Quick Beginnings for i5/OS

Contents

Welcome to WebSphere MQ for i5/OS

This section describes IBM® WebSphere® MQ for i5/OS®, Version 7.0. It explains how to plan for and install the product, and get started using it.

For latest information about WebSphere MQ for i5/OS, Version 7.0, refer also to the readme files on the product and documentation CDs, and to the WebSphere MQ Web site, WebSphere MQ.

Product naming convention

The full name of this product is `WebSphere MQ for i5/OS, Version 7 Release 0 Modification 1`, more usually expressed as **WebSphere MQ V7.0**.

In this documentation the product is generally described simply as **MQ**.

Typographical Conventions

Knowing the conventions used in this book will help you to use it more efficiently.

- **Boldface type** indicates the name of an item that you need to select.
- *Italic type* indicates new terms, book titles, or variable information that you must replace with actual values.
- `Monospace type` indicates an example (such as a command or file name) or text that is displayed on the screen.

WebSphere MQ Server for i5/OS
This section describes installing, maintaining, and uninstalling, WebSphere MQ for i5/OS, V7.0.

WebSphere MQ Java for i5/OS
This collection of topics describes installing, maintaining, and uninstalling, the WebSphere MQ classes for Java and WebSphere MQ classes for Java Message Service (JMS) on i5/OS.

WebSphere MQ documentation
Where to find information describing WebSphere MQ.

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1. WebSphere MQ Server for i5/OS

This section describes installing, maintaining, and uninstalling, WebSphere® MQ for i5/OS®, V7.0.

➤In addition to reading the information here, refer to the readme files on the product and documentation CDs, and also to the latest information, available at WebSphere MQ Library ◄

Planning to install the WebSphere MQ server for i5/OS

Preparing the system
This section describes steps you must take before installing WebSphere MQ for i5/OS, V7.0.

➤Install the WebSphere MQ Server for i5/OS◄
Install WebSphere MQ for i5/OS by installing the base MQ server in its primary language, installing samples and installing additional languages.

➤Upgrading to WebSphere MQ for i5/OS Version 7.0◄
This section describes steps you must take when upgrading to WebSphere MQ for i5/OS, V7.0.

Applying maintenance to WebSphere MQ for i5/OS

Uninstalling WebSphere MQ for IBM i, Version 7.1
There are two ways of uninstalling WebSphere MQ for IBM i, Version 7.1

Reinstalling WebSphere MQ for i5/OS
You can reinstall WebSphere MQ for i5/OS, V7.0 without losing any of your data.

Parent topic: Welcome to WebSphere MQ for i5/OS

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1.1. Planning to install the WebSphere MQ server for i5/OS

For the up to date list of supported hardware and software requirements, see WebSphere® MQ requirements on ibm.com®.

License requirements
You must have sufficient licenses for your installation. At installation the license files are stored on the system for later reference. WebSphere MQ supports ITLM.

Checking hardware and software requirements
Before you install WebSphere MQ for AIX, check that your system meets the hardware and operating system software requirements set for this product and the particular components you intend to install.

Clients
WebSphere MQ for i5/OS, V7.0 supports connection from any MQ V5.3 or later client. However, only WebSphere MQ classes for Java and WebSphere MQ classes for JMS client will run on i5/OS clients.

Language considerations

i5/OS installation libraries and directories

Delivery packaging
WebSphere MQ for i5/OS is supplied on a number of CDs.

Delivered components

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1.1.1. License requirements

You must have sufficient licenses for your installation. At installation the license files are stored on the system for later reference. WebSphere MQ supports ITLM.

Ensure that you have purchased sufficient licenses for your installation.

License files

At installation the license files are copied into directories as described in IFS root file system for MQ server, for you to be able to read at any later time.

Use the WRKSFWAGR command to view the software licenses.

ITLM

If you are using ITLM (IBM® Tivoli® License Manager) there is no need to take any special action. You can install ITLM before or after WebSphere MQ. WebSphere MQ automatically detects ITLM and makes its checks with it each time a queue manager is started, with no user interaction required.

This applies to both the WebSphere MQ server, and WebSphere MQ Java, products.

Parent topic: Planning to install the WebSphere MQ server for i5/OS

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1.1.2. Checking hardware and software requirements

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

Hardware and software requirements are set out at System Requirements for WebSphere MQ V7.0 on i5/OS on the IBM Web site.

Prerequisite software for optional components is detailed in the following sections:

SSL (Secure Sockets Layer)

In addition to the requirements for SSL detailed in the System Requirements Web page; if you want to install the 4758 PCI Cryptographic Coprocessor for System i® to speed up the SSL handshake processing, you must also install i5/OS® Cryptographic Service Provider (5722SS1 Option 35).

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1.1.3. Clients

WebSphere® MQ for i5/OS®, V7.0 supports connection from any MQ V5.3 or later client. However, only WebSphere MQ classes for Java and WebSphere MQ classes for JMS client will run on i5/OS clients.

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1.1.4. Language considerations

- Korean DBCS
  ➤If you configure your terminal emulators to 24*80 sessions you might find that EDTF incorrectly displays DBCS characters in MQ error log messages that extend beyond 80 columns.◀
  ➤To avoid this, configure your terminal emulators to use sessions capable of displaying 132 columns, for example 27*132.◀

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1.1.5. i5/OS installation libraries and directories

WebSphere® MQ for i5/OS® installs into the i5/OS library structure and also uses directories in the IFS root file system.

MQ library structure

IFS root file system for MQ server

A description of the IFS is given, and the WebSphere MQ IFS directory structure is described.

User profiles
Two important user profiles are described.

Directory names

Parent topic: Planning to install the WebSphere MQ server for i5/OS

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1.1.5.1. MQ library structure

Installation of WebSphere® MQ for i5/OS® creates the following libraries.

QMQM

The WebSphere MQ base product library.

QMQMSAMP

The WebSphere MQ samples library (if you choose to install the samples). Further samples are put in the IFS root file system, see IFS root file system for MQ server.

QMxxxx library

Each time that you create a queue manager, WebSphere MQ automatically creates an associated library, with a name like QM*xxxx* where *xxxx* is derived from the queue manager name. This library contains objects specific to the queue manager, including journals and associated receivers. By default the name of this library is derived from the name of the queue manager prefixed with the characters QM. For example, for a queue manager called TEST, the library would be called QMTEST.

Note: When you create a queue manager, you can specify the name of its library if you want to. For example:

```
CRTMQM MQMNAME(TEST) MQMLIB(TESTLIB)
```

You can use the WRKLIB command to list all the libraries that WebSphere MQ for i5/OS has created. Against the queue manager libraries, you will see the text QMGR: *QMGRNAME*. The format of the command is:

```
WRKLIB LIB(QM*)
```

These queue manager-associated libraries are retained when the product is deleted.

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1.1.5.2. IFS root file system for MQ server

A description of the IFS is given, and the WebSphere® MQ IFS directory structure is described.

The integrated file system (IFS) is a part of i5/OS® that supports stream input/output and storage management similar to personal computer and UNIX operating systems, while providing an integrating structure over all information stored in the server. When you install WebSphere MQ for i5/OS, the directories listed below are created in the IFS *root* file system.

(Use of the IFS file structure is described in the WebSphere MQ System Administration Guide).

ProdData

Overview

```
- QIBM
   '-- ProdData
           '-- mqm
                   '-- doc
                   '-- inc
                   '-- lib
                   '-- samp
                   '-- licenses
           '-- LicenseDoc
                   '-- 5724H72_V7R0M0
```

/QIBM/ProdData/mqm

Subdirectories below this contain all the product data, for example, C++ classes, trace format files, and license files. Data in this directory is deleted and replaced each time the product is installed.

/QIBM/ProdData/mqm/doc

A Command Reference for the CL commands is provided in HTML format and installed here.

/QIBM/ProdData/mqm/inc

The header files for compiling your C or C++ programs.

/QIBM/ProdData/mqm/lib

Auxiliary files used by MQ.

/QIBM/ProdData/mqm/samp

Further samples (for the others see MQ library structure).

/QIBM/ProdData/mqm/licenses

License files. The two files for each language are named like LA_*xx* and LI_*xx* where *xx* is the 2 character language identifier for each language supplied.

Also the following directory stores license agreements files:

/QIBM/ProdData/LicenseDoc/5724H72_V7R0M0

License files. The files are named like 5724H72_V7R0M0_*xx* where *xx* is the 2 or 5 character language identifier for each language supplied.

UserData

Overview

```
- QIBM
   '-- UserData
           '-- mqm
                   '-- errors
                   '-- trace
                   '-- qmgrs
                           '-- &system
                           '-- qmgrname1
                           '-- qmgrname2
                           '-- etc
```

/QIBM/UserData/mqm

> Subdirectories below this contain all user data relating to queue managers.
>
> When you install the product, an mqs.ini file is created in directory /QIBM/UserData/mqm/ (unless it is already there from a previous installation).
>
> When you create a queue manager, a qm.ini file is created in the directory /QIBM/UserData /mqm/qmgrs/*QMGRNAME*/ (where *QMGRNAME* is the name of the queue manager).
>
> Data in the above directories is retained when the product is deleted.

Parent topic: i5/OS installation libraries and directories

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1.1.5.3. User profiles

Two important user profiles are described.

When you install WebSphere® MQ for i5/OS®, V7.0, two user profiles are created:

- QMQM
- QMQMADM

These two objects are central to the correct running of WebSphere MQ for i5/OS. Do **not** alter or delete them. If you do, IBM® cannot guarantee correct behavior of your product.

If you uninstall WebSphere MQ and data, these profiles are deleted. If you uninstall WebSphere MQ only, these profiles are retained.

Parent topic: i5/OS installation libraries and directories

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1.1.5.4. Directory names

Directory names that on other WebSphere® MQ platforms begin with character:

        @ (at)

on WebSphere MQ for i5/OS® begin instead with character:

        & (ampersand)

For example:

        @SYSTEM

is on i5/OS:

        &SYSTEM

Parent topic: i5/OS installation libraries and directories

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1.1.6. Delivery packaging

WebSphere® MQ for i5/OS® is supplied on a number of CDs.

Three CDs are supplied, as follows:

1. WebSphere MQ for i5/OS, V7.0 (server), and sample programs; WebSphere MQ Java for i5/OS, V7.0 (client).
2. WebSphere MQ clients that you can use with WebSphere MQ for i5/OS server.
3. WebSphere MQ documentation (you can view or install this CD on Windows or Linux only).

For further information about using Java with WebSphere MQ, refer to WebSphere MQ Using Java.

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1.1.7. Delivered components

The components are as follows:

Server (Base)

Support to enable you to create and support your own applications. This includes the runtime component that provides support for external applications. It also includes support for client connections from WebSphere® MQ installations on other computers.

Command Reference

Help for the CL commands is provided in HTML format and installed with the product in the /QIBM/ProdData/mqm/doc directory.

Samples (Option 1)

Sample application programs. The source is supplied in the QMQMSAMP library and executables are supplied in the QMQM library.

Documentation

The full product documentation is supplied on the WebSphere MQ Documentation CD. See the main information center page for more details.

Readme file

Latest information about the product that became available after publication of this book or the full documentation. You can find the readme file in the root of the product or documentation CD. Review it before starting to install WebSphere MQ for i5/OS®.

Parent topic: Planning to install the WebSphere MQ server for i5/OS

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1.2. Preparing the system

This section describes steps you must take before installing WebSphere® MQ for i5/OS®, V7.0.

Use the following procedure only if you have never installed WebSphere MQ or MQSeries® on your system before.

Read the Readme file on the product or documentation CDs.

To run WebSphere MQ for i5/OS, V7.0, you must have the OS/400® V5R3 or later operating system installed on your machine.

If you are migrating to V7.0 from an earlier version of Websphere MQ, refer instead to Upgrading to WebSphere MQ for i5/OS Version 7.0.

Setting system values

Parent topic: WebSphere MQ Server for i5/OS

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1.2.1. Setting system values

About this task

Before installing WebSphere® MQ for i5/OS®, use the DSPSYSVAL command to check that the following system values are set to the requirements of your enterprise:

- QCCSID
- QSYSLIBL
- QALWOBJRST
- QSHRMEMCTL
- QFRCCVNRST
- QMLTTHDACN

You can change these values, if necessary, using the CHGSYSVAL command.

Procedure

1. QCCSID
   Every message has a coded-character set identifier (CCSID) in its header. The CCSID tag identifies the code page and character set of the source. For CCSIDs that are supported on the i5/OS machine, see the *i5/OS National Language Support* book.
   A queue manager obtains its CCSID from the job that created it. If the job CCSID is not a valid value in the range 1–65534, the queue manager uses the default CCSID value (65535) instead. You can change the CCSID used by the MQ queue manager by using the CL command CHGMQM.
   Note: The CCSID must be either single-byte character set (SBCS), or mixed, that is SBCS and DBCS. It must not be DBCS only.

2. QSYSLIBL
   Ensure that QSYS2 is included in the list of libraries that make up the system part of the library list. MQ uses programs in this library for data conversion and SNA LU 6.2 communication. The system value that determines the user part of the library list is QUSRLIBL.
   Note: Do not have QMQM as part of the system or user portion of the library list.

3. QALWOBJRST
   Ensure that the QALWOBJRST system value is set to *ALL or *ALWPGMADP before you install MQ. If it is set to *NONE, the installation will fail.
   After installation, reset QALWOBJRST to its original value to maintain system security.

4. QSHRMEMCTL
   Ensure that the QSHRMEMCTL system value is set to 1 (Allowed).
   A value of 1 is used in environments where pointers can be shared amongst programs between different jobs.
   MQ requires this setting to use the shared memory APIs `shmat` and `shmget` and to share its pointers across jobs.
   If it is not set correctly initialization of WebSphere MQ will fail with system return code "3401" (Permission denied), and commands such as CRTMQM, STRMQM, ENDMQM, TRCMQM will fail.

5. QFRCCVNRST
   Ensure that the QFRCCVNRST system value is set to zero (Restore all objects without conversion), or 1 (Objects with validation errors are converted), before you install MQ. If it is set otherwise the installation will fail.

6. QMLTTHDACN
   Optionally set this to control the generation of messages into joblogs. Set QMLTTHDACN to 2 to get messages generated in a joblog; set it to 1 to avoid the messages. For example, the message CPD000D is an informational message that is generated when a command that is not thread-safe is issued from a multi-threaded application. Setting QMLTTHDACN to 1 avoids the message.

Parent topic: [Preparing the system](#)

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1.3. Install the WebSphere MQ Server for i5/OS

Install WebSphere® MQ for i5/OS® by installing the base MQ server in its primary language, installing samples and installing additional languages.

About this task

You can install only one instance of WebSphere MQ for i5/OS in each partition of your server.

There are six stages to an installation. Click on the links to find the instructions for each step.

Procedure

1. Install the level (the base MQ server) including the primary language.

2. Install the samples.

3. Install any additional languages required.

4. Verify the installation.

5. Do the post installation tasks of checking for updates, checking program authorities and

starting the MQ subsystem.

6. Create the system default objects.

Results

If installation of WebSphere MQ fails, remove MQ before attempting to reinstall. To do this:

- To delete installed options, use `DLTLICPGM LICPGM(5724H72)OPTION(*ALL)`
- To delete partially-installed options, delete the QMQM library (and the QMQMSAMP libraries if necessary)
- Delete the IFS directory `/QIBM/ProdData/mqm` and its subdirectories. To delete the IFS directories, use the EDTF command, for example:

      EDTF STMF('/QIBM/ProdData')

  and select option 9 for the mqm directory.

If you want to see how the installation went in more detail, use the following commands:-

- View the log:

      DSPJOBLOG

- Review the spoolfile generated from the RSTLICPGM command

1. ❯Install base server❮
   Install the base WebSphere MQ server in its primary language and force object conversion.

2. ❯Install samples❮
   Install the WebSphere MQ samples

3. ❯Installing translated versions❮
   Install translated versions of WebSphere MQ from a choice of national-languages.

4. ❯Verify the installation❮
   How to check that your installation has been successful.

5. ❯After installation❮
   Tasks to perform after you have installed WebSphere MQ for i5/OS, and before using it.

6. ❯Creating the system-default objects❮

Parent topic: WebSphere MQ Server for i5/OS

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1.3.1. Install base server

Install the base WebSphere MQ server in its primary language and force object conversion.

Before you begin
You have completed planning the installation, obtained the installation CDs and set the system values, see Setting system values.

About this task

Install the base WebSphere MQ server and force object conversion. Object conversion migrates objects from the older to the newer version. By performing it now, rather than when an object is first used, you avoid slowing down the first use of the upgraded product.

➤After following the optional step to pre-agree the license, the **RSTLICPGM** command runs without requiring any interactive entry. Otherwise the license agreement is displayed for you to accept. See License requirements.◀

Procedure

1. Sign on to the system with a user profile that has `*ALLOBJ` special authority, for example `QSECOFR`.

2. ➤Optionally pre-agree the license terms and conditions by running the command,

       CALL PGM(QSYS/QLPACAGR) **PARM**('5724H72' 'V7R0M1' '0000' 0)

   Where the parameters of **PARM** are,

   5724H72

   The product identifier for WebSphere® MQ for i5/OS®.

   V7R0M1

   The version, release, and modification level.

   0000

   The option number for the base WebSphere MQ product.

   0

   Unused error structure.
   ◀

3. Install WebSphere MQ for i5/OS, V7.0 base product, and primary language. ➤

       RSTLICPGM LICPGM(5724H72) **DEV**(*install device*) **OPTION**(*BASE) **OUTPUT**(*PRINT)
              FRCOBJCVN(*YES *ALL)

   ◀ where the parameters of RSTLICPGM are,

   LICPGM(5724H72)

   The product identifier for WebSphere MQ for i5/OS.

   DEV(*install device*)

   The device from which the product is to be loaded, typically an optical drive, for example, `OPT01`.

   OPTION(*BASE)

   Install the base WebSphere MQ for i5/OS product.

   ➤**FRCOBJCVN(*YES *ALL)**◀

   ➤ An optional parameter. It forces object conversion. Otherwise object conversion takes place on first use and might take place at some inconvenient time. Or you can issue the `STROBJCVN` command after installation specifying the `QMQM` library as the object to convert.◀ ➤The FRCOBJCVN parameter is only required when installing WebSphere MQ on the IBM i 6.1 operating system.◀

   Unspecified parameters

   Unspecified parameters such as **RSTOBJ**(*ALL), revert to defaults. The command installs both MQ and the language files for the primary language of your computer. For installing additional languages see Installing translated versions.

Parent topic: ➤Install the WebSphere MQ Server for i5/OS◀
Next topic: ➤Install samples◀

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1.3.2. Install samples

Install the WebSphere® MQ samples

Before you begin

If you have not already done so, sign on to the system with a user profile that has `*ALLOBJ` special authority, for example `QSECOFR`.

About this task

Install the samples.

➤After following the optional step to pre-agree the license, the **RSTLICPGM** command runs without requiring any interactive input, otherwise the license agreement is displayed for you to accept. See [License requirements](#).◄

Procedure

1. Optionally pre-agree the license terms and conditions by running the command,

   CALL PGM(QSYS/QLPACAGR) **PARM**('5724H72' 'V7R0M1' '0001' 0)

   Where the parameters of **PARM** are,

   5724H72

   The product identifier for WebSphere MQ for i5/OS®.

   V7R0M1

   The version, release, and modification level.

   0001

   The option number for the samples.

   0

   Unused error structure.

2. Install the samples using the command:

   RSTLICPGM LICPGM(5724H72) **DEV**(*install device*) **OPTION**(1) **OUTPUT**(*PRINT)

   Where the parameters of RSTLICPGM are,

   LICPGM(5724H72)

   The product identifier for WebSphere MQ for i5/OS.

   DEV(*install device*)

   The device from which the product is to be loaded, typically an optical drive, for example, `OPT01`.

   OPTION(1)

   Install the samples for WebSphere MQ for i5/OS.

   OUTPUT(*PRINT)

   The output is printed with the spooled output of the job.

Parent topic: ➤[Install the WebSphere MQ Server for i5/OS](#)◄
Previous topic: ➤[Install base server](#)◄
Next topic: ➤[Installing translated versions](#)◄

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1.3.3. Installing translated versions

Install translated versions of WebSphere MQ from a choice of national-languages.

About this task

The following language versions are available for WebSphere® MQ for i5/OS®:

Table 1. National-language versions of WebSphere MQ for i5/OS

Language ID	Language
2909	Belgian English
2966	Belgian French MNCS (Multi-National Character Set)
2981	Canadian French MNCS
2975	Czech
2950	English Uppercase
2924	English Uppercase and Lowercase
2984	English US DBCS
2938	English US Uppercase DBCS
2928	French
2940	French MNCS
➤2929◄	➤German◄
➤2939◄	➤German MNCS◄
2976	Hungarian
2932	Italian
2942	Italian MNCS
2962	Japanese
2986	Korean
2978	Polish
2979	Russian
2989	Simplified Chinese
2931	Spanish

WebSphere MQ for i5/OS is installed in the language that is the primary language on your system.

You can install additional versions of the product in any of the languages shown in [Table 1](#). To do so:

Procedure

1. Sign on to the system with a user profile that has *ALLOBJ special authority

2. Issue the following command specifying the appropriate language ID:

   ```
   RSTLICPGM LICPGM(5724H72) DEV(install device) RSTOBJ(*LNG) LNG(language ID)
   ```

   This will install the commands, message file, and panel groups into the relevant QSYS library

for the language. For example, library QSYS2928 is used for French. If this QSYS29nn library does not exist, it will be created by the RSTLICPGM command.

Results

Note:
1. To run the Japanese language version of WebSphere MQ for i5/OS, the CCSID of the job must be 939 (5035) rather than 930 (5026) because WebSphere MQ uses lowercase English characters.
2. If you are installing WebSphere MQ for i5/OS onto a machine for which the primary language is not on the CD, the install program will prompt you to load a CD containing the product in that language; if, however, you have only one product CD, this means that the WebSphere MQ product has not been translated into your language. To get around this, proceed as follows:
    - Install the product in one of the supplied languages, and then add the corresponding QSYS29nn library into the *system library* list (for example using command CHGSYSLIBL). At the same time, check that there are no MQ *CMD, *MENU, or *MSGF objects in libraries higher up the library list. If some exist, then either delete these objects (because they refer to an earlier version of MQ) or reorder the System Library list (because the product has been installed in more than one of the supplied languages).

Parent topic: ❯Install the WebSphere MQ Server for i5/OS❮
Previous topic: ❯Install samples❮
Next topic: ❯Verify the installation❮

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1.3.4. Verify the installation

How to check that your installation has been successful.

Procedure

1. To ensure that the product has loaded correctly, issue the Display Software Resources (DSPSFWRSC) command and check that the licensed program `5724H72` is listed. If you have installed the base and the optional samples, you should see:

```
        Resource
         ID      Option  Feature  Description
         5724H72  *BASE    5050    WebSphere MQ for i5/OS
         5724H72  *BASE    2924    WebSphere MQ for i5/OS
         5724H72  1        5050    WebSphere MQ for i5/OS - Samples
```

2. Press F11, while viewing the Display Software Resources screen, and you will see the library and version number of the products installed:

```
        Resource                    Feature
         ID      Option  Feature  Type    Library   Release
         5724H72  *BASE    5050    *CODE   QMQM      V7R0M1
         5724H72  *BASE    2924    *LNG    QMQM      V7R0M1
         5724H72  1        5050    *CODE   QMQMSAMP  V7R0M1
```

3. If you have installed additional language versions, you will also see entries for these. For

example, if you have installed the French version, for which the language ID is 2928, you will see:

a.
```
          Resource
           ID        Option   Feature   Description
           5724H72   *BASE    2928      WebSphere MQ for i5/OS
```

b. and when you press F11:
```
          Resource                        Feature
           ID        Option   Feature   Type    Library      Release
           5724H72   *BASE    2928      *LNG    QSYS2928     V7R0M1
```

4. Use the command DSPMQMVER to check exactly what version you have installed. For V7R0M1 it will report:
```
                    Version: 7.0.1.0
```

Parent topic: ❯Install the WebSphere MQ Server for i5/OS❮
Previous topic: ❯Installing translated versions❮
Next topic: ❯After installation❮

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1.3.5. After installation

Tasks to perform after you have installed WebSphere® MQ for i5/OS®, and before using it.

About this task
When you have correctly installed WebSphere MQ for i5/OS on your system:

Procedure

1. ❯Refer to the WebSphere MQ Web site at: WebSphere MQ for the latest product information.❮

2. ❯To install and apply all fix packs that are recommended, see WebSphere MQ Support❮

3.
Some WebSphere MQ commands, for example CRTMQM (create queue manager) and DLTMQM (delete queue manager), rely on using i5/OS system commands for creating and managing objects, files, and libraries. Similarly some WebSphere MQ program code, for example a queue manager, relies on using i5/OS system programs.

To enable this, the commands and programs listed must either have *PUBLIC *USE authority, or explicit *USE authority to the WebSphere MQ user profiles QMQM and QMQMADM.

Such authority is applied automatically as part of the install process, and you do not need to apply it yourself.

However, if you encounter problems, here is how to do it manually:

a. **Commands**
Set the authorities for commands using GRTOBJAUT with an OBJTYPE(*CMD) parameter, for example:

```
GRTOBJAUT OBJ(QSYS/ADDLIBLE) OBJTYPE(*CMD) USER(QMQMADM) AUT(*USE)
```

- QSYS/ADDLIBLE
- QSYS/ADDPFM
- QSYS/CALL

- QSYS/CHGCURLIB
- QSYS/CHGJOB
- QSYS/CRTJRN
- QSYS/CRTJRNRCV
- QSYS/CRTJOBQ
- QSYS/CRTJOBD
- QSYS/CRTLIB
- QSYS/CRTMSGQ
- QSYS/CRTPF
- QSYS/CRTPGM
- QSYS/CRTSRCPF
- QSYS/DLTJRN
- QSYS/DLTJRNRCV
- QSYS/DLTLIB
- QSYS/DLTMSGQ
- QSYS/OVRPRTF
- QSYS/RCLACTGRP
- QSYS/RTVJRNE
- QSYS/RCVJRNE
- QSYS/SBMJOB

b. **Programs**

Set the authorities for programs using GRTOBJAUT with an OBJTYPE(*PGM) parameter, for example:

```
GRTOBJAUT OBJ(QSYS/QWTSETP) OBJTYPE(*PGM) USER(QMQMADM) AUT(*USE)
```

- QSYS/QWTSETP(*PGM)
- QSYS/QSYRLSPH(*PGM)
- QSYS/QSYGETPH(*PGM)

4. Where you have more than one computer and a mixture of releases of OS/400® or i5/OS, and WebSphere MQ, you must compile CL programs either on the computer they are to run on, or on one with an identical combination of releases of OS/400 or i5/OS, and WebSphere MQ. When you install later versions of WebSphere MQ, delete all WebSphere MQ commands from previous releases in any QSYSVvRrMm libraries using the QSYS/DLTCMD command.

5. If you have never installed WebSphere MQ on your system before (that is, you are not doing a migration), perform the following tasks:

    a. Make all user profiles that are to be used for creating and administering queue managers members of the group profile QMQMADM, using the command CHGUSRPRF.

    b. The default TCP channel listener in WebSphere MQ for i5/OS, V7.0 is a threaded listener, which starts threaded channels. If you want to run non-threaded TCP channel listeners in WebSphere MQ for i5/OS, V7.0, you must add an attribute to the CHANNELS stanza in the qm.ini file of each queue manager. The attribute is ThreadedListener=No. Information about qm.ini files is in the WebSphere MQ System Administration Guide.

6.

    a. Start the WebSphere MQ subsystem, by issuing the command:

    ```
    STRSBS SBSD(QMQM/QMQM)
    ```

    Note: The subsystem must be started after each IPL of the system, so you might

choose to start it as part of your system startup process.

Results
You are now ready to start using WebSphere MQ for i5/OS.

Parent topic: ➤Install the WebSphere MQ Server for i5/OS◄
Previous topic: ➤Verify the installation◄
Next topic: ➤Creating the system-default objects◄

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1.3.6. Creating the system-default objects

The system-default objects are created automatically when you issue the CRTMQM command to create a queue manager. For example:

```
CRTMQM MQMNAME(QMGRNAME) ASP(*SYSTEM)
```

You can refresh them using the STRMQM command (Warning: this command will replace any existing default objects). For example:

```
STRMQM MQMNAME(QMGRNAME) RDEFSYS(*YES)
```

Refer to the onscreen help for information about using this command.

Note: on the command `STRMQM MQMNAME(QMGRNAME) RDEFSYS(*YES)`:

- The command does not recreate the objects, it performs a CRTxxxx REPLACE(*YES) for all of the SYSTEM.* objects.
- This means that it refreshes the parameters on the objects back to their defaults. So if, for example, on the SYSTEM.DEFAULT.LOCAL.QUEUE object, TRGENBL had previously been changed to *YES, then, when the command is run, it is changed back to TRGENBL(*NO).
- If any messages exist on a queue, they are left intact, because the queues are not physically deleted.
- The contents of the SYSTEM.AUTH.DATA.QUEUE are untouched when this command is run.
- So, if the contents of this (or any other significant queue) become corrupt, it must be physically deleted and recreated either from scratch, or from a backup.

Parent topic: ➤Install the WebSphere MQ Server for i5/OS◄
Previous topic: ➤After installation◄

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➤

1.4. Upgrading to WebSphere MQ for i5/OS Version 7.0

This section describes steps you must take when upgrading to WebSphere® MQ for i5/OS®, V7.0.

There are two major types of upgrade:

- The upgrade takes place on the same machine, optionally accompanied by a hardware upgrade. This is referred to as a *slip install*.
- The upgrade takes place on a different machine. This is referred to as a *side-by-side install*.

If you had followed the recommended procedure in previous releases for installing translated versions of WebSphere MQ, then there is an additional task, Migrate translated versions, to remove the old translated versions. If you follow the procedure for installing additional languages described in Installing translated versions, the additional task to remove old language versions is no longer required.

›**Performing a slip install**‹
A slip installation upgrades WebSphere MQ for i5/OS on a computer with an earlier version is installed.

›**Performing a side-by-side install**‹
Save the queue managers on your current installation. Upgrade WebSphere MQ for i5/OS on a different computer and configuring using the saved queue managers.

›**Migrate translated versions**‹
Follow these instructions to migrate a translated version.

Parent topic: WebSphere MQ Server for i5/OS
‹

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1.4.1. Performing a slip install

›A slip installation upgrades WebSphere® MQ for i5/OS® on a computer with an earlier version is installed.‹

About this task
To perform a slip install, carry out the following tasks:

1. ›End WebSphere MQ activity‹
   End WebSphere MQ applications and connections, and remove any unwanted or indoubt messages.

2. ›Quiesce WebSphere MQ‹
   Stop all queue managers. If necessary force all queue managers to stop, tidy up shared memory and end all jobs in the QMQM subsystem.

3. ›Save WebSphere MQ data‹
   Save WebSphere MQ data after removing unwanted FDC, trace and JOB files.

4. ›Install base server‹
   Install the base WebSphere MQ server in its primary language and force object conversion.

5. ›Install samples‹
   Install the WebSphere MQ samples

6. ›Installing translated versions‹

Install translated versions of WebSphere MQ from a choice of national-languages.

7. ➤Verify the installation◄
   How to check that your installation has been successful.

8. ➤Verify the upgrade◄
   After you have verified the installation, start the WebSphere MQ subsystem, check the queue managers, and take a fresh media recovery checkpoint.

9. ➤After upgrading◄
   This lists the tasks that you perform after upgrading WebSphere MQ for i5/OS.

10. ➤After installation◄
    Tasks to perform after you have installed WebSphere MQ for i5/OS, and before using it.

Parent topic: ➤Upgrading to WebSphere MQ for i5/OS Version 7.0◄

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1.4.1.1. End WebSphere MQ activity

➤End WebSphere MQ applications and connections, and remove any unwanted or indoubt messages.◄

About this task
Before performing a slip install or side-by-side install, carry out the following procedure:

Procedure
1. Sign on to the system with a user profile that has *ALLOBJ special authority, for example QSECOFR.
2. Stop all applications that are using the existing version of WebSphere® MQ. (On WebSphere MQ verion 5.3 and later, use the command WRKMQM, option 22 "Work with queue manager jobs", to help find them).
3. End all channels for all queue managers on the system. To do this, use the WRKMQMCHL command and select option 15.
4. On each queue manager, end the command server. To do this, enter the command:

       ENDMQMCSVR MQMNAME(*QMGRNAME*) OPTION(*IMMED)

   where *QMGRNAME* is the name of the queue manager.
5. Remove any unwanted messages from your queues.
6. Resolve any in-doubt messages that are held by sender or server channels. To do this, use the WRKMQMCHST command and select option 17.
7. On each queue manager, save the latest media recovery checkpoint. To do this enter the following command:

       RCDMQMIMG OBJ(*ALL) OBJTYPE(*ALL) MQMNAME(*QMGRNAME*) DSPJRNDTA(*YES)

Parent topic: ➤Performing a slip install◄
Next topic: ➤Quiesce WebSphere MQ◄

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1.4.1.2. Quiesce WebSphere MQ

Stop all queue managers. If necessary force all queue managers to stop, tidy up shared memory and end all jobs in the QMQM subsystem.

About this task
The orderly shutdown of WebSphere® MQ is called *quiescing*. You need to quiesce WebSphere MQ to upgrade to a newer version.

To quiesce one or more queue managers:

Procedure
1. Sign on to a new interactive i5/OS® session, ensuring that you are not accessing any WebSphere MQ objects.
2. Ensure that you have:
    a. *ALLOBJ authority, or object management authority for the QMQM library.
    b. Sufficient authority to use the ENDSBS command.
3. Warn all users that you are going to stop WebSphere MQ.
4. Quiesce all queue managers:-
    a. On Version 5.3, use the ENDMQM command:

        ```
        ENDMQM MQMNAME(*ALL) OPTION(*CNTRLD) ENDCCTJOB(*YES) TIMEOUT(15)
        ```

        Where *15* is a timeout value in seconds.
        If the ENDMQM command has not completed within a reasonable period (at least 10 minutes), use the WRKMQM command to identify the queue managers that are still ending, and force each one in turn to stop by issuing:

        ```
        ENDMQM MQMNAME(QMGRNAME) OPTION(*IMMED)
        ```

        Where *QMGRNAME* is the name of the queue manager.
        Complete the tidying up of shared memory by issuing the command:

        ```
        ENDMQM MQMNAME(*ALL) OPTION(*IMMED) ENDCCTJOB(*YES) TIMEOUT(15)
        ```

    b. On Version 6.0 or later, use the ENDMQM command:

        ```
        ENDMQM MQMNAME(*ALL) OPTION(*CNTRLD) ENDCCTJOB(*YES) RCDMQMIMG(*YES)
         TIMEOUT(15)
        ```

        Where *15* is a timeout value in seconds.
        If the ENDMQM command has not completed within a reasonable period (at least 10 minutes), use the WRKMQM command to identify the queue managers that are still ending, and force each one in turn to stop by issuing:

        ```
        ENDMQM MQMNAME(QMGRNAME) OPTION(*IMMED)
        ```

        Where *QMGRNAME* is the name of the queue manager.
        Complete the tidying up of shared memory by issuing the command:

        ```
        ENDMQM MQMNAME(*ALL) OPTION(*IMMED) ENDCCTJOB(*YES) RCDMQMIMG(*NO)
         TIMEOUT(15)
        ```

5. If the command in the previous step does not complete, end the subsystem immediately by issuing:

    ```
    ENDSBS SBS(QMQM) OPTION(*IMMED)
    ```

6. If this also fails, use the operating system command ENDJOB to end all jobs in the subsystem QMQM, as described below.
   Note: Do not use ENDJOBABN unless you intend to IPL the machine before starting WebSphere MQ. Ending WebSphere MQ jobs using ENDJOBABN can lead to damaged semaphores, which in turn can prevent your queue manager from starting.

   a. If a QMGR(s) must be shut down manually, the recommended order of ending jobs (ENDJOB) is shown below (if the job exists) - wait a few minutes for AMQA* or AMQZ* jobs to tidy up.

      i. RUNMQLSR - TCP listener (multi-threaded)

      ii. AMQCLMAA - TCP listener (single-threaded)

      iii. AMQRMPPA - Channel process pooling job

      iv. RUNMQCHI - channel initiator

      v. AMQCRSTA - receiving MCA jobs

      vi. RUNMQCHL - sending MCA jobs

      vii. AMQCRS6B - LU62 receiver channel

      viii. AMQPCSEA - command server

      ix. RUNMQTRM - Application trigger monitor

      x. RUNMQDLQ - Dead letter queue handler

      xi. AMQFCXBA - Broker Worker Job

      xii. AMQFQPUB - Queued Publish/Subscribe Daemon

      xiii. AMQZMUC0 ('0' is a zero) - Utility Manager

      xiv. ➤AMQZMUF0 ('0' is a zero) - Utility Manager◀

      xv. AMQZMUR0 ('0' is a zero) - Utility Manager

      xvi. AMQZMGR0 ('0' is a zero) - Process Controller

      xvii. AMQRRMFA - cluster repository manager

      xviii. AMQZDMAA - deferred message manager

      xix. AMQALMPX - Log Manager

      xx. AMQZFUMA - Object Authority Manager

      xxi. AMQZLAS0 ('0' is a zero) - LQM agents

      xxii. AMQZLAA0 ('0' is a zero) - LQM agents

      xxiii. AMQZXMA0 ('0' is a zero) - Execution Controller

   b. Issue the following command:

      ```
      ENDMQM MQMNAME(QMGRNAME) OPTION(*IMMED)
      ```

   c. Issue the following command:

      ```
      ENDMQM MQMNAME(*ALL) OPTION(*CNTRLD) ENDCCTJOB(*YES) RCDMQMIMG(*NO)
      TIMEOUT(05)
      ```

      Where *05* is a timeout value in seconds.

   d. Manually clean up shared memory. Issue the following command:

      ```
      EDTF '/QIBM/UserData/mqm/qmgrs'
      ```

      then:

      i. Take option 5 for &SYSTEM and check that the following sub-dirs are empty: isem, esem, msem, ssem, and shmem.

      ii. Take option 5 for QMGRNAME and check that the following sub-dirs are empty :- isem, esem, msem, ssem, and shmem.

iii. Take option 5 for &ipcc in the QMGRNAME directory and check that the following sub-dirs are empty :- isem, esem, msem, ssem, and shmem.

iv. Take option 5 for &qmpersist in the QMGRNAME directory and check that the following sub-dirs are empty :- isem, esem, msem, ssem, and shmem.

v. Take option 5 for &app and check that the following sub-dirs are empty: isem, esem, msem, ssem, and shmem.

Parent topic: ❯Performing a slip install❮
Previous topic: ❯End WebSphere MQ activity❮
Next topic: ❯Save WebSphere MQ data❮

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1.4.1.3. Save WebSphere MQ data

Save WebSphere MQ data after removing unwanted FDC, trace and JOB files.

Before you begin
You need to have completed the tasks to remove unwanted and indoubt messages and quiesced WebSphere MQ.

About this task

Procedure

1. Create a save file for every queue manager library on your system. To do this, issue the command:

   ```
   CRTSAVF FILE(QGPL/queue-manager-library)
   ```

   where the *queue-manager-library* name consists of the name of the queue manager preceded by QM.

2. Save your queue manager libraries into the save files. To do this, issue the commands:

   ```
   SAVLIB LIB(queue-manager-library) DEV(*SAVF)
   SAVF(QGPL/queue-manager-library)
   ```

3. Remove all unwanted FDC data from directory:

   ```
   QIBM/UserData/mqm/errors
   ```

4. Remove old FDC files with the command:

   ```
   RMVLNK OBJLNK('/QIBM/UserData/mqm/errors/*.FDC')
   ```

   This cleans up all files with an extension of 'FDC' in the IFS.

5. Remove old JOB files with the command:

   ```
   RMVLNK OBJLNK('/QIBM/UserData/mqm/errors/*.JOB')
   ```

   This cleans up all files with an extension of 'JOB' in the IFS.

6. Remove all unwanted trace data from directory, or remove the whole directory:

   ```
   QIBM/UserData/mqm/trace
   ```

7. Remove all trace files with the command:

   ```
   RMVLNK OBJLNK('/qibm/userdata/mqm/trace/*')
   ```

8. Create a save file for MQ IFS data. To do this, issue the command:

   ```
   CRTSAVF FILE(QGPL/QMUSERDATA)
   ```

9. Save your MQ IFS data, using the command:

   ```
   SAV DEV('/QSYS.LIB/QGPL.LIB/QMUSERDATA.FILE') OBJ('/QIBM/UserData/mqm')
   ```

10. If you are going to run WebSphere® MQ on a new machine, transfer the save files to the new machine.

Parent topic: ❯Performing a slip install❮
Previous topic: ❯Quiesce WebSphere MQ❮
Next topic: ❯Install base server❮

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1.4.1.4. Install base server

Install the base WebSphere MQ server in its primary language and force object conversion.

Before you begin
You have completed planning the installation, obtained the installation CDs and set the system values, see Setting system values.

About this task
Install the base WebSphere MQ server and force object conversion. Object conversion migrates objects from the older to the newer version. By performing it now, rather than when an object is first used, you avoid slowing down the first use of the upgraded product.

❯After following the optional step to pre-agree the license, the **RSTLICPGM** command runs without requiring any interactive entry. Otherwise the license agreement is displayed for you to accept. See License requirements.❮

Procedure

1. Sign on to the system with a user profile that has *ALLOBJ special authority, for example QSECOFR.

2. ❯Optionally pre-agree the license terms and conditions by running the command,

   ```
   CALL PGM(QSYS/QLPACAGR) PARM('5724H72' 'V7R0M1' '0000' 0)
   ```

   Where the parameters of **PARM** are,

   5724H72

   The product identifier for WebSphere® MQ for i5/OS®.

   V7R0M1

   The version, release, and modification level.

   0000

   The option number for the base WebSphere MQ product.

   0

   Unused error structure.
   ❮

3. Install WebSphere MQ for i5/OS, V7.0 base product, and primary language. ❯

```
    RSTLICPGM LICPGM(5724H72) DEV(install device) OPTION(*BASE) OUTPUT(*PRINT)
            FRCOBJCVN(*YES *ALL)
```

‹ where the parameters of RSTLICPGM are,

LICPGM(5724H72)

   The product identifier for WebSphere MQ for i5/OS.

DEV(*install device*)

   The device from which the product is to be loaded, typically an optical drive, for example, `OPT01`.

OPTION(*BASE)

   Install the base WebSphere MQ for i5/OS product.

›**FRCOBJCVN(*YES *ALL)**‹

   › An optional parameter. It forces object conversion. Otherwise object conversion takes place on first use and might take place at some inconvenient time. Or you can issue the `STROBJCVN` command after installation specifying the `QMQM` library as the object to convert.‹ ›The FRCOBJCVN parameter is only required when installing WebSphere MQ on the IBM i 6.1 operating system.‹

Unspecified parameters

   Unspecified parameters such as **RSTOBJ**(*ALL), revert to defaults. The command installs both MQ and the language files for the primary language of your computer. For installing additional languages see Installing translated versions.

Parent topic: ›Performing a slip install‹
Previous topic: ›Save WebSphere MQ data‹
Next topic: ›Install samples‹

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1.4.1.5. Install samples

Install the WebSphere® MQ samples

Before you begin

If you have not already done so, sign on to the system with a user profile that has `*ALLOBJ` special authority, for example `QSECOFR`.

About this task

Install the samples.

›After following the optional step to pre-agree the license, the **RSTLICPGM** command runs without requiring any interactive input, otherwise the license agreement is displayed for you to accept. See License requirements.‹

Procedure

1. Optionally pre-agree the license terms and conditions by running the command,

```
    CALL PGM(QSYS/QLPACAGR) PARM('5724H72' 'V7R0M1' '0001' 0)
```

Where the parameters of **PARM** are,

5724H72

The product identifier for WebSphere MQ for i5/OS®.

V7R0M1

The version, release, and modification level.

0001

The option number for the samples.

0

Unused error structure.

2. Install the samples using the command:

> **RSTLICPGM LICPGM**(5724H72) **DEV**(*install device*) **OPTION**(1) **OUTPUT**(*PRINT)

Where the parameters of RSTLICPGM are,

LICPGM(5724H72)

The product identifier for WebSphere MQ for i5/OS.

DEV(*install device*)

The device from which the product is to be loaded, typically an optical drive, for example, OPT01.

OPTION(1)

Install the samples for WebSphere MQ for i5/OS.

OUTPUT(*PRINT)

The output is printed with the spooled output of the job.

Parent topic: ❯Performing a slip install❮
Previous topic: ❯Install base server❮
Next topic: ❯Installing translated versions❮

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1.4.1.6. Installing translated versions

Install translated versions of WebSphere MQ from a choice of national-languages.

About this task

The following language versions are available for WebSphere® MQ for i5/OS®:

Table 1. National-language versions of WebSphere MQ for i5/OS

Language ID	Language
2909	Belgian English
2966	Belgian French MNCS (Multi-National Character Set)
2981	Canadian French MNCS
2975	Czech
2950	English Uppercase
2924	English Uppercase and Lowercase
2984	English US DBCS
2938	English US Uppercase DBCS
2928	French
2940	French MNCS
›2929‹	›German‹
›2939‹	›German MNCS‹
2976	Hungarian
2932	Italian
2942	Italian MNCS
2962	Japanese
2986	Korean
2978	Polish
2979	Russian
2989	Simplified Chinese
2931	Spanish

Language ID	Language

WebSphere MQ for i5/OS is installed in the language that is the primary language on your system.

You can install additional versions of the product in any of the languages shown in Table 1. To do so:

Procedure

1. Sign on to the system with a user profile that has *ALLOBJ special authority

2. Issue the following command specifying the appropriate language ID:

   ```
   RSTLICPGM LICPGM(5724H72) DEV(install device) RSTOBJ(*LNG) LNG(language ID)
   ```

   This will install the commands, message file, and panel groups into the relevant QSYS library for the language. For example, library QSYS2928 is used for French. If this QSYS29nn library does not exist, it will be created by the RSTLICPGM command.

Results

Note:

1. To run the Japanese language version of WebSphere MQ for i5/OS, the CCSID of the job must be 939 (5035) rather than 930 (5026) because WebSphere MQ uses lowercase English characters.

2. If you are installing WebSphere MQ for i5/OS onto a machine for which the primary language is not on the CD, the install program will prompt you to load a CD containing the product in that language; if, however, you have only one product CD, this means that the WebSphere MQ product has not been translated into your language. To get around this, proceed as follows:
   - Install the product in one of the supplied languages, and then add the corresponding QSYS29nn library into the *system library* list (for example using command CHGSYSLIBL). At the same time, check that there are no MQ *CMD, *MENU, or *MSGF objects in libraries higher up the library list. If some exist, then either delete these objects (because they refer to an earlier version of MQ) or reorder the System Library list (because the product has been installed in more than one of the supplied languages).

Parent topic: ❯Performing a slip install❮
Previous topic: ❯Install samples❮
Next topic: ❯Verify the installation❮

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1.4.1.7. Verify the installation

How to check that your installation has been successful.

Procedure

1. To ensure that the product has loaded correctly, issue the Display Software Resources (DSPSFWRSC) command and check that the licensed program 5724H72 is listed. If you have

installed the base and the optional samples, you should see:

```
        Resource
        ID        Option   Feature   Description
        5724H72   *BASE    5050      WebSphere MQ for i5/OS
        5724H72   *BASE    2924      WebSphere MQ for i5/OS
        5724H72   1        5050      WebSphere MQ for i5/OS - Samples
```

2. Press F11, while viewing the Display Software Resources screen, and you will see the library and version number of the products installed:

```
        Resource                        Feature
        ID        Option   Feature   Type      Library    Release
        5724H72   *BASE    5050      *CODE     QMQM       V7R0M1
        5724H72   *BASE    2924      *LNG      QMQM       V7R0M1
        5724H72   1        5050      *CODE     QMQMSAMP   V7R0M1
```

3. If you have installed additional language versions, you will also see entries for these. For example, if you have installed the French version, for which the language ID is 2928, you will see:

   a.

   ```
           Resource
           ID        Option   Feature   Description
           5724H72   *BASE    2928      WebSphere MQ for i5/OS
   ```

   b. and when you press F11:

   ```
           Resource                        Feature
           ID        Option   Feature   Type    Library     Release
           5724H72   *BASE    2928      *LNG    QSYS2928    V7R0M1
   ```

4. Use the command DSPMQMVER to check exactly what version you have installed. For V7R0M1 it will report:

```
              Version: 7.0.1.0
```

Parent topic: ❯Performing a slip install❮
Previous topic: ❯Installing translated versions❮
Next topic: ❯Verify the upgrade❮

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iq10410_

1.4.1.8. Verify the upgrade

❯After you have verified the installation, start the WebSphere MQ subsystem, check the queue managers, and take a fresh media recovery checkpoint.❮

Before you begin
Before you start, make sure you have performed the steps in Verifying the installation.

About this task
To verify that you have migrated to WebSphere® MQ for i5/OS®, V7.0 successfully:

Procedure
1. Make QMQMADM either the primary or a secondary group profile for your user profile. To do

this, issue one of the following commands:

```
CHGUSRPRF USRPRF(YOUR PROFILE) GRPPRF(QMQMADM)
CHGUSRPRF USRPRF(YOUR PROFILE) SUPGRPPRF(QMQMADM)
```

2. Start the WebSphere MQ subsystem with the command:

```
STRSBS SBSD(QMQM/QMQM)
```

(If it is already running, you will get error message `CPF1010` which you can safely ignore).

3. Check that your queue managers are accessible by issuing the command:

```
WRKMQM
```

Use option 14 against each queue manager to start it.
Use option 5 against each queue manager to check its attributes.

4. You can use the other options to check your queue manager objects, for example check your queues using option 18, check your channels using option 20, and so on.

5. Take a fresh media recovery checkpoint, using the following command:

```
RCDMQMIMG OBJ(*ALL) OBJTYPE(*ALL) MQMNAME(QMGRNAME) DSPJRNDTA(*YES)
```

Where *QMGRNAME* is the name of the queue manager.

Parent topic: ❯Performing a slip install❮
Previous topic: ❯Verify the installation❮
Next topic: ❯After upgrading❮

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iq10490_

1.4.1.9. After upgrading

This lists the tasks that you perform after upgrading WebSphere® MQ for i5/OS®.

Before you begin
Satisfy yourself the upgrade has completed successfully.

Procedure
Delete the saved data in the save files in QGPL. This data was saved in Save WebSphere MQ data.
Parent topic: ❯Performing a slip install❮
Previous topic: ❯Verify the upgrade❮
Next topic: ❯After installation❮

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iq10500_

1.4.1.10. After installation

Tasks to perform after you have installed WebSphere® MQ for i5/OS®, and before using it.

About this task
When you have correctly installed WebSphere MQ for i5/OS on your system:

Procedure

1. ➤Refer to the WebSphere MQ Web site at: [WebSphere MQ](#) for the latest product information.◄

2. ➤To install and apply all fix packs that are recommended, see [WebSphere MQ Support](#)◄

3.

   Some WebSphere MQ commands, for example `CRTMQM` (create queue manager) and `DLTMQM` (delete queue manager), rely on using i5/OS system commands for creating and managing objects, files, and libraries. Similarly some WebSphere MQ program code, for example a queue manager, relies on using i5/OS system programs.

   To enable this, the commands and programs listed must either have `*PUBLIC *USE` authority, or explicit `*USE` authority to the WebSphere MQ user profiles `QMQM` and `QMQMADM`.

   Such authority is applied automatically as part of the install process, and you do not need to apply it yourself.

   However, if you encounter problems, here is how to do it manually:

   a. **Commands**

      Set the authorities for commands using GRTOBJAUT with an OBJTYPE(*CMD) parameter, for example:

      ```
      GRTOBJAUT OBJ(QSYS/ADDLIBLE) OBJTYPE(*CMD) USER(QMQMADM) AUT(*USE)
      ```

      - QSYS/ADDLIBLE
      - QSYS/ADDPFM
      - QSYS/CALL
      - QSYS/CHGCURLIB
      - QSYS/CHGJOB
      - QSYS/CRTJRN
      - QSYS/CRTJRNRCV
      - QSYS/CRTJOBQ
      - QSYS/CRTJOBD
      - QSYS/CRTLIB
      - QSYS/CRTMSGQ
      - QSYS/CRTPF
      - QSYS/CRTPGM
      - QSYS/CRTSRCPF
      - QSYS/DLTJRN
      - QSYS/DLTJRNRCV
      - QSYS/DLTLIB
      - QSYS/DLTMSGQ
      - QSYS/OVRPRTF
      - QSYS/RCLACTGRP
      - QSYS/RTVJRNE
      - QSYS/RCVJRNE
      - QSYS/SBMJOB

   b. **Programs**

      Set the authorities for programs using GRTOBJAUT with an OBJTYPE(*PGM) parameter, for example:

      ```
      GRTOBJAUT OBJ(QSYS/QWTSETP) OBJTYPE(*PGM) USER(QMQMADM) AUT(*USE)
      ```

      - QSYS/QWTSETP(*PGM)

- QSYS/QSYRLSPH(*PGM)
- QSYS/QSYGETPH(*PGM)

4. Where you have more than one computer and a mixture of releases of OS/400® or i5/OS, and WebSphere MQ, you must compile CL programs either on the computer they are to run on, or on one with an identical combination of releases of OS/400 or i5/OS, and WebSphere MQ. When you install later versions of WebSphere MQ, delete all WebSphere MQ commands from previous releases in any QSYSVvRrMm libraries using the QSYS/DLTCMD command.

5. If you have never installed WebSphere MQ on your system before (that is, you are not doing a migration), perform the following tasks:

   a. Make all user profiles that are to be used for creating and administering queue managers members of the group profile QMQMADM, using the command CHGUSRPRF.

   b. The default TCP channel listener in WebSphere MQ for i5/OS, V7.0 is a threaded listener, which starts threaded channels. If you want to run non-threaded TCP channel listeners in WebSphere MQ for i5/OS, V7.0, you must add an attribute to the CHANNELS stanza in the qm.ini file of each queue manager. The attribute is ThreadedListener=No. Information about qm.ini files is in the WebSphere MQ System Administration Guide.

6.

   a. Start the WebSphere MQ subsystem, by issuing the command:

           STRSBS SBSD(QMQM/QMQM)

      Note: The subsystem must be started after each IPL of the system, so you might choose to start it as part of your system startup process.

Results
You are now ready to start using WebSphere MQ for i5/OS.
Parent topic: ❯Performing a slip install❮
Previous topic: ❯After upgrading❮

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iq10420_

1.4.2. Performing a side-by-side install

Save the queue managers on your current installation. Upgrade WebSphere® MQ for i5/OS® on a different computer and configuring using the saved queue managers.

About this task
To perform a side-by-side install, carry out the following tasks:

1. ❯End WebSphere MQ activity❮
   End WebSphere MQ applications and connections, and remove any unwanted or indoubt messages.

2. ❯Quiesce WebSphere MQ❮
   Stop all queue managers. If necessary force all queue managers to stop, tidy up shared memory and end all jobs in the QMQM subsystem.

3. ❯Save WebSphere MQ data❮

> Save WebSphere MQ data after removing unwanted FDC, trace and JOB files.

4. **>Install base server<**
   Install the base WebSphere MQ server in its primary language and force object conversion.

5. **>Install samples<**
   Install the WebSphere MQ samples

6. **>Installing translated versions<**
   Install translated versions of WebSphere MQ from a choice of national-languages.

7. **>Verify the installation<**
   How to check that your installation has been successful.

8. **>Verify the upgrade<**
   After you have verified the installation, start the WebSphere MQ subsystem, check the queue managers, and take a fresh media recovery checkpoint.

9. **>Restoring queue managers after upgrading<**
   Complete the side-by-side upgrade by restored the saved queue managers onto the server that you have upgraded.

10. **>After upgrading<**
    This lists the tasks that you perform after upgrading WebSphere MQ for i5/OS.

11. **>After installation<**
    Tasks to perform after you have installed WebSphere MQ for i5/OS, and before using it.

Parent topic: >Upgrading to WebSphere MQ for i5/OS Version 7.0<

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iq10470_

1.4.2.1. End WebSphere MQ activity

>End WebSphere MQ applications and connections, and remove any unwanted or indoubt messages.<

About this task
Before performing a slip install or side-by-side install, carry out the following procedure:

Procedure

1. Sign on to the system with a user profile that has *ALLOBJ special authority, for example QSECOFR.

2. Stop all applications that are using the existing version of WebSphere® MQ. (On WebSphere MQ verion 5.3 and later, use the command WRKMQM, option 22 "Work with queue manager jobs", to help find them).

3. End all channels for all queue managers on the system. To do this, use the WRKMQMCHL command and select option 15.

4. On each queue manager, end the command server. To do this, enter the command:

   ```
   ENDMQMCSVR MQMNAME(QMGRNAME)  OPTION(*IMMED)
   ```

where *QMGRNAME* is the name of the queue manager.

5. Remove any unwanted messages from your queues.

6. Resolve any in-doubt messages that are held by sender or server channels. To do this, use the WRKMQMCHST command and select option 17.

7. On each queue manager, save the latest media recovery checkpoint. To do this enter the following command:

```
RCDMQMIMG OBJ(*ALL) OBJTYPE(*ALL) MQMNAME(QMGRNAME) DSPJRNDTA(*YES)
```

Parent topic: ❯Performing a side-by-side install❮
Next topic: ❯Quiesce WebSphere MQ❮

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This topic's URL:
iq10440_

1.4.2.2. Quiesce WebSphere MQ

Stop all queue managers. If necessary force all queue managers to stop, tidy up shared memory and end all jobs in the QMQM subsystem.

About this task
The orderly shutdown of WebSphere® MQ is called *quiescing*. You need to quiesce WebSphere MQ to upgrade to a newer version.

To quiesce one or more queue managers:

Procedure
1. Sign on to a new interactive i5/OS® session, ensuring that you are not accessing any WebSphere MQ objects.

2. Ensure that you have:
   a. *ALLOBJ authority, or object management authority for the QMQM library.
   b. Sufficient authority to use the ENDSBS command.

3. Warn all users that you are going to stop WebSphere MQ.

4. Quiesce all queue managers:-
   a. On Version 5.3, use the ENDMQM command:

   ```
   ENDMQM MQMNAME(*ALL) OPTION(*CNTRLD) ENDCCTJOB(*YES) TIMEOUT(15)
   ```

   Where *15* is a timeout value in seconds.
   If the ENDMQM command has not completed within a reasonable period (at least 10 minutes), use the WRKMQM command to identify the queue managers that are still ending, and force each one in turn to stop by issuing:

   ```
   ENDMQM MQMNAME(QMGRNAME) OPTION(*IMMED)
   ```

   Where *QMGRNAME* is the name of the queue manager.
   Complete the tidying up of shared memory by issuing the command:

   ```
   ENDMQM MQMNAME(*ALL) OPTION(*IMMED) ENDCCTJOB(*YES) TIMEOUT(15)
   ```

   b. On Version 6.0 or later, use the ENDMQM command:

   ```
   ENDMQM MQMNAME(*ALL) OPTION(*CNTRLD) ENDCCTJOB(*YES) RCDMQMIMG(*YES)
      TIMEOUT(15)
   ```

   Where *15* is a timeout value in seconds.
   If the ENDMQM command has not completed within a reasonable period (at least 10

minutes), use the WRKMQM command to identify the queue managers that are still ending, and force each one in turn to stop by issuing:

```
ENDMQM MQMNAME(QMGRNAME) OPTION(*IMMED)
```

Where *QMGRNAME* is the name of the queue manager.

Complete the tidying up of shared memory by issuing the command:

```
ENDMQM MQMNAME(*ALL) OPTION(*IMMED) ENDCCTJOB(*YES) RCDMQMIMG(*NO)
   TIMEOUT(15)
```

5. If the command in the previous step does not complete, end the subsystem immediately by issuing:

```
ENDSBS SBS(QMQM) OPTION(*IMMED)
```

6. If this also fails, use the operating system command ENDJOB to end all jobs in the subsystem QMQM, as described below.

Note: Do not use ENDJOBABN unless you intend to IPL the machine before starting WebSphere MQ. Ending WebSphere MQ jobs using ENDJOBABN can lead to damaged semaphores, which in turn can prevent your queue manager from starting.

     a. If a QMGR(s) must be shut down manually, the recommended order of ending jobs (ENDJOB) is shown below (if the job exists) - wait a few minutes for AMQA* or AMQZ* jobs to tidy up.

         i. RUNMQLSR - TCP listener (multi-threaded)

         ii. AMQCLMAA - TCP listener (single-threaded)

         iii. AMQRMPPA - Channel process pooling job

         iv. RUNMQCHI - channel initiator

         v. AMQCRSTA - receiving MCA jobs

         vi. RUNMQCHL - sending MCA jobs

         vii. AMQCRS6B - LU62 receiver channel

         viii. AMQPCSEA - command server

         ix. RUNMQTRM - Application trigger monitor

         x. RUNMQDLQ - Dead letter queue handler

         xi. AMQFCXBA - Broker Worker Job

         xii. AMQFQPUB - Queued Publish/Subscribe Daemon

         xiii. AMQZMUC0 ('0' is a zero) - Utility Manager

         xiv. ➤AMQZMUF0 ('0' is a zero) - Utility Manager◄

         xv. AMQZMUR0 ('0' is a zero) - Utility Manager

         xvi. AMQZMGR0 ('0' is a zero) - Process Controller

         xvii. AMQRRMFA - cluster repository manager

         xviii. AMQZDMAA - deferred message manager

         xix. AMQALMPX - Log Manager

         xx. AMQZFUMA - Object Authority Manager

         xxi. AMQZLAS0 ('0' is a zero) - LQM agents

         xxii. AMQZLAA0 ('0' is a zero) - LQM agents

         xxiii. AMQZXMA0 ('0' is a zero) - Execution Controller

     b. Issue the following command:

```
ENDMQM MQMNAME(QMGRNAME)  OPTION(*IMMED)
```

     c. Issue the following command:

```
ENDMQM MQMNAME(*ALL) OPTION(*CNTRLD) ENDCCTJOB(*YES) RCDMQMIMG(*NO)
TIMEOUT(05)
```

Where *05* is a timeout value in seconds.

d. Manually clean up shared memory. Issue the following command:

```
EDTF '/QIBM/UserData/mqm/qmgrs'
```

then:

i. Take option 5 for &SYSTEM and check that the following sub-dirs are empty: isem, esem, msem, ssem, and shmem.

ii. Take option 5 for QMGRNAME and check that the following sub-dirs are empty :- isem, esem, msem, ssem, and shmem.

iii. Take option 5 for &ipcc in the QMGRNAME directory and check that the following sub-dirs are empty :- isem, esem, msem, ssem, and shmem.

iv. Take option 5 for &qmpersist in the QMGRNAME directory and check that the following sub-dirs are empty :- isem, esem, msem, ssem, and shmem.

v. Take option 5 for &app and check that the following sub-dirs are empty: isem, esem, msem, ssem, and shmem.

Parent topic: ❯Performing a side-by-side install❮
Previous topic: ❯End WebSphere MQ activity❮
Next topic: ❯Save WebSphere MQ data❮

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This topic's URL:
iq10450_

1.4.2.3. Save WebSphere MQ data

Save WebSphere MQ data after removing unwanted FDC, trace and JOB files.

Before you begin
You need to have completed the tasks to remove unwanted and indoubt messages and quiesced WebSphere MQ.

About this task

Procedure

1. Create a save file for every queue manager library on your system. To do this, issue the command:

```
CRTSAVF FILE(QGPL/queue-manager-library)
```

where the *queue-manager-library* name consists of the name of the queue manager preceded by QM.

2. Save your queue manager libraries into the save files. To do this, issue the commands:

```
SAVLIB LIB(queue-manager-library) DEV(*SAVF)
SAVF(QGPL/queue-manager-library)
```

3. Remove all unwanted FDC data from directory:

```
QIBM/UserData/mqm/errors
```

4. Remove old FDC files with the command:

```
RMVLNK OBJLNK('/QIBM/UserData/mqm/errors/*.FDC')
```

This cleans up all files with an extension of 'FDC' in the IFS.

5. Remove old JOB files with the command:

```
RMVLNK OBJLNK('/QIBM/UserData/mqm/errors/*.JOB')
```

This cleans up all files with an extension of 'JOB' in the IFS.

6. Remove all unwanted trace data from directory, or remove the whole directory:

```
QIBM/UserData/mqm/trace
```

7. Remove all trace files with the command:

```
RMVLNK OBJLNK('/qibm/userdata/mqm/trace/*')
```

8. Create a save file for MQ IFS data. To do this, issue the command:

```
CRTSAVF FILE(QGPL/QMUSERDATA)
```

9. Save your MQ IFS data, using the command:

```
SAV DEV('/QSYS.LIB/QGPL.LIB/QMUSERDATA.FILE') OBJ('/QIBM/UserData/mqm')
```

10. If you are going to run WebSphere® MQ on a new machine, transfer the save files to the new machine.

Parent topic: ❯Performing a side-by-side install❮
Previous topic: ❯Quiesce WebSphere MQ❮
Next topic: ❯Install base server❮

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iq10442_

1.4.2.4. Install base server

Install the base WebSphere MQ server in its primary language and force object conversion.

Before you begin
You have completed planning the installation, obtained the installation CDs and set the system values, see Setting system values.

About this task
Install the base WebSphere MQ server and force object conversion. Object conversion migrates objects from the older to the newer version. By performing it now, rather than when an object is first used, you avoid slowing down the first use of the upgraded product.

❯After following the optional step to pre-agree the license, the **RSTLICPGM** command runs without requiring any interactive entry. Otherwise the license agreement is displayed for you to accept. See License requirements.❮

Procedure

1. Sign on to the system with a user profile that has *ALLOBJ special authority, for example QSECOFR.

2. ❯Optionally pre-agree the license terms and conditions by running the command,
   CALL PGM(QSYS/QLPACAGR) **PARM**('5724H72' 'V7R0M1' '0000' 0)

   Where the parameters of **PARM** are,

5724H72

>   The product identifier for WebSphere® MQ for i5/OS®.

V7R0M1

>   The version, release, and modification level.

0000

>   The option number for the base WebSphere MQ product.

0

>   Unused error structure.

>   ‹

3. Install WebSphere MQ for i5/OS, V7.0 base product, and primary language. ➤

>   RSTLICPGM **LICPGM**(5724H72) **DEV**(*install device*) **OPTION**(*BASE) **OUTPUT**(*PRINT)
>   **FRCOBJCVN**(*YES *ALL)

‹ where the parameters of RSTLICPGM are,

LICPGM(5724H72)

>   The product identifier for WebSphere MQ for i5/OS.

DEV(*install device*)

>   The device from which the product is to be loaded, typically an optical drive, for example,
>   OPT01.

OPTION(*BASE)

>   Install the base WebSphere MQ for i5/OS product.

➤**FRCOBJCVN(*YES *ALL)**‹

>   ➤ An optional parameter. It forces object conversion. Otherwise object conversion takes
>   place on first use and might take place at some inconvenient time. Or you can issue the
>   STROBJCVN command after installation specifying the QMQM library as the object to convert.‹
>   ➤The FRCOBJCVN parameter is only required when installing WebSphere MQ on the IBM i
>   6.1 operating system.‹

Unspecified parameters

>   Unspecified parameters such as **RSTOBJ**(*ALL), revert to defaults. The command installs
>   both MQ and the language files for the primary language of your computer. For installing
>   additional languages see Installing translated versions.

Parent topic: ➤Performing a side-by-side install‹
Previous topic: ➤Save WebSphere MQ data‹
Next topic: ➤Install samples‹

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iq10392_

1.4.2.5. Install samples

Install the WebSphere® MQ samples

Before you begin
If you have not already done so, sign on to the system with a user profile that has *ALLOBJ
special authority, for example QSECOFR.

About this task

Install the samples.

▶After following the optional step to pre-agree the license, the **RSTLICPGM** command runs without requiring any interactive input, otherwise the license agreement is displayed for you to accept. See <u>License requirements</u>.◀

Procedure

1. Optionally pre-agree the license terms and conditions by running the command,

   CALL PGM(QSYS/QLPACAGR) **PARM**('5724H72' 'V7R0M1' '0001' 0)

   Where the parameters of **PARM** are,

   5724H72

     The product identifier for WebSphere MQ for i5/OS®.

   V7R0M1

     The version, release, and modification level.

   0001

     The option number for the samples.

   0

     Unused error structure.

2. Install the samples using the command:

   RSTLICPGM LICPGM(5724H72) **DEV**(*install device*) **OPTION**(1) **OUTPUT**(*PRINT)

   Where the parameters of RSTLICPGM are,

   LICPGM(5724H72)

     The product identifier for WebSphere MQ for i5/OS.

   DEV(*install device*)

     The device from which the product is to be loaded, typically an optical drive, for example, OPT01.

   OPTION(1)

     Install the samples for WebSphere MQ for i5/OS.

   OUTPUT(*PRINT)

     The output is printed with the spooled output of the job.

Parent topic: ▶<u>Performing a side-by-side install</u>◀
Previous topic: ▶<u>Install base server</u>◀
Next topic: ▶<u>Installing translated versions</u>◀

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This topic's URL:
iq10394_

1.4.2.6. Installing translated versions

Install translated versions of WebSphere MQ from a choice of national-languages.

About this task

The following language versions are available for WebSphere® MQ for i5/OS®:

Table 1. National-language versions of WebSphere MQ for i5/OS

Language ID	Language
2909	Belgian English
2966	Belgian French MNCS (Multi-National Character Set)
2981	Canadian French MNCS
2975	Czech
2950	English Uppercase
2924	English Uppercase and Lowercase
2984	English US DBCS
2938	English US Uppercase DBCS
2928	French
2940	French MNCS
➤2929◀	➤German◀
➤2939◀	➤German MNCS◀
2976	Hungarian
2932	Italian
2942	Italian MNCS
2962	Japanese
2986	Korean
2978	Polish
2979	Russian
2989	Simplified Chinese
2931	Spanish

WebSphere MQ for i5/OS is installed in the language that is the primary language on your system.

You can install additional versions of the product in any of the languages shown in Table 1. To do so:

Procedure

1. Sign on to the system with a user profile that has *ALLOBJ special authority

2. Issue the following command specifying the appropriate language ID:

```
RSTLICPGM LICPGM(5724H72) DEV(install device) RSTOBJ(*LNG) LNG(language ID)
```

This will install the commands, message file, and panel groups into the relevant QSYS library for the language. For example, library QSYS2928 is used for French. If this QSYS29nn library does not exist, it will be created by the RSTLICPGM command.

Results

Note:

1. To run the Japanese language version of WebSphere MQ for i5/OS, the CCSID of the job must be 939 (5035) rather than 930 (5026) because WebSphere MQ uses lowercase English characters.

2. If you are installing WebSphere MQ for i5/OS onto a machine for which the primary language is not on the CD, the install program will prompt you to load a CD containing the product in that language; if, however, you have only one product CD, this means that the WebSphere MQ product has not been translated into your language. To get around this,

proceed as follows:

- ○ Install the product in one of the supplied languages, and then add the corresponding QSYS29nn library into the *system library* list (for example using command CHGSYSLIBL). At the same time, check that there are no MQ *CMD, *MENU, or *MSGF objects in libraries higher up the library list. If some exist, then either delete these objects (because they refer to an earlier version of MQ) or reorder the System Library list (because the product has been installed in more than one of the supplied languages).

Parent topic: ❯Performing a side-by-side install❮
Previous topic: ❯Install samples❮
Next topic: ❯Verify the installation❮

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1.4.2.7. Verify the installation

How to check that your installation has been successful.

Procedure

1. To ensure that the product has loaded correctly, issue the Display Software Resources (DSPSFWRSC) command and check that the licensed program 5724H72 is listed. If you have installed the base and the optional samples, you should see:

```
        Resource
        ID        Option   Feature  Description
        5724H72   *BASE     5050     WebSphere MQ for i5/OS
        5724H72   *BASE     2924     WebSphere MQ for i5/OS
        5724H72   1         5050     WebSphere MQ for i5/OS - Samples
```

2. Press F11, while viewing the Display Software Resources screen, and you will see the library and version number of the products installed:

```
        Resource                        Feature
        ID        Option   Feature  Type     Library    Release
        5724H72   *BASE     5050     *CODE    QMQM       V7R0M1
        5724H72   *BASE     2924     *LNG     QMQM       V7R0M1
        5724H72   1         5050     *CODE    QMQMSAMP   V7R0M1
```

3. If you have installed additional language versions, you will also see entries for these. For example, if you have installed the French version, for which the language ID is 2928, you will see:

   a.
```
        Resource
        ID        Option   Feature  Description
        5724H72   *BASE     2928     WebSphere MQ for i5/OS
```

   b. and when you press F11:
```
        Resource                        Feature
        ID        Option   Feature  Type     Library    Release
        5724H72   *BASE     2928     *LNG     QSYS2928   V7R0M1
```

4. Use the command DSPMQMVER to check exactly what version you have installed. For V7R0M1 it will report:

```
                       Version: 7.0.1.0
```

Parent topic: ❯Performing a side-by-side install❮
Previous topic: ❯Installing translated versions❮
Next topic: ❯Verify the upgrade❮

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1.4.2.8. Verify the upgrade

❯After you have verified the installation, start the WebSphere MQ subsystem, check the queue managers, and take a fresh media recovery checkpoint.❮

Before you begin

Before you start, make sure you have performed the steps in Verifying the installation.

About this task

To verify that you have migrated to WebSphere® MQ for i5/OS®, V7.0 successfully:

Procedure

1. Make QMQMADM either the primary or a secondary group profile for your user profile. To do this, issue one of the following commands:

   ```
   CHGUSRPRF USRPRF(YOUR PROFILE) GRPPRF(QMQMADM)
   CHGUSRPRF USRPRF(YOUR PROFILE) SUPGRPPRF(QMQMADM)
   ```

2. Start the WebSphere MQ subsystem with the command:

   ```
   STRSBS SBSD(QMQM/QMQM)
   ```

   (If it is already running, you will get error message CPF1010 which you can safely ignore).

3. Check that your queue managers are accessible by issuing the command:

   ```
   WRKMQM
   ```

   Use option 14 against each queue manager to start it.
   Use option 5 against each queue manager to check its attributes.

4. You can use the other options to check your queue manager objects, for example check your queues using option 18, check your channels using option 20, and so on.

5. Take a fresh media recovery checkpoint, using the following command:

   ```
   RCDMQMIMG OBJ(*ALL) OBJTYPE(*ALL) MQMNAME(QMGRNAME) DSPJRNDTA(*YES)
   ```

   Where *QMGRNAME* is the name of the queue manager.

Parent topic: ❯Performing a side-by-side install❮
Previous topic: ❯Verify the installation❮
Next topic: ❯Restoring queue managers after upgrading❮

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1.4.2.9. Restoring queue managers after upgrading

Complete the side-by-side upgrade by restored the saved queue managers onto the server that you have upgraded.

Before you begin

You have saved your queue manager data, see End WebSphere MQ activity, and installed and verified the upgrade.

About this task

Transfer the queue manager data, and journal receivers, onto the server that has been upgraded.

Procedure

1. Restore the queue manager libraries for every queue manager, using the command:

   ```
   RSTLIB SAVLIB(queue-manager-library) DEV(*SAVF) (*PRINT)
   SAVF(QGPL/queue-manager-library)
   ```

   where the *queue-manager-library* name consists of the name of the queue manager preceded by QM.

2. Restore the WebSphere® MQ IFS data, using the command:

   ```
   RST DEV('/QSYS.LIB/QGPL.LIB/QMUSERDATA.FILE') OBJ('/QIBM/UserData/mqm') (*PRIN
   ```

3. To associate the journal receivers, issue the command WRKJRN on the journal AMQAJRN in each queue manager library, by pressing *PF4* and selecting option 9.

4. If you want to set up your work management environment, job descriptions, and pools, see the WebSphere MQ for i5/OS System Administration Guide for guidance. Otherwise, use the default setup.

Parent topic: ❯Performing a side-by-side install❮
Previous topic: ❯Verify the upgrade❮
Next topic: ❯After upgrading❮

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iq10471_

1.4.2.10. After upgrading

This lists the tasks that you perform after upgrading WebSphere® MQ for i5/OS®.

Before you begin

Satisfy yourself the upgrade has completed successfully.

Procedure

Delete the saved data in the save files in QGPL. This data was saved in Save WebSphere MQ data.
Parent topic: ❯Performing a side-by-side install❮
Previous topic: ❯Restoring queue managers after upgrading❮
Next topic: ❯After installation❮

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1.4.2.11. After installation

Tasks to perform after you have installed WebSphere® MQ for i5/OS®, and before using it.

About this task
When you have correctly installed WebSphere MQ for i5/OS on your system:

Procedure
1. ❯Refer to the WebSphere MQ Web site at: <u>WebSphere MQ</u> for the latest product information.❮

2. ❯To install and apply all fix packs that are recommended, see <u>WebSphere MQ Support</u>❮

3.
   Some WebSphere MQ commands, for example CRTMQM (create queue manager) and DLTMQM (delete queue manager), rely on using i5/OS system commands for creating and managing objects, files, and libraries. Similarly some WebSphere MQ program code, for example a queue manager, relies on using i5/OS system programs.
   To enable this, the commands and programs listed must either have *PUBLIC *USE authority, or explicit *USE authority to the WebSphere MQ user profiles QMQM and QMQMADM.
   Such authority is applied automatically as part of the install process, and you do not need to apply it yourself.
   However, if you encounter problems, here is how to do it manually:

   a. **Commands**
      Set the authorities for commands using GRTOBJAUT with an OBJTYPE(*CMD) parameter, for example:

      ```
      GRTOBJAUT OBJ(QSYS/ADDLIBLE) OBJTYPE(*CMD) USER(QMQMADM) AUT(*USE)
      ```

      - QSYS/ADDLIBLE
      - QSYS/ADDPFM
      - QSYS/CALL
      - QSYS/CHGCURLIB
      - QSYS/CHGJOB
      - QSYS/CRTJRN
      - QSYS/CRTJRNRCV
      - QSYS/CRTJOBQ
      - QSYS/CRTJOBD
      - QSYS/CRTLIB
      - QSYS/CRTMSGQ
      - QSYS/CRTPF
      - QSYS/CRTPGM
      - QSYS/CRTSRCPF
      - QSYS/DLTJRN
      - QSYS/DLTJRNRCV
      - QSYS/DLTLIB
      - QSYS/DLTMSGQ
      - QSYS/OVRPRTF
      - QSYS/RCLACTGRP

- QSYS/RTVJRNE
- QSYS/RCVJRNE
- QSYS/SBMJOB

   b. **Programs**
      Set the authorities for programs using GRTOBJAUT with an OBJTYPE(*PGM) parameter, for example:

```
GRTOBJAUT OBJ(QSYS/QWTSETP) OBJTYPE(*PGM) USER(QMQMADM) AUT(*USE)
```

- QSYS/QWTSETP(*PGM)
- QSYS/QSYRLSPH(*PGM)
- QSYS/QSYGETPH(*PGM)

4. Where you have more than one computer and a mixture of releases of OS/400® or i5/OS, and WebSphere MQ, you must compile CL programs either on the computer they are to run on, or on one with an identical combination of releases of OS/400 or i5/OS, and WebSphere MQ. When you install later versions of WebSphere MQ, delete all WebSphere MQ commands from previous releases in any QSYSVvRrMm libraries using the QSYS/DLTCMD command.

5. If you have never installed WebSphere MQ on your system before (that is, you are not doing a migration), perform the following tasks:

   a. Make all user profiles that are to be used for creating and administering queue managers members of the group profile QMQMADM, using the command CHGUSRPRF.

   b. The default TCP channel listener in WebSphere MQ for i5/OS, V7.0 is a threaded listener, which starts threaded channels. If you want to run non-threaded TCP channel listeners in WebSphere MQ for i5/OS, V7.0, you must add an attribute to the CHANNELS stanza in the qm.ini file of each queue manager. The attribute is ThreadedListener=No. Information about qm.ini files is in the WebSphere MQ System Administration Guide.

6.

   a. Start the WebSphere MQ subsystem, by issuing the command:

```
STRSBS SBSD(QMQM/QMQM)
```

   Note: The subsystem must be started after each IPL of the system, so you might choose to start it as part of your system startup process.

Results

You are now ready to start using WebSphere MQ for i5/OS.

Parent topic: ❯Performing a side-by-side install❮
Previous topic: ❯After upgrading❮

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1.4.3. Migrate translated versions

Follow these instructions to migrate a translated version.

About this task

Previous editions of this book recommended installing translated versions that are not on the CD by: installing a language that is on the CD, and then copying the QSYS29xx files into QSYS. This is

no longer recommended because those objects will not be removed at a subsequent upgrade or reinstall. The new recommended procedure is described in <u>Installing translated versions</u>.

If you are upgrading now, and, when you installed your existing translated version, you followed the previous advice and copied objects into QSYS, then follow the steps below to ensure that all the old objects are removed at an upgrade or reinstall of MQ. This is a one-time resolution.

To remove old objects from QSYS:

Procedure

1. To uninstall the previous version of MQ, issue the command:

   ```
   DLTLICPGM 5724B41
   ```

   where `5724B41` is the component id of the previous version of MQ.

2. Create a temporary user profile:

   ```
   CRTUSRPRF QMQMx
   ```

   where QMQMx is any new temporary usrprf.

3. Delete the previous QMQM profile, and change the ownership of its objects to the temporary profile:

   ```
   DLTUSRPRF USRPRF(QMQM) OWNOBJOPT(*CHGOWN QMQMx)
   ```

4. Install the new version of WebSphere® MQ for i5/OS®, V7.0 base product and language:

   ```
   RSTLICPGM LICPGM(5724H72) DEV(install device) RSTOBJ(*LNG) LNG(language ID)
   ```

   See <u>Installing translated versions</u> for full details on this command, and what to do if your required language is not on the CD.

5. To preserve the required objects, change the ownership of the IFS `/QIBM/UserData/mqm` and its subdirs back to QMQM using the command:

   ```
   CHGOWN OBJ('/QIBM/UserData/mqm') NEWOWN(QMQM)
   ```

6. To preserve the required objects in the queue manager libraries, change their ownership back to QMQM using commands such as:

   ```
   CHGOBJOWN OBJ(qmgr_lib/qmgr_object) OBJTYPE(*object_type) NEWOWN(QMQM)
   ```

   where:

   - *qmgr_lib* is the queue manager library,
   - *qmgr_object* is one of the objects there,
   - *object_type* is the type of the object.

   Repeat the command for every object, and every queue manager.

7. Delete the temporary user profile QMQMx (and all its owned objects):

   ```
   DLTUSRPRF USRPRF(QMQMx) OWNOBJ(*DLT)
   ```

8. Follow the steps in <u>Verifying the installation</u>

Parent topic: ❯<u>Upgrading to WebSphere MQ for i5/OS Version 7.0</u>❮

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1.5. Applying maintenance to WebSphere MQ for i5/OS

To find out what version you have currently installed, use the following commands:-

Table 1. MQ commands to display the installed versions

WebSphere® MQ Product	Version command
WebSphere MQ Server	DSPMQMVER

WebSphere MQ Java	WebSphere MQ Classes for Java:
	
	    java com.ibm.mq.MQJavaLevel
	
	WebSphere MQ Classes for Java Message Service:
	
	    java com.ibm.mq.jms.MQJMSLevel
	
	Note: For those commands to work you might need to set your environment classpath to:
	
	  • /QIBM/ProdData/mqm/java/lib/com.ibm.mq.jar
	
	or:
	
	  • /QIBM/ProdData/mqm/java/lib/com.ibm.mqjms.jar
	
	respectively.
	
	See Environment variables relevant to WebSphere MQ classes for Java and Environment variables used by WebSphere MQ classes for JMS.

Service updates for WebSphere MQ for i5/OS® are supplied as PTFs (Program Temporary Fixes). They are available for download from the web as save files, which are normally stored in the QGPL library. For details of how to load and apply PTFs and read their cover letters, see the i5/OS Information Center here: http://publib.boulder.ibm.com/iseries/.

Before loading and applying a PTF:

  • Read the cover letter carefully to see if you need to take any special actions.
  • Quiesce all queue managers, as described in Quiesce WebSphere MQ.➤The topic, Applying maintenance to a running queue manager, describes how to apply maintenance to a multi-instance queue manager while keeping the queue manager running on a different server.◄

➤After temporarily or permanently applying a PTF:

  • When using an operating system version of V6R1M0 or higher, perform any object conversion that is necessary with STROBJCVN LIB(QMQM) and STROBJCVN(QMQMJAVA).

◄

i5/OS

To check for PTFs for i5/OS itself, check here:

    http://www.ibm.com/systems/support/supportsite.wss/brandmain?brandind=5000027

➤ and click "Fix Central".◄

➤**Applying maintenance to a running queue manager**◄
Use multi-instance queue managers to reduce the outage caused by applying service updates. Follow these steps to apply service to a multi-instance queue manager.

Parent topic: WebSphere MQ Server for i5/OS

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1.5.1. Applying maintenance to a running queue manager

Use multi-instance queue managers to reduce the outage caused by applying service updates. Follow these steps to apply service to a multi-instance queue manager.

Before you begin

Maintenance is applied to the WebSphere® MQ installation on a server and not to individual queue managers. You need to stop all the queue managers, and any WebSphere MQ services, on a server before you apply maintenance.

If you want a queue manager to keep running while service is applied, you need to configure it as a *multi-instance* queue manager, and have a standby instance running on another server. If a queue manager is an existing single instance queue manager, you need to convert it to a multi-instance queue manager. See the topic, Multi-instance queue managers for pre-requisites and guidance how to create a multi-instance queue manager.

You can create a multi-instance queue manager from v7.0.1 onwards. If you are running multi-instance queue managers, you then can apply a service update to a *running* queue manager by switching the active instance to a different server.

Typically active and standby installations are maintained at the same maintenance level. Consult the maintenance instructions for each upgrade. Check if it is possible to run the active and standby instances at different maintenance levels. Check if fail over from higher to lower, or only lower to higher maintenance level is possible.

The instructions for applying a service update might require you to stop a multi-instance queue manager completely.

If you have a primary server for running active queue manager instances, and a secondary server that runs standby instances, you have a choice of updating the primary or secondary server first. If you update the secondary server first, you need to switch back to the primary server once both servers have been updated.

If you have active and standby instances on several servers, you need to plan in what order you update the servers to minimize the disruption caused by ending the active instances on each server you update.

About this task

Combine the steps in this task with the service update procedure for applying maintenance to a WebSphere MQ server installation.

Procedure

1. Where the applying maintenance procedure instructs you to quiesce WebSphere MQ, do the following as well:

    a. If the queue manager is running as standby, end the standby by adding the `INSTANCE(*STANDBY)` option to the **ENDMQM** command.

    b. If the queue manager is running as the active instance, end the instance and transfer control to the standby instance by adding the `ALSWITCH(*YES)` option to the **ENDMQM** command. If there is no standby instance running, the command fails, and you need to start a standby instance on a different server.

    c. If a queue manager is running as a single instance queue manager, you have no alternative but to stop the queue manager before applying the service update.

    When you complete this step, no queue manager instances are left running on the server you intend to update.

2. Continue with the service update procedure, following the step to quiesce WebSphere MQ,

and apply maintenance to the WebSphere MQ server.

3. When you have completed the service update, restart all the queue managers on the WebSphere MQ server, permitting standbys, adding the `STANDBY(*YES)` option to the **STRMQM** command.

4. Repeat the procedure on the standby server, to update its maintenance level.

5. If necessary, switch the active instances back to the primary servers, using the **ENDMQM** command with the `ALSWITCH(*YES)` option, and the restart the instances using the **STRMQM** command with the `STANDBY(*YES)` option.

Parent topic: Applying maintenance to WebSphere MQ for i5/OS

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1.6. Uninstalling WebSphere MQ for IBM i, Version 7.1

There are two ways of uninstalling WebSphere® MQ for IBM® i, Version 7.1

To uninstall WebSphere MQ for IBM i, perform one of the following tasks:

- A *standard* deletion removes WebSphere MQ product code but preserves user data.
- An *entire* deletion removes both WebSphere MQ product code and user data.

Both types of deletion require you to be signed on to the system with a user profile that has *ALLOBJ special authority, for example, QSECOFR. Security administrator (*SECADM) special authority is also required to delete the QMQM and QMQMADM user profiles.

Uninstalling WebSphere MQ

Uninstalling WebSphere MQ and data

Parent topic: WebSphere MQ Server for i5/OS

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1.6.1. Uninstalling WebSphere MQ

About this task

Perform a standard deletion of the WebSphere® MQ for i5/OS® product if you want to retain your user data, for example, because you intend to reinstall the product at a later date.

To perform this deletion:

Procedure

1. Quiesce WebSphere MQ for i5/OS. (See Quiesce WebSphere MQ.)

2. End the WebSphere MQ subsystem, by issuing the command:

```
ENDSBS SBS(QMQM)
```

3. Ensure that no locks are held on the library QMQM, by issuing the command:

```
WRKOBJLCK OBJ(QMQM) OBJTYPE(*LIB)
```

4. Use the Delete Licensed Program (DLTLICPGM) command to delete the base product (and also the samples if you chose to install them). To delete the base product and the samples, issue the command:

```
DLTLICPGM LICPGM(5724H72) OPTION(*ALL)
```

To delete only the samples, issue the command:

```
DLTLICPGM LICPGM(5724H72) OPTION(1)
```

To delete any extra language versions installed, issue the command:

```
DLTLICPGM LICPGM(5724H72) LNG(nnnn)
```

where nnnn is the language number, as in the list here: Installing translated versions.

Results

Deleting WebSphere MQ for i5/OS in this way deletes only the objects that belong to WebSphere MQ: the QMQM library, and the subdirectories that belong to WebSphere MQ server below the /QIBM/ProdData/mqm directory.

If that leaves no other subdirectories (for example if WebSphere MQ Java is installed it uses subdirectories there) then the /QIBM/ProdData/mqm directory itself is deleted.

None of the queue manager journal libraries, or IFS directories based upon /QIBM/UserData are removed.

Parent topic: Uninstalling WebSphere MQ for IBM i, Version 7.1

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This topic's URL:
iq10530_

1.6.2. Uninstalling WebSphere MQ and data

About this task

You can delete WebSphere® MQ entirely, including all user data. If you do this, save your user data first. It will not be recoverable.

To perform this deletion:

Procedure

1. Quiesce WebSphere MQ for i5/OS®. (See Quiesce WebSphere MQ.)

2. Delete each queue manager in turn by using the command WRKMQM and selecting option 4.

3. End the WebSphere MQ subsystem, by issuing the command:

```
ENDSBS SBS(QMQM)
```

4. Delete the directory /QIBM/UserData/mqm and its subdirectories. Do this using the EDTF command and selecting option 9 (recursive delete) for the mqm directory, as follows,

   Note: If you do this, you will no longer have any information regarding your installation. Use this command with extreme caution.
   The format of the command is:

```
EDTF STMF('/QIBM/UserData')
```

Alternatively, you can delete the /QIBM/UserData/mqm directory and its subdirectories by repeated use of the RMVLNK and RMVDIR commands.

5. Ensure that no locks are held on the library QMQM, by issuing the command:

```
WRKOBJLCK OBJ(QMQM) OBJTYPE(*LIB)
```

6. Optional: At this point, if you want to also uninstall WebSphere MQ Java, you could do it now, using the command:

```
DLTLICPGM LICPGM(5724L26) OPTION(*ALL)
```

This will also uninstall the Java Samples, if they were installed.

7. Use the Delete Licensed Program (DLTLICPGM) command to delete the base product (and also the samples if you chose to install them). To delete the base product and the samples issue the command:

```
DLTLICPGM LICPGM(5724H72) OPTION(*ALL)
```

8. Identify all the users who belong to the QMQMADM group. Use the DSPUSRPRF command to display a list of them. You need to remove the QMQMADM group profile from their user profiles before you can delete the QMQMADM user profile. The format of the command is:

```
DSPUSRPRF USRPRF(QMQMADM) TYPE(*GRPMBR)
```

9. For each of the user profiles QMQM and QMQMADM, use the WRKOBJOWN command to list all the objects owned by the profile. The format of the command is:

```
WRKOBJOWN USRPRF(PROFILE)
```

You need to alter the ownership or delete the objects. Then you must delete the two user profiles.

Parent topic: Uninstalling WebSphere MQ for IBM i, Version 7.1

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1.7. Reinstalling WebSphere MQ for i5/OS

You can reinstall WebSphere® MQ for i5/OS®, V7.0 without losing any of your data.

When you reinstall WebSphere MQ for i5/OS, the system checks whether the WebSphere MQ configuration file (mqs.ini) exists. If the file exists, it is kept and used with the newly installed system. If the file does not exist, an empty mqs.ini file is placed in the directory /QIBM/UserData/mqm.

All data that you have in the UserData directory is referenced by the newly installed system. In addition, all the queue manager-associated libraries containing journal and receiver information are referenced by the new system.

Parent topic: WebSphere MQ Server for i5/OS

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2. WebSphere MQ Java for i5/OS

This collection of topics describes installing, maintaining, and uninstalling, the WebSphere® MQ classes for Java and WebSphere MQ classes for Java Message Service (JMS) on i5/OS®.

The WebSphere MQ classes for Java and WebSphere MQ classes for JMS are together known as *WebSphere MQ Java* in this section of the documentation.

In addition to reading the information here, refer to the readme files on the product and documentation CDs, and also to the latest information available on the WebSphere MQ Web site at WebSphere MQ Library.

Further information about WebSphere MQ Java can be found in the WebSphere MQ Using Java book.

Disk space required

Installation library and directories
You can install WebSphere MQ Java for i5/OS with or without the WebSphere MQ server.

Installing WebSphere MQ Java for i5/OS
Install WebSphere MQ Java for i5/OS from either product CD, using the **RSTLICPGM** command.

►Installing WebSphere MQ Java for i5/OS samples◄
Install WebSphere MQ Java for i5/OS samples from either product CD, using the **RSTLICPGM** command.

Migrating WebSphere MQ classes for JMS and WebSphere MQ classes for Java on i5/OS
If you have WebSphere MQ Java SupportPac MA88 installed, you must uninstall it first.

Verifying the installation of WebSphere MQ Java
To verify that you have successfully installed WebSphere MQ Java, follow these instructions.

Applying maintenance to WebSphere MQ Java for i5/OS

Uninstalling WebSphere MQ Java
Follow these instructions to uninstall Websphere MQ Java.

Parent topic: Welcome to WebSphere MQ for i5/OS

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iq10560_

2.1. Disk space required

For the WebSphere® MQ Java base code and samples, allow approximately 15 MB of storage.

Parent topic: WebSphere MQ Java for i5/OS

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2.2. Installation library and directories

You can install WebSphere® MQ Java for i5/OS® with or without the WebSphere MQ server.

You can install WebSphere MQ Java for i5/OS, V7.0 in 2 ways:

- In addition to WebSphere MQ for i5/OS, V7.0 server (it doesn't matter which product is installed first)
- Standalone

In both cases, the installation procedure is the same.

WebSphere MQ Java on i5/OS library structure
Installation of WebSphere MQ Java V7.0 creates the WebSphere MQ Java product library QMQMJAVA.

IFS root file system for WebSphere MQ Java
When you install WebSphere MQ Java on i5/OS, additional IFS directories are created.

Parent topic: WebSphere MQ Java for i5/OS

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2.2.1. WebSphere MQ Java on i5/OS library structure

Installation of WebSphere® MQ Java V7.0 creates the WebSphere MQ Java product library QMQMJAVA.

Parent topic: Installation library and directories

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2.2.2. IFS root file system for WebSphere MQ Java

When you install WebSphere® MQ Java on i5/OS®, additional IFS directories are created.

For general IFS information see IFS root file system for MQ server.

When you install WebSphere MQ Java on i5/OS, the following directories are created in the IFS root file system:

ProdData

Overview

```
  - QIBM
     '-- ProdData
               '-- mqm
                    '-- java
                           '-- samples
                           '-- bin
                           '-- lib
```

/QIBM/ProdData/mqm/java

Subdirectories below this contain all the product data, including Java classes. Data in this directory is deleted and replaced each time the product is replaced.

/QIBM/ProdData/mqm/java/samples

Subdirectories below this contain all the sample Java classes and data.

Also the following directory stores licenses:

/QIBM/ProdData/LicenseDoc/5724L26_V7R0M0

License files. The files are named like `5724L26_V7R0M0_xx` where *xx* is the 2 or 5 character language identifier for each language supplied.

Parent topic: [Installation library and directories](#)

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2.3. Installing WebSphere MQ Java for i5/OS

Install WebSphere® MQ Java for i5/OS® from either product CD, using the **RSTLICPGM** command.

Before you begin
You can install only one instance of WebSphere MQ Java for i5/OS in each partition of your server.

About this task
Install WebSphere MQ Java for i5/OS from either the Client CD or the Server CD.

▶After following the optional step to pre-agree the license, the **RSTLICPGM** command runs without requiring any interactive input, otherwise the license agreement is displayed for you to accept. See [License requirements](#).◀

Procedure

1. Sign on to the system with a user profile that has `*ALLOBJ` special authority, for example `QSECOFR`.

2. ▶Optionally pre-agree the license terms and conditions by running the command,

   CALL PGM(QSYS/QLPACAGR) **PARM**('5724L26' 'V7R0M1' '0000' 0)

   Where the parameters of **PARM** are,

   5724L26

   The product identifier for WebSphere MQ Java for i5/OS.

   V7R0M1

   The version, release, and modification level.

0000

> The option number for the base WebSphere MQ Java product.

0

> Unused error structure.

◄

3. To install WebSphere MQ Java, issue the command:

>   RSTLICPGM LICPGM(5724L26) DEV(*install device*) OPTION(*BASE) OUTPUT(*PRINT)

Where the parameters of RSTLICPGM are,

LICPGM(5724L26)

> The product identifier for WebSphere MQ Java for i5/OS.

DEV(*install device*)

> The device from which the product is to be loaded, typically an optical drive, for example, OPT01.

OPTION(*BASE)

> Install the base WebSphere MQ Java for i5/OS product.

OUTPUT(*PRINT)

> The output is printed with the spooled output of the job.

Results

If installation of WebSphere MQ Java fails, remove the partly installed objects before attempting reinstallation:

1. Delete the QMQMJAVA library.

2. Delete the IFS directory /QIBM/ProdData/mqm/java and its subdirectories using the **EDTF** command, for example:

>   EDTF STMF('/QIBM/ProdData/mqm')

Select option 9 against the Java directory.

Parent topic: WebSphere MQ Java for i5/OS

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2.4. Installing WebSphere MQ Java for i5/OS samples

Install WebSphere® MQ Java for i5/OS® samples from either product CD, using the **RSTLICPGM** command.

Before you begin
You can install only one instance of WebSphere MQ Java for i5/OS samples in each partition of your server.

About this task
You can install WebSphere MQ Java for i5/OS samples from either the Client CD or the Server CD.

►After following the optional step to pre-agree the license, the **RSTLICPGM** command runs without requiring any interactive input, otherwise the license agreement is displayed for you to

accept. See <u>License requirements</u>◄

Procedure

1. Sign on to the system with a user profile that has `*ALLOBJ` special authority, for example `QSECOFR`.

2. ►Optionally pre-agree the license terms and conditions by running the command,

   CALL PGM(QSYS/QLPACAGR) **PARM**('5724L26' 'V7R0M1' '0001' 0)

   Where the parameters of **PARM** are,

   5724L26

   The product identifier for WebSphere MQ Java for i5/OS.

   V7R0M1

   The version, release, and modification level.

   0001

   The option number for the WebSphere MQ Java samples.

   0

   Unused error structure.
   ◄

3. To install the WebSphere MQ Java samples, issue the command:

   RSTLICPGM LICPGM(5724L26) **DEV**(*install device*) **OPTION**(1) **OUTPUT**(*PRINT)

   where the parameters of RSTLICPGM are,

   LICPGM(5724L26)

   The product identifier for WebSphere MQ Java for i5/OS.

   DEV(*install device*)

   The device from which the samples are to be loaded, typically an optical drive, for example, `OPT01`.

   OPTION(1)

   Install the WebSphere MQ Java for i5/OS samples.

   OUTPUT(*PRINT)

   The output is printed with the spooled output of the job.

Parent topic: <u>WebSphere MQ Java for i5/OS</u>

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2.5. Migrating WebSphere MQ classes for JMS and WebSphere MQ classes for Java on i5/OS

If you have WebSphere® MQ Java SupportPac MA88 installed, you must uninstall it first.

About this task

If you have WebSphere MQ Java V5.3, or WebSphere MQ Java V6.0 installed, and want to install the WebSphere MQ Java V7.0 product on i5/OS®, you can install the new version without uninstalling the old one.

If you do have MA88 installed, and try to install WebSphere MQ Java V7.0 anyway, the installation fails with a warning requesting you to uninstall the old client.

To uninstall the previous Java client:

Procedure

1. Delete the QMQMJAVA library and the /QIBM/ProdData/mqm/java directory, by issuing the command:

   ```
   DLTLICPGM LICPGM(5648C60) OPTION(*ALL)
   ```

2. If the step above failed to delete the IFS directory /QIBM/ProdData/mqm/java and its subdirectories, use the EDTF command, for example:

   ```
   EDTF STMF('/QIBM/ProdData/mqm')
   ```

   and select option 9 against the java directory.

Parent topic: WebSphere MQ Java for i5/OS

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2.6. Verifying the installation of WebSphere MQ Java

To verify that you have successfully installed WebSphere® MQ Java, follow these instructions.

Procedure

1. To ensure that the product has loaded correctly, issue the Display Software Resources (DSPSFWRSC) command and check that the licensed program `5724L26` is listed. If you have installed the base and the optional samples, you should see:

   ```
         Resource
         ID        Option   Feature   Description
         5724L26   *BASE    5050      WebSphere MQ Classes for Java
         5724L26   1        5050      WebSphere MQ Classes for Java - Samples
   ```

2. Press F11, while viewing the Display Software Resources screen, and you will see the library and version number of the products installed:

   ```
         Resource                       Feature
         ID        Option   Feature   Type     Library    Release
         5724L26   *BASE    5050      *CODE    QMQMJAVA   V7R0V1
         5724L26   1        5050      *CODE    QMQMJAVA   V7R0V1
   ```

3. Check what versions you have installed by using the following commands:
   WebSphere MQ Classes for Java:

   ```
         java com.ibm.mq.MQJavaLevel
   ```

   WebSphere MQ Classes for Java Message Service:

   ```
         java com.ibm.mq.jms.MQJMSLevel
   ```

   Note: For those commands to work you might need to set your environment classpath to:

   ○ /QIBM/ProdData/mqm/java/lib/com.ibm.mq.jar

   or:

   ○ /QIBM/ProdData/mqm/java/lib/com.ibm.mqjms.jar

   respectively.
   See Environment variables relevant to WebSphere MQ classes for Java and Environment

variables used by WebSphere MQ classes for JMS.

For V7.0 both will report:

```
                        Version: 7.0.1.0
```

Note: The command uses the Java classes, and hence as well as reporting the version, it also performs some verification that the classes are installed and working.

4. Refer to WebSphere MQ Using Java for full details of verification of both:

- ○ WebSphere MQ classes for Java
- ○ WebSphere MQ classes for Java Message Service.

Parent topic: WebSphere MQ Java for i5/OS

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2.7. Applying maintenance to WebSphere MQ Java for i5/OS

About this task

See Applying maintenance to WebSphere MQ for i5/OS.

Parent topic: WebSphere MQ Java for i5/OS

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2.8. Uninstalling WebSphere MQ Java

Follow these instructions to uninstall Websphere MQ Java.

About this task

To uninstall the WebSphere® MQ Java, V7.0 product:

Procedure

1. Make sure you are signed on to the system with a user profile that has *ALLOBJ special authority, for example QSECOFR.

2. Issue the command:

```
        DLTLICPGM LICPGM(5724L26) OPTION(*ALL)
```

Results

Deleting WebSphere MQ Java for i5/OS® deletes the objects that belong to it: the QMQMJAVA library, and the subdirectories that belong to WebSphere MQ Java below the /QIBM/ProdData/mqm directory.

If that leaves no other subdirectories (for example if the WebSphere MQ Server is installed it uses subdirectories there) then the /QIBM/ProdData/mqm directory itself is deleted.

Parent topic: WebSphere MQ Java for i5/OS

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3. WebSphere MQ documentation

Where to find information describing WebSphere MQ.

See the main information center page.

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