphere MQ Explorer, click **Define sample configuration**.

   If this link is not present, and instead you see the text, "The sample configuration has been set up for this queue manager", then telemetry has already been configured. Proceed to step “6” on page 163.

If you clicked **Define sample configuration**, the page opens, and lists actions that are to be performed as part of the sample configuration.

4. Leave **Launch MQTT client utility** checked, if you want to automatically start the MQTT client utility. The check box is selected by default.
5. Click **Finish**.
6. Click **Connect**.

   In the MQTT client utility panel, ensure that the host and port names are correct.

   If you did not automatically start the MQTT client utility panel in step 4, you can start it either by using a direct link from the **Welcome to MQ Telemetry** panel, or by right-clicking a NON-SSL channel, which allows you to control the channel it runs on.

   The client history records a `Connected` event.
7. Click **Subscribe**.

   The client history records a `Subscribed` event.
8. Click **Publish**.

   The client history records a `Published` and `Received` event.

Results

If the publish/subscribe finishes successfully, the IBM WebSphere MQ Telemetry installation is verified.

If you encounter problems during the installation process, view the error log:

- On Windows, the default location for this log is, *`WebSphere MQ data directory`*`\qmgrs\`*`qMgrName`*`\mqxr`
- On AIX and Linux, the default location for this log is, `/var/mqm/qmgrs/`*`qMgrName`*`/mqxr/`

Verifying the installation of IBM WebSphere MQ Telemetry using the command line

Follow these instructions to run scripts to verify that the IBM WebSphere MQ Telemetry components have installed, and are able to publish and subscribe.

Before you begin

The telemetry (MQXR) service must be started to run the sample programs. The user ID must be a member of the mqm group. You must run the SampleMQM script first, followed by the MQTTV3Sample script to perform a publish and subscribe. The CleanupMQM sample script can be run to delete the queue manager created by the SampleMQM script. There are two commands to run the MQTTV3Sample script. These commands are shown in the Procedure section of this topic. The commands must be entered into different command lines or shell windows.

The SampleMQM script creates and uses a queue manager called MQXR_SAMPLE_QM. Therefore, do not run unaltered on a system with a MQXR_SAMPLE_QM queue manager. Any changes made might have implications for the configuration of the existing queue manager.

About this task

To perform verification on a server or device without a GUI, scripts are provided in the samples directory. The SampleMQM script performs the required steps to configure IBM WebSphere MQ Telemetry. The SampleMQM script runs through a series of steps, including defining and starting the telemetry (MQXR) service, setting up the default transmission queue, and configuring a telemetry channel.

For information about performing this manually, see Configuring a queue manager for telemetry on Linux and AIX , or Configuring a queue manager for telemetry on Windows.

The MQTTV3Sample script can then be run to validate the basic or custom IBM WebSphere MQ Telemetry configuration by connecting, subscribing to topics, and publishing messages.

The following items summarize the main goals that can be achieved using the verification scripts provided.

- Validation of a basic or custom IBM WebSphere MQ Telemetry configuration by connecting, subscribing to topics and publishing messages.
- Showcases the main features of MQTT protocol.
- Provides a simple tool to aid in debugging IBM WebSphere MQ Telemetry applications.

Procedure

1. Type the following command on a command line to run the SampleMQM script
   - On Windows, the command to run the SampleMQM script is as follows:

     ```
     MQ_INSTALLATION_PATH\mqxr\samples\SampleMQM.bat
     ```

   - On AIX and Linux, the command to run the SampleMQM script is as follows:

     ```
     MQ_INSTALLATION_PATH/mqxr/samples/SampleMQM.sh
     ```

   where *MQ_INSTALLATION_PATH* is the location in which IBM WebSphere MQ is installed.

   A queue manager called MQXR_SAMPLE_QM is created.
2. Type the following command to run the first part of the MQTTV3Sample script;
   - On Windows, on one command line, type the following command;

     ```
     MQ_INSTALLATION_PATH\mqxr\samples\RunMQTTV3Sample.bat -a subscribe
     ```

   - On AIX and Linux, in one shell window, type the following command;

     ```
     MQ_INSTALLATION_PATH/mqxr/samples/RunMQTTV3Sample.sh -a subscribe
     ```

3. Type the following command to run second part of the MQTTV3Sample script;
   - On Windows, on another command line, type the following command;

     ```
     MQ_INSTALLATION_PATH\mqxr\samples\RunMQTTV3Sample.bat -m "Hello from an MQTT v3
     application"
     ```

   - On AIX and Linux, in another shell window, type the following command;

     ```
     MQ_INSTALLATION_PATH/mqxr/samples/RunMQTTV3Sample.sh -m "Hello from an MQTT v3 application"
     ```

4. To remove the queue manager created by the SampleMQM script, you can run the CleanupMQM script using the following command;
   - On Windows, type the following command;

     ```
     MQ_INSTALLATION_PATH\mqxr\samples\CleanupMQM.bat
     ```

   - On AIX and Linux in another shell window, type the following command;

     ```
     MQ_INSTALLATION_PATH/mqxr/samples/CleanupMQM.sh
     ```

Results

The `Hello from an MQTT v3 application` message, that you typed into the second command line or window, is published by that application, and received by the application in the first window. The application in the first window shows it on the screen.

Press **Enter** in the first window to end the subscribing application.

If the scripts finish and messages can be sent and received, the IBM WebSphere MQ Telemetry installation is verified.

If you encounter any problems during the installation process, see Troubleshooting. Alternatively, you can view the Error Log.

- On Windows operating systems, the default location for the log is created in *WMQinstallation*\qmgrs*queue manager name*\mqxr
- On AIX and Linux systems, the default location for this log is created in /var/mqm/qmgrs/*queue manager name*/mqxr/

where *queue manager name* is the name of the queue manager.

Uninstalling IBM WebSphere MQ components

Information to help you uninstall components of IBM WebSphere MQ.

About this task

Refer to the following topics to uninstall components of IBM WebSphere MQ:

- Uninstalling IBM WebSphere MQ server and client
- Uninstalling IBM WebSphere MQ Advanced Message Security

Uninstalling IBM WebSphere MQ components

The topics in this section provide instructions on how to uninstall components.

Select the appropriate topic for your platform to find out how to uninstall IBM WebSphere MQ components:

- “Uninstalling IBM WebSphere MQ on AIX” on page 165
- “Uninstalling IBM WebSphere MQ on HP-UX” on page 167
- “Uninstalling IBM WebSphere MQ on Linux” on page 168
- “Uninstalling IBM WebSphere MQ on Solaris” on page 170
- “Uninstalling IBM WebSphere MQ on Windows” on page 171

Related concepts

“Installing IBM WebSphere MQ” on page 68
The topics in this section provide instructions on how to install IBM WebSphere MQ.

“Verifying an IBM WebSphere MQ installation” on page 141
The topics in this section provide instructions on how to verify a server or a client installation of IBM WebSphere MQ on Windows, UNIX and Linux, and HP Integrity NonStop Server systems.

Uninstalling IBM WebSphere MQ on AIX

On AIX, you can uninstall theIBM WebSphere MQ server or client using the System Management Interface Tool (SMIT) or the **installp** command.

Before you begin

If any updates have been applied, remove them before starting this uninstallation procedure. For more information, see AIX: Restoring the previous maintenance level on IBM WebSphere MQ Version 7.5 .

Procedure

1. Stop all IBM WebSphere MQ applications associated with the installation you are uninstalling.

2. For a server installation, end any IBM WebSphere MQ activity associated with the installation you are uninstalling:
   a) Log in as a user in the group `mqm`.
   b) Set up your environment to work with the installation you want to uninstall. Enter the following command:

      ```
      . MQ_INSTALLATION_PATH/bin/setmqenv
      ```

      where *MQ_INSTALLATION_PATH* refers to the location where IBM WebSphere MQ is installed.
   c) Display the state of all queue managers on the system. Enter the following command:

      ```
      dspmq -o installation
      ```

   d) Stop all running queue managers associated with the installation you want to uninstall. Enter the following command for each queue manager:

      ```
      endmqm QMgrName
      ```

   e) Stop any listeners associated with the queue managers. Enter the following command for each queue manager:

      ```
      endmqlsr -m QMgrName
      ```

3. Log in as root.
4. Uninstall IBM WebSphere MQ using either **installp** or **smit**. If IBM WebSphere MQ was installed in a non-default location, you must use **installp** to uninstall.
   - Uninstall using **installp** by entering one of the following commands:
     – For an installation in the default location `/usr/mqm`

       ```
       installp -u mqm
       ```

     – For an installation in a non-default location:

       ```
       installp -R usil -u mqm
       ```

       where *usil* is the path of the User Specified Install Location (USIL) specified when the product was installed.
   - Uninstall using **smit**:
     a. Select the required **smit** window using the following sequence:

        ```
        Software Installation and Maintenance
          Software Maintenance and Utilities
            Remove Installed Software
        ```

     b. List the software in the **SOFTWARE name** field:
        i) Enter **.**
        ii) Press **F4**
     c. Select the file sets to uninstall from the list (those beginning with mqm), and press **Enter**. There is an option at this stage to do a preview. Leave the option set to the default value of **Yes** to preview the file sets you are uninstalling, or select **No** to not preview these file sets.
     d. Press **Enter** on the **Remove Installed Software** panel, it asks whether you are sure, press **Enter**.

Results

You might find that certain files remain after uninstalling IBM WebSphere MQ. For example, `mqinst.ini` remains after uninstallation. This is to enable information to be reused by subsequent installs. See below for more information.

What to do next

- If the product successfully uninstalled, you can delete any files and directories contained in the `/usr/mqm` directory under the User Specified Install Location (USIL) specified in the **installp** uninstallation command.
- Use the **lslpp** command to check for other products installed in the USIL. If there are no other products installed in the USIL and you do not intend to use it again, you can delete the USIL using the **rmusil** command.
- If there are no other IBM WebSphere MQ installations on the system, and you are not planning to reinstall or migrate, you can delete the `/var/mqm` and `/etc/opt/mqm` directory trees. Deleting these directories destroys all queue managers and their associated data.

Uninstalling IBM WebSphere MQ on HP Integrity NonStop Server

On HP Integrity NonStop Server systems, you can uninstall the IBM WebSphere MQ client by using the **rm** command.

Procedure

1. Stop all IBM WebSphere MQ applications that are associated with the installation you are uninstalling.
2. Log in to the OSS as the user ID that owns the installation.
3. Use the OSS **rm** command to delete the files from the Guardian subvolume used by the installation. For example, use the following command:

   ```
   rm -rf <mqpath>/opt/mqm/bin/G/*
   ```

4. Use the OSS **rm** command to delete the OSS directory trees for the installation. For example, use the following command:

   ```
   rm -rf <mqpath>
   ```

Uninstalling IBM WebSphere MQ on HP-UX

On HP-UX, you can uninstall theIBM WebSphere MQ server or client using the **swremove** command.

Before you begin

If any updates have been applied, remove them before starting this uninstallation procedure. For more information, see HP-UX: Restoring the previous maintenance level on IBM WebSphere MQ Version 7.5 .

Procedure

1. Stop all IBM WebSphere MQ applications associated with the installation you are uninstalling.
2. For a server installation, end any IBM WebSphere MQ activity associated with the installation you are uninstalling:
   a) Log in as a user in the group `mqm`.
   b) Set up your environment to work with the installation you want to uninstall. Enter the following command:

      ```
      . MQ_INSTALLATION_PATH/bin/setmqenv
      ```

      where *MQ_INSTALLATION_PATH* refers to the location where IBM WebSphere MQ is installed.
   c) Display the state of all queue managers on the system. Enter the following command:

      ```
      dspmq -o installation
      ```

   d) Stop all running queue managers associated with the installation you want to uninstall. Enter the following command for each queue manager:

```
endmqm QMgrName
```

e) Stop any listeners associated with the queue managers. Enter the following command for each queue manager:

```
 endmqlsr -m QMgrName
```

3. Log in as root.
4. Uninstall IBM WebSphere MQ using **swremove**:
   - To uninstall all IBM WebSphere MQ components, enter the following command:

     ```
     swremove MQSERIES,l=MQ_INSTALLATION_PATH
     ```

     where *MQ_INSTALLATION_PATH* is the path where IBM WebSphere MQ is installed.
   - To uninstall selected IBM WebSphere MQ components, enter the following command:

     ```
     swremove componentname,l=MQ_INSTALLATION_PATH
     ```

     where *componentname* is the name of the component to uninstall, and *MQ_INSTALLATION_PATH* is the path where IBM WebSphere MQ is installed.

     For example, to uninstall the client and the telemetry client components, from an installation in `/opt/myLocation`, enter the following command:

     ```
     swremove MQSERIES.MQM-TXCLIENT,l=/opt/myLocation MQSERIES.MQM-CL-HPUX,l=/opt/myLocation
     ```

Results

You might find that certain files remain after uninstalling IBM WebSphere MQ. For example, `mqinst.ini` remains after uninstallation. This is to enable information to be reused by subsequent installs. See below for more information.

What to do next

- If the product successfully uninstalled, you can delete any files and directories contained in the installation directory.
- If there are no other IBM WebSphere MQ installations on the system, and you are not planning to reinstall or migrate, you can delete the `/var/mqm` and `/etc/opt/mqm` directory trees. Deleting these directories destroys all queue managers and their associated data.

Uninstalling IBM WebSphere MQ on Linux

On Linux, you can uninstall theIBM WebSphere MQ server or client using the **rpm** command.

Before you begin

If any updates have been applied, remove them before starting this uninstallation procedure. For more information, see Linux: Restoring the previous maintenance level on IBM WebSphere MQ Version 7.5 .

Procedure

1. Stop all IBM WebSphere MQ applications associated with the installation you are uninstalling.
2. For a server installation, end any IBM WebSphere MQ activity associated with the installation you are uninstalling:
   a) Log in as a user in the group `mqm`.
   b) Set up your environment to work with the installation you want to uninstall. Enter the following command:

   ```
   . MQ_INSTALLATION_PATH/bin/setmqenv -s
   ```

where *MQ_INSTALLATION_PATH* refers to the location where IBM WebSphere MQ is installed.

c) Display the state of all queue managers on the system. Enter the following command:

```
dspmq -o installation
```

d) Stop all running queue managers associated with the installation you want to uninstall. Enter the following command for each queue manager:

```
endmqm QMgrName
```

e) Stop any listeners associated with the queue managers. Enter the following command for each queue manager:

```
 endmqlsr -m QMgrName
```

3. Log in as root.
4. Uninstall IBM WebSphere MQ using the **rpm** command:
   a) On a system with a single installation:
      i) Find out the names of the packages (components) currently installed on your system, by entering the following command:

```
rpm -qa | grep MQSeries
```

      ii) Remove all the components at the same time by appending all the package names to the **rpm** command arguments. For example, to remove the runtime, Server and SDK components enter the following command:

```
rpm -ev MQSeriesRuntime MQSeriesServer MQSeriesSDK
```

   Tip: To list the packages, and uninstall them in one go, use a command like the following one:

```
rpm -qa | grep MQSeries | xargs rpm -ev
```

   b) On a system with multiple installations:
      i) Find out the names of the packages (components) currently installed on your system, by entering the following command:

```
rpm -qa | grep suffix
```

      where *suffix* is the unique name given to the packages when **crtmqpkg** was run at installation time. *suffix* is included in each of the package names that belong to a particular installation.

      ii) Remove all the components at the same time by appending all the package names to the **rpm** command arguments. For example, to remove the runtime, Server and SDK components for an installation with the *suffix* MQ71, enter the following command:

```
rpm -ev MQSeriesRuntime-MQ71 MQSeriesServer-MQ71 MQSeriesSDK-MQ71
```

Results

You might find that certain files remain after uninstalling IBM WebSphere MQ. For example, `mqinst.ini` remains after uninstallation. This is to enable information to be reused by subsequent installs. See below for more information.

What to do next

- If the product successfully uninstalled, you can delete any files and directories contained in the installation directory.

- If there are no other IBM WebSphere MQ installations on the system, and you are not planning to reinstall or migrate, you can delete the `/var/mqm` and `/etc/opt/mqm` directory trees. Deleting these directories destroys all queue managers and their associated data.

Uninstalling IBM WebSphere MQ on Solaris

On Solaris, you can uninstall theIBM WebSphere MQ server or client using the **pkgrm** command.

Before you begin

If any updates have been applied, remove them before starting this uninstallation procedure. For more information, see Solaris: Restoring the previous maintenance level on IBM WebSphere MQ Version 7.5 .

Procedure

1. Stop all IBM WebSphere MQ applications associated with the installation you are uninstalling.
2. For a server installation, end any IBM WebSphere MQ activity associated with the installation you are uninstalling:
   a) Log in as a user in the group `mqm`.
   b) Set up your environment to work with the installation you want to uninstall. Enter the following command:

   ```
   . MQ_INSTALLATION_PATH/bin/setmqenv
   ```

   where *MQ_INSTALLATION_PATH* refers to the location where IBM WebSphere MQ is installed.
   c) Display the state of all queue managers on the system. Enter the following command:

   ```
   dspmq
   ```

   d) Stop all running queue managers associated with the installation you want to uninstall. Enter the following command for each queue manager:

   ```
   endmqm QMgrName
   ```

   e) Stop any listeners associated with the queue managers. Enter the following command for each queue manager:

   ```
   endmqlsr -m QMgrName
   ```

3. Log in as root.
4. Uninstall IBM WebSphere MQ using **pkgrm**:
   a) On a system with a single installation, enter the following command:

   ```
   pkgrm mqm
   ```

   b) On a system with multiple installations:

   ```
   pkgrm mqm-suffix
   ```

   where *suffix* is the unique name given to the packages when **crtmqpkg** was run at installation time. *suffix* is included in each of the package names that belong to a particular installation. The first installation on the system does not have a *suffix*, and is uninstalled using the same method as for a single installation.

   If a package has a dependency on `mqm`, **pkgrm** returns the name of the package. Uninstall the dependent packages first.

Results

You might find that certain files remain after uninstalling IBM WebSphere MQ. For example, `mqinst.ini` remains after uninstallation. This is to enable information to be reused by subsequent installs. See below for more information.

What to do next

- If the product successfully uninstalled, you can delete any files and directories contained in the installation directory.
- If there are no other IBM WebSphere MQ installations on the system, and you are not planning to reinstall or migrate, you can delete the `/var/mqm` and `/etc/opt/mqm` directory trees. Deleting these directories destroys all queue managers and their associated data.

Uninstalling IBM WebSphere MQ on Windows

You can uninstall the IBM WebSphere MQ MQI clients and servers on Windows systems by using the control panel, the command line (**msiexec**), **MQParms**, or by using the installation media, in which case you can optionally remove queue managers as well.

Before you begin

By default, uninstall logging is not enabled on Windows. To ensure that you receive an uninstall log, carry out the following procedure:

1. In a command prompt, open the registry editor by issuing the command **regedit**.
2. Go to the appropriate registry key:
   `HKEY_LOCAL_MACHINE\Software\Policies\Microsoft\Windows\Installer`
3. Under this registry key add the following information:

   Name
   Logging

   Data type
   REG_SZ

   Value
   voicewarmup
4. Save the updated registry key.

Procedure

The first part of the procedure ensures that there are no IBM WebSphere MQ programs or processes running:

1. If you are running IBM WebSphere MQ with the Microsoft Cluster Service (MSCS), remove the queue managers from MSCS control before uninstalling IBM WebSphere MQ. Perform the following steps for each queue manager currently under MSCS control :
   a) Take the queue manager resource offline.
   b) Destroy the resource instance.
   c) Migrate the queue manager files back from shared drives. This step is shown as optional in Removing a queue manager from MSCS control. However, it is mandatory in this case.
2. Stop all IBM WebSphere MQ applications associated with the installation you are uninstalling.
3. Close all IBM WebSphere MQ Managed File Transfer agents.

   If you have a IBM WebSphere MQ Managed File Transfer agent running, close it by using the **fteStopAgent** command; see fteStopAgent (stop an IBM WebSphere MQ Managed File Transfer agent).
4. For a server installation, end all IBM WebSphere MQ activity:

a) Log in as a user in the group `mqm`.

b) Stop all running queue managers and listeners by using the IBM WebSphere MQ Explorer, or by entering the following commands:

i) Set up your environment to work with the installation you want to uninstall by entering the following command:

```
MQ_INSTALLATION_PATH\bin\setmqenv -s
```

where *MQ_INSTALLATION_PATH* is the location where IBM WebSphere MQ is installed.

ii) For each queue manager, enter the following command to stop the queue manager:

```
endmqm queue_manager_name
```

iii) For each queue manager, enter the following command to stop any listeners associated with the queue manager:

```
endmqlsr -m queue_manager_name
```

5. Stop IBM WebSphere MQ.

   To do this right-click the **WebSphere MQ** icon in the system tray, then select **Stop WebSphere MQ**.
6. Close all IBM WebSphere MQ windows.
7. Stop any monitoring service.

When all processes associated with IBM WebSphere MQ are no longer running, you can uninstall IBM WebSphere MQ:

8. Uninstall IBM WebSphere MQ by using one of the following methods:

   - Use the Windows Control Panel. This process is described in: "Uninstalling IBM WebSphere MQ using the control panel" on page 173. This method does not remove the queue manager data.
   - Use the command line by running the **msiexec** command as described in: "Uninstalling IBM WebSphere MQ using the command line" on page 173. This method does not remove the queue manager data.
   - Use the appropriate parameters with **MQParms**. This process is described in "Uninstalling IBM WebSphere MQ using MQParms" on page 175. This method does not remove the queue manager data.
   - Use the installation media, by selecting the appropriate option as described in: "Uninstalling IBM WebSphere MQ on Windows using the installation media" on page 176. The option to remove queue manager data is displayed in the **Removing Server feature** panel, if appropriate.

   If you have to cancel the uninstall process before it is finished, you might have to reconfigure IBM WebSphere MQ with the Prepare IBM WebSphere MQ wizard because the rollback of the deletion of the IBM WebSphere MQ service is unable to set the service's user account password. Use the following command to reconfigure IBM WebSphere MQ:

   ```
   MQ_INSTALLATION_PATH\bin\amqmjpse.exe -r
   ```

   For more information about the Prepare IBM WebSphere MQ wizard, see "Configuring IBM WebSphere MQ with the Prepare IBM WebSphere MQ wizard" on page 106.
9. Check the Windows event log and restart the system if necessary.

   If event ID 10005 is written to the Windows event log, you must restart the system to complete the uninstall.
10. If you are uninstalling the last or only installation of IBM WebSphere MQ, you can remove all the information about previous installations that is retained on the system, if you want to.

    Two registry values remain after uninstallation:

    - 32 bit systems:
      - `My Computer\HKEY_LOCAL_MACHINE\SOFTWARE\IBM\WebSphere MQ\LogDefaultPath`

  - `My Computer\HKEY_LOCAL_MACHINE\SOFTWARE\IBM\WebSphere MQ\WorkPath`
- 64 bit systems:
  - `My Computer\HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\IBM\WebSphere MQ\LogDefaultPath`
  - `My Computer\HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\IBM\WebSphere MQ\WorkPath`

Data folders are also left intact, located at *MQ_DATA_PATH*`\Config`, where *MQ_DATA_PATH* is the location of the IBM WebSphere MQ data directory.

If a client is installed on a system where the `LogDefaultPath` registry value remains from a previous server install, a client installation will attempt to create this directory if it does not already exist. If this behavior is not wanted, remove the LogDefaultPath registry value before installing the client.

Uninstalling IBM WebSphere MQ using the control panel

You can uninstall IBM WebSphere MQ by using the control panel to remove all currently installed features.

Before you begin

Start the uninstalling process by following the steps described in "Uninstalling IBM WebSphere MQ on Windows" on page 171.

If you no longer require the queue managers that are on the system, delete them by using the IBM WebSphere MQ Explorer or the **dltmqm** command.

Procedure

1. From the Windows taskbar, open the control panel by clicking **Start** > **Settings** > **Control Panel**, or **Start** > **Control Panel**.
2. Click **Add/Remove Programs**, or **Programs and Features**.
3. Click **IBM WebSphere MQ (*installation_name*)**, where *installation_name* is the name of the installation you want to remove.
4. Click **Remove** or **Uninstall** and click **Yes** to confirm.

   If User Account Control (UAC) is enabled, accept the Windows prompt to allow the uninstallation to run as elevated. The program then begins and runs to completion.

What to do next

Complete the steps that you started in "Uninstalling IBM WebSphere MQ on Windows" on page 171.

Uninstalling IBM WebSphere MQ using the command line

You can uninstall IBM WebSphere MQ by running the **msiexec** command from the command line to remove all currently installed features.

Before you begin

Start the uninstalling process by following the steps described in "Uninstalling IBM WebSphere MQ on Windows" on page 171.

If you no longer require the queue managers that are on the system, delete them by using the IBM WebSphere MQ Explorer or the **dltmqm** command.

About this task

To start uninstalling, use the **msiexec** command.

If you are running IBM WebSphere MQ on Windows with User Account Control (UAC) enabled, you must invoke the silent uninstallation from an elevated command prompt. Elevate a command prompt by using a right-click to start the command prompt and choose **Run as administrator**.

In all of the examples of commands shown, the variable names used are as follows:

- *installation_name* is the name of the installation you want to remove.
- *product_code* is the value shown for MSIProdCode in the output of the following command:

```
dspmqinst -n installation_name
```

  An example of a product code is {0730749B-080D-4A2E-B63D-85CF09AE0EF0}.
- *response_file* is the file that contains the [Response] stanza and the required *property=value* pairs. For details about how to create a response file, see "Creating a response file" on page 98. For details of the parameters you can specify in a response file, see Table 19 on page 93 in "Advanced installation using msiexec" on page 90. This is an example of a simple uninstallation [Response] stanza:

```
[Response] REMOVE="ALL"
```

Procedure

To uninstall all IBM WebSphere MQ features, use one of the following methods:

- Run the msiexec command with a parameter that calls a response file.

  A response file is an ASCII text file that contains the parameter values that you want to set for the uninstallation. The response file has a format similar to a Windows .ini file, and contains the stanza [Response]. This stanza contains parameters that the **msiexec** command can use, in the form of *property=value* pairs. The **msiexec** command ignores any other stanzas in the file.

  You can set which features to uninstall, and set whether to keep existing queue managers.

  To silently uninstall IBM WebSphere MQ using a response file, enter the following command:

```
msiexec /i {product_code} /l*v "c:\removal.log" /q USEINI="response_file"
INSTALLATIONNAME="installation_name"
```

- Enter one of the following commands on the command line:
  - To invoke an interactive uninstallation giving you the option to remove queue manager data (providing there are no other IBM WebSphere MQ installations remaining):

```
msiexec /i {product_code} /l*v "c:\removal.log" REMOVE="All"
INSTALLATIONNAME="installation_name"
```

    If you are running IBM WebSphere MQ on a Windows system with User Account Control (UAC) enabled, you might see **Open File - Security Warning** dialog boxes during uninstallation that list International Business Machines Limited as the publisher. Click **Run** to allow the uninstallation to continue.
  - To invoke a silent uninstallation that does not remove any queue manager data:

```
msiexec /i {product_code} /l*v "c:\removal.log" /q REMOVE="All"
INSTALLATIONNAME="installation_name"
```

  - To invoke a silent uninstallation and remove any queue manager data (only valid when removing the final server installation):

```
msiexec /i {product_code} /l*v "c:\removal.log" /q REMOVE="All" KEEPQMDATA="delete"
INSTALLATIONNAME="installation_name"
```

  - To the progress of the uninstalling process and not remove any queue manager data:

```
msiexec /x {product_code} /l*v "c:\removal.log" INSTALLATIONNAME="installation_name"
```

    If you are running IBM WebSphere MQ on a Windows system with User Account Control (UAC) enabled, you might see **Open File - Security Warning** dialog boxes during uninstallation that list

International Business Machines Limited as the publisher. Click **Run** to allow the uninstallation to continue.

– To invoke a silent uninstallation and not remove any queue manager data:

```
msiexec /x {product_code} /l*v "c:\removal.log" /q INSTALLATIONNAME="installation_name"
```

Results

After the command is entered, the command prompt immediately reappears and IBM WebSphere MQ is uninstalled as a background process. If you entered parameters to produce a log, check this file to see how the uninstallation is progressing. If the uninstallation finishes successfully, you see the message "Removal completed successfully" in the log file.

What to do next

Complete the steps that you started in “Uninstalling IBM WebSphere MQ on Windows” on page 171.

Uninstalling IBM WebSphere MQ using MQParms

You can uninstall IBM WebSphere MQ by running the **MQParms** command from the command line to remove all currently installed features.

Before you begin

Start the uninstalling process by following the steps described in “Uninstalling IBM WebSphere MQ on Windows” on page 171.

Procedure

1. Follow the instructions on the MQParms installation pages to uninstall IBM WebSphere MQ non-interactively. See: “Using the MQParms command” on page 99.
   a) Set the ADDLOCAL parameter to empty (ADDLOCAL="").
   b) Set the REMOVE parameter to "ALL" (REMOVE="ALL").
2. If you have multiple versions of IBM WebSphere MQ installed on your system, specify the product code that identifies the installation you want to remove.

   Type the following command:

   ```
   MQParms.exe parameter_file /i "{product_code}"
   ```

   where

   - *parameter_file* is the file that contains the required parameter values. If this file is not in the same folder as `MQParms.exe`, specify the full path and file name. If you do not specify a parameter file, the default is `MQParms.ini`.
   - *product_code* is the value shown for MSIProdCode in the output of the following command:

     ```
     dspmqinst -n installation_name
     ```

     where *installation_name* is the name of the installation you want to remove. An example of a product code is `{0730749B-080D-4A2E-B63D-85CF09AE0EF0}`.

What to do next

Complete the steps that you started in “Uninstalling IBM WebSphere MQ on Windows” on page 171.

Uninstalling IBM WebSphere MQ on Windows using the installation media

You can uninstall IBM WebSphere MQ by using the installation media to remove all currently installed features and optionally remove existing queue managers and their data.

Before you begin

Start the uninstalling process by following the steps described in "Uninstalling IBM WebSphere MQ on Windows" on page 171.

Procedure

1. Insert the IBM WebSphere MQ for Windows Server DVD into the DVD drive.
2. Start the installation process.
   - If autorun is enabled, the installation process starts automatically.
   - If autorun is not enabled, double-click the **Setup** icon in the root folder of the DVD to start the installation process.

   The IBM WebSphere MQ Installation Launchpad window opens.
3. Click **WebSphere MQ Installation**.
4. Click **Launch IBM WebSphere MQ Installer** and click **Next** until the IBM WebSphere MQ Program Maintenance panel is displayed with a welcome message.

   If this panel is not displayed, IBM WebSphere MQ for Windows is not currently installed.
5. Click **Maintain or upgrade an existing instance** and if there is more than one installation of IBM WebSphere MQ on the system, select which installation you want to remove. Click **Next** and in the Program Maintenance panel, click **Remove**, then **Next**.
6. If you are uninstalling the last or only server, and there are any queue managers on the system, the Removing Server feature panel is shown.

   Click one of the following options:

   - **Keep**: keep existing queue managers and their objects.
   - **Remove**: remove existing queue managers and their objects.

   Click **Next**.

   The Remove IBM WebSphere MQ panel is displayed, with a summary of the installation to be removed.
7. Click **Remove** to continue.

   If there are any messages that state that locked files are found, ensure that there are no IBM WebSphere MQ programs running; see "Uninstalling IBM WebSphere MQ on Windows" on page 171.

   When IBM WebSphere MQ has been uninstalled, a message indicates completion.
8. Click **Finish**.

What to do next

Complete the steps that you started in "Uninstalling IBM WebSphere MQ on Windows" on page 171.

Uninstalling IBM WebSphere MQ Advanced Message Security

Information provided guides you through the uninstallation process of IBM Advanced Message Security component.

Related tasks

"Uninstalling IBM WebSphere MQ Advanced Message Security on AIX" on page 177

On AIX platforms, you can remove IBM Advanced Message Security component either using SMIT or the command line.

"Uninstalling IBM WebSphere MQ Advanced Message Security on HP-UX" on page 178

Use the `swremove` command to remove IBM Advanced Message Security component on HP-UX platforms.

"Uninstalling IBM WebSphere MQ Advanced Message Security on Linux" on page 179
Use the `rpm` command to remove IBM Advanced Message Security component on Linux platforms.

"Uninstalling IBM WebSphere MQ Advanced Message Security on Windows" on page 179
You can uninstall IBM Advanced Message Security component using the GUI uninstallation wizard, or a command-line interface.

Uninstalling IBM WebSphere MQ Advanced Message Security on AIX

On AIX platforms, you can remove IBM Advanced Message Security component either using SMIT or the command line.

Procedure

1. Stop all WebSphere MQ applications associated with the installation you are uninstalling.
2. For a server installation, end any IBM WebSphere MQ activity associated with the installation you are uninstalling:
   a) Log in as a user in the group `mqm`.
   b) Set up your environment to work with the installation you want to uninstall. Enter the following command:

      ```
      . MQ_INSTALLATION_PATH/bin/setmqenv
      ```

      where `. MQ_INSTALLATION_PATH` refers to the location where WebSphere MQ is installed.
   c) Display the state of all queue managers on the system. Enter the following command:

      ```
      dspmq -o installation
      ```

   d) Stop all running queue managers associated with the installation you want to uninstall. Enter the following command for each queue manager:

      ```
      endmqm QMgrName
      ```

   e) Stop any listeners associated with the queue managers. Enter the following command for each queue manager:

      ```
      endmqlsr -m QMgrName
      ```

3. Log in as root.
4. UninstallIBM WebSphere MQ AMS component using either **installp** or **smit**. If IBM WebSphere MQ AMS component was installed in a non-default location, you must use **installp** to uninstall.
   - Uninstall using **installp** by entering one of the following commands:
     – For an installation in the default location `/usr/mqm`

       ```
       installp -u mqm.ams.rte
       ```

     – For an installation in a non-default location:

       ```
       installp -R
       usil -u mqm.ams.rte
       ```

       where *usil* is the path of the User Specified Install Location (USIL) specified when the product was installed.
   - Uninstall using **smit**:

a. Select the required **smit** window using the following sequence:

```
Software Installation and Maintenance
  Software Maintenance and Utilities
    Remove Installed Software
```

b. List the software in the **SOFTWARE name** field:

i) Enter `.`

ii) Press **F4**

c. Select the file sets to uninstall from the list (those beginning with mqm), and press **Enter**. There is an option at this stage to do a preview. Leave the option set to the default value of **Yes** to preview the file sets you are uninstalling, or select **No** to not preview these file sets.

d. Press **Enter** on the **Remove Installed Software** panel, it asks whether you are sure, press **Enter**.

Results

The Advanced Message Security component has been uninstalled.

Uninstalling IBM WebSphere MQ Advanced Message Security on HP-UX

Use the `swremove` command to remove IBM Advanced Message Security component on HP-UX platforms.

Procedure

1. Stop all WebSphere MQ applications associated with the installation you are uninstalling.
2. For a server installation, end any WebSphere MQ activity associated with the installation you are uninstalling:
   a) Log in as a user in the group `mqm`.
   b) Set up your environment to work with the installation you want to uninstall. Enter the following command:

   ```
   . MQ_INSTALLATION_PATH/bin/setmqenv
   ```

   where `. MQ_INSTALLATION_PATH` refers to the location where WebSphere MQ is installed.
   c) Display the state of all queue managers on the system. Enter the following command:

   ```
   dspmq -o installation
   ```

   d) Stop all running queue managers associated with the installation you want to uninstall. Enter the following command for each queue manager:

   ```
   endmqm QMgrName
   ```

   e) Stop any listeners associated with the queue managers. Enter the following command for each queue manager:

   ```
   endmqlsr -m QMgrName
   ```

3. Log on as root.
4. Run the following command:

```
swremove MQSERIES.MQM-AMS
```

Results

The Advanced Message Security component has been uninstalled.

Uninstalling IBM WebSphere MQ Advanced Message Security on Linux

Use the `rpm` command to remove IBM Advanced Message Security component on Linux platforms.

Procedure

1. Stop all WebSphere MQ applications associated with the installation you are uninstalling.
2. For a server installation, end any WebSphere MQ activity associated with the installation you are uninstalling:
   a) Log in as a user in the group `mqm`.
   b) Set up your environment to work with the installation you want to uninstall. Enter the following command:

   ```
   . MQ_INSTALLATION_PATH/bin/setmqenv
   ```

   where `. MQ_INSTALLATION_PATH` refers to the location where WebSphere MQ is installed.
   c) Display the state of all queue managers on the system. Enter the following command:

   ```
   dspmq -o installation
   ```

   d) Stop all running queue managers associated with the installation you want to uninstall. Enter the following command for each queue manager:

   ```
   endmqm QMgrName
   ```

   e) Stop any listeners associated with the queue managers. Enter the following command for each queue manager:

   ```
   endmqlsr -m QMgrName
   ```

3. Log in as root.
4. Run the following command:

   ```
   rpm -e <
   package_name>
   ```

   where <package_name> is one of the following:

   - MQSeriesAMS-7.5.0-0.i386.rpm
   - MQSeriesAMS-7.5.0-0.x86_64.rpm
   - MQSeriesAMS-7.5.0-0.ppc.rpm
   - MQSeriesAMS-7.5.0-0.s390.rpm

Results

The Advanced Message Security component has been uninstalled.

Uninstalling IBM WebSphere MQ Advanced Message Security on Windows

You can uninstall IBM Advanced Message Security component using the GUI uninstallation wizard, or a command-line interface.

Using the installation wizard

Procedure

1. Insert the WebSphere MQ Server DVD into the DVD-ROM drive.
2. If autorun is enabled, the installation process starts.

Otherwise, double-click the **Setup** icon in the root folder of the DVD to start the installation process.

The WebSphere MQ Installation Launchpad window is displayed.

3. Click the **WebSphere MQ Installation**.
4. Click **Launch IBM WebSphere MQ Installer**. Click **Next** until the WebSphere MQ Program Maintenance panel is displayed with a welcome message.

   If this panel is not displayed, WebSphere MQ for Windows, Version 7.5 is not installed on this machine. When presented with the option, select to remove/maintain or upgrade.
5. Select **Maintain or upgrade an existing instance**, then click **Next**.
6. If there are any existing queue managers, the Removing Server feature panel is displayed.

   Click one of the following options, then click **Next**:

   - **Keep** - keep existing queue managers and their objects.
   - **Remove** - remove existing queue managers and their objects.

   The Program Maintenance panel is displayed, with a summary of the installation to be removed.
7. Click **Modify** and click **Next**.
8. On the list of available WebSphere MQ features, click Advanced Message Security, select **Do not install this feature (remove if already intalled)** , and click **Next**.

   The Ready to modify WebSphere MQ panel appears with the summary of your changes.
9. Click **Modify** and **Next** on the following panel to continue.

Results

Selected features of Advanced Message Security component have been removed.

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This book contains information on intended programming interfaces that allow the customer to write programs to obtain the services of IBM WebSphere MQ.

However, this information may also contain diagnosis, modification, and tuning information. Diagnosis, modification and tuning information is provided to help you debug your application software.

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