

WebSphere Message Broker



Managing your Installation

Version 6 Release 0

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Note

Before using this information and the product it supports, read the information in the Notices appendix.

This edition applies to version 6, release 0, modification 0, fix pack 4 of IBM® WebSphere® Message Broker, with Message Brokers Toolkit version 6, release 0, modification 2, and to all subsequent releases and modifications until otherwise indicated in new editions.

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About this topic collection

This PDF has been created from the WebSphere Message Broker Version 6.0 (Fix Pack 4 update, March 2007) 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 these attempt to link to a PDF that is called after the topic identifier (for example, ac12340_.pdf) and therefore fail. Use the online information to navigate freely between topics.

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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.

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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.

Find out more about what the “Installation Guide” describes, and what to do after you have completed installation.

The Installation Guide describes hardware and software requirements for WebSphere Message Broker. You can also view these requirements within this information center in the “Installation” on page 31 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 14
- “Applying service to the Message Brokers Toolkit” on page 18

To install complementary products such as 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 (x86 platform) 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 (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 Acrobat Reader. To download Acrobat Reader, visit the Adobe Systems Inc. Web site.

Finding the latest information

The following information for WebSphere Message Broker 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, and you should 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 toolkit code, and you can install the latest level from within the toolkit. See “Applying service to the Message Brokers Toolkit” on page 18 for instructions about installing code and documentation updates.

Installing complementary products

If your environment requires it, you might need to refer to installation information for these complementary products:

- 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 deployed to a running broker.

Before you can use the flow debugger, you must install RAC on all systems where 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 8.

2. In the workbench, select the option in the Debug preference page that corresponds to your broker configuration, as documented in Setting flow debug 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 (`bipprof`), 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 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, stop them using the `mqsisstop` command.

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 described below. Do not change any other settings in this file.
 - a. `isDataMultiplexed`. Set this attribute to true to enable data and control information to be multiplexed on the single TCP/IP port.
`isDataMultiplexed = "true"`
 - b. `filePort`. Set this attribute to 0. This setting defines the port used for file transfer operations, which are not used by WebSphere Message Broker. If you have other programs that use RAC and require file transfer, set this attribute to the value defined by those programs.
`filePort="0"`
 - c. `port`. Set this attribute to the default value 1002, or to a value defined by your domain administrator. This setting defines the port on which RAC accepts connections from the workbench.
`port="1002"`
6. Check that the port that you have specified for RAC, for example 1002, is open on the firewall.
7. Start RAC.
8. When RAC is running, start the broker using the `mqsisstart` command.

Installing IBM DB2 Universal Database

IBM DB2 Enterprise Server is one of the supported databases for use with WebSphere Message Broker; other editions of DB2 that are stated to be suitable for production deployment are also supported. For a full list of suitable databases, see "Supported databases" on page 36.

On Windows, Derby (delivered by IBM Cloudscape) is supplied with WebSphere Message Broker and can be installed from the Launchpad as part of the WebSphere Message Broker product installation. This database provides sufficient resources for a broker database, and for installation verification. Derby is not sufficient for a production system, for which you must install one of the supported databases, for example, DB2 Enterprise Server. For information about how to install Derby as part of the WebSphere Message Broker installation, see the "Installation Guide" on page 3.

For distributed systems, DB2 Enterprise Server Version 8.2 is supplied on DVD (for Linux (x86 platform) and Windows only) and on CD with WebSphere Message Broker. DB2 can be installed 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. 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 usage of IBM (and other) software products. Use ITLM to perform the following software auditing functions:

- Monitor the licenses used across different machines.
- Help keep unnecessary licenses to a minimum.
- Guard against software license compliance problems.

WebSphere Message Broker includes support for ITLM Version 2.1. 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. A profile is provided for this purpose.

If appropriate, you can extend the initialization performed by this profile; for example, for broker or user databases, or other products that you want to use within the broker. For example, you might want to configure your broker to run with Java 5 instead of the default version Java 1.4.2.

You *must* ensure that you run this profile 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”

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

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 following directory:

`workpath\common\profiles`

When `mqsiprofile` runs, it automatically calls these additional user-written scripts.

Two typical reasons for adding scripts are “Running database setup scripts” and “Running with Java 5” 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 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 `workpath\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 databases for information about 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 command file `mqsijava15.cmd` from the directory `install_dir\bin` to the directory `workpath\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.

Command environment: Linux and UNIX systems

On Linux and UNIX systems, when you start a runtime component 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 need to run your own additional environment settings, add a script called `your_file_name.sh` to the profiles directory:

```
workpath/common/profiles
```

When `mqsiprofile` runs, it automatically calls these additional user-written scripts.

Two typical reasons for adding scripts are “Running database setup scripts” on page 13 and “Running with Java 5” on page 14.

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 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 access 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 `workpath\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 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 `workpath/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

You cannot back out service without removing the entire product. Keep a backup image or previous GA CD or fix pack readily available in case you encounter any problems after installing service.

Before you apply service to any component, check if you want to back up any associated resources. For details of this task, see [Backing up resources](#).

Maintenance updates for WebSphere Message Broker are available through a download from a web site, in the form of a Program Temporary Fix (PTF), also known as a fix pack. Fix packs are cumulative, therefore you do not need to install Fix Pack 1 before you can install Fix Pack 2. However, the GA code must have been installed first to activate the licensing requirements. You can find the latest information about available fix packs on the [WebSphere Message Broker support Web page](#)

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

You cannot remove individual fix packs; you can uninstall only the entire product. If you want to restore a system to a previous service level, you must uninstall the entire product, reinstall the GA level of the product, and then install the desired level of fix pack.

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

You can download the latest fix pack from the WebSphere Message Broker support Web page . Scroll down the page and select the fix pack listed for your WebSphere Message Broker product.

To download maintenance updates:

1. Read the multiplatforms memo. To access the memo, scroll down to read the Installation Instructions. Click on the link **Problems fixed (MEMO.PTF)**.
2. To begin the download process, scroll to **Download package** and click the **HTTP** download option. Accept the download terms and conditions and sign in to the download site. Click the link for your desired operating system (with name of the form Fix Pack XX *Unnnnnn*, where XX is the number of the fix pack, and *Unnnnnn* is the fix pack file name) and follow the instructions.
3. Select a suitable destination as the target for download.

Choose the relevant operating system for instructions about how to apply maintenance updates:

- Windows
- Linux and UNIX
- z/OS

Installing service on Windows

Before applying a maintenance update, download the update as described in “Applying service to runtime components” on page 14.

To apply maintenance updates to WebSphere Message Broker:

1. Ensure that the user ID you are logged on with is a member of the Windows Administrator group in the local security domain. You are recommended to use the same ID as the one you used for installing WebSphere Message Broker.
2. Ensure that all WebSphere Message Broker function is stopped. You must:
 - a. Stop execution of the Configuration Manager, the User Name Server, and all brokers on this system using the `mqsistop` command, or by stopping the Windows services for these components from **Start** → **Settings** → **Control Panel** → **Administrative Tools** → **Services**.
 - b. Stop execution of the workbench
 - c. Ensure that you do not have any WebSphere Message Broker files open.
3. You are also strongly recommended to exit all Windows programs before applying maintenance to WebSphere Message Broker
4. Change to the directory into which you downloaded the fix pack file (`Unnnnnn.exe`).
5. In Windows Explorer, right-click the fix pack file and select **Open**. Alternatively, enter the following command at a command prompt:
`FixPackLauncher [-s] -a install_arguments` , where

FixPackLauncher is the full path to the fix pack executable file, for example U200208.exe.

-s is optional and means that the fix pack launcher extracts silently. If you omit this, a progress of extraction panel is displayed.

-a means 'read in the following install arguments'.

install_arguments are the arguments that determine how the installer runs.

For more information about install arguments, see "Modes of installation and uninstallation" on page 47.

After successful extraction the installer runs automatically according to the chosen arguments. Follow the instructions on the install panels.

When you have completed installation, review the multiplatform memo supplied in the directory readmes, and complete any manual post-installation tasks required.

Installing service on Linux and UNIX

Before applying a maintenance update, download the update as described in "Applying service to runtime components" on page 14.

To apply maintenance updates to WebSphere Message Broker:

1. Stop all brokers and User Name Servers that are running.
2. Change to the directory where you downloaded the fix pack file, Unnnnnn.tar.z.
3. Replace the .Z file with a .tar file, by entering the following command:
uncompress -fv filename.tar.Z .
4. Untar the image and extract all the directories, subdirectories, and files required to apply the update, by entering the following command: tar -xvf filename.tar.
5. Decide which mode of installation you want to use. The alternatives are explained in "Modes of installation and uninstallation" on page 47.
6. Depending on the mode of installation you have decided to use, run one of the commands described below, where *<installer>* is the appropriate installation program for your platform, listed in the table below.
 - To invoke the installation wizard in graphical mode double-click the file or type its name with no options at a command prompt and press **Enter**. 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.
 - Enter one of the following commands to invoke the installation wizard in console mode. Enter this command for a default invocation, *<installer> -console*. Alternatively, for improved accessibility enter: *<installer> -accessibility*. 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.
 - The command shown below invokes the installation wizard to complete a typical installation with all default settings. You must include the *-G licenseAccepted=true* flag on the invocation, to ensure the license is accepted. *<installer> -silent -G licenseaccept=true*. 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, you must 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 49.

Platform	Installation program
AIX	setupaix
HP-UX	setuphp
Linux (POWER platform)	setuplinuxppc
Linux (x86 platform)	setuplinux32
Linux (zSeries platform)	setuplinux390
Solaris (SPARC platform)	setupsolaris
Solaris (x86-64 platform)	setupsolarisx86

After successful extraction the installer runs automatically according to the chosen arguments. Follow the instructions on the installation panels.

When you have completed the installation, review the multiplatform memo supplied in the readme directory, and complete any manual post-installation tasks required.

Installing service on z/OS

If your SMP/E target zones are not on the same file system as your production directories, copy the directories as a whole to the system where they are to be used, and replace the directories currently there. This means that any brokers or the User Name Server use the updated directories when they next restart.

If you do not want all of your brokers to be affected by changing the directories, you need to have at least two copies of the product directories. Copy the updated files to the first copy and run one or more brokers with these directories. When you are satisfied with the updates, copy the updated files to the second copy of the directories for the rest of your brokers to use.

Use the following steps to back up your WebSphere Message Broker directories on z/OS, and restore them on another system or on the same system in a different directory:

1. Tar the code using the command:

```
tar -cvzf mqsi.tar.z /usr/lpp/mqsi
```

where */usr/lpp/mqsi* is the installation path.

2. FTP the tar file to the new file system in binary mode by entering the following commands:

```
ftp machine_name
binary
cd USS_path_for_storing_tar_file
put mqsi.tar.z
quit
```

3. Extract the contents of the file using the following command:

```
tar -xvzf mqsi.tar.z
```

Because the initial tar command used the absolute path

```
/usr/lpp/mqsi
```

you need WRITE access to the root directory for this task. You can use a relative path instead. See the **tar** command in the *UNIX System Services Command Reference Guide* for more details.

Applying service to the Message Brokers Toolkit

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 these can be applied in the same way.

Before you apply service, you might want to consider preserving some of the resources you have created or imported. For details of this task, see *Backing up the Message Brokers Toolkit workspace*.

1. In the toolkit, select **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. Restart it from the command line with the **-clean** option. Change to the directory in which you have installed the component before you enter the command, or enter the full path.

For example on Linux (x86 platform), enter the following command:

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

On Windows, enter the following command:

```
wmbt -clean
```

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

Part 2. Uninstalling

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Uninstalling

This section describes the following tasks:

- “Uninstalling runtime components”
- “Uninstalling the Message Brokers Toolkit” on page 25

You might also want to uninstall complementary products. See the documentation provided by those products to complete this task:

- RAC: See the file `install.html` that is located in the root directory of the RAC component on CD or DVD.
- DB2: Access the appropriate information for your installation:
 - DB2 V8 information center (distributed systems)
 - DB2 V8 information center (z/OS)
 - DB2 V7 library (z/OS)
- IBM Tivoli License Manager information center

Uninstalling runtime components

This section describes the tasks that you must complete to uninstall the runtime components on the following systems:

- AIX
 - HP-UX
 - Linux
 - Solaris
 - Windows
1. Decide which mode of uninstallation you want to use. The choices are explained in “Modes of installation and uninstallation” on page 47.
 2. Follow the uninstallation instructions provided in the corresponding topic:
 - “Uninstalling runtime components in graphical mode”
 - “Uninstalling runtime components in console mode” on page 22
 - “Uninstalling runtime components in silent mode” on page 23

For information about removing service updates see “Uninstalling service for runtime components” on page 24.

Always use the uninstall wizard to remove this product, do not use the native uninstallation program.

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.

Uninstalling runtime components in graphical mode

Always use the uninstall wizard to remove this product, do not use the native uninstallation program.

The uninstallation process for the WebSphere Message Broker runtime and the Message Brokers Toolkit requires you to complete different actions. To uninstall the Message Brokers Toolkit, see “Uninstalling the Message Brokers Toolkit” on page 25.

To uninstall the runtime components complete the following steps:

1. Stop all running processes that are associated with runtime components (broker, Configuration Manager and User Name Server) before uninstalling. Use the `mqsolist` (list resources) command to check which components are running. Use the `mqsistop` command to stop each component.
2. On Windows and Linux (x86 platform), end all active sessions of the Message Brokers Toolkit.
3. If you do not plan to reinstall on this computer, delete all the brokers (`mqsdeletebroker` command), Configuration Managers (`mqsdeleteconfigmgr` command), and User Name Servers (`mqsdeleteusernameeserver` 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 `mqscreatedb` command, delete them with the `mqsdeletedb` 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 Version 6.0 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):

```
/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 launched 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

Always use the uninstall wizard to remove this product, do not use the native uninstallation program.

For information about console mode and alternative modes available, see “Modes of installation and uninstallation” on page 47. To invoke 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 uninstalling. Use the `mqsolist` (list resources) command to check which components are running. Stop each component using the `mqsistop` command.

2. On Windows and Linux (x86 platform), end any active sessions of the Message Brokers Toolkit.
3. If you do not plan to reinstall on this computer, delete all of the runtime components. When you delete a component, all its associated data and resources are deleted. Use the following commands to do this: `mqsdeletebroker` command, `mqsdeleteconfigmgr` command, and `mqsdeleteusernameeserver` command.
4. If you have created DB2 or Derby databases on Windows with the `mqscreatedb` command, delete them with the `mqsdeletedb` 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 Version 6.0 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. Invoke the uninstallation program in console mode from outside the installation directory, specifying the full path to ensure that the folders are removed during uninstallation.

```
/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 will be 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

Note: For improved accessibility, use the command */install_dir/_uninst_runtime/uninstaller -console -accessibility*

6. When invoked, the uninstaller presents text-based screens on the console that you can navigate between 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

Always use the uninstall wizard to remove this product, do not use the native uninstallation program.

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 in silent mode 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 49.

1. Stop all running processes that use any part of WebSphere Message Broker (brokers, Configuration Manager, and the User Name Server) before uninstalling. Use the `mqsilist` (list resources) command to check which components are running. Stop each component using the `mqsistop` command.
2. On Windows and Linux (x86 platform), end any active sessions of the Message Brokers Toolkit.
3. If you do not plan to reinstall on this computer, delete all of the runtime components. When you delete a component, all its associated data and resources are deleted. Use the following commands to do this: `mqsdeletebroker` command, `mqsdeleteconfigmgr` command, and `mqsdeleteusernameeserver` command.
4. If you have created DB2 or Derby databases on Windows with the `mqscreatedb` command, delete them with the `mqsdeletedb` 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 Version 6.0 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 using one of the commands below:
 - On Windows, run the command from inside the installation directory.
`start /w uninstaller`
 - On Linux and UNIX, run the command from outside the installation directory to ensure that the folders are removed during uninstallation.
`/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

You cannot remove a service package without uninstalling the entire product.

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. You do not need to reinstall the GA level of the product first, because the update package does this for you. No data is lost during this process.

You can have more than one instance of WebSphere Message Broker installed on a machine. These different installations can be at different levels. Therefore it is not necessary to uninstall an instance of the product to replace it with an installation at an earlier level. For further information, see Coexistence with previous versions and other products.

Uninstalling the Message Brokers Toolkit

This section describes the tasks that you must complete to uninstall the Message Brokers Toolkit on the following systems:

- Windows
 - Linux (x86 platform)
1. Decide which mode of uninstallation you want to use. The alternatives are explained in “Modes of installation and uninstallation” on page 47.
 2. Follow the uninstallation instructions provided in the corresponding topic:
 - “Uninstalling the Message Brokers Toolkit in graphical mode”
 - “Uninstalling the Message Brokers Toolkit in console mode”
 - “Uninstalling the Message Brokers Toolkit in silent mode” on page 26

Uninstalling the Message Brokers Toolkit in graphical mode

For information about graphical mode and alternative modes available, see “Modes of installation and uninstallation” on page 47. Invoke and complete the uninstaller to uninstall the Message Brokers Toolkit.

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

Platform	Uninstallation wizard
Windows	uninstall.exe
Linux	uninstall.bin

2. When the uninstaller is invoked, follow the guidance through the series of panels.

To complete the uninstallation of the Message Brokers Toolkit, restart your computer.

Uninstalling the Message Brokers Toolkit in console mode

For information about console mode and alternative modes available, see “Modes of installation and uninstallation” on page 47. Invoke the uninstallation wizard with the options of your choice.

1. Invoke the uninstaller in console mode.
 - On Windows enter this command for default invocation: `uninstall.exe -console`
 - On Windows enter this command for improved accessibility: `uninstall.exe -accessibility`
 - On Linux enter this command for default invocation: `./uninstall.bin -console`

- On Linux enter this command for improved accessibility: `./uninstall.bin -accessibility`

If you invoke installation from a directory other than the one in which the wizard exists, `<installdir>/wmbt_prod/_uninst` directory, include the absolute or relative path with the command name.

2. When invoked, the uninstaller presents text-based screens on the console that you can navigate between using the following options:
 - 1 next
 - 2 previous
 - 3 cancel
 - 4 redisplay

The uninstaller will ask you to confirm that you wish to uninstall the product and that the location it is uninstalling from is correct. Once you have responded to these questions the uninstallation commences.

Uninstalling the Message Brokers Toolkit in silent mode

For information about silent mode and alternative modes available, see “Modes of installation and uninstallation” on page 47. To complete uninstallation without any user interaction, use the silent mode.

The commands shown below invoke the uninstaller with all the default settings.

- On Linux systems, enter the following command to start a default uninstallation:
`./uninstall.bin -silent`
- On Windows systems, 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 invoke installation from a directory other than the one in which the wizard exists, `<installdir>/wmbt_prod/_uninst` directory, include the absolute or relative path with the command name.

To use non-default 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 49.

Uninstalling service from the Toolkit

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

1. Launch the RPU, from the toolkit. **Help > Software Updates> IBM Rational Product Updater.**
2. On the Installed Products tab you will see the entry for the IBM WebSphere Message Brokers Toolkit, any updates that have been installed will appear under this entry. If you want to uninstall any of these updates click on the **Rollbacks** tab.

3. Untick the box on the left of the update that you wish to uninstall. Ensure that no products are ticked that you do not wish to uninstall.
4. To remove the update, click **Roll Back Updates**.

Part 3. Reference

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Installation

Use the reference information in this section to understand your installation options, and what effects your options have on the system.

- “Hardware requirements”
- “Software requirements” on page 34
- “Modes of installation and uninstallation” on page 47
- “National language support” on page 51
- 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.

Hardware requirements

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

- “Supported processors”
- “Memory and disk space” on page 32
- “Communications” on page 34

Supported processors

WebSphere Message Broker is supported on the following systems.

Operating system	Requirements ¹
AIX [®]	IBM e(logo)server pSeries [®] IBM RS/6000 [®] processor machines IBM e(logo)server i5 (for AIX)
HP-UX (Integrity platform)	Hewlett-Packard Integrity systems ²
HP-UX (PA-RISC platform)	Hewlett-Packard HP-9000 PA-RISC 2.0 processor machines ³
Linux (POWER platform)	IBM e(logo)server iSeries Server (using the IBM Integrated xSeries Server or Linux PowerPC) IBM e(logo)server pSeries IBM RS/6000 processor machines
Linux (x86 platform)	IBM e(logo)server xSeries [®] or equivalent Intel [®] based systems ⁴
Linux (zSeries platform)	IBM e(logo)server zSeries [®] 600 or 700 Server
Solaris (SPARC platform)	Sun Microsystems SPARC processor machines
Solaris (x86-64 platform)	Sun Microsystems AMD64 or equivalent EM64T processor machines
Windows [®]	IBM e(logo)server xSeries or equivalent Intel based systems IBM e(logo)server 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. Any hardware is supported that is explicitly compatible and fully capable of running the specified operating system, all corresponding supporting software detailed in this information center, and any associated applications unmodified.
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 2GHz 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

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

Distributed systems

- 512 MB of RAM are required to support runtime operations (1 MB equals approximately 1000 000 bytes).
- 512 MB of RAM are required to support Message Brokers Toolkit operations on Linux (x86 platform) 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 system 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, so you might need to check or change the setting of both these variables.

If you are installing the Message Brokers Toolkit, you can specify a different temporary space directory when you invoke the installation wizard. Detailed instructions are given in the “Installation Guide” on page 3.

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 table below, check that your system has sufficient space before you continue with the installation.

Component	AIX	HP-UX (Integrity platform)	HP-UX (PA-RISC platform)	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 (x86 platform) 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 Cloudscape require approximately 105 MB.

- On systems 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 systems.

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

Read the topics in this section for information about the software requirements of WebSphere Message Broker.

- “Operating system requirements”
- “Supported databases” on page 36
- “Additional software requirements” on page 42
- “Optional software support” on page 45

Operating system requirements

You must have the correct level of operating system software before you install WebSphere Message Broker. Operating system software requirements are defined in the table below:

Operating system	Requirements ¹
AIX	<ul style="list-style-type: none"> • IBM AIX Version 5.2 with Maintenance Level 3 • IBM AIX Version 5.3 with Maintenance Level 2
HP-UX (Integrity platform)	<ul style="list-style-type: none"> • HP-UX 11i v2 (11.23) for Integrity
HP-UX (PA-RISC platform)	<ul style="list-style-type: none"> • HP-UX 11i v1 (B.11.11) (plus December 2003 QPK) • HP-UX 11.23
Linux (POWER platform) ²	<ul style="list-style-type: none"> • Linux PowerPC Red Hat Enterprise Linux Advanced Server V4 (plus Update 2) • Linux PowerPC SUSE Linux Enterprise Server (SLES) 9 RC5 or above • Linux PowerPC SUSE Linux Enterprise Server (SLES) 10³

Operating system	Requirements ¹
Linux (x86 platform) ²⁺⁴	<ul style="list-style-type: none"> • Linux Intel (32-bit) Red Hat Enterprise Linux Advanced Server V3.0 (plus Update 2) • Linux Intel (32-bit) Red Hat Enterprise Linux Advanced Server V4.0 (plus Update 2) • Linux x86 (64-bit) Red Hat Enterprise Linux Advanced Server Version 4.0 (plus Update 2)⁵ • Linux Intel (32-bit) SUSE Linux Enterprise Server (SLES) 9 • Linux Intel (32-bit) SUSE Linux Enterprise Server (SLES) 10³
Linux (zSeries platform) ²	<ul style="list-style-type: none"> • Linux zSeries (31-bit) Red Hat Enterprise Linux Advanced Server V3.0 (plus Update 2) • Linux zSeries (64-bit) Red Hat Enterprise Linux Advanced Server Version 4.0 (plus Update 2)⁶ • Linux zSeries (31-bit) SUSE Linux Enterprise Server (SLES) 9 • Linux zSeries (31-bit) SUSE Linux Enterprise Server (SLES) 10³ • Linux zSeries (64-bit) SUSE Linux Enterprise Server (SLES) 9⁶ • Linux zSeries (64-bit) SUSE Linux Enterprise Server (SLES) 10³⁺⁶
Solaris (SPARC platform)	<ul style="list-style-type: none"> • Sun Solaris 8 (plus SunSolve recommended Patch Cluster level and Patch ID 111308-05)⁷ • Sun Solaris 9 (plus SunSolve recommended Patch Cluster level) • Sun Solaris 10 (plus SunSolve recommended Patch Cluster level)⁸
Solaris (x86-64 platform)	<ul style="list-style-type: none"> • Sun Solaris 10 (plus SunSolve recommended Patch Cluster level)⁸
Windows	<ul style="list-style-type: none"> • 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 ⁹	<ul style="list-style-type: none"> • 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. 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 Advanced Server V4.0, you must also install the deprecated X Windows libraries.

All these libraries are available with the operating systems media.

3. WebSphere MQ Version 6.0.2.0 or later is required with this operating system.
4. The Message Brokers Toolkit is supported on Linux Intel (32-bit) Red Hat Enterprise Linux Advanced Server V3.0, Linux Intel (32-bit) SUSE Linux Enterprise Server (SLES) 9, and Linux Intel (32-bit) SUSE Linux Enterprise Server (SLES) 10 only.
5. Linux x86 (64-bit) Red Hat Enterprise Linux AS V4.0 supports broker components only. 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 (x86 platform), 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 Advanced Server 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.
6. On Linux (zSeries platform), 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.
 7. This patch provides multithreaded malloc support on Solaris 8. It is required because the standard system malloc library is optimized for single-threaded applications, but the broker typically runs many threads and requires the multithreaded `mtmalloc`.
 8. 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.
 9. 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".

Supported databases

A broker requires access to a database to store operational and state data. You must create the 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 40.

Multiple brokers within a single instance can access the same database, if appropriate, because the tables that are created are qualified by the broker name. Brokers in different installation locations on the same system cannot share a database.

The following table, and the accompanying notes, indicate the minimum levels of database products that are supported on each operating system.

You can also configure message flows that access user databases. The support provided is the same as for broker databases, shown in the table below.

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 39.

Database support is shown below; for the latest details on all supported platforms, visit the WebSphere Message Broker Requirements Web site.

Operating system	DB2 ¹	Microsoft SQL Server	Oracle ¹⁺²	Sybase ¹	Informix ³
AIX	8.2 ⁴ 9.1 ⁴⁺⁵	2000 SP3a ⁶	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10G Release 1 10G Release 2	12.5	Dynamic Server V9.4 with UC7 fix pack Client SDK V2.90 with UC4 fix pack
HP-UX (Integrity platform)	8.2 ⁴ 9.1 ⁴⁺⁵	Not applicable	10G Release 2	Not supported	Not supported
HP-UX (PA-RISC platform)	8.2 ⁴ 9.1 ⁴⁺⁵	2000 SP3a ⁶	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10G Release 1 10G Release 2	12.5	Dynamic Server V9.4 with UC7 fix pack Client SDK V2.90 with HC4 fix pack
Linux (POWER platform)	8.2 ⁴ 9.1 ⁴⁺⁵	Not applicable	Not supported	Not supported	Not supported
Linux (x86 platform)	8.2 ⁴⁺⁸ 9.1 ⁴⁺⁵⁺⁸	2000 SP3a ⁶	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10G Release 1 10G Release 2	12.5	Dynamic Server V9.4 with UC7 fix pack Client SDK V2.90 with UC3 fix pack
Linux (zSeries platform)	8.2 ⁴⁺⁹ 9.1 ⁴⁺⁵⁺⁹	Not applicable	Not supported	Not supported	Not supported
OS/400 ¹⁰	8.2 ⁴	Not applicable	Not applicable	Not applicable	Not supported
Solaris (SPARC platform)	8.2 ⁴⁺¹¹ 9.1 ⁴⁺⁵	2000 SP3a ⁶	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10G Release 1 10G Release 2	12.5.3	Dynamic Server V9.4 with UC7 fix pack Client SDK V2.90 with UC4 fix pack
Solaris (x86-64 platform)	8.2 ⁴⁺¹¹ 9.1 ⁴⁺⁵	Not applicable	10G Release 1	Not supported	Not supported
Windows	8.2 ⁴⁺¹² 9.1 ⁴⁺⁵	2000 SP3a	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10G Release 1 ¹³ 10G Release 2	12.5	Dynamic Server V9.4 with TC7 fix pack Client SDK V2.90 with TC4 fix pack

Operating system	DB2 ¹	Microsoft SQL Server	Oracle ¹⁺²	Sybase ¹	Informix ³
z/OS	7.1 ¹⁴ 8.1 ¹⁴	Not applicable	Not supported	Not applicable	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 FixPak 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. Both the Oracle Database Server and the Oracle Runtime Client are required.

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

The client SDK only is required on each broker system; 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.

4. 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 FixPak 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.

5. You must install WebSphere MQ Version 6.0.2.0 or later if you want to use DB2 Version 9.1. JDBC/XA is not supported with this database release.

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

7. On Linux (POWER platform), XA coordination is restricted to 32-bit brokers only.

8. If you have installed Linux x86 (64-bit) Red Hat Enterprise Linux AS V4.0:

- DB2 is the only database supported on this operating system.

- If you have installed DB2 Version 8 FixPak 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.
 - XA is not supported.
9. If you have installed Linux zSeries (64-bit) Red Hat Enterprise Linux AS V4.0, and you install a 31-bit DB2 Runtime Client, the client must be at DB2 Version 8 FixPak 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.
 10. You can configure message flows to access DB2 databases on OS/400 for user data. The message flows can run on any supported broker platform. You cannot create a broker database on OS/400 as a remote DB2 database from any broker platform. For further details of these restrictions, and for information about the PTFs that are required with this product, see “Database locations.”
 11. Solaris 10 on Solaris (SPARC platform) requires DB2 Version 8 FixPak 9 or later; Solaris 10 on Solaris (x86-64 platform) requires DB2 Version 8 FixPak 11 or later.
 12. You can use the embedded Derby database for verification, evaluation, and test purposes only. (Derby refers to IBM Cloudscape Version 10.0, a database product that is built on the Derby database from the Apache Software Foundation.) For a production system, install and configure your chosen enterprise database.
 13. For XA coordination with Oracle 10G on Windows, you must install Patch Set 3 for Oracle 10G (10.1.0.4.0).
 14. 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

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

You can choose to create and configure these databases on the local system, or on a remote system, subject to the following restrictions:

- You can use a local or remote database for the broker tables, with the exception that a remote database cannot be accessed on z/OS or OS/400.
- You can use a local or remote database for user data, subject to the following operating system restrictions:

Database on iSeries

- Database support on iSeries (OS/400) is DB2 only.
- Your OS/400 installation must be V5R2 or V5R3.
- On Linux, UNIX, and Windows you can connect using DB2 Connect. On Windows only you can also use iSeries Access for Windows.
- Globally coordinated (XA) transactions are not supported.
- New Era of Network nodes within message flows cannot access an iSeries database.

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

Database on zSeries

- Database support on z/OS is DB2 only.
- 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.
- New Era of Network nodes within message flows cannot 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 Rules and Formatter Option for z/OS*.

WebSphere Information Integrator Support

- Message flows on all distributed systems brokers can access databases on WebSphere Information Integrator for Linux, UNIX, and Windows Version 8.2.
- Message flows on z/OS brokers can access 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-Datcom
 - Software AG ADABAS
 - DB2

WebSphere Information Integrator Classic Federation for z/OS Version 8.2 does not support two phase commit, and you must set up all ODBC connections with CAF (Call Attachment Facility), not the default option which is RRSF (Recoverable Resource Manager Services Attachment Facility).

- 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 your database product using for WebSphere Message Broker to determine the best options for your specific environment and requirements, and information about how to configure remote databases 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. You can

specify a different database for every broker, or share a database between brokers. The database tables schema inherits its name from the Data Source User ID specified in the create command.

The table below shows the database tables that are created by the `mqscreatebroker` command in the broker database. The tables are created when you create the first broker. When you create further brokers specifying the same database, new rows are created for each broker. Every row created in the table includes the broker name, therefore each row is unique to a single broker.

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
BROKERA	Broker process details to support recovery
BROKERAEG	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
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 44
- “Browsers” on page 45

WebSphere MQ

WebSphere MQ is required for all WebSphere Message Broker components at the minimum supported level shown in the table below.

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

Operating system	Requirements
AIX HP-UX (PA-RISC platform) Linux (x86 platform) with Red Hat Enterprise Linux Advanced Server V3.0 or SUSE Linux Enterprise Server (SLES) 9 Linux (zSeries platform) with Red Hat Enterprise Linux Advanced Server V3.0 or SUSE Linux Enterprise Server (SLES) 9 Solaris (SPARC platform) Windows	WebSphere MQ Version 5.3.0.1 (or later) ¹⁺²⁺³
Linux (POWER platform) with Red Hat Enterprise Linux Advanced Server V4.0 or SUSE Linux Enterprise Server (SLES) 9 Linux (x86 platform) with Linux Intel (32-bit) Red Hat Enterprise Linux Advanced Server V4.0 Linux (x86 platform) with Linux x86 (64-bit) Red Hat Enterprise Linux Advanced Server V4.0 Linux (zSeries platform) with Red Hat Enterprise Linux Advanced Server V4.0	WebSphere MQ Version 6.0.0.0 (or later) ¹⁺²⁺³
Linux (POWER platform) with SUSE Linux Enterprise Server (SLES) 10 Linux (x86 platform) with SUSE Linux Enterprise Server (SLES) 10 Linux (zSeries platform) with SUSE Linux Enterprise Server (SLES) 10	WebSphere MQ Version 6.0.2.0 (or later) ¹⁺²⁺³

Operating system	Requirements
HP-UX (Integrity platform)	WebSphere MQ Version 6.0.1.1 (or later) ¹⁺²⁺³
Solaris (x86-64 platform)	
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 WebSphere MQ Version 5.3 already installed, 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 (x86 platform) 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 Integration products system requirements 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; 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. If you want product components to use Java 5 SR2 instead of the embedded Java 1.4.2, configure your command environment to access this optional version. If you make this change, all components that are installed and created on this system will use Java 5 SR2.

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 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 (x86 platform).

Some Linux (x86 platform) offerings do not install Mozilla by default. If you plan to install the Message Brokers Toolkit on your Linux (x86 platform) system, check that a supported version of Mozilla is already installed. If not, install Mozilla from your Linux (x86 platform) 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 (RAC)"
- "WebSphere MQ Everyplace"
- "Tivoli License Manager"
- "WebSphere Application Server"
- "Compilers" on page 46
- "Adobe Flash Player" on page 47
- "Internet Protocol v4, v6" on page 47

Rational Agent Controller (RAC)

WebSphere Message Broker interacts with 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 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.

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

HP aC++ Version A 03.52

Linux

Linux (POWER platform)

GNU g++, Version 3.3 or later

Linux

Linux (x86 platform)

GNU g++, Version 3.2 or later

Linux

Linux (zSeries platform)

GNU g++, Version 3.2 or later

Solaris

Solaris (SPARC platform)

Sun Studio Compiler, Forte Developer for HPC 6 update 2

Solaris

Solaris (x86-64 platform)

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 42.

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.

Modes of installation and uninstallation

This topic describes the three modes that you can use during installation and uninstallation, both for the runtime components and the Message Brokers Toolkit:

- “Graphical mode”
- “Console mode” on page 48
- “Silent mode” on page 48

In this topic *installer* and *uninstaller*, used in example commands, denote 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 “Installation Guide” on page 3 and “Uninstalling” on page 21.

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 CPU 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 with accessibility considerations; for example, those 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 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 below.

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 check 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 49), 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 (x86 platform), 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.”

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 below.

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 (x86 platform), enter the following command:

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

Using response files

This topic describes how to use response files.

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 50 supplied with WebSphere Message Broker.

You can also use response files to install service updates; for further information see:

- “Generating response files” on page 50
- “Recording a response file” on page 51
- “Calling response files in commands” on page 51

If you want to install or uninstall in silent mode (see “Modes of installation and uninstallation” on page 47), 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 14, and “Uninstalling” on page 21.

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

The command for generating a template installation response file, without installation being performed is:

```
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

The command for recording a response file during installation is:

```
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.

National language 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

WebSphere Message Broker supports messages for 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. Due to limited syslog support on HP-UX, messages are written to the log in US English only.

2. These values are the same for Linux (POWER platform), Linux (x86 platform), and Linux (zSeries platform).

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, 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 table below.

Directories under <i>install_dir</i>	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

Directories under <i>install_dir</i>	Contents
migration	Migration files
readmes	Product readme files
sample	C, C++, and Java sample files
xml4c	XML processing files

On AIX, the default work directory is `/var/mqsi/`. The directories created are shown in the table below.

Directories under <code>/var/mqsi</code>	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 (Integrity platform)

On HP-UX (Integrity platform), the default home directory *install_dir* is `/opt/IBM/mqsi/6.0`. The directories created in *install_dir* are shown in the table below.

Directories under <i>install_dir</i>	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

Directories under <i>install_dir</i>	Contents
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 (Integrity platform), the default work directory is `/var/mqsi/`. The directories created are shown in the table below.

Directories under <code>/var/mqsi</code>	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 (PA-RISC platform)

On HP-UX (PA-RISC platform), the default home directory *install_dir* is `/opt/IBM/mqsi/6.0`. The directories created in *install_dir* are shown in the table below.

Directories under <i>install_dir</i>	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

Directories under <i>install_dir</i>	Contents
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 (PA-RISC platform), the default work directory is `/var/mqsi/`. The directories created are shown in the table below.

Directories under <code>/var/mqsi</code>	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 table below.

Directories under <i>install_dir</i>	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
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 <i>install_dir</i>	Contents
license	License files
lib	Loadable library files (32-bit)
merant	ODBC driver and related files (Linux (POWER platform) and Linux (x86 platform) 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 work directory is `/var/mqsi/`. The directories created are shown in the table below.

Directories under <code>/var/mqsi</code>	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 (x86 platform) 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 table below.

Directories under <i>install_dir</i>	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

Directories under <i>install_dir</i>	Contents
rwdrpt_shared	Rational directories and files
sdpiv	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 table below.

Directories under <i>install_dir</i>	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
readmes	Product readme files
sample	C, C++, and Java sample files
xml4c	XML processing files

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

Directories under <i>/var/mqsi</i>	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 folder>\IBM\MQSI\6.0. The directories created in *install_dir* are shown in the table below.

Directories under <i>install_dir</i>	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
readmes	Product readme files
sample	C, C++, and Java sample files

On Windows, the default work 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 table below.

Directories under <i>work_dir</i>	Contents
Ccommon/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 table below.

Directories under <i>install_dir</i>	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
sdpiv	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

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 caused 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).

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

The table below describes the main Windows registry entries. These 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 IBM Service. The table below shows the main Windows registry entries, 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, you must ensure that your environment is set up correctly for working with WebSphere Message Broker. If you have installed on z/OS, see Customizing the z/OS environment.

Sample profile files are provided with WebSphere Message Broker, and you must 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, the profile is *install_dir/bin/mqsiprofile*.
- On Windows, a command console is set up when you install components. Access this through the **Start** menu. When you select this option, a command line window is opened and the relevant environment is set up for you.
If you prefer, you can access the profile *install_dir\bin\mqsiprofile.cmd*; you must run this in a command window before you work with WebSphere Message Broker.

If you have more than one installation on a single system, you must 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, these profiles are incompatible with Version 6 profiles. 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 configuration

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

The resources created have names that begin with the reserved characters SYSTEM. The table below 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.
SYSTEM.BROKER.ADMIN.REPLY	Queue	Configuration Manager	Target for response messages sent by the broker 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.

Resource name	Type	Queue manager	Description
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.CLIENTS.DATA	Queue	Broker	Used internally for publish/subscribe data.
SYSTEM.BROKER.CONFIG.QUEUE	Queue	Configuration Manager	Target for messages sent to the Configuration Manager from the toolkit.
SYSTEM.BROKER.CONFIG.REPLY	Queue	Configuration Manager	Target for messages sent to the toolkit by the Configuration Manager.
SYSTEM.BROKER.CONTROL.QUEUE	Queue	Broker	Target for publish/subscribe control requests sent to the broker by applications.
SYSTEM.BROKER.EXECUTIONGROUP.QUEUE	Queue	Broker	Target for messages sent by the Configuration Manager to the broker.
SYSTEM.BROKER.EXECUTIONGROUP.REPLY	Queue	Broker	Target for response messages from the User Name Server to the broker.
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
SYSTEM.BROKER.MODEL.QUEUE	Queue	All	Model for dynamic response queues.
SYSTEM.BROKER.SECURITY.QUEUE	Queue	User Name Server	Target for messages to the User Name Server from the Configuration Manager, brokers, and the toolkit.
SYSTEM.BROKER.SECURITY.REPLY	Queue	Configuration Manager and brokers	Target for response messages from the User Name Server to its requestor.
SYSTEM.BROKER.SUBSCRIPTIONS.DATA	Queue	Broker	Used internally for publish/subscribe data
SYSTEM.BROKER.TIMEOUT.QUEUE	Queue	Broker	Used internally to support the TimeoutControl and Notification nodes.

Resource name	Type	Queue manager	Description
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.

These resources are defined in addition to the default WebSphere MQ objects created when that product is installed.

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. You can specify a different database for every broker, or share a database between brokers. The database tables schema inherits its name from the Data Source User ID specified in the create command.

The table below shows the database tables that are created by the `mqsicreatebroker` command in the broker database. The tables are created when you create the first broker. When you create further brokers specifying the same database, new rows are created for each broker. Every row created in the table includes the broker name, therefore each row is unique to a single broker.

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

Table name	Description
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
BRMWFDFINFO	Registered wire format descriptors
BROKERA	Broker process details to support recovery
BROKERAEG	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
BUSERNAME	Publish/subscribe principals: users

Part 4. Appendixes

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