WebSphere Message Broker

Managing your Installation

Version 6 Release 0

IBM

WebSphere Message Broker

Managing your Installation

Version 6 Release 0

This edition applies to version 6, release 0, modification 0, fix pack 9 of IBM WebSphere Message Broker and to all subsequent releases and modifications until otherwise indicated in new editions.

Contents

About this topic collection

This PDF file has been created from the WebSphere Message Broker Version 6.0 (March 2009) information center topics. Always refer to the WebSphere Message Broker online information center to access the most current information. The information center is periodically updated on the document update site and this PDF and others that you can download from that Web site might not contain the most current information.

The topic content included in the PDF does not include the "Related Links" sections provided in the online topics. Links within the topic content itself are included, but are active only if they link to another topic in the same PDF collection. Links to topics outside this topic collection are also shown, but result in a "file not found "error message. Use the online information to navigate freely between topics.

Feedback: do not provide feedback on this PDF. Refer to the online information to ensure that you have access to the most current information, and use the Feedback link that appears at the end of each topic to report any errors or suggestions for improvement. Using the Feedback link provides precise information about the location of your comment.

The content of these topics is created for viewing online; you might find that the formatting and presentation of some figures, tables, examples, and so on are not optimized for the printed page. Text highlighting might also have a different appearance.

Part 1. Installing

Installing

Installation information for WebSphere® Message Broker is provided in the WebSphere Message Broker Installation Guide, which is supplied in hardcopy with your product media.

The "Installation Guide" defines hardware and software requirements for WebSphere Message Broker and its corequisite and prerequisite products. It describes the tasks that you must complete to prepare for installation, to install WebSphere Message Broker, and to verify the installation. When you have completed installation, use this information center to create and configure your components and the broker domain.

The software and hardware requirements are also provided within this information center in the "Installation" on page 37 reference section.

See "Finding the latest information" on page 4 for details about how to check that you have access to the most recent information available.

If product fixes or updates are made available, refer to the following topics for information about how to apply these:
* "Applying service to runtime components" on page 15
* "Applying service to the Message Brokers Toolkit" on page 23

To install complementary products including DB2® and Rational® Agent Controller, see "Installing complementary products" on page 4.

Installation Guide

Installation information for WebSphere Message Broker is provided in the Installation Guide that is supplied in hardcopy with your product package.

The guide provides general preparation, planning, and security information for all platforms. It also provides installation instructions for distributed systems, and describes common problems and solutions and the names and locations of the installation log files. The guide also covers verification programs on Linux® on x86 and Windows®.

If you are installing on z/OS®, the equivalent installation instructions are provided in the Program Directory that is supplied in hardcopy with your product media.

The Installation Guide does not cover configuration or customization tasks on any operating system; it describes only how you install the product components onto your computers. When you have completed installation on distributed systems, you must initialize the local environment before you can create or configure resources. This task is described in "Setting up a command environment" on page 10. Environment initialization is not required on z/OS. Refer to Configuring WebSphere Message Broker for information about how to design and configure your broker domain on all systems.

The Installation Guide PDF file (in English only) is available on the Documentation CD. Translated versions are available on the IBM Publications Center.

You can view, search, and print PDF files using Adobe® Reader. To download Adobe Reader, visit the Adobe Systems Inc. Web site.

Finding the latest information

Access the latest information for WebSphere Message Broker.

The following information is provided:

Requirements Web site
For the latest details of hardware and software requirements on all supported platforms, visit the WebSphere Message Broker Requirements Web site.

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

Installation Guide
The Installation Guide is provided in hardcopy with your product. It is also available on the IBM® Publications Center Web site. See "Installation Guide" on page 3 for instructions about how to access this site to view the guide online or check whether a later edition of the guide is available.

Information center
This information center is installed with the Message Brokers Toolkit, and updates are typically included when you apply service to that component.

The information center is periodically updated independently of the code, and you can install the latest level from within the toolkit. See "Applying service to the Message Brokers Toolkit" on page 23 for instructions about installing code and documentation updates.

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

Installing complementary products

WebSphere Message Broker works with several other products to provide complementary services.

If you want to use these optional services in your WebSphere Message Broker environment, refer to the following installation information:

- IBM Rational Agent Controller
- IBM DB2
- IBM Tivoli® License Manager

Installing Rational Agent Controller

Rational Agent Controller (RAC) is a daemon process that provides the mechanism by which client applications either launch new host processes or attach to agents

that coexist within existing host processes. WebSphere Message Broker uses RAC to provide debugging facilities for message flows that are deployed to a running broker.

Before you can use the flow debugger, you must install RAC on all computers on which you run the brokers in which you want to debug message flows. Also, check that the RAC component installed on the broker has TCP/IP connectivity to the system on which the Message Brokers Toolkit is running, to enable it to communicate with the RAC client which is embedded in the Message Brokers Toolkit.

Rational Agent Controller Versions 6.0.1 and 5.0.2.1 are supported for use with WebSphere Message Broker Version 6.0.
- If you have previous versions of WebSphere Message Broker installed, and have a domain that includes Version 5 brokers in addition to Version 6 brokers, you must use RAC Version 5.0.2.1. RAC Version 6.0.1 cannot be used with Version 5 brokers. Do not update to RAC Version 6.0.1 if you want to continue to use RAC with your Version 5 brokers. Version 2.1 brokers do not use RAC.

  If you are not sure which version of RAC you have installed, see the instructions on how to check the RAC version on your broker operating systems.
- If you do not have brokers from previous versions, or you do not want to use RAC with them, use RAC Version 6.0.1. Rational Agent Controller Version 6.0.1 is supplied with WebSphere Message Broker on a supplemental CD and DVD.

The requirements for Version 5 brokers on each operating system are shown in the following table:

	Version 5 Fix Pack 3 Broker and beyond with RAC 5.0.2.1	Version 5 Fix Pack 2 Broker and below with RAC 5.0.2.1	Version 5 Fix Pack 2 Broker and below with RAC 5.0.1
Windows	Yes	Yes	Yes
AIX®	Yes	Yes	Yes
Solaris	Yes	Yes	No
HP-UX	Yes	No	No
z/OS	Yes	No	No
Linux	Yes	No	No

To use RAC with WebSphere Message Broker brokers, complete the following steps:
1. Install RAC from the supplemental CD or DVD supplied with WebSphere Message Broker using the full instructions provided in the file install.html located in the root directory of the RAC component on CD or DVD.

   For successful operation with the broker, you must disable the security option during installation. For more details, see the install.html file and the appropriate topic for your operating system:
   - AIX, HP-UX, and Solaris
   - Linux
   - Windows
   - z/OS

To control access within your domain, install RAC behind a firewall and stop the RAC service if you do not use the flow debugger. To configure RAC to be used with WebSphere Message Broker with a firewall, see "Configuring RAC for use with a firewall" on page 9.

2. In the workbench, select the option in the Debug preference page that corresponds to your broker configuration, as documented in Setting flow debugger preferences.

If you experience problems installing RAC on distributed platforms, you can rerun the installer with the following command line options to obtain a debug log from the installer:

Linux and UNIX® systems

```
./setup.bin -is:log /tmp/rac.log -log !/tmp/rac_events.log @ALL
```

On some Linux and UNIX shells, you might have to escape the exclamation mark (!) with the backslash character (\). If you do not escape the exclamation mark when required, a message similar to the following error is displayed:

```
-bash: !/tmp/rac_events.log: event not found
```

Windows

```
setup.exe -is:log \tmp\rac.log -log !\tmp\rac_events.log @ALL
```

Installing Rational Agent Controller on AIX, HP-UX, and Solaris

If you already have Rational Agent Controller (RAC) installed, and want to check what version it is, complete the following steps:

1. Log on as root.
2. On AIX, if RAC is at Version 5.1 or later, enter:
   ```
   lslpp -i ibmrac
   ```

   or if RAC is at Version 5.0.x, enter:
   ```
   lslpp -i e22643e413d203c89236cd92ef065fbc
   ```
3. On HP-UX, if RAC is at Version 6.0 or later, enter:
   ```
   swlist | grep IBMRAC
   ```

   or if RAC is at 5.0.x, or later, enter:
   ```
   swlist | grep 628282f51593896a6d94a9eee71770f5
   ```
4. On Solaris:
   a. Enter the command `pkginfo -x > pkginfo.txt`
   b. Enter the command `vi pkginfo.txt`
   c. Search for "ibmrac" (if RAC is at 5.1 or later) or "28887f2df81d126aa228a4f84b6051d5" (if RAC is at 5.0.x).
   d. Find the version displayed on the line following the search string, reverse the third and fourth digits, and ignore trailing characters. For example if the version is displayed as "5.1.0.2DSP", this string represents "5.1.2".

To install RAC Version 6.0.1 from the supplemental CD or DVD supplied with WebSphere Message Broker, refer to the install.html file supplied in the root directory of the RAC component on the CD or DVD. In addition to the instructions in the install.html file, take note of the following points:

- When the installation wizard displays the list of features that you can select to install on the **Product Installation** page, you must clear the selection for the IBM

Rational Plugins Security feature. If you do not disable security during RAC installation, you will be unable to debug message flows. If you do not clear this option, you must uninstall RAC and reinstall it with security disabled before you can use the debug functions.

- On the **Java Runtime Environment** page of the installation wizard, you must specify the location of the Java runtime file (java.exe). RAC requires a Java Runtime Environment (JRE) as a prerequisite. Do not specify the JRE installed with WebSphere Message Broker for this purpose; you must use an alternative JRE.

After installation, add the lib directory (for example, /usr/lpp/IBM/ AgentController/lib) to the start of the appropriate environment variable before you start the broker to enable it to connect to RAC:

AIX   Add the directory to the variable LIBPATH

HP-UX
> Add the directory to the variable SHLIB_PATH

Solaris
> Add the directory to the variable LD_LIBRARY_PATH

Installing Rational Agent Controller on Linux

If you already have Rational Agent Controller (RAC) installed, and want to check what version it is, complete the following steps:

1. Log on as root.
2. Invoke the following command:

    ```
    rpm -q ibmrac
    ```

On all Linux systems on which you plan to use Rational Agent Controller, check that the X Window System libraries are installed; on 64-bit platforms, the 31-bit or 32-bit X Window System libraries are required in addition to the 64-bit libraries. On Red Hat Enterprise Advanced Server V4.0, you must also install the deprecated X Window System libraries.

To install RAC Version 6.0.1 from the supplemental CD or DVD supplied with WebSphere Message Broker, follow the instructions in the install.html file that is supplied in the root directory of the RAC component on the CD or DVD. In addition to those instructions, consider the following restrictions:

- When the installation wizard displays the list of features that you can select to install on the **Product Installation** page, clear the selection for the IBM Rational Plugins Security feature. If you do not disable security during RAC installation, you will be unable to debug message flows. If you do not clear this option, you must uninstall RAC and reinstall it with security disabled before you can use the debug functions.
- On the **Java Runtime Environment** page of the installation wizard, specify the location of the Java runtime file (java.exe). RAC requires a Java runtime environment (JRE) as a prerequisite. Do not specify the JRE installed with WebSphere Message Broker for this purpose; you must use an alternative JRE.

After installation, add the lib directory (for example, /usr/lpp/IBM/ AgentController/lib) to the start of the LD_LIBRARY_PATH environment variable before you start the broker, to enable it to connect to RAC.

Installing Rational Agent Controller on Windows

If you already have Rational Agent Controller (RAC) installed, and want to check what version it is, complete the following steps:

1. Log on as an administrator.
2. Find the RAServer.exe file in the \bin directory of the Agent Controller installation.
3. Right-click the file and select **Properties**.
4. Select the **Version** tab.

    The version is listed as "File version". For example, if you already have the required version, the value displayed is 6.0.1. For most versions, the "Product Version" under "Other information" has the same value.

To install RAC Version 6.0.1 from the supplemental CD or DVD supplied with WebSphere Message Broker, refer to the install.html file which is supplied in the root directory of the RAC component on the CD or DVD. In addition to the instructions in install.html, take note of the following points:

- When the installation wizard displays the list of features that you can select to install on the **Product Installation** page, you must clear the selection for the IBM Rational Plugins Security feature. If you do not disable security during RAC installation, you will be unable to debug message flows. If you do not clear this option, you must uninstall RAC and reinstall it with security disabled before you can use the debug functions.
- When the installation wizard asks you to enter a location of the Java runtime file java.exe on the **Java Runtime** page, you must specify the location of a Java runtime file that is already installed. Do not specify the JRE installed with WebSphere Message Broker for this purpose; you must use an alternative JRE.

Stopping and starting the Rational Agent Controller service:

When you have successfully installed Rational Agent Controller, the Rational Agent Controller service is started automatically on Windows. You can stop and start the service using the **Services** window. Change the Startup type from **Automatic** to **Manual** to control when this service is available. If you do not use the flow debugger, stop the Rational Agent Controller service.

Installing Rational Agent Controller on z/OS

If you already have Rational Agent Controller (RAC) installed, and want to check what version it is, go to /usr/lpp/IBM/AgentController/config, review the file serviceconfig.xml and check the attribute version.

To install RAC Version 6.0.1 from the supplemental CD or DVD supplied with WebSphere Message Broker, refer to the install.html file supplied in the root directory of the RAC component on the CD or DVD. In addition to the instructions in the install.html file, take note of the following points:

- At the **Java Runtime Environment** prompt during installation, you must specify the location of the Java runtime file (java.exe). RAC requires a Java Runtime Environment (JRE) as a prerequisite. Do not specify the JRE installed with WebSphere Message Broker for this purpose; you must use an alternative JRE.
- At the **Security** prompt during installation, enter **false** because the security feature is not supported.

To enable the z/OS broker to connect to RAC, add the lib directory (for example, /usr/lpp/IBM/AgentController/lib) to the start of the LIBPATH environment variable in the broker's profile (located in ++COMPONENTDATASET++(BIPBPROF))), then submit BIPGEN to recreate the broker's ENVFILE. When this change has been completed, restart the broker to enable debugging sessions to be connected.

Configuring RAC for use with a firewall

If your broker domain environment includes a firewall between your broker systems and the system on which you are running the workbench, you can set a fixed port that can be opened in the firewall for Rational Agent Controller (RAC).

Complete the steps below for each broker system on which RAC is installed. These instructions are applicable to RAC Version 6.0.1.

1. If one or more brokers are running on the system, use the mqsistop command to stop the brokers.
2. If applicable, stop any other programs or processes on this system that use RAC.
3. Stop RAC if it is running.
4. Within the RAC installation directory, navigate to the config subdirectory and find the services configuration file serviceconfig.xml. For example, on Windows the file is in location C:\Program Files\IBM\Agent Controller\Config.
5. Open serviceconfig.xml with your preferred editor and update the settings that are described below. Do not change any other settings in this file.
   - isDataMultiplexed. This setting indicates whether data and control information are to be multiplexed on the single TCP/IP port. Set this attribute to true to enable this option.
     isDataMultiplexed ="true"
   - filePort. This setting defines the port that is used for file transfer operations. WebSphere Message Broker does not support file transfer and therefore does not require this attribute to be set. If you have other programs that use RAC and require file transfer, set this attribute to the value that is defined by those programs; if not, set this attribute to 0.
     filePort="0"
   - port. This setting defines the port on which RAC accepts connections from the workbench. Set this attribute to the default value 10002, or to a value that is defined by your domain administrator.
     port="10002"
6. Check that the port that you have specified for RAC, for example 10002, is open on the firewall.
7. Start RAC.
8. When RAC is running, use the mqsistart command to start the broker.

Installing IBM DB2

IBM DB2 Enterprise Server is one of the supported databases for use with WebSphere Message Broker.

Other editions of IBM DB2 that are stated to be suitable for production deployment are also supported. For a full list of supported databases and versions, from IBM and other vendors, see "Supported databases" on page 44.

On Windows only, the Derby database is embedded in the broker component. It is suitable for verification and evaluation only, and is enabled when you install the ODBC Drivers from the Launchpad as part of the WebSphere Message Broker product installation. For production systems, you must install one of the supported databases, for example, DB2 Enterprise Server. For information about how to install ODBC Drivers as part of the WebSphere Message Broker installation, see the "Installation Guide" on page 3.

For distributed systems, DB2 Universal Database Enterprise Server Version 8.2 is supplied on DVD (for Linux on x86 and Windows only) and on CD with WebSphere Message Broker. You can install DB2 either before or after you have installed WebSphere Message Broker. To install DB2, see the install.html file in the /doc directory on the CD or DVD. The supplied version is subject to restricted terms and conditions for use with WebSphere Message Broker. Help is provided by the installation wizard following license acceptance.

For z/OS systems, either DB2 Version 7.1 or DB2 Version 8.1 is required, but no other databases are supported. You must install DB2 before you install WebSphere Message Broker on z/OS systems.

Installing Tivoli License Manager

IBM Tivoli License Manager (ITLM) enables you to monitor the use of IBM (and other) software products. WebSphere Message Broker includes support for ITLM Version 2.1.

Use ITLM to perform the following software auditing functions:
- Monitor the licenses used by different machines.
- Help keep unnecessary licenses to a minimum.
- Guard against software license compliance problems.

To find out more about using ITLM to monitor usage of WebSphere Message Broker and other IBM products, or to purchase ITLM, see the IBM Tivoli License Manager Web site.

For information about installing this product, see the IBM Tivoli License Manager information center.

Setting up a command environment

After you have installed the product on any of the distributed systems, you must initialize the environment before you can use any runtime component or command.

Also complete this task if you have migrated to WebSphere Message Broker Version 6.0 from a previous version. A profile is provided to help you set up the environment.

Ensure that you use this environment each time you run one of the administrative commands, or start a component; for example, a broker.

For information on setting up your command and runtime environment on a Windows system, see "Command environment: Windows platforms" on page 11

For information on setting up your command and runtime environment on Linux and UNIX systems, see "Command environment: Linux and UNIX systems" on page 12

Command environment: Windows platforms

Set up the Windows environment to run WebSphere Message Broker commands.

On Windows platforms, the components run as services, therefore they do not inherit the environment that is set for the command prompt from which you start them. The components run the mqsiprofile command when they start, which completes the environment initialization.

The mqsiprofile command is located in the directory *install_dir*\bin.

You must not change the location of the mqsiprofile command, or make user modifications to the command, because it might be replaced if you install service, or an update, to the product.

If you need to run your own settings, add one or more command files called *your_file_name*.cmd to the directory *work_path*\common\profiles, where *work_path* identifies the broker's working directory.

The default working directory is %ALLUSERSPROFILE%\Application Data\IBM\MQSI where `%ALLUSERSPROFILE%` is the environment variable that defines the system working directory. The default directory is C:\Documents and Settings\All Users\Application Data\IBM\MQSI; the actual value might be different on your computer.

If you are unsure of the broker's work path, enter the following command in a command console:

```
echo %MQSI_WORKPATH%
```

When mqsiprofile runs, it automatically calls any additional user-written scripts in this directory.

Two typical reasons for adding scripts are "Running with Java 5" on page 12 and "Running database setup scripts" on page 12.

When you have configured any additional setup, you can use one of the following methods to initialize the runtime environment for components and commands:

1. If you have only one installation of the runtime product, open a command console by clicking **Start** → **IBM** → **WebSphere Message Brokers 6.0** → **Command Console**. The mqsiprofile command initializes the environment and invokes any additional scripts in the common\profiles directory.

2. If you have one or more installations of the runtime product, open a command prompt window. Locate and run the mqsiprofile.cmd script in the directory in which you installed the appropriate product. The mqsiprofile command initializes the environment and invokes any additional scripts in the common\profiles directory.

Check whether the following conditions apply to your environment:

- If you have a previous version of the product on this system, ensure that you run the correct profile before using Version 6.0. The mqsiprofile command places the Version 6.0 commands and libraries at the front of your search path, and

invokes any user profiles that you have supplied which can override any combination of PATH, CLASSPATH, or library PATH.

- If you use the same user ID, and you run multiple profiles (from multiple different installations or versions), you might get unexpected results. Log off and log on again before you run the specific profile that you require.

Running with Java 5

WebSphere Message Broker supplies two versions of Java™, version 1.4.2 and version 5 (also known as version 1.5). Both versions are installed, and all components are configured to run with the default version 1.4.2. Complete the steps below to configure all components on this system to use Java 5 (you cannot make this change for individual components).

1. To check what level of Java you are currently working with, enter the following command:

   ```
   java -fullversion
   ```

2. To upgrade to Java 5, copy the command file mqsijava15.cmd from the directory *install_dir*\bin to the directory *work_path*\common\profiles.

3. Close the current window and open a new window before you run mqsiprofile. If one or more runtime components (broker, Configuration Manager, User Name Server) are active, stop and restart each component to pick up the change.

Running database setup scripts

A broker requires access to a database to maintain operational and state data, and might also require access to user databases from deployed message flows.

When you install a database product on Windows, the relevant settings are typically made to the system environment. However, some database managers provide a profile to perform this setup, or provide details of actions that you must take in their documentation. Always check the database product documentation for environment setup details; the information provided here is for general guidance only.

If a profile is provided for the database that you are using, complete the following steps:

1. If you can update the profile to provide permanent values for the details that are required (for example, the database server name or the installation directory):

   a. Complete the changes to the database profile.

   b. Copy the profile file to the directory *work_path*\common\profiles.

2. If you cannot update the profile permanently, but need to make changes each time, you must run it independently of the mqsiprofile command before you start the component.

When your environment has been set up, see Configuring broker and user databases for information about setting up your databases for use with the broker.

Command environment: Linux and UNIX systems

Set up the Linux or UNIX environment to run WebSphere Message Broker commands.

When you start a runtime component on Linux and UNIX systems, it inherits the environment from where you issue the mqsistart command.

You must therefore initialize the environment before you start a component; the command mqsiprofile located in the directory *install_dir*/bin, performs this initialization. If you are starting a broker, you might also need to initialize the environment for any databases that are accessed by the broker.

You must not change the location of the mqsiprofile command, or make user modifications to the command, because it might be replaced if you install service, or an update, to the product.

If you want to run your own additional environment settings, add a script called *your_file_name*.sh to the broker's *work_path* directory which contains the:

```
/common/profiles
```

subdirectory.

When you run mqsiprofile again, the command automatically calls the additional user-written scripts in this location. The newly added script will not be picked up if you run an mqsistart command from an existing initialized command shell.

work_path identifies the broker's working directory; if you are unsure of the broker's work path, enter the following command:

```
echo $MQSI_WORKPATH
```

Two typical reasons for adding scripts are "Running database setup scripts" on page 14 and "Running with Java 5" on page 15.

When you have configured any additional setup, you can initialize the runtime environment for components and commands:

1. Issue the mqsiprofile command:

   ```
   . install_dir/bin/mqsiprofile
   ```

   You must include the period and space preceding the location for this invocation to work correctly. Add this command to your login profile if you want it to be run at the start of every session.

   This command accesses additional scripts that you have copied to the common/profiles directory, therefore the environment is initialized for runtime components and other resources such as databases.

2. Start the components that you want to run on this system using the mqsistart command.

Check if the following conditions apply to your environment:

- If you have a previous version of the product on the system, ensure that you run the correct profile before using Version 6.0. The mqsiprofile command places the Version 6.0 commands and libraries at the front of your search path, and invokes any user profiles that you have supplied which can override any combination of PATH, CLASSPATH, or library PATH.
- If you use the same user ID, and you run multiple profiles (from multiple different installations or versions), you might get unexpected results. Log off and log on again before you run the specific profile that you require.
- ODBC settings on Linux and UNIX systems are found in a text file defined by the ODBCINI environment variable, which defaults to the value:

  ```
  /var/mqsi/odbc/.odbc.ini
  ```

The same filename was used by earlier versions of the product, but the format is different for Version 6.0. If you have installed more than one version on this system, you must create a different .odbc.ini file for each version, and override the `ODBCINI` environment variable setting in mqsiprofile.

Running database setup scripts

A broker requires access to a database to maintain operational and state data, and might also require access to user databases from deployed message flows.

When you install a database product on Linux and UNIX systems, some database managers provide a profile to perform the environment set up that the database requires, or provide details of actions that you must take in their documentation. Always check the database product documentation for environment setup details; the information provided here is for general guidance only and might not be complete.

If you have installed 64-bit instances of DB2 or 64-bit Oracle databases, you need to complete additional setup steps, including adding 32-bit libraries to the LIBPATH. Detailed instructions are provided in Setting your environment to support access to databases, Creating a DB2 database on Linux and UNIX systems, and Connecting to a database from Linux and UNIX systems.

1. If you can update the profile to provide permanent values for the details that are required (for example, the database server name or the installation directory):

   a. Complete the changes to the profile.

   b. Copy the profile file to the directory *work_path*\common\profiles.

2. If you cannot update the profile permanently, but need to make changes each time, you must run it independently of the mqsiprofile command:

   a. Run the appropriate profiles to initialize the environment for the database:

      - For DB2, issue the following command for the relevant DB2 instance:

        `. db2_instance_directory/sqllib/db2profile`

      - For Oracle, export `ORACLE_HOME` and `ORACLE_SID`, then issue the following command:

        `. ${ORACLE_HOME}/bin/oraenv`

      - For Sybase, issue the following command, specifying your installation directory:

        `. Sybase_installation_directory/SYBASE.sh`

      - For Informix®, check the documentation for the client on your broker system for details of the actions that you must take. For example, you might have to specify the following environment variables:

        ```
        export INFORMIXDIR=/installation_directory_of_informix_client_software
        export PATH=${INFORMIXDIR}/bin:${PATH}
        export INFORMIXSERVER=server_name
        export INFORMIXSQLHOSTS=${INFORMIXDIR}/etc/sqlhosts
        export TERMCAP=${INFORMIXDIR}/etc/termcap
        export TERM=vt100
        export LIBPATH=${INFORMIXDIR}/lib:${INFORMIXDIR}/lib/esql:
                        ${INFORMIXDIR}/lib/cli:$LIBPATH
        ```

        where *server_name* is defined in the file sqlhosts (the required value is typically the machine name), and the location of the file sqlhosts is set up as part of the installation process.

To configure your system to run this setup at the start of every session, add these statements to the login profile of the user that is going to run the broker.

When your environment has been set up, see Configuring broker and user databases for information on setting up your databases for use with the broker.

Running with Java 5

WebSphere Message Broker supplies two versions of Java, version 1.4.2 and version 5 (also known as version 1.5). Both versions are installed, and all components are configured to run with the default version 1.4.2. Complete the steps below to configure all components on this system to use Java 5 (you cannot make this change for individual components).

1. To check what level of Java you are currently working with, enter the following command:

   ```
   java -fullversion
   ```

2. To upgrade to Java 5, copy the script file mqsijava15.sh from the directory *install_dir*/bin to the directory *work_path*/common/profiles.

3. Close the current shell and open a new shell before you run mqsiprofile. If one or more runtime components (broker, Configuration Manager, User Name Server) are active, stop and restart each component to pick up the change.

Applying service to runtime components

Apply maintenance updates and program fixes to the product components.

Before you apply service to any component, check that you have backed up any associated resources, including the database used by any brokers on this computer. You might also choose to back up installation and work path directories. For details of this task, see Backing up resources.

You can download maintenance updates for WebSphere Message Broker from a Web site, in the form of a Program Temporary Fix (PTF), also known as a fix pack. Fix packs are cumulative, therefore, if multiple fix packs are available, you do not have to install a previous fix pack before you install the latest available. However, you must first install the GA code to ensure that you comply with your license agreement. You can find the latest information about available fix packs on the WebSphere Message Broker support Web page.

In some circumstances, fix packs are also provided as a media refresh; CDs and DVDs are recreated, and electronic images on IBM Passport Advantage® are replaced. Check with your IBM representative if you want a media refresh.

If you have installed the Trial Edition, you can apply service to this installation, provided that you are within your 90 day trial period.

Fix packs for WebSphere Message Broker are installed using the same technology as the GA release. Therefore product files are consistently tracked and updated appropriately.

If you have applied any interim fixes to your existing installation, contact your IBM Service representative for instructions and possible updated interim fixes for the fix pack level that you are installing.

Because you can install more than one copy of WebSphere Message Broker runtime components on a single computer, you can choose how to apply service:

1. Apply service to an existing installation.

   When you apply the fix pack, the new level of the product overwrites the existing level. You must stop all components before you apply service. All the components and resources that you have defined are retained. When the fix pack is successfully installed, restart the components.

2. Install the fix pack level of the product at a new location.

   Fix packs are supplied as complete installations. You can install the product in a new location on your computer by using the fix pack packages. You can do this only within the terms of your license:

   - You must have installed a GA level of the product on this computer.
   - You must conform to the any license restrictions for the number of installations on a single computer; your license might permit you to install more than one copy of the product, but allow you to run only one installation at a time.

   This option provides several advantages:

   - You do not have to stop components to complete the installation.
   - You can choose which component runs at which service level by running the appropriate mqsiprofile before you start the component.
   - You can back out a component to the previous service level by using the mqsiprofile from the older code level and restarting the component.

   If you already have more than one installation on the computer, read the additional information in "Applying service on computers with multiple installations" on page 17.

If you want to remove service that you have applied, see "Uninstalling service for runtime components" on page 31.

Downloading a fix pack

Download the latest fix pack from the WebSphere Message Broker support Web page:

1. Click **Recommended fixes** in the Download section of the support page.
2. Click your WebSphere Message Broker product. Available fixes are displayed.
3. Click the fix that you want to download. Details about the fix, and instructions for download and installation, are displayed.
4. Click **Problems fixed** to find out what PMRs, APARs, and defects have been fixed in the fix pack.
5. Click **Release notes** to read more detail about the fix pack contents.
6. Click **HTTPS** in the **Download package** section to start the download process. Accept the download terms and conditions and sign in to the download site using your IBM ID. If you do not have an ID, you can register on this page.
7. Select your chosen operating system and follow the instructions to apply the maintenance updates for this fix.

   a. If you are applying service to an existing installation:
      - Windows
      - Linux and UNIX
      - z/OS

b. If you are applying service by installing an additional copy of the product, follow the instructions provided in the Installation Guide, specifying a new installation location.

Applying service on computers with multiple installations

If you have installed WebSphere Message Broker runtime components more than once on a single computer, you can choose to apply service to one or more of these installations in any order. You might therefore choose to install a service level on one instance initially, and complete some tests, before you apply the fixes to additional installations. You can also choose to run a subset of components at the new level of service, and leave others at the original level.

You must ensure that you comply with the terms of your license at all circumstances.

Distributed systems

You specify which installation you want runtime components to work with by running the mqsiprofile command that is associated with that installation. Any resources that you have defined are associated with the installation for which you have run mqsiprofile. When the mqsiprofile command has completed, restart the component.

If you decide to return to a previous level, stop the component, run the mqsiprofile command that is associated with the installation at the previous service level, and restart the component.

For further details about working with multiple installations, see "Command environment: Windows platforms" on page 11 and "Command environment: Linux and UNIX systems" on page 12.

z/OS systems

You can create component profiles to work with one of multiple installations. Details are provided in "Installing service on z/OS" on page 21.

For further information about components, see z/OS customization overview.

If you have a single installation on a computer, and you want to apply service, you must stop all runtime components, apply service, and restart the components. The service is applied to the product code and you can start the components immediately to run against the new service level.

Installing service on Windows

Apply maintenance updates and program fixes to runtime components.

Before you can apply maintenance to WebSphere Message Broker, download the update, which is typically a fix pack, as described in "Applying service to runtime components" on page 15.

Fix packs are supplied as self-extracting executable programs. To install the updates that you have downloaded:

1. Ensure that the user ID you are logged on with is a member of the Windows Administrator group in the local security domain. If you can, use the same user ID as the one that you used for installing WebSphere Message Broker.
2. Ensure that all WebSphere Message Broker function is stopped:

a. Stop the Configuration Manager, the User Name Server, and all brokers on this computer by using the mqsistop command, or by stopping the Windows services for these components from **Start** → **Settings** → **Control Panel** → **Administrative Tools** → **Services**.

b. Close all instances of the workbench.

c. Ensure that you do not have any WebSphere Message Broker files open.

3. Close all Windows programs before applying maintenance to WebSphere Message Broker to ensure that data is not lost.

4. Run the fix pack self-extracting program from either Windows Explorer or the command line.

The program is referred to as *FixPackLauncher* and its name is in the form *V.R.M-prod-platform-fixpack*.exe, where *V.R.M-prod* represents the version, release, and modification level of the product, *-platform* identifies the platform, and *-fixpack* identifies the fix pack. For example, the file name 6.0.0-WS-MB-WIN32-FP0006.exe identifies the file for Fix Pack 6 on Version 6.0.0 of WebSphere Message Broker on Windows.

- If you start this program from Windows Explorer, or you start it from the command line with no options, the *FixPackLauncher* runs with default options. It extracts the updates from the fix pack file, and starts the WebSphere Message Broker installation program in graphical mode.

- If you run the program from the command line with options, you can choose the mode in which it runs, and how the WebSphere Message Broker installation program runs.

For further details of how you can install, and other options that you can specify, see "Modes of installation and uninstallation" on page 56.

If you start this program from a directory other than the one in which the file is saved, you must include the fully qualified path of the file and its name.

Graphical mode

Use the following command format:

```
FixPackLauncher -a -gui
```

-gui specifies that you want the installation program to run in graphical mode. Graphical is the default mode if you specify only *FixPackLauncher*.

For example, use either of the following commands

```
6.0.0-WS-MB-WIN32-FP0006.exe
6.0.0-WS-MB-WIN32-FP0006.exe -a -gui
```

Console mode

Use the following command format:

```
FixPackLauncher -a -console
```

-console specifies that you want the installation program to run in console mode. You must specify this option if you want the installation to run in this mode.

For example:

```
6.0.0-WS-MB-WIN32-FP0006.exe -a -console
```

Silent mode

Use the following command format:

```
FixPackLauncher -s -a -options "path" -silent
```

-s specifies that you want the extraction to run in silent mode. You must specify this option if you want the extraction to be completed in this mode.

-a specifies that you want to pass options to the installation program.

-options "*path*" specifies the path to the silent installation response file.

-silent specifies that you want the installation program to run in silent mode.

If you do not specify a response file, the default options are used from the supplied response file. If you want to tailor the options to suit your installation requriements, create your own response file and specify its location on the command.

For example, to run both the extractor program and the WebSphere Message Broker installation program silently with a response file, enter the following command:

```
FixPackLauncher -s -a -options "C:\response1.txt" -silent
```

5. If you run the WebSphere Message Broker installation program in graphical or console mode, follow the prompts given and provide any input that is required to complete the installation.

6. If you run the fix pack installation program or the WebSphere Message Broker installation program silently, check the installation log to ensure that the process was successful. File mqsi6_install.log is stored in your home directory,

   The location of your home directory is typically C:\Documents and Settings*UserID*. If you are unsure of your home directory, enter echo %HOMEPATH% on the command line; your home directory is displayed.

7. When installation has successfully completed, review the release notes that are supplied in the directory readmes, and complete any manual post-installation tasks that are required.

8. Restart the components by using the mqsistart command.

Installing service on Linux and UNIX

Apply maintenance updates and program fixes to product components.

Before applying a maintenance update to WebSphere Message Broker, download the update as described in "Applying service to runtime components" on page 15.

To install the updates that you have downloaded:

1. Log in to the system. On AIX, you must log in as root. On Linux and on other UNIX computers, your user ID must have root authority to complete installation. Follow your local security guidelines to acquire root authority; either log in as root, or log in as another user and become root.

2. Stop all components that are running on this computer by using the mqsistop command. If you are applying service on a computer that is running Linux on x86, close all instances of the workbench.

   Ensure that you do not have any WebSphere Message Broker files open.

3. Change to the directory where you downloaded the fix pack file. The file name is in the form *V.R.M-prod-platform-fixpack*.tar.z, where *V.R.M-prod* represents the version, release, and modification level of the product, *-platform* identifies the platform, and *-fixpack* identifies the fix pack. For example, the

file name 6.0.0-WS-MB-AIXPPC64-FP0006.tar.z identifies the file for Fix Pack 6 on Version 6.0.0 of WebSphere Message Broker on AIX.

4. Replace the .z file with a .tar file, by entering the following command:

   `uncompress -fv V.R.M-prod-platform-fixpack.tar.z`

5. Untar the image and extract all the directories, subdirectories, and files required to apply the update, by entering the following command:

   `tar -xvf V.R.M-prod-platform-fixpack.tar`

6. Decide which interface you want to use for the installation; `-graphical` (the default option if none is specified), `-console`, or `-silent`. For further details of how you can run and installation, and other options that you can specify, see "Modes of installation and uninstallation" on page 56.

7. Depending on the choice you have selected, run one of the commands described below, where *installer* is the appropriate installation program for your platform, listed in the table.

   - To start the installation wizard in graphical mode, type the *installer* name with no options at a command prompt, and press Enter. Include the absolute or relative path names if you invoke installation from a directory other than the one in which the wizard exists. When you invoke the installation wizard, it guides you through a series of panels where you can make choices about where to install the components, and which components you want to install.

   - To start the installation wizard in console mode, enter *installer* `-console`. Include the absolute or relative path names if you invoke installation from a directory other than the one in which the wizard exists. When you invoke the installation wizard, it prompts you to enter input for all options, including where to install the components, and which components you want to install.

   - To use the installation wizard silent interface, enter *installer* `-silent`. To start the installation wizard in silent mode, enter *installer* `-silent`. Include the absolute or relative path names if you invoke installation from a directory other than the one in which the wizard exists. If you want to specify non-default settings, include a response file on the invocation. For more details of how to do this, and how to create and edit a response file to define your requirements, see "Using response files" on page 58.

Platform	Installation program
AIX	`setupaix`
HP-UX on Itanium	`setuphpia64`
HP-UX on PA-RISC	`setuphp`
Linux on POWER™	`setuplinuxppc`
Linux on x86	`setuplinuxia32`
Linux on System z®	`setuplinux390`
Solaris on SPARC	`setupsolaris`
Solaris on x86-64	`setupsolarisx64`

The installer extracts the update files and runs according to the arguments supplied.

8. Follow the instructions presented by the installation program and provide any input that is required to complete the installation.

When installation has successfully completed, review the release notes that are supplied in the directory readmes, and complete any manual post-installation tasks that are required.

9. If you have defined ODBC connections for brokers on this computer, check the sample odbc.ini files and make any required changes before you restart your brokers. For example, a change to database libraries might have been made. Apply these changes to your ini files, or copy the sample and recreate your ini files, making sure that you use the appropriate 32-bit or 64-bit sample files.

10. When you have completed any required ODBC changes, restart the components by using the mqsistart command.

Installing service on z/OS

Apply maintenance updates to product components.

Before applying a maintenance update to WebSphere Message Broker, download the update as described in "Applying service to runtime components" on page 15.

Use this three stage process to install service on z/OS:

1. Store the updates on your target system.
2. Install and test the fix pack. If testing is not satisfactory, you can remove this fix pack at this stage.
3. After testing, confirm the fix pack as your current base level of installation.

Follow these instructions to complete the process:

1. Receive the updates. Use SMP/E RECEIVE to transfer the contents of the fix pack from the tape or the downloaded package to your system at the specified location.
2. Apply the updates. Use SMP/E APPLY to install the fix pack which completes the link edit steps and generates a runtime environment in your chosen location.

   The installation process completes updates to USS and to four product data sets (SBIPSAMP, SBIPINST, SBIPPROC, and SBIPAUTH).

   If your SMP/E target system is not on the same file system as your production system, copy the data sets (including the data set that represents your USS mount point) to the system where they are to be used, overwriting the current content. When you complete this action, all runtime components use the updated data sets when they next restart.

   If you do not want all of your components to use the updated installation, copy the data sets to a different location and start selected components against that copy. Further details are provided in "Multiple concurrent installations at different levels" on page 22.

   You can specify the same destination for receiving the fix pack contents (the SMP/E target system) and for installing (the production system). If you specify a different location, you must copy the product data sets to the appropriate location.

   When you have installed the fix pack, you can test it to ensure that it is working correctly in your environment. If you find any problems at this stage, you can remove the fix pack using SMP/E RESTORE. The command restores your installation to the level that you last accepted (SMP/E ACCEPT).

3. Confirm the update. Use SMP/E ACCEPT to commit the changes and to establish this fix pack as the current level. When you have completed this step,

you cannot restore your system to a previous service level. If you want to use an earlier service level, you must reinstall that level.

Multiple concurrent installations at different levels

If you want to install a later fix pack level, and retain your existing installation so that you can use both service levels, install the second level in a different location. You can then set up additional customization so that one or more of your existing runtime components can use the second service level. By retaining the product files in the first location, you can switch a component back to the first level, if required.

For example, you might choose to change one broker to use the later service level, but keep your Configuration Manager at the original service level until you have completed some tests on the updated broker.

The following steps are a summary of the tasks that you must complete to run components at one service level concurrently with components at another service level. These steps are identical to those you take for setting up an initial installation, except where indicated. For a full description of installation and customization for each component, see Creating a broker on z/OS, Creating a Configuration Manager on z/OS, and Creating a User Name Server on z/OS.

1. To install a second service or fix pack level:
   a. Install the second level of the product components by using the instructions provided with that level.
   b. Copy all the template data sets and the main files from the HFS file system to a unique location.

2. To prepare components for use with the second installation:
   a. Create and customize a new component data set. For example, if you want to create a new broker component, complete the steps described in Customizing the broker component data set.
   b. Copy the template JCL from the second location to the new dataset.
   c. Customize the JCL to work with the second location, but use the existing queue manager definition that you are using with the first location. If the component is a broker, use the existing database definition too. For more details about this step, see the appropriate task for your component, for example Customizing the broker JCL.

3. To change a component to work with the second installation:
   a. Submit the BIPGEN job to update the environment file ENVFILE for the component. This task is described in Creating the environment file.
   b. Copy the customized started task from the new data set into the procedures library, for example USER.PROCLIB.
   c. Start the component; the component is now associated with the second location.

4. To roll back to the previous version:
   a. Open the original component data set, that is associated with the first location.
   b. Resubmit BIPGEN from that data set.
   c. Copy the original PROC into the procedures library USER.PROCLIB.
   d. Stop and restart the component.

Applying service to the Message Brokers Toolkit

Apply maintenance updates and program fixes to the Message Brokers Toolkit.

Before you apply a fix pack or other service pack to the Message Brokers Toolkit, you might want to preserve the resources that you have created or imported into the workspace. For details of this task, see Backing up the Message Brokers Toolkit workspace.

The Message Brokers Toolkit uses the Rational Product Updater (RPU) to install service updates. Follow these instructions to install any available updates to the Message Brokers Toolkit. Sometimes, updates to the information center are also made available through RPU, and you can apply these updates in the same way.

For information about current fixes, follow the link **Recommended fixes** on the WebSphere Message Broker support Web page. From that page, you can access the service release notes, and the list of problems fixed in a fix pack or other maintenance release.

1. In the toolkit, click **Help** → **Software Updates** → **IBM Rational Product Updater** to launch the RPU.
2. On the Installed Products tab, click the entry for IBM WebSphere Message Brokers Toolkit. IBM WebSphere Message Brokers Toolkit is highlighted.
3. Click the **Find Updates** button. You are shown a list of updates that are available for the products that you have installed. If any updates are available for the Message Brokers Toolkit, these appear below the product name.
4. For more information about any of the available updates, click the update. Information about the update appears in the Detailed information pane.
5. Before applying any of the available updates, read the information and follow any instructions given.
6. By default, all available updates are selected. Clear any items that you do not want to install.
7. Click **Install updates** to apply the service updates. Installation of the updates begins.
8. Specific updates might require further input; follow any instructions and answer any questions that you are presented with.

When installation is complete, the service update appears on the Installed Products tab, under IBM WebSphere Message Brokers Toolkit.

If you still see a problem that you believe should be fixed by this update, close the Message Brokers Toolkit. Follow the instructions in "Restarting the Message Brokers Toolkit."

For more detailed information about the RPU, see the Rational Product Updater Help.

Restarting the Message Brokers Toolkit

Restart the Message Brokers Toolkit to resolve potential inconsistencies.

Under some circumstances, you might need to restart the Message Brokers Toolkit with the -clean option.

1. Change to the directory in which you have installed the toolkit. If you prefer, you can enter the full path to the command, and omit this step.

2. Enter the following command:

- **Linux**

  ```
  ./wmbt.bin -clean
  ```

- **Windows**

  ```
  wmbt -clean
  ```

Part 2. Uninstalling

Uninstalling

Remove runtime components or the Message Brokers Toolkit from your computer.

Follow the appropriate link for the task that you want to complete:
- "Uninstalling runtime components"
- "Uninstalling the Message Brokers Toolkit" on page 32

You might also want to uninstall complementary products. See the documentation provided by those products to complete this task:
- Rational Agent Controller (RAC): See the file install.html that is located in the root directory of the RAC component on CD or DVD.
- IBM DB2: Access the appropriate information for your installation:
  - DB2 V9.1 information center (distributed systems)
  - DB2 V8 information center (distributed systems)
  - DB2 information center (z/OS) (Versions 8 and 9)
  - DB2 V7 library (z/OS)
- IBM Tivoli License Manager: access the IBM Tivoli License Manager information center

Uninstalling runtime components

You can uninstall the runtime components on distributed systems in a number of ways.

This section describes this task for the following systems:
- AIX
- HP-UX
- Linux
- Solaris
- Windows

If you are uninstalling on Linux or UNIX systems, make sure that the directory /var is not full; the uninstallation wizard requires space in this directory while it is running.

1. Check that your user ID has the correct authority to uninstall runtime components, or to uninstall service that you have applied.
2. If you are uninstalling one or more runtime components, decide which mode of uninstallation you want to use. The choices are explained in "Modes of installation and uninstallation" on page 56.
3. Follow the uninstallation instructions provided in the appropriate topic:
   - "Uninstalling runtime components in graphical mode" on page 28
   - "Uninstalling runtime components in console mode" on page 29
   - "Uninstalling runtime components in silent mode" on page 30
   - "Uninstalling service for runtime components" on page 31

If, in exceptional circumstances, the uninstall wizard fails to remove the product successfully, you can remove the product manually. Contact your IBM Service Center for assistance if a failure occurs.

For information about removing service updates, see "Uninstalling service for runtime components" on page 31.

Uninstalling runtime components in graphical mode

Remove the runtime components in graphical mode.

Always use the WebSphere Message Broker uninstall wizard to remove product components, unless otherwise stated. Do not use the uninstallation program that is provided by the operating system; for example, geninstall on AIX, or swremove on HP-UX.

On HP-UX Version 11.23, and on Linux on POWER, a known restriction prevents the creation of the uninstall wizard. If this situation occurs, use the alternative command specified in these instructions. Also check the readme.html file to ensure that no additional operating systems are affected by this restriction.

For information about graphical mode and alternative modes available, see "Modes of installation and uninstallation" on page 56.

To start the uninstaller in graphical mode, complete the following steps:

1. Stop all running processes that are associated with runtime components (broker, Configuration Manager and User Name Server) before you uninstall. Use the mqsilist (list resources) command to check which components are running. Use the mqsistop command to stop each component.

2. On Windows and Linux on x86, end all active sessions of the Message Brokers Toolkit.

3. If you do not plan to reinstall components on this computer, delete all the brokers (mqsideletebroker command), Configuration Managers (mqsideleteconfigmgr command), and User Name Servers (mqsideleteusernameserver command) that are associated with this installation. When you delete a component, all its associated data and resources are deleted; if you want to retain component data, do not delete that component.

4. If you have created DB2 or Derby databases on Windows with the mqsicreatedb command, delete them with the mqsideletedb command. If you delete the last database, the Database Instance Manager is also deleted (the Database Instance Manager controls all appropriate databases in a single system; if you have another installation, this component might not be deleted if databases that are associated with the other installation remain). Databases that have been created by the Default Configuration wizard can also be deleted in this way.

5. Run the following command from outside the installation directory, specifying the full path (this method of invocation ensures that the full directory structure is removed during uninstallation):

   - On HP-UX systems running Version 11.23 only, and on Linux on POWER systems:

     */install_dir/*_uninst_runtime_jvm/jre/bin/java -jar */install_dir/*_uninst_runtime/uninstall.jar

   - On all other operating systems:

     install_dir/_uninst_runtime/*uninstaller*

   where *install_dir* is the home directory of your WebSphere Message Broker installation.

   If you accepted the default location during installation, this directory is as follows:

- On Windows, C:\Program Files\IBM\MQSI\6.0
- On AIX, HP-UX, and Solaris, /opt/IBM/mqsi/6.0
- On Linux, /opt/ibm/mqsi/6.0

Alternatively, if you have a single installation of runtime components on Windows, you can navigate to **Start** → **Settings** → **Control Panel** → **Add/Remove Programs**. Select WebSphere Message Broker and click **Change/Remove**. The uninstaller is started in graphical mode.

6. Choose the component or components that you want to uninstall and follow the prompts to complete uninstallation.

Uninstalling runtime components in console mode

Remove the runtime components in console mode.

Always use the WebSphere Message Broker uninstall wizard to remove product components, unless otherwise stated. Do not use the uninstallation program that is provided by the operating system; for example, geninstall on AIX, or swremove on HP-UX.

On HP-UX Version 11.23, and on Linux on POWER, a known restriction prevents the creation of the uninstall wizard. If this situation occurs, use the alternative command specified in these instructions. Also check the readme.html file to ensure that no additional operating systems are affected by this restriction.

For information about console mode and alternative modes available, see "Modes of installation and uninstallation" on page 56.

To start the uninstaller in console mode, complete the following steps:

1. Stop all running processes that use any part of WebSphere Message Broker (brokers, Configuration Manager, and the User Name Server) before you uninstall. Use the mqsilist (list resources) command to check which components are running. Stop each component using the mqsistop command.

2. On Windows and Linux on x86, end any active sessions of the Message Brokers Toolkit.

3. If you do not plan to reinstall on this computer, delete all the brokers (mqsideletebroker command), Configuration Managers (mqsideleteconfigmgr command), and User Name Servers (mqsideleteusernameserver command) that are associated with this installation. When you delete a component, all its associated data and resources are deleted; if you want to retain component data, do not delete that component.

4. If you have created DB2 or Derby databases on Windows with the mqsicreatedb command, delete them with the mqsideletedb command. If you delete the last database, the Database Instance Manager is also deleted (the Database Instance Manager controls all appropriate databases in a single system; if you have another installation, this component might not be deleted if databases associated with the other installation remain). Databases created by the Default Configuration wizard can also be deleted in this way.

5. Run the uninstallation program from outside the installation directory, specifying the full path to ensure that the folders are removed during uninstallation.
   - On HP-UX systems that are running Version 11.23 only, and on Linux on POWER systems:

*/install_dir/*_uninst_runtime_jvm/jre/bin/java -jar */install_dir/*_uninst_runtime/uninstall.jar -console

   - On all other operating systems:

```
install_dir/_uninst_runtime/uninstaller -console
```

where *install_dir* is the home directory of your WebSphere Message Broker installation.

If you accepted the default location during installation, this directory is as follows:

- On Windows, C:\Program Files\IBM\MQSI\6.0
- On AIX, HP-UX, and Solaris, /opt/IBM/mqsi/6.0
- On Linux, /opt/ibm/mqsi/6.0

6. When started, the uninstaller presents text-based screens on the console. Navigate between these screens using the following options:

- 1 next
- 2 previous
- 3 cancel
- 4 redisplay

The uninstaller asks you to confirm that you want to uninstall the product and that the location it is uninstalling from is correct. When you have responded to these questions, the uninstallation starts.

Uninstalling runtime components in silent mode

Remove the runtime components without user interaction in silent mode .

Always use the WebSphere Message Broker uninstall wizard to remove product components, unless otherwise stated. Do not use the uninstallation program that is provided by the operating system; for example, geninstall on AIX, or swremove on HP-UX.

On HP-UX Version 11.23, and on Linux on POWER, a known restriction prevents the creation of the uninstall wizard. If this situation occurs, use the alternative command specified in these instructions. Also check the readme.html file to ensure that no additional operating systems are affected by this restriction.

You can remove WebSphere Message Broker without user interaction. This process is called unattended (or silent) removal. This topic describes how to run the uninstallation program silently without a response file; the program assumes all the default values.

If you want to complete a silent uninstallation, but have non-default requirements, you can use a response file. A response file is a text file that contains values for the options that you select when you uninstall WebSphere Message Broker. For more details of how to create, edit, and employ a response file to specify your requirements, see "Using response files" on page 58.

For information about silent mode and alternative modes available, see "Modes of installation and uninstallation" on page 56.

To start the uninstaller in silent mode, complete the following steps:

1. Stop all running processes that use any part of WebSphere Message Broker (brokers, Configuration Manager, and the User Name Server) before you uninstall. Use the mqsilist (list resources) command to check which components are running. Stop each component using the mqsistop command.
2. On Windows and Linux on x86, end any active sessions of the Message Brokers Toolkit.

3. If you do not plan to reinstall on this computer, delete all the brokers (mqsideletebroker command), Configuration Managers (mqsideleteconfigmgr command), and User Name Servers (mqsideleteusernameserver command) that are associated with this installation. When you delete a component, all its associated data and resources are deleted; if you want to retain component data, do not delete that component.

4. If you have created DB2 or Derby databases on Windows with the mqsicreatedb command, delete them with the mqsideletedb command. If you delete the last database, the Database Instance Manager is also deleted (the Database Instance Manager controls all appropriate databases in a single system; if you have another installation, this component might not be deleted if databases associated with the other installation remain). Databases created by the Default Configuration wizard can also be deleted in this way.

5. Run the following command from outside the installation directory, specifying the full path (this method of invocation ensures that the full directory structure is removed during uninstallation):
   - On HP-UX systems that are running Version 11.23 only, and on Linux on POWER systems:

*/install_dir/*_uninst_runtime_jvm/jre/bin/java -jar */install_dir/*_uninst_runtime/uninstall.jar -silent

   - On all other operating systems:

   install_dir/_uninst_runtime/*uninstaller -silent*

   where *install_dir* is the home directory of your WebSphere Message Broker installation.

   If you accepted the default location during installation, this directory is as follows:
   - On Windows, C:\Program Files\IBM\MQSI\6.0
   - On AIX, HP-UX, and Solaris, /opt/IBM/mqsi/6.0
   - On Linux, /opt/ibm/mqsi/6.0

   The uninstallation program runs without interaction.

Uninstalling service for runtime components

On some platforms, you can remove fixes that you have applied.

Distributed systems

You cannot remove individual fixes that you have applied to runtime components on distributed systems. If you want to restore a system to a previous service level, you must uninstall the product before you reinstall the desired level of service.

If you have a single installation on your computer, create and retain a backup image, or keep previous GA or fix pack images or media, in case of problems after you have installed service. If you have multiple installations, each one can be at a different service level and you can transfer the runtime components to work with an alternative installation at a newer or older level of service. This option is described in "Applying service to runtime components" on page 15.

When you uninstall the product, the components that you have created are not lost, and you can continue to use these components and associated resources with the reinstalled product. However, you might want to take a backup of the installation and work path directories before you start this procedure.

| To restore a system on which you have a single installation to a previous
| service level:
| 1. Uninstall the entire product.
| 2. Reinstall the GA level of the product. This step is required to ensure
| that you comply with your license agreement.
| 3. Install the desired level of fix pack.
| **z/OS** On z/OS systems, you can uninstall service levels under some
| circumstances during the installation phase; for further information, see
| "Installing service on z/OS" on page 21.

Uninstalling the Message Brokers Toolkit

Choose the method that you want to use to uninstall the Message Brokers Toolkit and follow the instructions to remove the component.

Complete the following steps to uninstall the Message Brokers Toolkit:

1. Check that your user ID has the correct authority to uninstall the Message Brokers Toolkit or to uninstall service that you have applied. On Linux on x86, your user ID must have root authority. Follow your local security guidelines to acquire root authority; either log in as root, or log in as another user and become root. On Windows, your user ID must have Administrator authority.
2. If you are uninstalling the Message Brokers Toolkit component, decide which mode of uninstallation you want to use. The choices are explained in "Modes of installation and uninstallation" on page 56.
3. Follow the instructions provided in the appropriate topic:
   - "Uninstalling the Message Brokers Toolkit in graphical mode"
   - "Uninstalling the Message Brokers Toolkit in console mode" on page 33
   - "Uninstalling the Message Brokers Toolkit in silent mode" on page 33
   - "Uninstalling service from the Message Brokers Toolkit" on page 34

Uninstalling the Message Brokers Toolkit in graphical mode

The graphical interface guides you through the process of uninstalling the Message Brokers Toolkit.

For information about the modes that are available, see "Modes of installation and uninstallation" on page 56.

Complete the following steps:

1. Invoke the uninstaller in graphical mode using one of the following methods. On Linux on x86, you can use only the third option.
   - **Windows** Find the entry for **IBM WebSphere Message Broker Toolkit Version 6.0** in Add/Remove Programs and click **Remove**.
   - **Windows** Find the uninstallation wizard in the *install_dir*/wmbt_prod/ _uninst directory. Its name is defined in the table below. Double-click the file uninstall.exe.
   - Navigate to the uninstallation directory, *install_dir*/wmbt_prod/_uninst directory, in a command prompt and type one of the following commands:
     - **Linux** Type the command: `./uninstall.bin`
     - **Windows** Type the command: `uninstall.exe`

2. Follow the guidance through the series of panels, providing input and responses as required.
3. When the process completes, check the log file for errors. The file wmbt_uninstall.log is recorded in your home directory.
4. Restart your computer to complete the uninstallation of the Message Brokers Toolkit.

Uninstalling the Message Brokers Toolkit in console mode

Uninstall the toolkit component using the command line interface.

For information about console mode and alternative modes available, see "Modes of installation and uninstallation" on page 56.

Complete the following steps:
1. Invoke the uninstaller in console mode:
   - `Linux` Enter the command: `./uninstall.bin -console`
   - `Windows` Enter the command: `uninstall.exe -console`

   If you invoke installation from a directory other than the one in which the wizard exists, *install_dir*/wmbt_prod/_uninst directory, include the absolute or relative path with the command name. The uninstallation program starts.
2. The uninstaller presents text-based screens on the console. Navigate through the screens using the following options:
   - 1 next
   - 2 previous
   - 3 cancel
   - 4 redisplay

   The uninstaller asks you to confirm that you want to uninstall the component and that the location it is uninstalling from is correct. When you have answered these questions, uninstallation starts.
3. When the process completes, check the log file for errors. The file wmbt_uninstall.log is written to your home directory.
4. Restart your computer to complete the uninstallation of the Message Brokers Toolkit

Uninstalling the Message Brokers Toolkit in silent mode

Uninstall the Message Brokers Toolkit without user interaction.

For information about alternative modes that are available, see "Modes of installation and uninstallation" on page 56.

Complete the following steps:
1. To uninstall the Message Brokers Toolkit using default settings:
   - `Linux` Enter the following command:
     `./uninstall.bin -silent`
   - `Windows` Invoke the installation command within a start command with parameter **/w** to ensure that the installation completes before it returns to the command prompt. Enter the following command to start a default uninstallation:
     `start /w uninstall.exe -silent`

If you start the installation program from a directory other than the one in which the wizard exists, *install_dir*/wmbt_prod/_uninst directory, include the absolute or relative path with the command name.

2. To uninstall the Message Brokers Toolkit using tailored settings, you must include a response file on the invocation:

   `uninstaller` -silent *responsefile*

   where *uninstaller* is the name of the uninstaller for your platform, and *responsefile* is the full path and name of your chosen response file. For more details of how to create, edit, and employ a response file to specify your requirements, see "Using response files" on page 58. Check the log file wmbt_uninstall.log for errors. It is recorded in your home directory.

3. When the process completes, check the log file for errors. The file wmbt_uninstall.log is recorded in your home directory.

4. Restart your computer to complete the uninstallation of the Message Brokers Toolkit.

Uninstalling service from the Message Brokers Toolkit

Remove maintenance or fixes from the Message Brokers Toolkit.

You can remove WebSphere Message Broker iFix and service updates from the toolkit using the Rational Product Updater (RPU).

To uninstall service:

1. Launch the RPU from the toolkit; click **Help** → **Software Updates** → **IBM Rational Product Updater**.

2. Click the Rollbacks tab. An entry for the IBM WebSphere Message Brokers Toolkit is displayed, and any updates that you have installed appear under this entry.

3. Select the update that you wish to uninstall. Ensure that you select only those products or fixes that you want to uninstall.

4. To remove the updates that you have selected, click **Roll Back Updates**. The products or fixes are removed.

Part 3. Reference

Installation

Use the reference information in this section to understand what your installation options are, and how they affect the system.

- "Hardware requirements"
- "Software requirements" on page 40
- "Modes of installation and uninstallation" on page 56
- "Multicultural support" on page 60
- System changes

Read the product readme.html file to see if additional options or restrictions are in force; this file is provided on CD (or DVD) and installed with the product. You can find the most up-to-date version on the Web, as described in "Finding the latest information" on page 4.

Product requirements are also available on the Web, and are occasionally updated. Check for the latest information on the WebSphere Message Broker Requirements.

Hardware requirements

This section provides information about the hardware requirements of WebSphere Message Broker.

- "Supported processors"
- "Memory and disk space requirements" on page 38
- "Communications" on page 40

Supported processors

WebSphere Message Broker is supported on multiple processors.

The hardware requirements for each supported operating system are given in the following table. All support statements assume that the stated systems are capable of running the required level of a compatible operating system and have enough storage for the WebSphere Message Broker components that you install, and all prerequisite products.

Operating system	Requirements[1]
AIX	64-bit IBM pSeries® systems Any hardware from IBM or other vendors that is capable of running trademarked AIX systems[2]
HP-UX on Itanium	Hewlett-Packard Integrity systems
HP-UX on PA-RISC	Hewlett-Packard HP-9000 PA-RISC 2.0 processor machines[3]
Linux on POWER	64-bit iSeries® and pSeries IBM POWER processor based systems only
Linux on x86	**32-bit** IBM eserver xSeries® or equivalent Intel® based systems[4] **64-bit** AMD64 or equivalent EM64T processor machines

Operating system	Requirements[1]
Linux on System z	Any server capable of running one of the supported Linux on System z operating system releases
Solaris on SPARC	Sun Microsystems SPARC processor machines
Solaris on x86-64	Sun Microsystems AMD64 or equivalent EM64T processor machines
Windows	IBM eserver xSeries or equivalent Intel based systems IBM eserver iSeries Server using the IBM Integrated xSeries Server[5]
z/OS[6]	Any server capable of running one of the supported z/OS releases

Notes:

1. Always check the WebSphere Message Broker Requirements Web site and the readme.html file for the latest information about supported processors.

   A readme file is supplied on the product DVD or CD (for runtime components and for the Message Brokers Toolkit), and you can access it from the final panel of the relevant installation program. However, the files are updated occasionally; access the product readmes Web page to check that you have the latest level.

2. You can use AIX systems only if they have passed a set of verification tests for compliance with the AIX application binary and programming interfaces.

3. The +DAportable flag cannot be used for 64-bit compilations, therefore PA-RISC 1.1 chips are no longer supported.

4. The Message Brokers Toolkit requires an Intel Pentium® III (or higher) processor-based computer with a processor speed of at least 700 MHz. This specification is the minimum supported level; for improved performance use a 2 GHz processor.

   A minimum display resolution of at least 1024 x 768 is required for some dialogs (for example, the Preferences dialog).

5. You must install OS/400® Version 5 Release 2 or Version 5 Release 3 on the iSeries Server to exploit this support.

6. See the *Program Directory for WebSphere Message Broker for z/OS* or the *Program Directory for WebSphere Message Broker with Rules and Formatter for z/OS* for further details.

Memory and disk space requirements

Check the memory and disk space that is required for your installation.

Requirements for memory and disk space depend on the installation operating system, and on the WebSphere Message Broker components that you are installing.

Distributed systems

- 512 MB of RAM is required to support runtime operations (1 MB equals approximately 1000 000 bytes).
- 512 MB of RAM is required to support Message Brokers Toolkit operations on Linux on x86 or Windows. This specification is the minimum supported level; for improved performance, provide 1 GB (1 GB equals approximately 1 000 000 000 bytes).

- Disk space requirements are dependent on the components that you install and the working space that is required by those components (for example, for WebSphere MQ queues and persistent messages).

  Check that your computer has at least the space shown in the table below, which provides guidance for both permanent product requirements and temporary space. If you install just one or two of the runtime components, the storage required is reduced by only a small amount. Check that these requirements have not been updated in the latest product readme file readme.html.

  If the installation directory and the temporary space are on the same partition or drive, add together the two figures to check that you have enough space available. If you do not, increase the available storage or change either the location of the temporary space or the installation directory. The temporary files are deleted when installation has completed.
  - On AIX, HP-UX, and Linux systems, the default temporary space directory is /tmp.
  - On Solaris systems, the default temporary space directory is /var/tmp.
  - On Windows, the default temporary space directory is pointed to by the TEMP system variable. On some systems, the variable TMP exists and is used before TEMP, therefore you might need to check or change the setting of both these variables.

  The installation wizard displays requirements for permanent space, but not for temporary space. If the figure that the installation wizard displays is greater than the figure shown in the following tables, check that your computer has sufficient space before you continue with the installation.

Component	AIX	HP-UX on Itanium	HP-UX on PA-RISC	Linux[1,2]	Solaris[1]	Windows[2]
Broker, Configuration Manager, and User Name Server	680 MB plus 300 MB temporary space	680 MB plus 300 MB temporary space	820 MB plus 300 MB temporary space	360 MB plus 300 MB temporary space	565 MB plus 300 MB temporary space	370 MB plus 300 MB temporary space
Message Transformation Services (optional broker extension)	45 MB	50 MB	50 MB	25 MB	30 MB	20 MB
Message Brokers Toolkit	Not available	Not available	Not available	5.9 GB plus 2.1 GB temporary space	Not available	5.9 GB plus 2.1 GB temporary space

Notes:

1. Requirements vary slightly on different Linux and Solaris offerings; maximum figures are shown.
2. The Message Brokers Toolkit is available on Linux on x86 and Windows only. The maximum space shown as the requirement in the installation directory is required by the installation wizard; when it completes, the final allocation of permanent space is approximately 3.85 GB.

- If you install one of the database products supplied with WebSphere Message Broker, you need additional disk space:
  - DB2 Enterprise Server requires approximately 300 MB. This specification is for a Compact installation, which provides sufficient function for WebSphere Message Broker; if you choose a Typical or Custom installation, additional storage might be required.
  - On Windows, ODBC (Open Database Connectivity) drivers for the Derby database require approximately 105 MB.
- On computers on which you create a broker, approximately 10 MB is required for the broker tables. If you create user databases that are accessed by message flows, additional space is required on those computers.
- If you intend to create more than one broker on any one computer, you will need additional memory and swap space. For example, you might create more than one broker at different versions to complete migration. Plan for 1 GB RAM and 1 GB of swap space for each broker, in addition to the space and memory requirements of other applications.

  You might need to increase these figures if you deploy complex message flows to the brokers, or if you process large messages (of many megabytes) or complex messages that contain many different tags.

z/OS   See the section about DASD storage requirements in the *Program Directory for WebSphere Message Broker for z/OS* or the *Program Directory for WebSphere Message Broker with Rules and Formatter for z/OS*.

Communications

Your system must have communications hardware that supports at least one of the following protocols:
- NetBIOS
- SNA LU 6.2
- SPX
- TCP/IP

Software requirements

View the operating system, database, and other software requirements.

This section provides information about requirements of WebSphere Message Broker:
- "Support for 32-bit and 64-bit platforms"
- "Operating system requirements" on page 41
- "Supported databases" on page 44
- "Additional software requirements" on page 50
- "Optional software support" on page 53

Support for 32-bit and 64-bit platforms

WebSphere Message Broker operates in 32-bit mode, or 64-bit mode, or both, on supported operating systems.

On operating systems where both modes are supported, 32-bit operation is the default mode. If you create an execution group for a broker in a mode that is not supported by its underlying hardware and software, it is created and operates in the supported mode, although the workbench reports the mode that you specified. For example, if you specify 64-bit mode on Windows, an execution group is

created, and you can deploy resources to it. It operates in 32-bit mode, even though it is displayed as a 64-bit execution group.

If you do not specify a size when you create an execution group on platforms that support both 32-bit and 64-bit modes, a 32-bit execution group is created.

The following table shows for each supported platform whether the components can be run in 32-bit mode, 64-bit mode, or both.

Platform	Broker core components and commands	32-bit execution groups	64-bit execution groups
AIX	32-bit	Yes	Yes
HP-UX on Itanium	64-bit	No	Yes
HP-UX on PA-RISC	32-bit	Yes	Yes
Linux on POWER	32-bit	Yes	No
Linux on x86	32-bit	Yes	No
Linux on x86-64	32-bit	Yes	No
Linux on System z	32-bit	Yes	No
Solaris on SPARC	32-bit	Yes	Yes
Solaris on x86-64	32-bit	Yes	No
Windows	32-bit	Yes	No
z/OS	32-bit	Yes	No

Operating system requirements

WebSphere Message Broker is supported on multiple operating systems.

Operating system software requirements are defined in the following table.

Operating system	Requirements[1]
AIX	• IBM AIX Version 5.2 with Maintenance Level 3 • IBM AIX Version 5.3 with Maintenance Level 2
HP-UX on Itanium	• HP-UX 11i v2 11.23 for Integrity • HP-UX 11i v3[2]
HP-UX on PA-RISC	• HP-UX 11i v1 (B.11.11) (plus December 2003 QPK) • HP-UX 11i v3[2] • HP-UX 11.23
Linux on POWER[3]	• Linux PowerPC® Red Hat Enterprise Linux V4.0 (plus Update 2 or later) • Linux PowerPC Red Hat Enterprise Linux V5.0 • Linux PowerPC SUSE Linux Enterprise Server (SLES) 9 RC5 or above • Linux PowerPC SUSE Linux Enterprise Server (SLES) 10[4]

Operating system	Requirements[1]
Linux on x863+5	• Linux Intel (32-bit) Red Hat Enterprise Linux V3.0 (plus Update 2 or later) • Linux Intel (32-bit) Red Hat Enterprise Linux V4.0 (plus Update 2 or later) • Linux Intel (32-bit) Red Hat Enterprise Linux V5.0 (plus Update 1 or later)[6] • Linux x86 (64-bit) Red Hat Enterprise Linux Version 4.0 (plus Update 2 or later)[7] • Linux x86 (64-bit) Red Hat Enterprise Linux Version 5.0 (plus Update 1 or later)[6] • Linux Intel (32-bit) SUSE Linux Enterprise Server (SLES) 9 • Linux Intel (32-bit) SUSE Linux Enterprise Server (SLES) 10[5] • Linux Intel (64-bit) SUSE Linux Enterprise Server (SLES) 9[6] • Linux Intel (64-bit) SUSE Linux Enterprise Server (SLES) 10[6]
Linux on System z[3]	• Linux zSeries® (31-bit) Red Hat Enterprise Linux V3.0 (plus Update 2 or later) • Linux zSeries (64-bit) Red Hat Enterprise Linux Version 4.0 (plus Update 2 or later)[9] • Linux zSeries (64-bit) Red Hat Enterprise Linux Version 5.0 (plus Update 1 or later)[9] • Linux zSeries (31-bit) SUSE Linux Enterprise Server (SLES) 9 • Linux zSeries (31-bit) SUSE Linux Enterprise Server (SLES) 10[4] • Linux zSeries (64-bit) SUSE Linux Enterprise Server (SLES) 9[8] • Linux zSeries (64-bit) SUSE Linux Enterprise Server (SLES) 10[4+8]
Solaris on SPARC	• Sun Solaris Operating Environment 8 (plus SunSolve recommended Patch Cluster level and Patch ID 111308-05)[9] • Sun Solaris Operating Environment 9 (plus SunSolve recommended Patch Cluster level) • Sun Solaris Operating Environment 10 (plus SunSolve recommended Patch Cluster level)[10]
Solaris on x86-64	• Sun Solaris Operating Environment 10 (plus SunSolve recommended Patch Cluster level)[10]
Windows	• Microsoft® Windows XP Professional (plus SP2) • Microsoft Windows Server 2003 Standard Edition • Microsoft Windows Server 2003 Enterprise Edition • Microsoft Windows 2003 Server R2
z/OS[11]	• z/OS V1.5 or later

Notes:

1. Always check the WebSphere Message Broker Requirements Web site and the readme.html file for the latest information about supported software.

   A readme file is supplied on the product DVD or CD (for runtime components and for the Message Brokers Toolkit), and you can access it from the final panel of the relevant installation program. However, the files are updated occasionally; access the product readmes Web page to check that you have the latest level.

2. You must install WebSphere Message Broker Fix Pack 6.0.0.5 or later with HP-UX 11i v3.

3. On all Linux systems on which you plan to use Rational Agent Controller, ensure that the X Windows libraries are installed before you install WebSphere Message Broker. If you have a 64-bit platform, you must install the 31-bit or 32-bit X Windows libraries in addition to the 64-bit libraries.

   If you are installing on Red Hat Enterprise V4.0, you must also install the deprecated X Windows libraries.

   All these libraries are available with the operating systems media.

4. This operating system requires WebSphere MQ Version 6.0.2.0 or later.

5. The Message Brokers Toolkit is supported on Linux Intel (32-bit) Red Hat Enterprise Linux V3.0, Linux Intel (32-bit) SUSE Linux Enterprise Server (SLES) 9, and Linux Intel (32-bit) SUSE Linux Enterprise Server (SLES) 10 only.

6. You must install WebSphere Message Broker Version 6.0.0.5 or later on computers running Linux Intel (32-bit) Red Hat Enterprise Linux V5.0 or Linux x86 (64-bit) Red Hat Enterprise Linux V5.0.

   You must install WebSphere Message Broker Version 6.0.0.3 or later on computers running Linux Intel (64-bit) SUSE Linux Enterprise Server (SLES) 9 and Linux Intel (64-bit) SUSE Linux Enterprise Server (SLES) 10.

7. WebSphere Message Broker is a 32-bit application and requires 32-bit C and C++ libraries, which are available through the Red Hat Enterprise Linux compatibility hardware architecture runtime support options.

   On Linux on x86, you might require the following additional packages, which are available with the operating system:

   - If you chose to install in graphical mode, compatibility libraries are required:
     – Red Hat Enterprise 3.0: package `compat-libstdc++`
     – SUSE LINUX Enterprise Server: package `compat` (at version 2002.12.6.0 or later)

     These libraries are not required for console or silent installations.

   - If you want to use the package monitor (RPM), the `rpm-build` package is required.

8. On Linux on System z, WebSphere Message Broker operates in 31-bit mode on 64-bit versions. Ensure that 31-bit versions of the C and C++ libraries, WebSphere MQ, and DB2 are installed.

9. This patch provides multithreaded malloc support on Solaris 8. It is required because the standard operating system malloc library is optimized for single-threaded applications, but the broker typically runs many threads and requires the multithreaded mtmalloc.

10. WebSphere Message Broker is supported only in the Global zone, or in a whole root non-global zone, and must be installed separately in each.

11. See the *Program Directory for WebSphere Message Broker for z/OS* or the *Program Directory for WebSphere Message Broker with Rules and Formatter for z/OS* for further details. In particular, review the information in ″Preventative Service Planning″.

In all operating environments except z/OS, defect support is available for virtualization environments where they relate to releases that are already supported by WebSphere Message Broker. Unless stated elsewhere in the system requirements, WebSphere Message Broker has not been specifically tested in virtualization environments. WebSphere Message Broker support is therefore unable to assist in issues related to configuration and setup, or issues that are directly related to the virtualization environment itself.

Supported databases

A broker requires access to a database to store operational and state data. Databases from IBM and other suppliers are supported at specific versions on supported operating systems.

You must create the broker database before you create the broker, and specify the name of the database on the mqsicreatebroker command. The command creates tables to hold the broker data; these tables are listed in "Database contents" on page 48.

You can use the same database schema for all brokers that are at the same version, if appropriate, even if you create the brokers on different computers. The broker tables are created in a schema that is determined by the user ID that you specify for the broker database connection, and the rows within the tables are qualified by a unique identifier (UUID) for each broker. The schema user ID is set by **-u dataSourceUserId** (if you specified this parameter on the mqsicreatebroker or mqsichangebroker command), or by **-i serviceUserId** (if you did not specify the **-u** parameter).

You can also create user databases to be accessed from message flows; database support is the same as that defined for brokers except where specifically stated. Some data types supported by these databases are not supported by WebSphere Message Broker; for details, see Data types of values from external sources.

In most environments, the broker does not have to be running on the same operating system as the database server. For details about local and remote database use, and the restrictions that apply, see "Database locations" on page 47.

The following table, and the accompanying notes, indicate the minimum levels of products that are supported for databases on each operating system. For the latest information on all supported platforms, visit the WebSphere Message Broker Requirements Web site.

Operating system	DB2[1+2]	Microsoft SQL Server[1]	Oracle[1+3]	Sybase[1]	Informix[1+4]
AIX	8.2[5] 9.1[5+6]	2000 SP3a[7]	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10g Release 1 10g Release 2[8]	12.5	Dynamic Server V9.4 with UC7 fix pack Client SDK V2.90 with UC4 fix pack
HP-UX on Itanium	8.2[5] 9.1[5+6]	Not supported	10g Release 2	Not supported	Not supported
HP-UX on PA-RISC	8.2[5] 9.1[5+6+9]	2000 SP3a[7]	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10g Release 1 10g Release 2[8]	12.5	Dynamic Server V9.4 with UC7 fix pack Client SDK V2.90 with HC4 fix pack
Linux on POWER[10]	8.2[5] 9.1[5+6]	Not supported	Not supported	Not supported	Not supported
Linux on x86	8.2[5+11] 9.1[5+6+11]	2000 SP3a[6]	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10g Release 1 10g Release 2[8]	12.5	Dynamic Server V9.4 with UC7 fix pack Client SDK V2.90 with UC3 fix pack
Linux on System z	8.2[5+12] 9.1[5+6+12]	Not supported	Not supported	Not supported	Not supported
i5/OS® and OS/400[13]	V5R2 V5R3[5]	Not supported	Not supported	Not supported	Not supported
Solaris on SPARC	8.2[5+14] 9.1[5+6]	2000 SP3a[6]	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10g Release 1 10g Release 2[8]	12.5.3	Dynamic Server V9.4 with UC7 fix pack Client SDK V2.90 with UC4 fix pack
Solaris on x86-64	8.2[4+14] 9.1[4+5]	Not supported	10g Release 1	Not supported	Not supported
Windows	8.2[5+15] 9.1[5+6]	2000 SP3a	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10g Release 1[16] 10g Release 2[8]	12.5	Dynamic Server V9.4 with TC7 fix pack Client SDK V2.90 with TC4 fix pack
z/OS	7.1[17] 8.1[17]	Not supported	Not supported	Not supported	Not supported

Notes:

1. Supported releases of DB2, Oracle, and Sybase can participate as a resource manager in a distributed XA transaction, and can be coordinated by WebSphere MQ as the XA Transaction Manager. In WebSphere Message Broker, this support is referred to as globally-coordinated message flow support. On z/OS, all transactions are coordinated by Recoverable Resource Services (RRS).

   If you use WebSphere MQ Version 6.0 as a transaction manager, all datasources that are connected to DB2 from message flows in both 32-bit and 64-bit execution groups must connect to 64-bit DB2 instances.

   XA coordination with 64-bit execution groups is available only with DB2 and Oracle.

XA coordination for messages in the MRM domain on Windows requires DB2 Version 8 Fix Pack 10 or later.

If you deploy message flows that access databases, you can define the message flows to be coordinated so that updates to those databases are synchronized with updates to other resources.

2. Automatic Client Reroute for DB2 is supported on all platforms except Solaris on SPARC and Windows.

3. Both the Oracle Database Server and the Oracle Runtime Client are required.

4. Informix is supported only as a user database accessed by message flows; you cannot create a broker database as an Informix database.

   Each broker system requires only the client SDK; install the Dynamic Server on the system on which you create databases.

   Support is not provided for 64-bit databases or XA coordination. Informix uses two types of large objects (LOBs); simple and smart. Simple LOBs are data types TEXT and BYTE, and they are supported. Smart LOBs are data types CLOB and BLOB, and they are unsupported.

5. Check the readme.html file for your product to check whether a fix pack or other fix is required.

   DB2 Version 8.2 is functionally equivalent to Version 8.1 Fix Pack 7. If you install DB2 Version 8.2 from the supplied CDs or DVD, you might see information that indicates the Version 8.1 level, for example when you use the command db2level.

6. DB2 Version 9.1 requires WebSphere MQ Version 6.0.2.0 or later.

7. You can use a remote SQL Server database on Windows from a Linux or UNIX system using a supplied wire protocol driver.

8. The Connect-Time Failover feature of Oracle RAC (Real Application Clusters) in a non-XA environment only is supported.

9. If you use DB2 Version 9.1 on HP-UX on PA-RISC, you must set the following environment variable, and export it in the broker's environment:

   MQSI_SIGNAL_EXCLUSIONS=10

10. On Linux on POWER, XA coordination is restricted to 32-bit brokers only.

11. If you have installed Linux x86 (64-bit) Red Hat Enterprise Linux V4.0 or V5.0:

    • If you have installed DB2 Version 8 Fix Pack 9, you must use a 32-bit database instance. If you have a later release of DB2, you can use both 32-bit and 64-bit database instances.

      If you have installed Oracle, you must use the 32-bit client libraries.

    • XA is supported only if you use WebSphere MQ Version 6.0 (32-bit).

      If you do not require XA, you can install WebSphere MQ Version 6.0 (64-bit). XA is not supported because the 64-bit queue manager requires 64-bit ODBC drivers and switch files, which are not supplied.

12. If you have installed Linux zSeries (64-bit) Red Hat Enterprise Linux V4.0, and you install a 31-bit DB2 Runtime Client, the client must be at DB2 Version 8 Fix Pack 10 or higher, and no other DB2 product can be

installed on the same system. Therefore, the 64-bit DB2 server must be located on a separate Linux zSeries image from the one in which the broker is installed.

13. You can configure message flows to access DB2 databases on i5/OS and OS/400 for user data. The message flows can run on any supported broker platform. You cannot create a broker database as a remote DB2 database on i5/OS or OS/400 from any broker platform. For further details of these restrictions, and for information about the PTFs that are required with DB2 on these operating systems, see "Database locations."

14. Solaris 10 on Solaris on SPARC requires DB2 Version 8 Fix Pack 9 or later; Solaris 10 on Solaris on x86-64 requires DB2 Version 8 Fix Pack 11 or later.

15. You can use the embedded Derby database for verification, evaluation, and test purposes only. (Derby refers to the database product based on the Apache Derby open source project from the Apache Software Foundation.) For a production system, install and configure your chosen enterprise database.

16. For XA coordination with Oracle 10g on Windows, you must install Patch Set 3 for Oracle 10g (10.1.0.4.0).

17. On z/OS, DB2 is a mandatory requirement. You must create a unique database for each broker. See the *Program Directory for WebSphere Message Broker for z/OS* or the *Program Directory for WebSphere Message Broker for z/OS* for further details.

Database locations

The broker can access databases set up on the local computer or on a remote server, subject to restrictions.

A broker domain requires databases to support its brokers. In addition, your brokers can host message flows that access user databases. (The Configuration Manager and the User Name Server have no requirement for database access.)

You can create and configure a broker database on the local broker system, or on a remote system, with the exception that you cannot create a remote broker database on i5/OS, OS/400, or z/OS.

- You can use a local or remote database for user data, subject to the following restrictions:

  Databases on i5/OS and OS/400

  – You can use only DB2 (UDB) on iSeries (System i®) under OS/400 or i5/OS.

  – You must install OS/400 V5R2 or i5/OS V5R3.

  – On Linux, UNIX, and Windows, you can connect using DB2® Connect™. On Windows only, you can also use iSeries Access for Windows.

  – You cannot define globally-coordinated (XA) transactions.

  – You cannot configure message flows that include Rules and Formatter Extension nodes to access a database on i5/OS or OS/400.

  – You can call stored procedures only if access to the remote database is provided by DB2 Connect.

  Databases on z/OS

- You can use only DB2 (UDB) on z/OS. If you install DB2 V8.1, you must apply the PTF for APAR PQ84976.
- You must use DB2 Connect on Linux, UNIX, and Windows.
- Large database objects (LOBs) are supported with DB2 for z/OS V7.1 at RSU0409 or later.
- You cannot configure message flows that include Rules and Formatter Extension nodes to access a database on z/OS.

For further details, see the *Program Directory for WebSphere Message Broker for z/OS* or the *Program Directory for WebSphere Message Broker with Rules and Formatter for z/OS*.

WebSphere Information Integrator databases

- You can configure message flows on all distributed systems to access user data in WebSphere Information Integrator for Linux, UNIX, and Windows Version 8.2.

  You can also configure message flows to access user data in WebSphere Information Integrator Classic Federation (IICF) for z/OS Version 8.2, on broker platforms for which WebSphere IICF client code is provided.

- You can configure message flows on z/OS brokers to access user data in WebSphere Information Integrator Classic Federation for z/OS Version 8.2. This support provides direct SQL connectivity with the following z/OS data sources:
  - IMS™
  - VSAM
  - ISAM
  - Sequential files
  - CA-IDMS
  - CA-Datacom
  - Software AG ADABAS
  - DB2

  WebSphere Information Integrator Classic Federation for z/OS Version 8.2 is supported only with a CAF (Call Attachment Facility) ODBC connection. This support does not include two-phase commit, and database operations are not coordinated by Recoverable Resource Services (RRS).

- If you choose to use a remote database, you must configure the ODBC connection to the database correctly. Refer to the documentation for the database product that you are using for further information.

See the documentation for the database product that you are using with WebSphere Message Broker to determine the best options for your specific environment and requirements, and information about how to configure remote database access.

Database contents

WebSphere Message Broker stores configuration and resource information in databases to retain the information and ensure its security and integrity. Each broker creates and maintains information in tables specifically created for that purpose.

When you create a broker, the mqsicreatebroker command creates a number of database tables within the database that you specify in the command. The database

schema is created, if it does not already exist, based on the user ID you specify on the command, and the tables are created if they do not already exist.

You can specify parameters that create a different database schema for every broker, or share a database schema between brokers. If you create further brokers that specify the same database schema, new rows are created for each broker. Every row that is created in the table is qualified by a unique identifier (UUID) for each broker, therefore each row is unique to a single broker.

The following table shows the database tables that are created by the mqsicreatebroker command in the broker database schema.

Table name	Description
BACLENTRIES	ACL entries
BCLIENTUSER	Maps client identifiers to durable subscriptions
BGROUPNAME	Publish/subscribe principals: groups
BMQEPUBDEST	Contains list of WebSphere MQ Everyplace® queues on which messages can be placed
BMQEPUBMSGIN	Holds persistent WebSphere MQ Everyplace publish/subscribe messages waiting to be processed by the broker
BMQEPUBMSGOUT	Holds persistent WebSphere MQ Everyplace publish/subscribe to be placed on an WebSphere MQ Everyplace queue
BMQESTDMSGIN	Holds persistent WebSphere MQ Everyplace non-publish/subscribe messages waiting to be processed by the broker
BMQESTDMSGOUT	Holds persistent messages to be sent to WebSphere MQ Everyplace destinations
BMQPSTOPOLOGY	Publish/subscribe neighbor information
BMULTICASTTOPICS	Multicast topics records
BNBRCONNECTIONS	Inter-broker neighbor connection information
BPUBLISHERS	Registered publishers
BRETAINEDPUBS	Retained publications
BRMINFO	Registered resource managers
BRMPHYSICALRES	Physical resources
BRMRTDDEPINFO	Runtime dictionary dependency values
BRMRTDINFO	Registered runtime dictionaries
BRMWFDINFO	Registered wire format descriptors
BROKERAA	Broker process details to support recovery
BROKERAAEG	Execution group details to support recovery
BROKERRESOURCES	Broker resources
BSCADADEST	Contains list of SCADA clients to which messages can be sent
BSCADAMSGIN	Holds persistent SCADA messages waiting to be processed by the broker
BSCADAMSGOUT	Holds persistent messages to be sent to SCADA destinations
BSUBSCRIPTIONS	Durable subscription information
BTOPOLOGY	Inter-broker neighbor information
BUSERCONTEXT	Maps client identifiers to context information
BUSERMEMBERSHIP	Publish/subscribe principals: membership

Table name	Description
BUSERNAME	Publish/subscribe principals: users

Additional software requirements

WebSphere Message Broker requires additional software products to run successfully.

- "WebSphere MQ"
- Java runtime environment
- "Rational Application Developer" on page 53
- "Browsers" on page 53

WebSphere MQ

All WebSphere Message Broker components require WebSphere MQ at the minimum supported level shown in the table.

WebSphere MQ Version 6.0 (with tailored terms and conditions for use with WebSphere Message Broker) is supplied on DVD on Linux on x86 and Windows only, and on CD on all platforms. If you have a previous version of WebSphere MQ, you can use the supplied CDs or DVD to upgrade your current installation.

All runtime components (broker, Configuration Manager, and User Name Server) require a WebSphere MQ queue manager. Each component of the same type must have a dedicated local queue manager. More than one broker cannot share a single queue manager; this restriction also applies to Configuration Manager and to User Name Server components. Components of different types can share a queue manager; for example, a broker and a Configuration Manager on a single computer can share a queue manager.

Operating system	Requirements
AIX HP-UX on PA-RISC Linux on x86 with Red Hat Enterprise Linux V3.0 or SUSE Linux Enterprise Server (SLES) 9 Linux on System z with Red Hat Enterprise Linux V3.0 or SUSE Linux Enterprise Server (SLES) 9 Solaris on SPARC Windows	WebSphere MQ Version 5.3.0.1 (or later)[1+2+3]

Operating system	Requirements
Linux on POWER with Red Hat Enterprise Linux V4.0 or SUSE Linux Enterprise Server (SLES) 9 Linux on x86 with Linux Intel (32-bit) Red Hat Enterprise Linux V4.0 Linux on x86 with Linux x86 (64-bit) Red Hat Enterprise Linux V4.0 Linux on x86 with Linux Intel (32-bit) Red Hat Enterprise Linux V5.0 Linux on x86 with Linux x86 (64-bit) Red Hat Enterprise Linux V5.0 Linux on System z with Red Hat Enterprise Linux V4.0 Linux on System z with Red Hat Enterprise Linux V5.0	WebSphere MQ Version 6.0.0.0 (or later)[1,2,3]
Linux on POWER with SUSE Linux Enterprise Server (SLES) 10 Linux on x86 with SUSE Linux Enterprise Server (SLES) 10 Linux on System z with SUSE Linux Enterprise Server (SLES) 10	WebSphere MQ Version 6.0.2.0 (or later)[1,2,3]
HP-UX on Itanium Solaris on x86-64	WebSphere MQ Version 6.0.1.1 (or later)[1,2,3]
z/OS[4]	WebSphere MQ Version 5.3.1 (or later) with MQ Java Classes feature[2,3]

Notes:

1. As a minimum, you must install the server and Java Messaging components. You can install WebSphere MQ before or after you install WebSphere Message Broker.

   If you have already installed WebSphere MQ Version 5.3, the Java Messaging component is not installed by default. Check that your installation includes it; add this component from the WebSphere MQ Version 5.3 CD if it is not installed.

   If you choose to install WebSphere MQ Version 6 from the Windows Launchpad, Express installation installs all required components for you. If you use Advanced installation, you must select a custom installation and include the server and Java Messaging components.

   If you start the WebSphere MQ Version 6 installation program directly on any platform, including Windows, you must select a custom installation and include the server and Java Messaging components.

If you want to use the WebSphere MQ Explorer, the graphical interface that is available on Linux on x86 and Windows only, install the WebSphere Eclipse Platform Version 3.0.1 and the WebSphere MQ Explorer components.

Other components are optional for use with WebSphere Message Broker.

2. WebSphere Message Broker requires a full WebSphere MQ product and cannot function correctly with the WebSphere MQ product that is included with WebSphere Application Server Version 5 (known as Embedded Messaging).

You cannot install WebSphere MQ if you already have WebSphere Application Server Version 5 installed, because you cannot upgrade the Embedded Messaging component to the full WebSphere MQ product. You must uninstall WebSphere Application Server Version 5, install WebSphere MQ, then reinstall WebSphere Application Server Version 5.

WebSphere Message Broker is fully compatible with WebSphere Application Server Version 6. You do not have to take any special action for these products to interact successfully.

3. For some specific broker functions, later levels might be required:
   * If you are running publish/subscribe applications that use WebSphere MQ Real-time transport, WebSphere MQ Version 5.3.0.10 (or later) might be required if you experience problems in a heavily loaded broker system.
   * If you develop message flows that include the MQOptimizedFlow node, you must install WebSphere MQ Version 5.3.0.10 (or later) on each affected broker system.
   * Support for JMS SSL requires WebSphere MQ Version 5.3.0.11 (or later) on each affected broker system.
   * Support for JMS Real-time nodes requires WebSphere MQ Version 5.3.0.10 (or later) on each affected broker system.
   * If you develop message flows that use WebSphere MQ Real-time Transport with Multicase PGM support, you must install WebSphere MQ Version 6.0.1.0 (or later) on each affected broker system.
   * To exploit the Native POSIX Threading Library (NPTL) performance gains on Linux systems (available with Kernel 2.6 and above), which support multiple threads running within one process, you must install WebSphere MQ Version 6.0 (or later). Performance gains might be achieved if you have multiple message flows deployed to a single execution group.
   * To exploit 64-bit execution groups, you must install WebSphere MQ Version 6.0 (or later) on each affected broker system.
   * If you use DB2 Version 9.1, you must install WebSphere MQ Version 6.0.2.0 on each affected broker system. (DB2 Version 9.1 is not supported on z/OS.)

4. On z/OS, WebSphere MQ is a mandatory requirement and must be installed before you install WebSphere Message Broker. See the *Program Directory for WebSphere Message Broker for z/OS* or the *Program Directory for WebSphere Message Broker with Rules and Formatter for z/OS* for further details about required levels of WebSphere MQ.

For details of WebSphere MQ products and supported versions, see the WebSphere MQ product information Web site.

JRE

A Java runtime environment (JRE) is required. The minimum supported version is Version 1.4.2; Version 5 (also known as Java 1.5) SR2 is also supported.

Distributed systems

- Java Version 1.4.2 is embedded in the product components. This version is the product default option; no configuration is necessary if you require this level of support. All components that are installed and created on this system will use Java 1.4.2.
- Java 5 SR2 is supplied with the product components. You must change your configuration if you want to use this alternative level of Java; see "Command environment: Linux and UNIX systems" on page 12.

z/OS

- Java 1.4.2 (Fix Pack 2) is supported but must be separately installed. Customize the profile of each component that you install and create on this system to use Java 1.4.2 if appropriate.
- Java 5 SR2 (32-bit) is supported but must be separately installed. Customize the profile of each component that you install and create on this system to use Java 5 SR2 if appropriate.

For additional information, see Customizing the version of Java on z/OS and the Java 2 on z/OS Web site.

Rational Application Developer

The Message Brokers Toolkit includes components of the Rational Application Developer (RAD) integrated development environment. These components provide a common Rational framework that is shared with other compatible Rational products if one or more such products are installed on the same system.

For further information about RAD and the Message Brokers Toolkit, see the "Installation Guide" on page 3.

Browsers

For best results when viewing the information center from the Message Brokers Toolkit, use Internet Explorer Version 6.0 (or later) on Windows, or Mozilla 1.4.2 (or later) on Linux on x86.

Some Linux on x86 offerings do not install Mozilla by default. If you plan to install the Message Brokers Toolkit on your Linux on x86 system, check that a supported version of Mozilla is already installed. If not, install Mozilla from your Linux on x86 operating system media.

Optional software support

The products listed here are not required, but might be useful. Except where stated, these products are not supplied with WebSphere Message Broker.
- "Rational Agent Controller" on page 54
- "WebSphere MQ Everyplace" on page 54
- "Tivoli License Manager" on page 54
- "JMS providers" on page 54
- "WebSphere Application Server" on page 54
- "Compilers" on page 54
- "Adobe Flash Player" on page 55

- "Internet Protocol v4, v6" on page 55

Rational Agent Controller

WebSphere Message Broker interacts with Rational Agent Controller (RAC) Version 6.0.1 or RAC Version 5.0.2.1 to provide message flow debugging. You can use either version with Version 6 brokers; if you have Version 5 brokers in your broker domain, you must install RAC 5.0.2.1 on those brokers.

RAC is not supported for 64-bit operation on HP-UX systems.

RAC Version 6.0.1 is supplied with WebSphere Message Broker.

WebSphere MQ Everyplace

WebSphere MQ Everyplace supports messaging to, from, and between pervasive devices, including handheld devices such as mobile phones and PDAs.

WebSphere MQ Everyplace Version 2.0.2.0 is supplied with WebSphere Message Broker.

Tivoli License Manager

To monitor the use of software products including WebSphere Message Broker, install IBM Tivoli License Manager Version 2.1.

JMS providers

The JMSInput and JMSOutput nodes are compatible with, and work with, any JMS provider that conforms to the Java Message Service Specification, version 1.1.

WebSphere Application Server

WebSphere Application Server provides a secure, scalable, application infrastructure that can ease administration in a single-server environment.

WebSphere Message Broker interacts with WebSphere Application Server Version 5 and Version 6:
- WebSphere Message Broker requires a full WebSphere MQ product and cannot function correctly with the WebSphere MQ product that is included with WebSphere Application Server Version 5 (known as Embedded Messaging).

  You cannot install WebSphere MQ if you already have WebSphere Application Server Version 5 installed, because you cannot upgrade the Embedded Messaging component to the full WebSphere MQ product. You must uninstall WebSphere Application Server Version 5, install WebSphere MQ, and then reinstall WebSphere Application Server Version 5.
- WebSphere Message Broker is fully compatible with WebSphere Application Server Version 6. You do not have to take any special action for these products to interact successfully.

Compilers

If you develop user-defined extensions in C or Java, you need the appropriate supported software:

C

AIX	**AIX**

IBM VisualAge® C++ Professional for AIX Version 6.0

HP-UX	**HP-UX on PA-RISC**

HP aC++ Version A 03.73 or later

HP-UX	**HP-UX on Itanium**

HP aC++ Version A 06.12 or later

Linux	**Linux on POWER**

GNU g++, Version 3.3 or later

Linux	**Linux on x86**

GNU g++, Version 3.2 or later

Linux	**Linux on x86-64**

GNU g++, Version 3.2 or later

Linux	**Linux on System z**

GNU g++, Version 3.2 or later

Solaris	**Solaris on SPARC**

Sun Studio Compiler, Forte Developer for HPC 6 update 2

Solaris	**Solaris on x86-64**

Sun Studio 10

Windows	**Windows**

Microsoft Visual C++ .NET 2003

z/OS	**z/OS**

IBM z/OS C/C++, for z/OS Version 1.5 or later

Java   Version 1.4.2 and Version 5 (also known as Java 1.5) SR2 are supported on all operating systems. An SDK is included on distributed systems, and is installed in the *install_dir*\jre directory for Version 1.4.2 and the *install_dir*\jre15 directory for Version 5 SR2. On z/OS, you must install your required level of JRE. For further details, see "Additional software requirements" on page 50.

Adobe Flash Player

If you want to launch the Quick Tour from the information center in the Message Brokers Toolkit, you must install Adobe Flash Player Version 6.0 or later. You can freely download from the Adobe Web site an Adobe Flash Player plug-in for the Web browsers that are supported by the Message Brokers Toolkit.

Internet Protocol v4, v6

Internet Protocol Version 4 (IPv4) and Version 6 (IPv6) are supported, and you can enter or refer to either format wherever an IP address is relevant; for example, in the mqsichangeproperties command.

General industry standards supported by WebSphere Message Broker

WebSphere Message Broker supports general industry standards that are associated with message processing.

Supported standards

The following table details the general standards and versions supported.

Standard	Supported releases in Version 6.0
XSD	1.0
WSDL	1.1
SOAP	1.1
XSLT	1.0
Java	1.4.2, 1.5

Modes of installation and uninstallation

You can specify different modes for installation and uninstallation of runtime components and the Message Brokers Toolkit.

Three modes are supported for installation and uninstallation of WebSphere Message Broker components:
- "Graphical mode"
- "Console mode" on page 57
- "Silent mode" on page 57

In this topic, *installer* and *uninstaller*, used in example commands, indicate where you must enter the specific names of the installation or uninstall wizard. For the names of the installation and uninstall wizards, and full details of these tasks, see the "Installation Guide" on page 3 and "Uninstalling" on page 27.

Graphical mode

The installation and uninstallation wizards start in graphical mode if you invoke them with no options (the default mode). The wizards guide you through the installation or uninstallation process with a series of dialogs that present options and defaults. You can accept the default values, or change them to suit your environment and requirements.

This mode provides the highest level of information and guidance to help you complete installation or uninstallation. Use this mode when you are unfamiliar with the product, or if you want to monitor the installation or uninstallation progress.

If you click **Cancel** before the Install Progress or Uninstall Progress panel appears, you can exit the setup. If you choose to exit, your system returns to its state before launching the wizard. However, if you cancel the installation wizard after installation or uninstallation has completed, and the final summary panel is displayed, your system is not restored to its previous state: the installation wizard stops immediately. If you want to remove any program that has been installed, invoke the uninstallation wizard.

When you use the wizards, you might have to wait a few seconds to move to the next panel after clicking **Next >**. Progress is not always displayed on all panels. If you click **Next >** twice, you might skip an entire panel. To ensure the installer or uninstaller is progressing, you can monitor your processor usage which increases greatly during both installation and uninstallation.

Console mode

Console mode presents a text-based interface with which you interact in a command window. It presents the same options as the graphical interface; you can choose values, and navigate through the process, using the keyboard only.

Use console mode if you want a command line rather than a graphical interface. This interface is also suitable for users who use only the keyboard to choose values and navigate through installation, and those with screen reader software such as JAWS.

Invoke the installer using the following command. Use the same format for the uninstaller.

`installer -console`

Use these prompts to navigate through the installation:
- 1 Move to the next panel
- 2 Return to the previous panel
- 3 Cancel and terminate the install program
- 4 Redisplay the current screen

The default option is always displayed within brackets, for example [1]. If this default option is the correct choice, press Enter to continue.

Silent mode

If you invoke a silent installation or uninstallation, the wizard runs without any interaction. In this mode, the process is completed with default options, or according to a predefined set of options, as described here.

Use this unattended interface for automated installation or uninstallation over a large number of identical systems.

Silent mode does not provide any feedback to the caller, therefore you must view the log to check whether the action was successful.

You can perform a silent installation in the following ways:
- With default settings.

  For example, for installation this results in these actions:
  – Check that prerequisite software is installed (runtime components only).
  – Install to the default directory.
  – Install all selectable features.

  Because the installation wizard for the runtime components checks for prerequisite software in silent mode, the program fails if the prerequisite software is not already installed. You can override this check if you use a response file (see "Using response files" on page 58), or include the appropriate parameter with a non-default value on the command invocation.

  To run a default silent installation, specify the `-silent` option on the command. For example, to install runtime components on Linux on x86, enter the following command:

  `setuplinuxia32 -silent`
- With one or more non-default settings.

If you want the installation wizard to use non-default values for one or more values, you can either specify non-default options on the command invocation, or specify a response file, as described in "Using response files." The "Installation Guide" on page 3 also provides further details about working with response files.

A sample response file for the installation of the runtime components is provided in the `sample-scripts` directory of the root CD directory. This file includes detailed information about the options that you can change, and the values that you must enter to change them. You can tailor this file to your requirements, or you can generate a new response file, as described here.

To run a tailored silent installation using a response file called `response1.txt`, specify the `-silent` option and the filename on the installation command. For example, on Linux on x86, enter the following command:

```
setuplinuxia32 -silent -options response1.txt
```

Using response files

Create or update response files to perform tailored installation or uninstallation.

Before you perform an operation such as installing service or uninstalling, refer to the instructions specific to the task that you are performing in addition to this topic.

For uninstallation you are advised to use the "Sample response files" on page 59 supplied with WebSphere Message Broker.

You can also use response files to install service updates; for further information see:
- "Generating response files" on page 59
- "Recording a response file" on page 60
- "Calling response files in commands" on page 60

If you want to install or uninstall in silent mode (see "Modes of installation and uninstallation" on page 56), but you want to use values other than the defaults, you can pass a response file to the program. A response file is a text file that contains options that define the choices that the wizard makes. For example, you can tailor several options in the installation and uninstallation wizards to cause the operation to be completed in a particular way.
- Specify a non-default installation location
- Choose a custom installation (typical is the default) (runtime components only)
- Choose which components to install (runtime components only)
- Specify if the program is to check for prerequisite software (runtime components only)

Commands in this topic show the use of response files when installing service, however, this information is equally applicable to uninstalling the product. To use response files when uninstalling, substitute *uninstaller* for *installer* where it occurs in the example commands. In the example commands, *uninstaller* and *installer* denote where the specific names of the uninstall or installation wizards should be entered. For the names of the uninstall and installation wizards, and full details of these tasks, see the "Installation Guide" on page 3, "Applying service to runtime components" on page 15, and "Uninstalling" on page 27.

Sample response files

Sample response files are supplied with WebSphere Message Broker. Use these response files when uninstalling the product. The sample response file includes detailed information about the options that you can change, and the values you must enter to change them. You can tailor this file to your requirements. The sample response files are located in the sample_scripts directory of root CD directory.

Generating response files

Use the following command to generate a template installation response file without installation being performed:

installer -options-template *responsefile*

where *responsefile* is the full path and name of your chosen response file. On Windows, surround the path and name with double quotes if it contains spaces.

The generated template response file contains full instructions on how to edit it to specify your required options. Installation is not performed.

You can edit the file to change the options to define the operation that you want to be performed.

If you are uninstalling, create the response file in another directory to ensure that it is not deleted as part of the uninstallation.

A problem with InstallShield causes generated response files to contain incorrect options. If you select one or more specific components to be uninstalled (rather than the full product), the option is ignored and the full product is uninstalled. To overcome this problem, complete the following steps.

1. Open the generated response file in a text editor.
2. Find each line that specifies if an individual component is to be uninstalled:

   -P *feature*.active=true

   where *feature* is the name of the component that you want to be uninstalled.
3. Change each line to the following content:

   -P *feature*.activeForUninstall=true
4. Find each line that specifies if an individual component is not to be uninstalled:

   -P *feature*.active=false

   where *feature* is the name of the component that you do **not** want to uninstall.
5. Change each line to the following content:

   -P *feature*.activeForUninstall=false
6. Check that one of these statements is present for every component. The generated response file might also include activeForUninstall statements that refer to components that are not installed on this system. If such statements exist, ensure that the activeForUninstall option for each of these components is set to true. If the activeForUninstall option is set to `false` for these components, the uninstallation program fails.

Recording a response file

Use the following command to record a response file during installation:

installer -options-record *responsefile*

where *responsefile* is the full path and name of your chosen response file. On Windows, surround the path and name with double quotes if it contains spaces. Create this file in a directory different to the one in which the product is installed.

The installation wizard starts in graphical mode, and requires your input as it progresses. Your responses are recorded during installation. When installation is complete, the response file contains all the choices you have made during installation.

If you want to record a response file during a console mode installation, use the following command:

installer -options-record *responsefile* -console

Calling response files in commands

To run a program specifying the silent options and the response file that you want to use, use the following command:

installer -options *responsefile* -silent

where *responsefile* is the full path and name of your chosen response file. On Windows, surround the path and name with double quotes if it contains spaces.

The program runs without interaction according to the options selected when you recorded the response file.

Multicultural support

The user interface and message catalogs are provided in the following languages on distributed systems:
- Brazilian Portuguese
- French
- German
- Italian
- Japanese
- Korean
- Simplified Chinese
- Spanish
- Traditional Chinese
- US English

The message catalogs are provided in the following languages on z/OS:
- Japanese
- Simplified Chinese
- US English

The messages written to the z/OS operator console (which are a subset of the messages written to the syslog) are in US English only, and are written in mixed case or in uppercase depending on your chosen system configuration.

WebSphere Message Broker provides a selection of message catalogs that are used by the product components to report any problems that occur. Products that are used in conjunction with WebSphere Message Broker might cause WebSphere Message Broker to report errors using its message catalogs, or might report problems using their own techniques.

You must refer to the documentation supplied with any other products that you use to determine the process they employ. In particular, you must check the documentation supplied by the databases that you use and documentation provided with any user-defined node or parser that you integrate into the WebSphere Message Broker environment.

You can install WebSphere Message Broker and WebSphere MQ in any supported language; all language versions for each product are compatible with all language versions for the other product. All languages for the WebSphere MQ messaging products are included on the WebSphere MQ server CD supplied with WebSphere Message Broker.

All messages generated for internal inter-component message exchange (for example, deployed configuration messages and log files for mqsireadlog) are generated in code page 1208 (`utf-8`).

Locales

Message support is provided in a number of locales.

WebSphere Message Broker supports at least the following locales:

Windows	AIX	Solaris	HP-UX[1]	Linux[2]	z/OS
English (United States)	en_US	en_US	en_US.iso88591, en_US.roman8	en_US	En_US.IBM-1047, En_US.IBM-037
German (Standard)	de_DE, De_DE	de	de_DE.ISO88591, de_DE.roman8	de_DE	not supported
Spanish (Modern Sort)	es_ES, Es_ES	es	es_ES.ISO88591, es_ES.roman8	es_ES	not supported
French (Standard)	fr_FR, Fr_FR	fr	fr_FR.ISO88591, fr_FR.roman8	fr_FR	not supported
Italian (Standard)	it_IT, It_IT	it	it_IT.ISO88591, it_IT.roman8	it_IT	not supported
Portuguese (Brazilian)	pt_BR, Pt_BR	pt_BR	pt_BR.ISO88591, pt_BR.utf8	pt_BR	not supported
Japanese	Ja_JP, ja_JP	ja_JP.PCK, ja	ja_JP.SJIS, ja_JP.eucJP	ja_JP	Ja_JP.IBM-939, Ja_JP.IBM-930
Simplified Chinese (China)	Zh_CN, zh_CN	zh, zh.GBK	zh_CN.hp15CN	zh_CN	Zh_CN.IBM-1388, Zh_CN.IBM-935
Traditional Chinese (Taiwan)	Zh_TW, zh_TW	zh_TW, zh_TW.BIG5	zh_TW.big5, zh_TW.eucTW	zh_TW	not supported
Korean	ko_KR	ko	ko_KR.eucKR	ko_KR	not supported

Notes:

1. These values are the same for HP-UX on Itanium and HP-UX on PA-RISC. Due to limited syslog support on HP-UX operating systems, messages are written to the log in US English only.
2. These values are the same for Linux on POWER, Linux on x86, and Linux on System z.

Other locales might be supported; check your operating system for further details.

System changes caused by installation and configuration

When you install WebSphere Message Broker, the installation program causes certain changes to be made to your system.

Resources are also affected by how you configure your system (for example, the brokers that you create).
- Directory structures
- Registry contents
- Environment variables
- Default WebSphere MQ resources
- Database contents

Directory structures after installation

When you install WebSphere Message Broker components, the installation program creates a structure of subdirectories under the directory that you specified as the installation directory. The exact structure depends on the platform on which you have installed WebSphere Message Broker, and the components that you have installed.

AIX

On AIX, the default home directory *install_dir* is /opt/IBM/mqsi/6.0. The directories created in *install_dir* are shown in the following table.

Directories under *install_dir*	Contents
_uninst_runtime	Uninstall programs
_uninst_runtime_jvm	Uninstall programs (JVM)
bin	Executable binaries
catalina	Web Services support files
classes	Java class files
DD64	ODBC driver and related files (64-bit support)
docs	Java API files
exmltConfig	XML transformation files
include	Header and other files for samples
itlm	Tivoli License Manager files
jplugin	Java plug-in files
jre	IBM Runtime Environment for the Java Platform Version 1.4.2
jre15	IBM Runtime Environment for the Java Platform Version 5 (also known as Version 1.5)
lib	Shared library files

Directories under *install_dir*	Contents
license	License files
lil	Loadable library files (32-bit)
lil64	Loadable library files (64-bit)
merant	ODBC driver and related files
messages	Description files for messages and exceptions
migration	Migration files
readmes	Product readme files
sample	C, C++, and Java sample files
xml4c	XML processing files

On AIX, the default working directory is /var/mqsi/. The directories created are shown in the following table.

Directories under /var/mqsi	Contents
common/errors	Error files
common/locks	Resource locks
common/log	Trace files
common/profiles	User profiles
components	Component details
odbc	ODBC files
registry	Registry information
shared-classes	User installed user-defined node classes

HP-UX on Itanium

On HP-UX on Itanium, the default home directory *install_dir* is /opt/IBM/mqsi/6.0. The directories created in *install_dir* are shown in the following table.

Directories under *install_dir*	Contents
_uninst_runtime	Uninstall programs
_uninst_runtime_jvm	Uninstall programs (JVM)
bin	Executable binaries
catalina	Web Services support files
classes	Java class files
DD64	ODBC driver and related files (64-bit support)
docs	Java API files
exmltConfig	XML transformation files
include	Header and other files for samples
itlm	Tivoli License Manager files
jplugin	Java plug-in files
jre	IBM Runtime Environment for the Java Platform Version 1.4.2

Directories under *install_dir*	Contents
jre15	IBM Runtime Environment for the Java Platform Version 5 (also known as Version 1.5)
lib	Shared library files
license	License files
lil	Loadable library files
messages	Description files for messages and exceptions
migration	Migration files
readmes	Product readme files
sample	C, C++, and Java sample files
xml4c	XML processing files

On HP-UX on Itanium, the default working directory is /var/mqsi/. The directories created are shown in the following table.

Directories under /var/mqsi	Contents
common/errors	Error files
common/locks	Resource locks
common/log	Trace files
common/profiles	User profiles
components	Component details
odbc	ODBC files
registry	Registry information
shared-classes	User installed user-defined node classes

HP-UX on PA-RISC

On HP-UX on PA-RISC, the default home directory *install_dir* is /opt/IBM/mqsi/6.0. The directories created in *install_dir* are shown in the following table.

Directories under *install_dir*	Contents
_uninst_runtime	Uninstall programs
_uninst_runtime_jvm	Uninstall programs (JVM)
bin	Executable binaries
catalina	Web Services support files
classes	Java class files
DD64	ODBC driver and related files (64-bit support)
docs	Java API files
exmltConfig	XML transformation files
include	Header and other files for samples
itlm	Tivoli License Manager files
jplugin	Java plug-in files

Directories under *install_dir*	Contents
jre	IBM Runtime Environment for the Java Platform Version 1.4.2
jre15	IBM Runtime Environment for the Java Platform Version 5 (also known as Version 1.5)
lib	Shared library files
license	License files
lil	Loadable library files (32-bit)
lil64	Loadable library files (64-bit)
merant	ODBC driver and related files
messages	Description files for messages and exceptions
migration	Migration files
readmes	Product readme files
sample	C, C++, and Java sample files
xml4c	XML processing files

On HP-UX on PA-RISC, the default working directory is /var/mqsi/. The directories created are shown in the following table.

Directories under /var/mqsi	Contents
common/errors	Error files
common/locks	Resource locks
common/log	Trace files
common/profiles	User profiles
components	Component details
odbc	ODBC files
registry	Registry information
shared-classes	User installed user-defined node classes

Linux

On Linux, the default home directory *install_dir* is /opt/ibm/mqsi/6.0. The directories created in *install_dir* are shown in the following table.

Directories under *install_dir*	Contents
_uninst_runtime	Uninstall programs
_uninst_runtime_jvm	Uninstall programs (JVM)
bin	Executable binaries
catalina	Web Services support files
classes	Java class files
docs	Java API files
exmltConfig	XML transformation files
include	Header and other files for samples
itlm	Tivoli License Manager files

Directories under *install_dir*	Contents
jplugin	Java plug-in files
jre	IBM Runtime Environment for the Java Platform Version 1.4.2
jre15	IBM Runtime Environment for the Java Platform Version 5 (also known as Version 1.5)
lib	Shared library files
license	License files
lil	Loadable library files (32-bit)
merant	ODBC driver and related files (Linux on POWER and Linux on x86 only)
messages	Description files for messages and exceptions
migration	Migration files
readmes	Product readme files
sample	C, C++, and Java sample files
xml4c	XML processing files

On Linux, the default working directory is /var/mqsi/. The directories created are shown in the following table.

Directories under /var/mqsi	Contents
common/errors	Error files
common/locks	Resource locks
common/log	Trace files
common/profiles	User profiles
components	Component details
odbc	ODBC files
registry	Registry information
shared-classes	User installed user-defined node classes

Message Brokers Toolkit

On Linux on x86 only, the default home directory *install_dir* for the Message Brokers Toolkit is /opt/ibm/MessageBrokersToolkit/6.0. The default workspace directory is /IBM/wmbt6.0/workspace in your home directory.

The directories created are shown in the following table.

Directories under *install_dir*	Contents
bin	Rational directories and files
csdev	Rational directories and files
csdevrpt_shared	Rational directories and files
eclipse	Toolkit features and plug-ins
evtoolkit	Event Broker specific plug-ins
ibtoolkit	Message Broker specific plug-ins

Directories under *install_dir*	Contents
logs	Installation logs
rad	Rational directories and files
radrsm_shared	Rational directories and files
Resource Adapters	Rational directories and files
runtimes	Rational directories and files
rwd	Rational directories and files
rwdrpt_shared	Rational directories and files
sdpisv	Rational directories and files
setup	Installation program and file
updater	Rational product updater (RPU) files
updater/eclipse	RPU executable file for command line execution
wmbt_prod	Readme files, product information
wmbt_prod/_uninst	Uninstall files

Solaris

On Solaris, the default home directory *install_dir* is /opt/IBM/mqsi/6.0. The directories created in *install_dir* are shown in the following table.

Directories under *install_dir*	Contents
_uninst_runtime	Uninstall programs
_uninst_runtime_jvm	Uninstall programs (JVM)
bin	Executable binaries
catalina	Web Services support files
classes	Java class files
DD64	ODBC driver and related files (64-bit support)
docs	Java API files
exmltConfig	XML transformation files
include	Header and other files for samples
itlm	Tivoli License Manager files
jplugin	Java plug-in files
jre	IBM Runtime Environment for the Java Platform Version 1.4.2
jre15	IBM Runtime Environment for the Java Platform Version 5 (also known as Version 1.5)
lib	Shared library files
license	License files
lil	Loadable library files (32-bit)
lil64	Loadable library files (64-bit)
merant	ODBC driver and related files
messages	Description files for messages and exceptions
migration	Migration files

Directories under *install_dir*	Contents
readmes	Product readme files
sample	C, C++, and Java sample files
xml4c	XML processing files

On Solaris, the default working directory is /var/mqsi/. The directories created are shown in the following table.

Directories under /var/mqsi	Contents
common/errors	Error files
common/locks	Resource locks
common/log	Trace files
common/profiles	User profiles
components	Component details
odbc	ODBC files
registry	Registry information
shared-classes	User installed user-defined node classes

Windows

On Windows, the default home directory *install_dir* is C:\Program Files\IBM\MQSI\6.0. The directories created in *install_dir* are shown in the following table.

Directories under *install_dir*	Contents
_uninst_runtime	Uninstall programs
_uninst_runtime_jvm	Uninstall programs (JVM)
bin	Executable binaries
catalina	Web Services support files
classes	Java class files
DataDirect	ODBC driver and related files
docs	Java API files
exmltConfig	XML transformation files
include	Header and other files for samples
itlm	Tivoli License Manager files
jplugin	Java plug-in files
jre	IBM Runtime Environment for the Java Platform Version 1.4.2
jre15	IBM Runtime Environment for the Java Platform Version 5 (also known as Version 1.5)
lib	Shared library files
license	License files
messages	Description files for messages and exceptions
migration	Migration files

Directories under *install_dir*	Contents
readmes	Product readme files
sample	C, C++, and Java sample files

On Windows, the default working directory is C:\Documents and Settings\All Users\Application Data\IBM\MQSI. Your system might have a different value for Documents and Settings\All Users\ but the remainder of this path is fixed. The directories created are shown in the following table.

Directories under *work_dir*	Contents
Common/dbinstmgr	Derby database files
Common/errors	Error files
Common/locks	Resource locks
Common/log	Trace files
Common/profiles	User profiles
components	Component details
odbc	ODBC files
registry	Registry information
shared-classes	User installed user-defined node classes

Message Brokers Toolkit

On Windows, the default home directory *install_dir* for the Message Brokers Toolkit is C:\Program Files\IBM\MessageBrokersToolkit\6.0. The default workspace directory is \IBM\wmbt6.0\workspace in your home directory.

The directories created are shown in the following table.

Directories under *install_dir*	Contents
bin	Rational directories and files
csdev	Rational directories and files
csdevrpt_shared	Rational directories and files
eclipse	Toolkit features and plug-ins
evtoolkit	Event Broker specific plug-ins
ibtoolkit	Message Broker specific plug-ins
logs	Installation logs
rad	Rational directories and files
radrsm_shared	Rational directories and files
Resource Adapters	Rational directories and files
runtimes	Rational directories and files
rwd	Rational directories and files
rwdrpt_shared	Rational directories and files
sdpisv	Rational directories and files
setup	Installation program and file
updater	Rational product updater (RPU) files

Directories under *install_dir*	Contents
updater\eclipse	RPU executable file for command line execution
wmbt_prod	Readme files, product information
wmbt_prod_uninst	Uninstall files

z/OS

The default installation directory is /usr/lpp/mqsi/*VxRxMx* where *VxRxMx* represents Version X, Release X, Modification X, for example, V6R0M0.

For more details of locations, libraries, and file system paths, see the *Program Directory for WebSphere Message Broker for z/OS* or the *Program Directory for WebSphere Message Broker with Rules and Formatter for z/OS*.

Registry changes created by installation and configuration

When you install WebSphere Message Broker, the installation program creates a number of entries in a registry. Further changes are made by some configuration updates (for example, when you create a broker).

Runtime components

On Windows, the system registry is used; on Linux and UNIX systems, equivalent values are stored within the installation directory structure; the environment variable $MQSI_REGISTRY is set to point to the location. Do not alter or remove these entries unless instructed to do so by your IBM Service representative.

The table below describes the main Windows registry entries. These entries are created under HKEY_LOCAL_MACHINE\SOFTWARE\IBM\WebSphereMQIntegrator.

Location	Description
component_name	Top level entry for each component that you have installed and configured.
component_name\CurrentVersion\DataSourceName	Name of database for this component.
component_name\CurrentVersion\FADLevel	Formats and data version; contents depend on service installed. FADLevel does not necessarily change with each product update.
component_name\CurrentVersion\QueueManagerName	Name of queue manager for this component.

Entries are also created under HKEY_LOCAL_MACHINE\SOFTWARE\ODBC\ODBCINST.INI for the installed database drivers for Oracle and Sybase, which contain driver locations and parameters.

An entry is added under HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\ Services\Eventlog\Application\WebSphere Broker v*** for Event Log information, where v*** is the current three-digit product version number.

Message Brokers Toolkit

On Windows, the system registry is used; on Linux systems, equivalent values are stored within /etc/IBM/WebSphereMessageBrokersToolkit/. Do not alter or remove these entries unless instructed to do so by your IBM Service representative. The

table below shows the main Windows registry entries that are created under `HKEY_LOCAL_MACHINE\SOFTWARE\IBM\WebSphere Message Brokers Toolkit`.

Location	Description
product\com.ibm.wmbt	Installation location and version details
components\com.ibm.wmbt.specific	Location of files specific to Message Broker

Environment variables after installation

On distributed systems, ensure that your environment is set up correctly.

If you have installed on z/OS, see Customizing the z/OS environment.

Sample profile files are provided with WebSphere Message Broker; check their content to ensure the variables are set correctly for your environment before you use the product or configure any resources.

- On Linux and UNIX systems, the profile is *install_dir*/bin/mqsiprofile.
- On Windows systems, a command console is set up when you install components. Access this through the **Start** menu. When you select this option, a command window containing the correct environment is opened.

  If you prefer, run *install_dir*\bin\mqsiprofile.cmd in a command window before working with WebSphere Message Broker in the same command window.

If you have more than one installation on a single system, ensure that you run the correct profile, or access the correct command console, for the installation that you want to work with. If an installation is at Version 2.1 or Version 5.0, the profile is incompatible with the Version 6.0 profile. You must log off and log on again before you run a second profile.

Check the readme file (readme.html) to ensure that you have the latest version of the profile.

Default WebSphere MQ resources created during installation and configuration

When you install WebSphere Message Broker and create components, WebSphere MQ resources are created for use by those components.

The names of these resources begin with the reserved characters SYSTEM. The resources are additional to the default WebSphere MQ objects that are created when you install that product. The following table lists the resources and indicates the component queue manager with which they are associated.

Resource name	Type	Queue manager	Description
SYSTEM.BROKER.ADMIN.QUEUE	Queue	Broker	Target for messages sent by the Configuration Manager and by commands to modify the broker's configuration and operation.

Resource name	Type	Queue manager	Description
SYSTEM.BROKER.ADMIN.REPLY	Queue	Configuration Manager	Target for response messages that the broker sends to the Configuration Manager.
SYSTEM.BROKER.AGGR.CONTROL	Queue	Broker	Used internally to store a control message for each aggregate group.
SYSTEM.BROKER.AGGR.REPLY	Queue	Broker	Used internally to store each known response message received by an AggregateReply node.
SYSTEM.BROKER.AGGR.REQUEST	Queue	Broker	Used internally to store each request message that forms part of an aggregate group.
SYSTEM.BROKER.AGGR.TIMEOUT	Queue	Broker	Used internally in the timeout and unknown timeout processing within an AggregateReply node.
SYSTEM.BROKER.AGGR.UNKNOWN	Queue	Broker	Stores each unknown response received by an AggregateReply node.
SYSTEM.BROKER.CONFIG.QUEUE	Queue	Configuration Manager	Target for messages that the toolkit sends to the Configuration Manager.
SYSTEM.BROKER.CONFIG.REPLY	Queue	Configuration Manager	Target for messages that the Configuration Manager sends to the toolkit.
SYSTEM.BROKER.CONTROL.QUEUE	Queue	Broker	Target for publish/subscribe control requests that applications send to the broker.
SYSTEM.BROKER.EXECUTIONGROUP.QUEUE	Queue	Broker	Target for messages that the broker's internal AdminAgent component sends to execution groups.
SYSTEM.BROKER.EXECUTIONGROUP.REPLY	Queue	Broker	Target for response messages that execution groups send to the broker's internal AdminAgent component.
SYSTEM.BROKER.INTER.BROKER.COMMUNICATIONS	Queue	Broker	Target for publish/subscribe control messages.
SYSTEM.BROKER.INTERBROKER.MODEL.QUEUE	Queue	Broker	Model for dynamic publication queues.
SYSTEM.BROKER.INTERBROKER.QUEUE	Queue	Broker	Target for publish/subscribe messages sent by neighbor brokers.
SYSTEM.BROKER.IPC.QUEUE	Queue	Broker	Target for internal control messages.

Resource name	Type	Queue manager	Description
SYSTEM.BROKER.MODEL.QUEUE	Queue	All	Model for dynamic response queues.
SYSTEM.BROKER.SECURITY.QUEUE	Queue	User Name Server	Target for messages that the Configuration Manager, brokers, and the toolkit send to the User Name Server.
SYSTEM.BROKER.SECURITY.REPLY	Queue	Configuration Manager and brokers	Target for response messages that the User Name Server sends to its requestor.
SYSTEM.BROKER.TIMEOUT.QUEUE	Queue	Broker	Used internally to support the TimeoutControl and TimeoutNotification nodes.
SYSTEM.BROKER.WS.ACK	Queue	Broker	Used internally for Web Services client support.
SYSTEM.BROKER.WS.INPUT	Queue	Broker	Used internally for Web Services client support.
SYSTEM.BROKER.WS.REPLY	Queue	Broker	Used internally for Web Services client support.
SYSTEM.BKR.CONFIG	SVRCONN	Configuration Manager	A connection channel for toolkit clients.

Part 4. Appendixes

Appendix. Notices for WebSphere Message Broker

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this information in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this information. The furnishing of this information does not give you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

IBM World Trade Asia Corporation
Licensing
2-31 Roppongi 3-chome, Minato-ku
Tokyo 106-0032,
Japan

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law:

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the information. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this information at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

IBM United Kingdom Laboratories,
Mail Point 151,
Hursley Park,
Winchester,
Hampshire,
England
SO21 2JN

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this information and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Programming License Agreement, or any equivalent agreement between us.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

All statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

This information includes examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not

been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs.

Each copy or any portion of these sample programs or any derivative work, must include a copyright notice as follows:

(C) (*your company name*) (*year*). Portions of this code are derived from IBM Corp. Sample Programs. © Copyright IBM Corp. *_enter the year or years_*. All rights reserved.

Trademarks in the WebSphere Message Broker information center

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both. If these and other IBM trademarked terms are marked on their first occurrence in this information with a trademark symbol ($^®$ or $^{™}$), these symbols indicate U.S. registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries. A current list of IBM trademarks is available on the Web at Copyright and trademark information at `www.ibm.com/legal/copytrade.shtml`.

Adobe, the Adobe logo, PostScript, and the PostScript logo are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States, and/or other countries.

Intel and Pentium are trademarks of Intel Corporation in the United States and other countries.

Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.

Microsoft and Windows are trademarks of Microsoft Corporation in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Java and all Java-based trademarks are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.

Other company, product, or service names may be trademarks or service marks of others.

Index

Numerics

IBM ®

Printed in USA