WebSphere Message Broker
Installation Guide
Version 6.0

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Draft level: First and only draft

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Reviewers:

Please refer to notes inside front cover.

Please return comments to Kate on or before Wednesday 7 December 05. A review meeting is scheduled for that day, please ask if you want to attend and have not been invited.

Please note that this title page is temporary and will be removed before publication. Thanks!

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WebSphere Message Broker

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About this book

This book explains how to plan and prepare for installation of IBM®
WebSphere Message Broker for Multiplatforms Version 6.0 and WebSphere
Message Broker for z/OS® Version 6.0.

These products are supported on the following operating systems:
* Multiplatforms:
  – IBM AIX®
  – HP-UX (PA-RISC platform)
  – Linux™ (x86 platform)
  – Linux (zSeries® platform)
  – Sun Solaris Operating Environment (SPARC platform)
  – Microsoft® Windows® XP and Windows 2003
* IBM z/OS

The book describes tasks that you must complete before and after you install
this product. For WebSphere Message Broker for Multiplatforms, it also gives
details of how to install; for WebSphere Message Broker for z/OS, see the
Program Directory for WebSphere Message Broker for z/OS or the *Program
Directory for WebSphere Message Broker with Rules and Formatter Extension for
z/OS* for equivalent information. Finally, it tells you how you can verify that
your installation has been successful.

The book is divided into four parts:
* Part 1, "Planning," on page 1
* Part 2, "Preparation," on page 37
* Part 3, "Installation," on page 61
* Part 4, "After installation," on page 83

Appendixes provide further support and reference information.

If you have ordered WebSphere Message Broker with Rules and Formatter
Extension for Multiplatforms, use this book to install WebSphere Message
Broker, then insert the Rules and Formatter Extension CD for your operating
system and follow the instructions to install the extension.

If you have ordered WebSphere Message Broker with Rules and Formatter
Extension for z/OS, use the *Program Directory for WebSphere Message Broker
with Rules and Formatter Extension for z/OS* to install both broker and
extensions.

About this book

For further information specific to the Rules and Formatter Extension, see the documentation on the supplied Rules and Formatter Extension CD, or view the information center after you have installed the extension.

This book does not provide details about how to install maintenance and service, nor does it tell you how to remove the product. See the information center for instructions on those tasks. You can access the information center from the product after you have installed the Message Broker Toolkit, or you can access it from other locations before installation. See "Where to find more information" on page xi for details of the options available.

Who this book is for

This book is for system administrators of systems on which WebSphere Message Broker components are installed.

What you need to know to understand this book

To understand this book, you must be familiar with the system facilities of your operating system, for example accessing CDs and setting up security.

Terms used in this book

All references in this book to Windows are applicable to Windows XP and Windows 2003 unless otherwise stated.

The term Linux refers to Linux (x86 platform) and Linux (zSeries platform) where their behavior is common.

The term UNIX® refers to the operating systems AIX, HP-UX, and Solaris where their behavior is common.

The term distributed system refers to Windows, Linux, and UNIX systems where their behavior is common.

The term *installer* refers to the installation wizard (its name is not the same on every operating system).

The term *install_dir* refers to the directory in which you install the product.

The term *working directory* refers to a directory on a distributed system that is associated with the current user logon ID. It contains product-related files.

DB2® Enterprise Server refers to IBM DB2 Universal Database™ Enterprise Server Edition. A copy of DB2 Enterprise Server Edition Version 8.2 with tailored terms and conditions is supplied with WebSphere Message Broker for

Multiplatforms. On z/OS, DB2 Enterprise Server is a prerequisite product. Other editions of DB2 Universal Database (Multiplatforms and z/OS) that are stated to be suitable for production deployment are also supported (for example, Workgroup Server Edition).

Derby refers to IBM Cloudscape™ Version 10.0, a database product that is built on the Derby database from the Apache Software Foundation. Cloudscape does not modify Derby in any way, but provides additional function including installers. Derby database support is embedded in the broker component on Windows only. See "Databases" on page 8 for further information about Derby.

The Message Broker Toolkit refers to the installable component that provides a graphical interface for administration, configuration, and development for WebSphere Message Broker. After installation, this component is referred to by its generic name, the Message Brokers Toolkit. Both terms, Message Broker Toolkit and Message Brokers Toolkit, are used in this book, depending on the context of the reference (before or after installation).

Key terms introduced in this book are defined in the "Glossary of terms and abbreviations" on page 123. For a full product glossary, see the information center.

For information about terms and abbreviations that are not specific to this product, see the IBM Terminology Web site at:

`http://www.ibm.com/software/globalization/terminology/`

Where to find more information

This book contains only installation information. Most of the information that you need to use this product is contained in the information center, which you can access from the **Help > Help Contents** menu in the Message Brokers Toolkit after installation. The information center includes this book in PDF.

You can access the information center before and after installation from these additional locations:

- From the documentation CD included in the product package.

  The information center is provided for Linux (x86 platform) and Windows, and you can start it in both standalone mode (access is limited to the local computer) or web server mode (which supports local and remote access).

  You can access the information center directly on CD, or you can copy the files onto disk. Instructions are provided in `installing_and_managing.htm` on the CD.

- From the documentation FTP site at:

  `ftp://ftp.software.ibm.com/software/integration/wbibrokers/docs`

Information sources

Download file `wmb_help_lin.zip` for Linux (x86 platform) or `wmb_help_win.zip` for Windows, and follow the instruction in the `installing_and_managing.htm` file that is included in each zipped file. The downloaded information center can also be started in standalone mode or web server mode.

On this site you can also find PDF files of topic collections for printing, and translated versions of product readme files.

- Online from the IBM WebSphere Business Integration Information Center at:

  `http://publib.boulder.ibm.com/infocenter/wbihelp/index.jsp`

The information center on the documentation CD, and that available from the FTP site, includes documentation plug-ins for WebSphere Message Broker, WebSphere Event Broker, WebSphere MQ Version 6.0, and WebSphere MQ Everyplace® Version 2.0.2.0.

The latest product readme files, in US English only, are maintained on the WebSphere MQ family product readmes Web site at:

`http://www.ibm.com/software/integration/mqfamily/support/readme/`

Publications

The following books are available for WebSphere Message Broker:

- *WebSphere Message Broker Installation Guide (GC34-6621)* (this book)
- *Program Directory for WebSphere Message Broker for z/OS (GI10-2595)*
- *Program Directory for WebSphere Message Broker with Rules and Formatter Extension for z/OS (GI10-2596)*

Related products

Online information centers and publications for other IBM products that you might use with WebSphere Message Broker are available through the IBM Publications Center at:

`http://www.elink.ibmlink.ibm.com/public/applications/publications/cgibin/pbi.cgi`

Direct links are provided below.

WebSphere MQ

The WebSphere MQ documentation is included in the integrated information center provided on the WebSphere Documentation CD.

You can also access the WebSphere MQ information center online at:

`http://publib.boulder.ibm.com/infocenter/wmqv6/v6r0/index.jsp`

DB2 Enterprise Server

Access the information center online at:

`http://publib.boulder.ibm.com/infocenter/db2help/index.jsp`

DB2 Run-Time Client

Access the information center online at:

`http://publib.boulder.ibm.com/infocenter/cldscp10/index.jsp`

WebSphere MQ Everyplace

The WebSphere MQ Everyplace documentation is included in the integrated information center provided on the WebSphere Documentation CD.

WebSphere information on the Web

Follow links on the WebSphere Web site at `http://www.ibm.com/software/info1/websphere` to:

- Obtain the latest information about WebSphere products
- Access manuals, white papers, IBM Redbooks™, and other information sources
- Download service and support information including SupportPac™ offerings
- Access information about IBM Business Partners and associated offerings

Information sources

Summary of changes

This section describes changes in this edition of *WebSphere Message Broker Installation Guide*. Changes since the previous edition of the book are marked by vertical lines to the left of the changes.

Changes for this edition

This section describes changes in this edition of *WebSphere Message Broker Installation Guide*. Changes since the previous edition of the book are marked by vertical lines to the left of the changes.

- Refresh of Message Broker Toolkit media and content.
- Updates to installation instructions for systems that have multiple Rational Application Developer products.
- Other details still to be decided............
- Minor technical corrections and editorial changes have been made throughout the book.

Changes

Part 1. Planning

The first part of this book describes the environment that you need before you can install WebSphere Message Broker. It contains the following chapters:

Chapter 1. System requirements

Before you install WebSphere Message Broker, you must check that your system meets both the hardware and software requirements of the product. Details are provided in these sections:

- "Hardware requirements"
- "Software requirements" on page 6

The product readme file readme.html might contain updates to the information in this chapter. Always check for later information in the readme file which is available from these locations:

- Before installation, on the product media. The same file is included on DVD (on Linux (x86 platform) and Windows only), runtime components Disk 1, and on Message Broker Toolkit Disk 1) in location \readmes*locale*\, where *locale* identifies country, region, or language, for example en_US.
- After installation, in *install_dir*\readmes*locale*\.

The file is updated occasionally; access the WebSphere MQ family product readmes Web site at http://www.ibm.com/software/integration/mqfamily/support/readme/ to check that you have the latest level.

For information about license requirements, see "License requirements" on page 18.

The information in this chapter is repeated in the information center (under **Reference > Installation**), so that you can check requirements online after installation.

Hardware requirements

To run this product, you must install the Message Broker Toolkit on at least one system. This component can be installed only on Linux (x86 platform) and Windows, and you must therefore include one of these systems in your environment. All other components can be installed on all supported platforms.

Hardware requirements

Check that your target systems are at the required level of support. Table 1 describes what you need.

Table 1. Hardware requirements

Operating system	Requirements[1]
AIX	IBM e(logo)server® pSeries® IBM RS/6000® processor machines IBM e(logo)server i5
HP-UX	Hewlett-Packard HP-9000 processor machines[2]
Linux (x86 platform)	IBM e(logo)server xSeries® or equivalent Intel® based systems[3]
Linux (zSeries platform)	IBM e(logo)server zSeries 600 or e(logo)server 700 Server
Solaris	Sun Microsystems SPARC processor machines
Windows	IBM e(logo)server xSeries or equivalent Intel based systems[3] IBM e(logo)server iSeries™ Server using the IBM Integrated xSeries Server[4]
z/OS[5]	Any server capable of running one of the supported z/OS releases

Notes:

1. Always check the readme.html file for the latest information about supported hardware.
2. The +DAportable flag cannot be used for 64-bit compilations, therefore WebSphere MQ 64-bit queue managers cannot be supported on the PA-RISC 1.1 chips.
3. The Message Broker Toolkit requires any Intel Pentium® III (or higher) processor-based IBM PC or compatible, with 700 or more MHz processor speed. This is the minimum supported level; for improved performance, use a 2 GHz processor.

   A minimum display resolution of at least 1024 x 768 is required for some dialogs (for example, the Preferences dialog).
4. You must install OS/400® Version 5 Release 2 or Version 5 Release 3 on the iSeries Server to exploit this support.
5. See the *Program Directory for WebSphere Message Broker for z/OS* or the *Program Directory for WebSphere Message Broker with Rules and Formatter Extension for z/OS* for further details.

DVDs are provided for Linux (x86 platform) and Windows; if you want to install from DVD your system must have a DVD reader. All other systems require a CD reader. For details of the CDs and DVDs supplied, see Chapter 4, "Installation packages," on page 29.

Memory and disk space

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

Distributed systems

- 512 MB of RAM are required to support runtime operations (1 MB equals approximately 1 000 000 bytes).
- 512 MB of RAM are required to support Message Broker Toolkit operations on Linux (x86 platform) or Windows. This 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).

  The installation wizard displays the actual requirements for each component that you have selected for installation, excluding temporary space. Table 2 shows typical figures for components installed on Windows and Linux for guidance only; different operating systems might show small variations. If you install just one or two of the runtime components, the storage required is reduced by only a small amount.

Table 2. Disk space requirements guidelines

Component	Space required on Windows	Space required on Linux
Broker, Configuration Manager, and User Name Server	315 MB plus 300 MB temporary space	280 MB plus 300 MB temporary space
Transformation Services (optional broker extension)	25 MB	20 MB
Message Broker Toolkit	4.5 GB plus 1.5 GB temporary space	4.5 GB plus 1.5 GB temporary space

- 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 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 (see "Databases" on page 8).
  - 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.

Memory and disk space

- Temporary disk space is required during installation as shown in Table 2 on page 5. This space is required in the default temporary space directory, not in the folder into which you install the product:
  - On Linux and UNIX systems, the default temporary space directory is /tmp.
  - On Windows, the default temporary space directory is pointed to by the TEMP system variable.

  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 storage available. If you do not, you must increase available storage or change either the location of the temporary space or the installation directory. If you are installing the Message Broker Toolkit, you can specify a different temporary space directory when you invoke the installation wizard, as described in "Changing the location of the temporary space directory" on page 81.

  The temporary files are deleted when installation has completed.

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 Extension for z/OS*.

Communications

Check that your system has communications hardware that supports at least one of the following protocols:
- NetBIOS
- SNA LU 6.2
- SPX
- TCP/IP

Software requirements

WebSphere Message Broker has specific requirements for operating system software, and for supporting products. Details are provided in these sections:
- "Operating system requirements"
- "Databases" on page 8
- "Additional required products" on page 12
- "Optional software" on page 16

Operating system requirements

You must ensure that you have the correct level of operating system software before you install WebSphere Message Broker. Check the requirements for your operating system in Table 3 on page 7.

Table 3. Operating system requirements

Operating system	Requirements[1]
AIX	• AIX V5.2 with Maintenance Level 3 • AIX V5.3 with Maintenance Level 2
HP-UX	• HP-UX 11i V1 (B.11.11) (plus December 2003 QPK)
Linux (x86 platform)[2]	• Linux Intel IA32 Red Hat Enterprise Advanced Server V3.0 (plus Update 2) (Kernel Version 2.4.21) • Linux Intel IA32 SUSE Linux Enterprise Server (SLES) 9 (Kernel Version 2.6)
Linux (zSeries platform)	• Linux zSeries (31-bit) Red Hat Enterprise Linux Advanced Server V3.0 (plus Update 2) (Kernel Version 2.4.21) • Linux zSeries (31-bit) SUSE Linux Enterprise Server (SLES) 9 (Kernel Version 2.6)
Solaris	• Solaris 8 (plus SunSolve recommended Patch Cluster level and Patch ID 111308-05)[3] • Solaris 9 (plus SunSolve recommended Patch Cluster level)
Windows	• Windows XP Professional[4] • Windows Server 2003 Standard Edition • Windows Server 2003 Enterprise Edition
z/OS[5]	• z/OS V1.5 or later

Notes:

1. Always check the `readme.html` file for the latest information about supported software.
2. You might require the following additional packages on Linux (x86 platform). These are available with the operating system.
   - If you choose to install in graphical mode, compatibility libraries are required:
     – Red Hat Enterprise Advanced Server V3.0: package `compat-libstdc++`
     – SUSE Linux Enterprise Server: package `compat` (at version 2002.12.6.0 or later)

   These are not required for console or silent installations.
   - If you want to use the package monitor (RPM), the `rpm-build` package is required.
3. 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.
4. Support is for development and test purposes only, not for production.
5. See the *Program Directory for WebSphere Message Broker for z/OS* or the *Program Directory for WebSphere Message Broker with Rules and Formatter Extension for z/OS* for further details. In particular, review the information in "Preventative Service Planning".

Databases

A broker requires a database to contain operational and state data. You can complete the WebSphere Message Broker installation program if you do not have a suitable database installed on this system, but you must install one before you create a broker. (If you use the Launchpad when you install on Windows, you can select a suitable database to be installed by the Launchpad at that time. See Chapter 8, "Installing with the Windows Launchpad," on page 63 for details.)

DB2 Enterprise Server is supplied with WebSphere Message Broker for Multiplatforms. You can install and use DB2 Enterprise Server on all supported platforms. A Compact installation provides all the function that is required by WebSphere Message Broker; Typical and Custom installations are also available and the installation program provides further details about additional features and storage requirements.

On z/OS, you must obtain your own copy of DB2 Enterprise Server. If you do not already have DB2 installed, contact your IBM representative for further information and assistance.

On Windows only, you can use the embedded Derby database, which is supported for test and evaluation purposes only. No other Cloudscape or Derby database is supported; you can use only the database embedded in the broker component.

To use Derby, you do not have to install any database server code, but you must install the ODBC drivers for Cloudscape that provide an interface to that database. These are available with the IBM DB2 Run-Time Client for Windows Version 8.2, a copy of which is provided on CD or DVD for WebSphere Message Broker for Multiplatforms on Windows only. If you use the Windows Launchpad to install, select the option for the ODBC drivers for Cloudscape. If you do not use the Launchpad, install the DB2 Run-Time Client directly from CD or DVD.

For a production system, install and configure your chosen enterprise database, for example DB2 Enterprise Server.

Microsoft SQL Server, Oracle, and Sybase Adaptive Server Enterprise (ASE) databases are also supported, as shown in Table 4 on page 10. You must acquire your own version of these products; they are not supplied with WebSphere Message Broker.

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

You can also configure message flows to access databases that hold data associated with your message processing. The databases supported for this purpose (known as user databases) are identical to those supported for a broker.

You can exploit stored procedure support on all supported databases.

Databases

Table 4 shows which levels of database are supported on which operating systems. In most situations, the broker that accesses the database does not have to be running on the same operating system as the database server. For details about local and remote database use, and existing restrictions, see "Database locations" on page 11.

Table 4. Supported databases

Operating system	DB2[1]	SQL Server	Oracle[1]	Sybase
AIX	8.2[2]	Not applicable	9i Rel 2 Patch Set 4 (9.2.0.5, patch 3501955) 10G	12.5
HP-UX	8.2[2]	Not applicable	9i Rel 2 Patch Set 4 (9.2.0.5, patch 3501955) 10G	12.5
Linux (x86 platform)	8.2[2]	Not applicable	9i Rel 2 Patch Set 4 (9.2.0.5, patch 3501955) 10G	12.5
Linux (zSeries platform)	8.2[2]	Not applicable	Not supported	Not supported
OS/400[3]	8.2	Not applicable	Not applicable	Not applicable
Solaris	8.2[2]	Not applicable	9i Rel 2 Patch Set 4 (9.2.0.5, patch 3501955) 10G	12.5
Windows	8.2[2+4]	2000 SP3a	9i Rel 2 Patch Set 4 (9.2.0.5, patch 3501955) 10G	12.5
z/OS	7.1[5] 8.1[5]	Not applicable	Not supported	Not applicable

Notes:
1. Supported releases of DB2 and Oracle 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 is referred to as supporting a globally coordinated message flow. On z/OS, all transactions are coordinated by Recoverable Resource Services (RRS).

   XA coordination for messages in the MRM domain on Windows requires DB2 Version 8.2 FixPak 10 or later.
2. Check the readme.html file for your product to check if a fix pack or other fix is required.
3. You can access a DB2 database installed on OS/400 as a user database from a message flow running on a broker on any supported system. You cannot create a broker database on any system as a remote DB2 database

on OS/400. For further details of these restrictions, and for information about the PTFs that are required with this product, see "Database locations."

4. You can use the embedded Derby database for verification, evaluation, and test purposes only. For a production system you might want to install and configure your chosen enterprise database.

5. 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 with Rules and Formatter Extension for z/OS* for further details.

If you develop 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.

Database locations

You can create and configure databases that you use with WebSphere Message Broker 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, 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:

DB2 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.
- Large database objects (LOBs) are not supported.
- 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 if access to the remote database is provided by DB2 Connect only.

DB2 database on z/Series

- Database support on zSeries (z/OS) is DB2 only. See the *Program Directory for WebSphere Message Broker for z/OS* or the *Program Directory for WebSphere Message Broker with Rules and Formatter Extension for z/OS* for further details.
- You must use DB2 Connect on Linux, UNIX, and Windows.

 – Large database objects (LOBs) are supported by DB2 Universal Database for z/OS V7.1 See the *Program Directory for WebSphere Message Broker for z/OS* or the *Program Directory for WebSphere Message Broker with Rules and Formatter Extension for z/OS* for further details.

WebSphere Information Integrator support

Brokers can access WebSphere Information Integrator databases for user data on WebSphere Information Integrator for Linux, UNIX, and Windows Version 8.2, and on WebSphere Information Integrator Classic Federation for z/OS Version 8.2. On z/OS this provides direct SQL connectivity with the following z/OS data sources:
 – IMS™
 – VSAM
 – ISAM
 – Sequential files
 – CA-IDMS
 – CA-Datacom
 – Software AG ADABAS
 – DB2

WebSphere Information Integrator Classic Federation for z/OS Version 8.2 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 RRSAF (Recoverable Resource Manager Services Attachment Facility).

- If you choose to use a remote database, you must configure the ODBC connection to the database correctly.

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 database access.

Additional required products

WebSphere Message Broker requires additional software products to run successfully.

WebSphere MQ

WebSphere MQ is required for all WebSphere Message Broker components at the minimum supported level shown in Table 5 on page 13.

If you do not already have 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, you can use the supplied CDs or DVD to upgrade your current installation.

Table 5. WebSphere MQ requirements

Operating system	Requirements
Distributed platforms	WebSphere MQ Version 5.3.0.1 or later[1][2][3]
z/OS[4]	WebSphere MQ Version 5.3.1 with JMS Feature applied[2][3]

Notes:

1. The minimum set of components that you must install are 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.

   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). For further clarification, see "Optional software" on page 16.

3. For some specific broker functions, later levels of WebSphere MQ 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.

   - If you develop message flows that use WebSphere MQ Real-time Transport with Multicast PGM support, you must install WebSphere MQ Version 6.0 or later on each affected broker system. An iFix is also required; see the readme.html file for the latest information.

Additional products

- To exploit the Native POSIX Threading Library (NPTL) performance gains on Linux systems (available with Kernel Version 2.6 and above), which support multiple threads running within one process, you must install WebSphere MQ Version 6.0. Performance gains might be achieved where you have multiple message flows assigned to a single execution group.

  For z/OS, see the *Program Directory for WebSphere Message Broker for z/OS* or the *Program Directory for WebSphere Message Broker with Rules and Formatter Extension for z/OS* for further details about required levels of WebSphere MQ.

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 Extension for z/OS* for further details.

For details of WebSphere MQ products and supported versions, see WebSphere Business Integration software at:

http://www.ibm.com/software/integration/websphere/mqplatforms/supported.html

Java Runtime Environment

The Java™ Runtime Environment is embedded with the product on all platforms except z/OS, where Java Runtime Environment (JRE) Version 1.4.2 (Fix Pack 2) is required. For additional information, see the Java products for z/OS Web site at:

http://www.ibm.com/servers/eserver/zseries/software/java/getsdk14.html

Rational Application Developer (RAD)

The Message Broker Toolkit is based on the Rational® Application Developer (RAD) integrated development environment framework. The RAD framework is supplied as a component of the Message Broker Toolkit. If required, it is installed when you install the toolkit, and you do not have to order or install RAD separately.

If you have existing RAD software, or Rational Software Architect (RSA) products, installed on your local system, the RAD framework is not installed when you install the Message Broker Toolkit. This is because all RAD and RSA products participate in *shell-sharing*, where product-specific plug-ins share a single common framework.

The support of a common framework saves space and installation time. Workbenches associated with the installed products are integrated together so that you can view and access all the supported functions in a single session. RAD shell-sharing is enforced and cannot be deactivated.

When you first install a RAD (or RSA) product on a system, the common framework is installed, and the product's plug-ins are installed. If you install another RAD product onto the same system, the installation program recognizes that the common framework is already installed, and installs only the second product's plug-ins.

If you install the Message Broker Toolkit on a system that has no RAD framework installed, the common framework is installed with the product-specific plug-ins. If you later install another product based on the RAD framework, and its RAD requirement is compatible, only the plug-ins specific to that second product are installed because the common framework is already in place.

Because multiple RAD products on a single system use a common framework, all the products that you want to install must be based on a compatible level of RAD. If the product you are installing is not based on a compatible level, the installation fails, and reports that it cannot work with the existing RAD installation.

The Message Broker Toolkit is based on RAD Version 6.0.1.1 and is compatible with that release and later Version 6.0.1 releases. It cannot coexist with RAD products based on Version 6.0.0 (for example 6.0.0.1) or Version 6.0.2 and later. See "Integrating with other RAD installations" on page 78 for information about how to resolve RAD incompatibilities before you install the Message Broker Toolkit.

If you have installed the Message Broker Toolkit on Linux, and you later install another RAD product, the default directory presented for the later installation is the current installation directory for the toolkit, for which the default location is `/opt/ibm/MessageBrokersToolkit/6.0` (where `6.0` represents this version and release. Accept this default value; if you install another RAD product into a different directory, you will not be able to upgrade your product.

RAD is not required for any of the runtime components.

The Language Pack feature: When you install a RAD product, you must consistently select, or not select, the Language Pack feature. The feature supports the display of messages, menus, properties, and so on in your current locale. When you install a product based on the RAD framework, you can select or clear an option to install the additional Language Pack feature. If you select this feature for one RAD product, you must select it for all subsequent RAD products; if you do not, the installation fails.

If you decide you require the Language Pack feature on a product after you have installed it, for example if you want to install the Language Pack feature

Additional products

on a second RAD product, you must run the installation of the first product again, and select the Language Pack feature. Then install the second product and select Language Pack for this second product too.

The Language Pack feature is selected by default when you install the Message Broker Toolkit. You must specify if you do not want this feature installed.

Browsers

The information center is accessed from the Message Brokers Toolkit on Linux (x86 platform) and Windows. For best viewing results, use Internet Explorer version 6.0 or higher, or Mozilla-based browsers version 1.x or higher.

Some Linux (x86 platform) offerings do not install Mozilla by default. If you plan to install the Message Broker Toolkit on your Linux (x86 platform) system, check that Mozilla 1.4.2 or above is already installed. If not, install Mozilla from the operating system media.

Optional software

The products listed in this section are not required, but interact with WebSphere Message Broker in some way that you might find useful. Two of these products, Rational Agent Controller and WebSphere MQ Everyplace, are supplied with WebSphere Message Broker.

None of these products are required to complete the verification procedure described in Chapter 11, "Configuring and verifying your system," on page 85.

Rational Agent Controller

Rational Agent Controller (RAC) Version 6.0.0.1 supports message flow debugging. If you want to use the Debugger, you must install RAC on each system on which you start a broker that hosts message flows.

Rational Agent Controller Version 6.0.0.1 is supplied on a supplemental CD and on DVD (on Linux (x86 platform) and Windows only); see "Supplemental CDs" on page 34. The RAC component that you install on the broker is a server that communicates with the RAC client which is embedded in the Message Brokers Toolkit.

Full instructions about how to install the RAC server are provided in the file `install.html` in the root directory of the RAC component on CD or DVD. For further information about using RAC with WebSphere Message Broker, see the information center.

If you have previous versions of RAC installed, and have a domain that includes WebSphere Message Broker Version 6 brokers and

Version 5 brokers, do not upgrade RAC on the Version 5 brokers. For details of RAC required with Version 5 brokers, see the information center. Version 2.1 brokers do not require RAC.

WebSphere MQ Everyplace

WebSphere MQ Everyplace Version 2.0.2.0 supports mobile and wireless applications with robust and secure messaging. Installing WebSphere MQ Everyplace in the broker domain gives these applications access to brokers and other services.

WebSphere MQ Everyplace Version 2.0.2.0 is supplied on a supplemental CD and on DVD (on Linux (x86 platform) and Windows only); see "Supplemental CDs" on page 34. For more information about how you can connect your WebSphere MQ Everyplace with brokers, see the information center.

WebSphere Application Server

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, 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.

Tivoli License Manager

WebSphere Message Broker includes support for IBM Tivoli® License Manager Version 2.1. For more information about how you can monitor the use of IBM and other product licenses with Tivoli License Manager, see the information center.

Macromedia Flash Player

If you want to launch the Quick Tour from the information center in the Message Brokers Toolkit, you must install Macromedia Flash Player Version 6.0 or later. You can freely download Macromedia Flash Player as a plug-in for an internet browser from the Macromedia Web site at:

`http://www.macromedia.com/software/flashplayer/`

Optional software

Macromedia Flash Player is not included with WebSphere Message Broker.

For the Linux (x86 platform), Flash player plug-ins are available for the following browsers:
- Mozilla V1.0 or later
- Firefox V0.9.3 or later
- Konqueror V3.2.2 or later

For the Windows platforms, Flash Player plug-ins are available for the following browsers:
- Internet Explorer V4.0 or later
- Netscape Navigator V4 or later
- Netscape V6.3 or later
- AOL V7
- Mozilla V1.0 or later
- Opera V6

License requirements

When you purchased the WebSphere Message Broker for Multiplatforms product, you specified the number of licenses that you required. Licenses are measured in terms of processor license units (PLUs). For details of the entitlements purchased with each license, see the Licensing Terms and Conditions. The terms and conditions are displayed by the installation wizard when you install the runtime components. You can view them after installation in your chosen language in directory *install_dir*/license/.

Terms and Conditions are also supplied for third-party products used by WebSphere Message Broker. The file containing these details is stored in the same license subdirectory when you install one or more runtime components.

No Licensing Terms and Conditions or third-party Terms and Conditions are displayed or stored when you install the Message Broker Toolkit.

For information about licenses on z/OS, further details about license agreements, or to make further purchases, contact your IBM representative.

Chapter 2. Coexistence and migration

When you install WebSphere Message Broker Version 6, you can specify the location into which it is installed, referred to as the *install_dir*. Because of this flexibility of location, you can install WebSphere Message Broker Version 6 on a system that has another installation of Version 6, and previous product versions, on all operating systems.

If you have more than one installation, the products can coexist, and you can perform migration of components to Version 6 when you choose. Refer to the following sections for further details:
- "Coexistence"
- "Migration" on page 24

Coexistence

Coexistence varies according to the operating system and the components that you install. The components and their purpose are described in Chapter 6, "Choosing what to install," on page 51.

Runtime components on distributed systems

When you install WebSphere Message Broker runtime components on distributed systems, the default action taken by the installation wizard is to complete a *typical installation* which installs all components into a default directory.

The default directory for a typical installation is fixed and you cannot change it. It includes the version and release of the product you are installing in the format V.R (Version.Release), and has the following values:

Linux	/opt/ibm/mqsi/*v.r*
UNIX	/opt/IBM/mqsi/*v.r*
Windows	C:\Program Files\IBM\MQSI*v.r*

Each unique version and release of the product is therefore installed into a different default location.

The installation wizard differentiates only at version and release level; it does not differentiate between different modification levels and fix pack levels. The current modification level is 0 (Version 6.0.0). If a later modification level is made available, it will install into the same default location with a *v.r* value of 6.0, therefore upgrading the Version 6.0.0 to the higher modification level (for example, Version 6.0.1).

Coexistence

The wizard does not support installation of a previous modification level or fix pack over a later one. The default action installs one fix pack over a previous fix pack, but prohibits you from installing a previous modification or fix pack over a later one.

You can install the product more than once at the same version and release, in preference to upgrading the current installation. To achieve this, you must choose a *custom installation* and specify a unique directory for each installation (one of which can be the default directory). The installations at the same version and release can be at the same modification or fix pack level, or at different levels.

You can also use a custom installation to install into a non-default directory, or to install a subset of the runtime components into the default, or another, directory. If you have already installed one or more of the runtime components in the specified directory, the installation wizard indicates this on the panel on which you choose further components. If you want to upgrade an existing installation with a later version or release, you can achieve this with a custom installation. For example, if a Version 6.1 is released, you could force this to install over Version 6.0.

If you have never completed a typical installation of the product on the system on which you have selected a custom installation, the directory is initially set to the default directory, but you can change this to your chosen value.

If you install the Message Broker Toolkit on Windows and you specify your own directory location, be aware of the file system limit of 256 characters imposed by NTFS. This can cause restrictions in path specification to resources (for example, message flow projects), and might cause access problems if the combination of path and resource name exceeds this limit. Keep installation locations and resource names short to avoid problems associated with this restriction.

If you install the product more than once on any individual system, at any version and release, the following restrictions apply:

- If you install the same version and release, for example 6.0, more than once, the native installer support cannot manage these installations in the normal way. See "Native software installer support" on page 23 for more details.
- Brokers associated with one installation cannot share a database with brokers associated with a different installation.
- Components created in one installation cannot share a queue manager with components created in a different installation.

Files are also stored in the working directory, which depends on the current ID with which you are logged on. The location depends on the operating system:

Linux and UNIX   /var/mqsi

Windows   C:\Documents and Settings\All
                            Users\Application Data\IBM\MQSI

                            (C:\Documents and Settings\All
                            Users is the default setting; this might
                            have a different value on your
                            system.)

If you have multiple installations on a single system, you can review the contents of the file install.properties, which is stored in the root of the working directory. For each installation at Version 6.0 and above, the file is updated with the location and the level.

This example shows the contents of install.properties on a Windows system on which a single installation has completed:

C\:\\Program\ Files\\IBM\\MQSI\\6.0=6.0.0.0

(The backslash character \ is interpreted as an escape character. It is inserted before each non-alphabetic and non-numeric character in the string to preserve the character. A colon and several backslash characters are escaped in this example.)

If you want to revert your installation to a previous level for any reason, you must uninstall the current version and install the previous product. Therefore back up any resources, for example databases, to enable you to return to a previous state if you choose.

Because the version and release are included in the directory structure when you complete a typical installation, and you have a free choice of directory if you perform a custom installation, you can also install Version 6.0 and later releases on the same system on which you have already installed either Version 2.1 or Version 5.0. The installations can coexist, and you can operate them independently. Coexistence of Version 2.1 with Version 5.0 is not supported.

There is no limit to the number of installations of Version 6 or later, other than those imposed by the availability of systems resources.

This coexistence means that you can manage a migration from an earlier version to Version 6 in a controlled manner, and do not have to migrate all components at the same time. For more information, see "Migration" on page 24.

Coexistence

Runtime components on z/OS

On z/OS you can install multiple copies of the runtime components on the same system if you specify a different installation location for each copy. The installations can run independently of each other. The code can be at the same or at different version and release levels, including Version 2.1 and Version 5.0. There are no restrictions other than those imposed by the availability of systems resources.

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 HFS paths, see the *Program Directory for WebSphere Message Broker for z/OS* or the *Program Directory for WebSphere Message Broker with Rules and Formatter Extension for z/OS*.

Message Broker Toolkit on Linux (x86 platform) and Windows

Linux   When you install the Message Broker Toolkit, the default action taken by the installation wizard is to install all files into directory:

`/opt/ibm/MessageBrokersToolkit/`*v.r*

You can install only Message Broker Toolkit Version 6; previous versions of this component were available on Windows only. Only one instance of the Message Broker Toolkit can be installed on a single system.

The Message Broker Toolkit Version 6 can coexist with multiple installations of runtime components, subject to the restrictions described for those components.

Windows

When you install the Message Broker Toolkit, the default action taken by the installation wizard is to install all files into directory:

`C:\Program Files\IBM\MessageBrokersToolkit\`*v.r*

The Message Broker Toolkit Version 6 can coexist with the Message Brokers Toolkit for WebSphere Studio Version 5. Only one instance of the Message Broker Toolkit of each version can be installed on a single system.

The Message Broker Toolkit Version 6 can coexist with a Version 2.1 Control Center.

The Message Broker Toolkit Version 6 can coexist with multiple installations of runtime components, subject to the restrictions described for those components.

Setting the environment for an installation

Because you can have more than one installation on a single system, you must ensure that any commands that you issue on that system are directed to the correct version of installed code. The file `mqsiprofile` is provided on Linux and UNIX systems and you must run this profile to set up the correct environment before you run other WebSphere Message Broker commands, for example, **mqsicreatebroker**. On Windows a command console is available for each installation and you must invoke commands in the window for a particular installation.

This requirement is not applicable on z/OS systems.

If you have an earlier version of this product installed on this system, check that the earlier profile is not set for the current user ID. The two profiles are incompatible and might cause unpredictable results.

For more details about `mqsiprofile`, see Chapter 12, "What's next," on page 91.

Native software installer support

If you install the same version and release (for example, 6.0) more than once on a single system, the native installer support cannot manage these installations in the normal way.

To guarantee that you uninstall the correct installation, use the appropriate uninstall program `uninstaller` in the `_uninst_runtime` directory of that installation. For further information about uninstalling the product, see the information center.

You can view the `install.properties` file to see current installations and their locations, and check the operating system representation:

AIX The first installation is recorded as mqsi*v.r*, for example mqsi60. Subsequent installations at the same *v.r* level appear under the first one when you list installed products with **lslpp**. If you use **smitty** and **geninstall** to manage those subsequent installations, results are unpredictable.

Linux, HP-UX, and Solaris
The first installation is recorded as mqsi*v.r*, for example mqsi60. Subsequent installations at the same *v.r* level are recorded as mqsi*v.r*-2, and so on.

Coexistence

Windows

The most recent installation that you completed for any given version and release appears in **Add/Remove Programs**. No other installations are shown here. Similarly, the Command Console option in the **Start** menu is that associated with the most recent installation.

If you uninstall the product at a specific version and release listed by **Add/Remove Programs**, earlier installations you completed on the system are not reinstated in that view.

Migration

Because you can install WebSphere Message Broker Version 6 on the same system as previous versions and other installations of Version 6, you are not required to complete any migration tasks before you install Version 6.

WebSphere Message Broker Version 6 can coexist with one of the following products:
- WebSphere Business Integration Message Broker Version 5.0
- WebSphere Business Integration Event Broker Version 5.0
- WebSphere MQ Integrator Version 2.1
- WebSphere MQ Integrator Broker Version 2.1
- WebSphere MQ Event Broker Version 2.1

You can choose how and when to migrate resources and components, according to the instructions provided in the information center.

As stated earlier, you are not required to back up any resources before you install Version 6, although backing up resources such as your workspace files before you migrate the Message Broker Toolkit ensures that you can revert to a previous level. More information is provided in the migrating section in the information center.

To review the migration information before you install, view a standalone or online version of the information center. Access instructions are provided in "Where to find more information" on page xi.

Chapter 3. National language support

When you install WebSphere Message Broker, the installation wizards detect your current system locale and perform the installation process in that language.

If your current system locale is not one of the supported languages (indicated below), you must select a supported language from those listed in the dialog that is presented by the wizard before you can continue with the installation. This language is used for the installation process only and does not affect other processes on your computer.

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

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

The messages written to the z/OS operator console (which are a subset of the messages written to the joblog) 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. If you use other products in conjunction with WebSphere Message Broker, these might cause WebSphere Message Broker to report errors using its message catalogs, or might report problems using their own techniques.

Refer to the documentation supplied with any other products that you use to determine the language support that they provide. In particular, check the

National language support

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 the **mqsireadlog** command) are generated in code page 1208 (UTF-8).

Locales

WebSphere Message Broker supports messages for the following locales.

Table 6. Supported locales

AIX	HP-UX[1]	Linux[2]	Solaris	Windows	z/OS
en_US	en_US.iso88591, en_US.roman8	en_US	en_US	English (United States)	En_US.IBM-1047, En_US.IBM-037
de_DE, De_DE	de_DE.ISO88591, de_DE.roman8	de_DE	de	German (Standard)	Not supported
es_ES, Es_ES	es_ES.ISO88591, es_ES.roman8	es_ES	es	Spanish (Modern Sort)	Not supported
fr_FR, Fr_FR	fr_FR.ISO88591, fr_FR.roman8	fr_FR	fr	French (Standard)	Not supported
it_IT, It_IT	it_IT.ISO88591, it_IT.roman8	it_IT	it	Italian (Standard)	Not supported
pt_BR, Pt_BR	pt_BR.ISO88591, pt_BR.utf8	pt_BR	pt_BR	Portugese (Brazilian)	Not supported
Ja_JP, ja_JP	ja_JP.SJIS, ja_JP.eucJP	ja_JP	ja_JP.PCK, ja	Japanese	Ja_JP.IBM-939, Ja_JP.IBM-930
Zh_CN, zh_CN	zh_CN.hp15CN	zh_CN	zh, zh.GBK	Simplified Chinese (China)	Zh_CN.IBM-1388, Zh_CN.IBM-935
Zh_TW, zh_TW	zh_TW.big5, zh_TW.eucTW	zh_TW	zh_TW, zh_TW.BIG5	Traditional Chinese (Taiwan)	Not supported
ko_KR	ko_KR.eucKR	ko_KR	ko	Korean	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 (x86 platform) and Linux (zSeries platform).

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

Chapter 4. Installation packages

This chapter describes the contents of your product package, which depend on which product you have ordered:

- **WebSphere Message Broker for Multiplatforms** or **WebSphere Message Broker with Rules and Formatter Extension for Multiplatforms**

  The package includes product code for five operating systems, plus other optional software and documentation:

  - A DVD that contains all required and optional code for Linux (x86 platform). The structure of the DVD content is described in "DVD contents" on page 30.
  - Two DVDs that contain all required and optional code for Windows. The structure of the DVD content is described in "DVD contents" on page 30.
  - A set of CDs for installation of runtime components and required products on all operating systems. They are listed in Table 9 on page 32.
  - A set of CDs for installation of the Message Broker Toolkit on both Linux (x86 platform) and Windows. These are listed in Table 10 on page 34.
  - Supplemental CDs. These CDs contain additional products that you might choose to install. These CDs are listed in Table 11 on page 35. For further information about why these products might be required, see "Optional software" on page 16.
  - If you have ordered **WebSphere Message Broker with Rules and Formatter Extension for Multiplatforms**, your package includes the set of CDs, shown in Table 12 on page 35. The Rules and Formatter extension code is not included on DVD; you must install this extension from CD.

- **WebSphere Message Broker for z/OS** or **WebSphere Message Broker with Rules and Formatter Extension for z/OS**

  The package includes z/OS product code on tape, plus other optional software and documentation. In addition, you receive the product for Linux (x86 platform) and Windows, because the Message Broker Toolkit is available only on those operating systems.

  - A DVD containing all required and optional code for Linux (x86 platform). The structure of the DVD content is described in "DVD contents" on page 30.
  - Two DVDs that contain all required and optional code for Windows. The structure of the DVD content is described in "DVD contents" on page 30.

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Installation packages

- – A set of CDs for installation of runtime components and required products on Linux (x86 platform) and Windows. They are included in Table 9 on page 32.
- – A set of CDs for installation of the Message Broker Toolkit on Linux (x86 platform) and Windows. These are listed in Table 10 on page 34.
- – Supplemental CDs. These CDs contain additional products that you might choose to install. These CDs are listed in Table 11 on page 35. For further information about why these products might be required, see "Optional software" on page 16.
- – z/OS tapes

  For information about tapes supplied with WebSphere Message Broker for z/OS, see the *Program Directory for WebSphere Message Broker for z/OS* or the *Program Directory for WebSphere Message Broker with Rules and Formatter Extension for z/OS*.

DVD contents

DVDs (type DVD-R, size DVD-5) is supplied for Linux (x86 platform) and Windows only. The DVD labels are WebSphere Message Broker V6.0.0.1 Linux x86 and WebSphere Message Broker V6.0.0.1 Windows DVD1 and DVD2.

Look for the symbol to find the DVDs.

The DVDs contain code for the following products:
- WebSphere Message Broker Version 6.0 runtime components
- Message Broker Toolkit Version 6.0.0.1
- WebSphere MQ Version 6.0
- DB2 Enterprise Server Version 8.2
- DB2 Run-Time Client Version 8.2 (Windows only)
- Rational Agent Controller Version 6.0.0.1

If you install on Windows using the Launchpad (described in Chapter 8, "Installing with the Windows Launchpad," on page 63), the Launchpad navigates the DVDs to find the products and components that you have chosen to install, and prompts you to insert the second DVD if required. You do not have to be familiar with the structure of the DVD contents.

If you install on Linux (x86 platform), or you install on Windows and choose not to use the Launchpad, use the DVD structure shown in Table 7 on page 31 and Table 8 on page 31 to find what you want.

If you have ordered WebSphere Message Broker with Rules and Formatter Extension, you must install the extension from CD; it is not supplied on DVD.

Table 7. DVD contents (Linux (x86 platform))

Directory	Description
\ (root)	Runtime components installation files
\DB2_Enterprise_Server_V8.2	DB2 Enterprise Server Version 8.2
\installation_guide	Installation Guide PDF files (US English only)
\license	License files used by the installation wizard (US English and translations)
\Message_Broker_Toolkit_V6.0	Message Broker Toolkit installation images
\Rational_Agent_Controller_V6	Rational Agent Controller Version 6 installation images
\readmes	WebSphere Message Broker readme.html files (US English and translations)
\sample-scripts	Sample installation and uninstall response files
\WebSphere_MQ_V6.0	WebSphere MQ installation images

Table 8. DVD contents (Windows)

DVD1 Directory	Description
\ (root)	• Runtime components installation files • Launchpad and Quick Tour[1]
\DB2_Enterprise_Server_V8.2	DB2 Enterprise Server Version 8.2
\DB2_Runtime_Client_V8.2	DB2 Runtime Client Version 8.2
\installation_guide	Installation Guide PDF files (US English only)
\license	License files used by the installation wizard (US English and translations)
\readmes	WebSphere Message Broker readme.html files (US English and translations)
\sample-scripts	Sample installation and uninstall response files
\WebSphere_MQ_V6.0	WebSphere MQ installation images
DVD2 Directory	**Description**
\Message_Broker_Toolkit_V6.0	Message Broker Toolkit installation images
\Rational_Agent_Controller_V6	Rational Agent Controller Version 6 installation images
\readmes	WebSphere Message Broker readme.html files (US English and translations)
\sample-scripts	Sample installation and uninstall response files

DVD contents

Notes:

1. This is a standalone executable version of the Quick Tour, which is available on Windows only. On Linux (x86 platform) and Windows, you can access the Quick Tour from the Message Broker Toolkit.

Runtime component CDs

The CDs listed in Table 9 are supplied for installation of runtime components

and associated products. The packages display the symbol ⚙ .

Table 9. CDs supplied for WebSphere Message Broker for Multiplatforms runtime components and associated products

Operating System	CD label	Description
AIX	WebSphere Message Broker V6.0 AIX (Runtime Disk 1)	Product code
	WebSphere MQ for AIX V6.0 (Runtime Disk 2)	Product code
	DB2 V8.2 for WebSphere Broker products - AIX (Runtime Disk 3) - English/French/German/Italian	Product code and documentation
	DB2 V8.2 for WebSphere Broker products - AIX (Runtime Disk 3) - English/Spanish/Brazilian Portuguese	Product code and documentation
	DB2 V8.2 for WebSphere Broker products - AIX (Runtime Disk 3) - English/Japanese/Korean/Simplified Chinese/Traditional Chinese	Product code and documentation
HP-UX (PA-RISC platform)	WebSphere Message Broker V6.0 HP-UX (Runtime Disk 1)	Product code
	WebSphere MQ for HP-UX V6.0 (Runtime Disk 2)	Product code
	DB2 V8.2 for WebSphere Broker products - HP-UX (Runtime Disk 3)	Product code and documentation
Linux (x86 platform)	WebSphere Message Broker V6.0 Linux x86 (Runtime Disk 1)	Product code
	WebSphere MQ for Linux x86 V6.0 (Runtime Disk 2)	Product code
	DB2 V8.2 for WebSphere Broker products - Linux x86 (Runtime Disk 3)	Product code and documentation

Table 9. CDs supplied for WebSphere Message Broker for Multiplatforms runtime components and associated products (continued)

Operating System	CD label	Description
Linux (zSeries platform)	WebSphere Message Broker V6.0 Linux zSeries (Runtime Disk 1)	Product code
	WebSphere MQ for Linux zSeries V6.0 (Runtime Disk 2)	Product code
	DB2 V8.2 for WebSphere Broker products - Linux zSeries (Runtime Disk 3)	Product code and documentation
Solaris (SPARC platform)	WebSphere Message Broker V6.0 Solaris (Runtime Disk 1)	Product code
	WebSphere MQ for Solaris V6.0 (Runtime Disk 2)	Product code
	DB2 V8.2 for WebSphere Broker products - Solaris (Runtime Disk 3)	Product code and documentation
Windows	WebSphere Message Broker V6.0 Windows (Runtime Disk 1)	• Runtime components installation files • IBM DB2 Run-Time Client V8.2[1] • Launchpad and Quick Tour[2] • License files[3] • Readme files[3] • Installation Guides[3] • Sample scripts[3]
	WebSphere MQ for Windows V6.0 (Runtime Disk 2)	• Product code • Launchpad and Quick Tour[2]
	IBM DB2 V8.2 for WebSphere Broker products - Windows (Runtime Disk 3)	• Product code and documentation • Launchpad and Quick Tour[2]

Notes:

1. Install this product to install the ODBC drivers for Cloudscape that are required if you want to use the Derby embedded database in the broker component.
2. This is a standalone executable version of the Quick Tour.
3. These items are identical to equivalent items on the DVD, as described in "DVD contents" on page 30.

Message Broker Toolkit CDs

The CDs shown in Table 10 are supplied for the Message Broker Toolkit

installation. The packages display the symbol ⬚ . The product code
includes the information center.

Table 10. CDs supplied for Message Broker Toolkit

Operating System	CD label	Description
Linux (x86 platform)	WebSphere Message Broker Toolkit V6.0.0.1 Disk 1 (Linux x86)	Product code
	WebSphere Message Broker Toolkit V6.0.0.1 Disk 2 (Linux x86)	Product code
	WebSphere Message Broker Toolkit V6.0.0.1 Disk 3 (Linux x86)	Product code
	WebSphere Message Broker Toolkit V6.0.0.1 Disk 4 (Linux x86)	Product code
	WebSphere Message Broker Toolkit V6.0.0.1 Disk 5 (Linux x86)	Product code
Windows	WebSphere Message Broker Toolkit V6.0.0.1 Disk 1 (Windows)	• Product code • License files[1] • Readme files[1] • Launchpad
	WebSphere Message Broker Toolkit V6.0.0.1 Disk 2 (Windows)	Product code
	WebSphere Message Broker Toolkit V6.0.0.1 Disk 3 (Windows)	Product code
	WebSphere Message Broker Toolkit V6.0.0.1 Disk 4 (Windows)	Product code
	WebSphere Message Broker Toolkit V6.0.0.1 Disk 5 (Windows)	Product code

Notes:

1. These items are identical to equivalent items on the DVD, as described in "DVD contents" on page 30.

Supplemental CDs

The CDs listed in Table 11 on page 35 are supplied for supplemental

(optional) products. The packages display the symbol ▱ .

Table 11. Supplemental CDs supplied with WebSphere Message Broker

Operating System	CD label	Description
Multiplatforms	WebSphere Documentation[1]	Documentation
	Rational Agent Controller V6.0	Product code and documentation
	WebSphere MQ Everyplace Version 2.0.2.0	Product code

Notes:

1. The WebSphere Documentation CD contains an integrated information center which includes documentation plug-ins for WebSphere Message Broker, WebSphere Event Broker, WebSphere MQ Version 6.0, and WebSphere MQ Everyplace Version 2.0.2. For more information about how you can use this information center, see "Where to find more information" on page xi. It also contains PDF versions of the WebSphere Message Broker Installation Guide in US English and translations.

Rules and Formatter Extension CDs

If you have purchased WebSphere Message Broker with Rules and Formatter Extension for Multiplatforms, your package also includes contains the CDs listed in Table 12. The packages display the symbol . (The contents of these CDs are not included on the DVDs.)

Table 12. Additional CDs supplied for WebSphere Message Broker with Rules and Formatter Extension

Operating System	CD label	Description
AIX	Rules and Formatter Run-time Extension V6.0 AIX	Product code and documentation
HP-UX (PA-RISC platform)	Rules and Formatter Run-time Extension V6.0 HP-UX	Product code and documentation
Linux (x86 platform)	Rules and Formatter Run-time Extension V6.0 Linux x86	Product code and documentation
	Rules and Formatter Design-time Extension V6.0 Linux x86	Product code and documentation
Linux (zSeries platform)	Rules and Formatter Run-time Extension V6.0 Linux zSeries	Product code and documentation
Solaris (SPARC platform)	Rules and Formatter Run-time Extension V6.0 Solaris	Product code and documentation

Rules and Formatter Extension CDs

Table 12. Additional CDs supplied for WebSphere Message Broker with Rules and Formatter Extension (continued)

Operating System	CD label	Description
Windows	Rules and Formatter Run-time Extension V6.0 Windows	Product code and documentation
	Rules and Formatter Design-time Extension V6.0 Windows	Product code and documentation

Part 2. Preparation

This part describes the tasks that you might need to complete before you start installation of WebSphere Message Broker. It contains the following chapters:

Chapter 5. Preparing the system

Before you install WebSphere Message Broker, there are several tasks that you must complete on some operating systems. There are other tasks you might want to complete, depending on your installation intentions.

If you are installing on a distributed system or on z/OS, read the following section:
- "Setting up security"

If you are installing on a distributed system, read the following section:
- "Accessing CDs and DVDs" on page 42

If you are installing on HP-UX or Solaris, read the following section:
- "Checking the kernel configuration" on page 48

When you have completed these tasks, follow the installation instructions in the appropriate chapter:
- Chapter 8, "Installing with the Windows Launchpad," on page 63
- Chapter 9, "Installing runtime components," on page 73
- Chapter 10, "Installing the Message Broker Toolkit," on page 77

Setting up security

This section describes security requirements:
- To install the product
- To complete the procedures described in Chapter 11, "Configuring and verifying your system," on page 85

After installation, check the topics under the Security heading in the information center to review and implement the security requirements for additional users doing other tasks.

Security control of WebSphere Message Broker components, resources, and tasks depends on the definition of users and groups of users (principals) to the security subsystem of the operating system. Check that you have the correct authority, and that the required principals are in place, before you install WebSphere Message Broker.

On Windows systems, user IDs can be up to 12 characters long but on Linux and UNIX systems, and on z/OS, they are restricted to eight characters. You might also be restricted to user IDs of eight characters by your broker

database; for example, DB2 has this limit. If you have a mixed environment, ensure that the user IDs you use within the broker domain are limited to a maximum of eight characters.

You must also ensure that the case (upper, lower, or mixed) of user IDs in your broker domain is consistent. In some environments, upper case and lower case user IDs are considered the same but in other environments, user IDs of different case are considered unique. For example, on Windows the user IDs tester and TESTER are identical but on Linux and UNIX systems they are recognized as different user IDs.

In addition, check the validity of spaces and special characters in user IDs to ensure that, if used, these can be accepted by all relevant systems and products in your broker domain.

- If you are installing on Linux or UNIX systems, go to "Security on Linux and UNIX systems."
- If you are installing on Windows, go to "Security on Windows systems" on page 41.
- If you are installing on z/OS, go to "Security on z/OS systems" on page 42.

Security on Linux and UNIX systems

Before you install WebSphere Message Broker, you must set up the required security.

Use the security facilities provided by your operating system to complete these tasks, for example, SMIT on AIX or the System Administration Manager (SAM) on HP-UX.

Complete the following actions:

1. Log in and become the root user. You cannot complete installation without this level of authority.

   If you are installing only the Message Broker Toolkit on Linux (x86 platform), this is the only action that you must complete.

2. Create a new security group called mqbrkrs.

3. Add the user ID that you logged in with to the group mqbrkrs. Do not add user ID root.

   If you are installing on a system that will run as a production servers (with the broker and perhaps Configuration Manager components installed), create an additional new user ID for use only with product components. If you create a new ID, add it to the mqbrkrs group.

   On a Linux (x86 platform) system that you are running as a development or test system, you can use a typical user ID such as the ID you logged on with to complete installation.

4. If you have already installed WebSphere MQ on this system, a group called mqm and a user called mqm have already been defined. If you have not yet installed WebSphere MQ, you must create this user and group.

5. Add the user ID that you logged in with (not root), the new user ID (if you created one), and the user ID mqm to the group mqm.

6. To complete installation verification on Linux (x86 platform) only, you do not have to become root. If you do not want to complete verification with root authority, log off when you have completed installation. Log on with the same or a different user ID, but do not become root. If you have not already done so, add that user ID to the groups mqbrkrs and mqm before you launch the Message Brokers Toolkit.

Security on Windows systems

Before you install WebSphere Message Broker runtime components or the Message Broker Toolkit, you must log on with a user ID that has Administrator authority, but is not the Administrator ID.

If you are installing the runtime components, the installation wizard calls the **mqsisetsecurity** command which completes the following tasks:

1. Creates a new security group called mqbrkrs.

2. Adds your current (logged on) user ID to the group mqbrkrs.

3. Adds your current user ID to the group mqm, if that group exists.

   The mqm group exists if have already installed WebSphere MQ on this system. If you have not, call the **mqsisetsecurity** command when you have completed WebSphere MQ installation. If you use the Windows Launchpad (described in Chapter 8, "Installing with the Windows Launchpad," on page 63), it completes WebSphere MQ installation first.

If you prefer to create principals before you install WebSphere Message Broker, use the security facilities provided by the Windows Control Panel to complete those tasks.

To complete verification, your user ID must have Administrator authority. If you log in with a different user ID to that with which you perform installation, you must add that user ID to the groups mqbrkrs and mqm. Use either the Windows security facilities or the **mqsisetsecurity** command (run this after you have logged on with that different ID) to complete these additions.

Security in a domain environment

If you intend to install in a Windows domain environment, you must decide whether you want to install WebSphere Message Broker on the domain controller.

- If you install WebSphere Message Broker on the domain controller:

Setting up security

1. Install on the domain controller before you install on any of the domain workstations.

   The WebSphere Message Broker installation program creates the mqbrkrs local group only if you have Domain Administrator authority; if you do not have this authority when you install, create this group at a later time.

   In a domain environment, WebSphere Message Broker also requires a global group, Domain mqbrkrs, which you must create using Windows security facilities. You must also add Domain mqbrkrs to the local group mqbrkrs.

2. Install on each workstation that is a member of the same domain. The WebSphere Message Broker installation program creates the mqbrkrs local group. Add the Domain mqbrkrs global group to the local mqbrkrs group.

- If you do not install WebSphere Message Broker on the domain controller system:

   1. Create the Domain mqbrkrs global group on the domain controller system.

   2. Install on each workstation in the domain. After installation has completed, add the Domain mqbrkrs global group to the local group.

Security on z/OS systems

The user ID that you use to install the product must be no more than eight characters in length. It must also have suitable RACF® privileges to perform SMP/E installation in your environment. The user ID must have a valid OMVS segment, because the product installs into HFS into the paths specified during the SMP/E APPLY processing.

Accessing CDs and DVDs

When you install WebSphere Message Broker, you can install from the CDs or DVD on the local system, or you can set up a shared drive and install several systems from that shared resource.

The information in the following sections is relevant to both CDs and DVDs. All references are to CDs; DVD behavior is identical. DVDs are available for Linux (x86 platform) and Windows only.

For local installations, see "Accessing CDs and DVDs on the local system" on page 43; for remote installations, see "Accessing CDs and DVDs on a remote system" on page 45.

Accessing CDs and DVDs on the local system

If you want to install product components from a local CD or DVD, complete this task. Always consult your operating system documentation for exact details of this task.

AIX

1. Log on and become root.
2. Complete the security setup described in "Security on Linux and UNIX systems" on page 40.
3. Create a CD mount point directory:

   ```
   mkdir /cdbroker
   ```

   where */cdbroker* is the mount point.
4. Insert the CD that you want to access in the drive of the system on which you want to install one or more product components.
5. Use SMIT to mount the CD, or use the following command:

   ```
   mount -r -v cdrfs /dev/cd0 /cdbroker
   ```

   where */dev/cd0* is the CD device and */cdbroker* is the mount point.
6. You are now ready to install the product that is supplied on this CD.

HP-UX

The HP-UX CDs have the format ISO 9660, with Rockridge extensions enabled. If volume management software is in use, the CD mounts automatically when you insert it into the CD drive. Alternatively, you can mount the CD as described in the following procedure

If the CD is mounted incorrectly, some of the files cannot be read. This causes the installation to fail with corrupt directory errors. It is important that you check that the CD is mounted with Rockridge extensions enabled.

1. Log on and become root.
2. Complete the security setup described in "Security on Linux and UNIX systems" on page 40.
3. Create a CD mount point directory and grant read-only access to all users:

   ```
   mkdir /cdbroker
   chmod 775 /cdbroker
   ```

   where */cdbroker* is the mount point.
4. Insert the CD that you want to access in the drive of the system on which you want to install one or more product components.
5. Mount the CD using the following command:

Accessing CDs and DVDs locally

```
mount -F cdfs /dev/dsk/device /cdbroker
```

where */device* is the CD device, for example */c0t0d0* and */cdbroker* is the mount point.

6. You are now ready to install the product that is supplied on this CD.

Linux

1. Log on and become root.
2. Complete the security setup described in "Security on Linux and UNIX systems" on page 40.
3. Create a CD mount point directory:
   ```
   mkdir /cdbroker
   ```

   where */cdbroker* is the mount point.
4. Insert the CD that you want to access in the drive of the system on which you want to install one or more product components.
5. Run the following command:
   ```
   mount -o ro -t iso9660 /dev/cdrom /cdbroker
   ```
   where */dev/cdrom* is the name of your CD device, for example /dev/hdc, and */cdbroker* is the mount point.
6. You are now ready to install the product that is supplied on this CD.

Solaris

1. Log on and become root.
2. Complete the security setup described in "Security on Linux and UNIX systems" on page 40.
3. Insert the CD that you want to access in the drive of the system on which you want to install one or more product components.
4. Enter the following command to check if the Volume Manager is running on your system:
   ```
   /usr/bin/ps -ef | /bin/grep vold
   ```

   If the Volume Manager is running, the CD is mounted on /cdrom/*vol_label* automatically, where *vol_label* is the volume label of the current CD, for example wmb6_sol for Runtime Disk 1.
5. If the Volume Manager is not started, run the following commands to mount the CD:
   ```
   mkdir -p /cdbroker
   mount -F hsfs -o ro /dev/dsk/cdrom /cdbroker
   ```

where */dev/dsk/cdrom* is the CD location, for example c0t0d0 and */cdbroker* is the mount point directory.

Check where your CD is located using the command iostat -En. Alternatively, use the **volcheck** command to mount a CD device automatically.

6. You are now ready to install the product that is supplied on this CD.

Windows

1. Log on with a user ID that has Administrator authority, but is not the Administrator ID.
2. Complete the security setup described in "Security on Windows systems" on page 41.
3. Insert the CD that you want to access in the drive of the system on which you want to install one or more product components.
4. You are now ready to install the product that is supplied on this CD.

Accessing CDs and DVDs on a remote system

If you want to install product components from a remote (server) CD or DVD, complete this task. Always consult your operating system documentation for exact details of this task.

If you want to perform more than one installation of one or more components, you might find that a remote server setup provides some performance benefits, particularly for the Message Broker Toolkit which is the largest component. You might also find this more convenient if you want to run installations in silent mode.

If you want to install the Message Broker Toolkit in silent mode, and you cannot install from DVD, you must make a copy of the installation images onto a disk drive, as described here, to avoid the requirement to swap CDs during the process.

To enable a remote installation, you must complete tasks on both the server system (the computer on which the CD, DVD, or shared drive is mounted) and each target system (on which you want to install the product). For details of the commands used in these examples, refer to the operating system documentation.

You can use these instructions if you want to install, from a server, other products that are supplied with WebSphere Message Broker, for example DB2 Enterprise Server. However you must check with the appropriate associated product documentation to ensure that remote installation is supported.

Accessing CDs and DVDs remotely

Setting up the server system

You can either share the CD drive on the server, or make a copy of the installation images on a disk and share the directory on that disk.

You can share a CD drive on Linux or UNIX with any other supported Linux or UNIX system, but not with Windows. You can share a Windows CD drive only with other Windows systems.

1. If you want to share a copy of the installation image, create the copy:

   a. Create a directory on the server to store the installation images:

      Linux and UNIX

      Enter the following command:

      ```
      mkdir /instbroker
      ```

      where *instbroker* is the directory into which you will copy the product files.

      Windows   Enter the following command:

      ```
      md m:\instbroker
      ```

      where *m* is the drive on which you want to store the installation images and *instbroker* is the directory on that drive.

      If you are creating directories for the Message Broker Toolkit on Linux (x86 platform) or Windows, you must create all five disk subdirectories in the same directory, for example:

      ```
      /instbroker/disk1
      /instbroker/disk2
      /instbroker/disk3
      /instbroker/disk4
      /instbroker/disk5
      ```

      where the subdirectories, for example disk1, is the root level of the corresponding CD image.

      This structure ensures that the installation program does not prompt for location, and does not fail because it cannot find the right images.

   b. Insert and mount the appropriate CD in the drive as described in "Accessing CDs and DVDs on the local system" on page 43. The installation programs for the runtime components and the Message Broker Toolkit are on separate CDs; insert the correct CD for the components you want to install from this server.

      If you have inserted a runtime or toolkit CD on Windows, the Launchpad is invoked if autorun is enabled. When the initial window opens, click **Cancel** to close it.

   c. Copy the complete contents of the CD to the new directory.

Linux and UNIX

Enter the following command:

```
cp -rf /cdrom. /instbroker
```

Windows   Enter the following command:

```
xcopy e:\*.* m:\instbroker /e
```

where *e* is the CD drive.

2. Grant users access to the drive that contains the product code. These instructions are the same for a disk drive on which you have copied the CD contents, and for the CD drive itself.

AIX   Either type **smit** and click **Communications Applications and Services > NFS > Network File System (NFS) > Add a Directory to Exports List**, or enter the fastpath command `smitty mknfsexp`. Complete the fields as appropriate and press Enter.

HP-UX and Linux

Use the **exportfs** command. The example below gives all users read-only access using NFS:

```
exportfs -i -o ro /instbroker
exportfs -a
```

where */instbroker* represents the CD drive or the directory containing the CD copy.

Solaris   Use the **share** and **exportfs** commands. The example below gives all users read-only access using NFS:

```
share -F nfs -o ro -d "Broker LAN server" /instbroker
exportfs -a
```

where *"Broker LAN server"* is an optional description and */instbroker* represents the server CD drive or directory containing the CD copy.

Windows   Open Windows Explorer and right-click the drive that you want to share. Click **Sharing** and follow the instructions on the Properties dialog.

Setting up the target system

1. On Linux and UNIX systems, create a new directory to mount the shared directory. Enter the following command:

```
mkdir /remotebroker
```

where *remotebroker* is the name of the new directory.

2. Access the remote directory:

Accessing CDs and DVDs remotely

Linux and UNIX

Enter the following command:

mount *machine name:instbroker* /remotebroker

where *machine name* is the name of the system on which you created the CD copy.

Windows

Connect to the appropriate drive and folder using the **net use** command at a command prompt on the target machine, for example:

net use *x*: *server_name**instbroker*

where *x*: is the required mapped drive on the target machine.

If your shared installation directory name contains spaces (for example, Broker Image), enclose it in quotes.

If your server is protected, you might need to specify a user ID and password on this command (see the Windows online help for more information about **net use**). Alternatively, use Windows Explorer or some other method to map the shared resource to a drive letter.

You cannot enter a UNC path (\\\\server\\drive) to access the installation program; you must map the drive, as shown, otherwise the Java process times out. If you cannot map the drive, or choose not to, copy the CD contents to a local drive and install from that drive.

3. Change to the remote image directory. You are now ready to install the product in that directory.

Checking the kernel configuration

On HP-UX and Solaris systems, check the current values of the system kernel configuration parameters, and increase any values to the minimum values that are recommended for the operation of WebSphere Message Broker.

Follow these steps:

1. Check the recommended values for the following products:
   - WebSphere Message Broker; see Figure 1 on page 50 and Figure 2 on page 50.
   - WebSphere MQ; see the *Quick Beginnings* book for your operating system for the version of WebSphere MQ that you have installed.
   - DB2, if installed.

- Any other software that you are running that provides recommended values.

2. Take the highest values for each parameter and compare it to the corresponding value in your kernel configuration.

3. If the current value is lower than the highest recommended value, update the current setting using the appropriate tool (for example, SAM on HP-UX). If the current value is higher, leave it unchanged.

4. On Solaris, increase the maximum number of concurrent open file descriptors on your system to at least 256.

5. If you have changed any kernel values, restart your system for these changes to take effect.

Checking the kernel configuration

HP-UX

```
maxdsiz      0x40000000
maxssiz      0x08000000
max_thread_proc 1024
maxusers     32
msgmap       258 (msgtql +2)
msgmax       4096
msgmnb       4096
msgmni       50
msgseg       1024
msgssz       tbs
msgtql       256
sema         1
semaem       16384
semmni       1024 (semmni<semmns)
semmap       1026 (semmni +2)
semmns       16384
semmnu       2048
semume       256
semvmx       32767
shmmax       4194304
shmem        1
shmmni       1024
shmseg       1024
```

Figure 1. Recommended values for HP-UX kernel configuration parameters

Solaris

```
lwp_default_stksize = 0x4000
rpcmod:svc_run_stksize = 0x4000
shmsys:shminfo_shmmax = 4194304
shmsys:shminfo_shmseg = 1024
shmsys:shminfo_shmmni = 1024
shmsys:shminfo_shmmin = 8
semsys:seminfo_semaem = 16384
semsys:seminfo_semmni = 1024 (semmni < semmns)
semsys:seminfo_semmap = 1026 (semmni +2)
semsys:seminfo_semmns = 16384
semsys:seminfo_semmsl = 125
semsys:seminfo_semopm = 100
semsys:seminfo_semmnu = 2048
semsys:seminfo_semume = 256
semsys:seminfo_semvmx = 32767
msgsys:msginfo_msgmap = 1026
```

Figure 2. Recommended values for Solaris kernel configuration parameters

Chapter 6. Choosing what to install

WebSphere Message Broker consists of four runtime components and the Message Broker Toolkit.

Runtime components

> The runtime components are available on all supported operating systems. On distributed systems, you can choose to install one or more components; when you install on z/OS, all the runtime components are installed; you cannot choose to install a subset.

> **Broker**

>> The broker is a set of execution processes that provide message processing facilities that interact with a variety of application clients using both point-to-point and publish/subscribe communications. The message flows that you create are hosted by the broker. You define how messages are received, processed, and delivered to receiving applications or subscribers. A broker can host many message flows, in one or more execution groups, and can support many clients.

>> The broker creates and maintains state and local configuration data in a database. You must install and initialize a suitable database before you create a broker, although you can install the broker without a database being present on the system, and install the database at a later time. For information about supported databases, see "Databases" on page 8.

> **Transformation Services**

>> Transformation Services provides message processing services that extend the capabilities of the broker. You can install this component only if you install the broker component. Enhancements and extensions include the following processing options:

>> - Additional message processing nodes to support enhanced message processing, routing, and transformation, some of which you can customize with mapping, ESQL, and Java.

>> - Additional input and output nodes to interact with a wider variety of application clients.

>> - Creation of message models to define message structures determined by C and COBOL data structures, industry standards such as SWIFT or EDIFACT, and XML DTD or schema, and agreed by senders and receivers.

Choosing what to install

- Development of user-defined extensions (nodes and parsers) to support message processing options not provided by the supplied nodes and parsers.
- Message flow debug to step through processing to check paths and results.
- Message flow aggregation to manage multiple requests and responses generated by a single input message.

Configuration Manager

A Configuration Manager is an interface between the Message Brokers Toolkit and a set of one or more brokers, that controls the resources in a broker domain. It maintains the configuration details of the domain, and disseminates the updates and additions that you make to that domain in the Message Brokers Toolkit.

The Configuration Manager creates and maintains the configuration data for the domain in an internal repository.

User Name Server

A User Name Server is an optional component that provides authentication for publish/subscribe environments, using access control lists based on operating system definitions. Install this component only if you want to restrict the publish/subscribe activity of users or groups.

A single User Name Server to handle the publish/subscribe authentication within a broker domain is typically sufficient; if you have heavy publish/subscribe message traffic and a large number of users, you might want to consider more that one User Name Server. See the additional information about this option in the information center.

If you are migrating from Version 2.1 or Version 5.0, and you already have a User Name Server that provides publish/subscribe authentication within your domain, you do not need to install another one, because the User Name Server is unchanged in function in Version 6.0.

You can install any combination of these components, and you can install them more than once on any system. For more details about how different installations can coexist, see Chapter 2, "Coexistence and migration," on page 19.

For installation of runtime components, you can choose between a typical installation and a custom installation. These are explained in Chapter 2, "Coexistence and migration," on page 19.

Message Broker Toolkit

The Message Brokers Toolkit is an integrated development environment and graphical user interface based on the Eclipse platform and the Rational Application Developer framework.

Application developers work in separate instances of the Message Brokers Toolkit to develop message sets and message flows.

You can connect the Message Brokers Toolkit to one or more Configuration Managers, and manage the broker domains through those Configuration Managers, for example by deploying resources to brokers, and starting and stopping resources.

You can access a shared repository (for example, CVS) to store resources and make them accessible in a secure manner to multiple users.

The Message Brokers Toolkit is available only on Linux (x86 platform) and Windows.

Table 13 summarizes which components you can install on each operating system.

Table 13. Installation choices

Operating system	Broker	Transformation Services	Configuration Manager	User Name Server	Message Brokers Toolkit
AIX	✔	✔	✔	✔	
HP-UX	✔	✔	✔	✔	
Linux (x86 platform)	✔	✔	✔	✔	✔
Linux (zSeries platform)	✔	✔	✔	✔	
Solaris	✔	✔	✔	✔	
Windows	✔	✔	✔	✔	✔
z/OS	✔	✔	✔	✔	

Choosing what to install

Chapter 7. Choosing an installation mode

Choose the mode that you want to use to install WebSphere Message Broker from the following options:
- On Windows only, "The Windows Launchpad"
- "Graphical mode"
- "Console mode" on page 56
- "Silent mode" on page 57

There are different reasons to choose each of these modes, and these are discussed in the appropriate sections. When you have chosen that mode that you want to use, follow the installation instructions:
- Chapter 8, "Installing with the Windows Launchpad," on page 63
- Chapter 9, "Installing runtime components," on page 73
- Chapter 10, "Installing the Message Broker Toolkit," on page 77

The Windows Launchpad

On Windows, the Launchpad is the preferred and the default mode of installation. The Launchpad helps you through the installation process for WebSphere Message Broker and its prerequisite products (required for runtime components only). You can either install them individually following the Launchpad prompts, or request that the Launchpad installs your selected products for you using default options.

From the Launchpad you can also view this book in PDF format, review the readme file readme.html, and launch the Quick Tour (see Chapter 11, "Configuring and verifying your system," on page 85 for further information).

The Launchpad exists on the DVD, and on every CD from which product components or prerequisite products might be installed, and, if autorun is enabled, starts automatically when you insert a CD or DVD.

Graphical mode

The installation wizard runs in graphical mode if you start it with no options (this is the default mode). The wizard guides you through the installation 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.

Graphical mode

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

The name of the installation wizard for your operating system is listed in "Installation wizard names" on page 60.

If you click **Cancel** before the **Install Progress** panel appears, you can exit the setup. If you decide to exit, your system returns to the state it was in before the installation wizard was launched. However, if you cancel the installation wizard after installation has completed, and the 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, you must use the uninstall program.

When you use the wizard, 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 that the installer is progressing, you can monitor your CPU usage; CPU usage increases greatly during installation.

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, and 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, or if you require additional audible information for visually-impaired users, which is available when you specify an accessibility option.

The name of the installation wizard for your operating system is listed in "Installation wizard names" on page 60.

To navigate through the installation, enter the following values:

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 required choice, press Enter to continue.

Table 14 shows the options that you can specify in console mode.

Table 14. Console mode options

Command option	Command format
Start the installation wizard in console mode. Messages are displayed on the console during installation.	*installer* -console
Start the installation wizard in console mode with additional audible information for visually-impaired users. (This option sets the installation automatically to console mode so you do not need the -console option as well.)	*installer* -accessibility

Silent mode

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

Use silent mode with unattended interface for automated installations over a large number of identical systems.

You cannot install the Message Broker Toolkit directly from CD in silent mode, because you are required to swap CDs when prompted. Therefore for a silent mode installation you must either install from DVD, or make a copy of the CD images on a local or remote drive. For more information about copying CD images, see "Accessing CDs and DVDs on a remote system" on page 45.

Silent mode does not provide any feedback to the caller, therefore you must check the installation log to determine if the installation was successful. The location of the installation log is given in "Dealing with problems during installation" on page 70 (runtime components) and "Dealing with problems during installation" on page 81 (Message Broker Toolkit).

The name of the installation wizard for your operating system is listed in "Installation wizard names" on page 60.

You can run a silent installation with default settings, or with one or more non-default values:

- With default settings, the installation wizard performs the following actions:
  - Checks that prerequisite software is installed (runtime components only)
  - Installs to the default directory
  - Installs all selectable features

Silent mode

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 (described below), 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 installation command. For example, to install runtime components on Linux (x86 platform), enter the following command:

```
setuplinuxia32 -silent
```

- With one or more non-default settings, the installation wizard performs the options that you specify on the command, or reads a response file to determine what actions to take.

A sample response file is provided in the `sample-scripts` directory of the CD or DVD. It 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
```

Response files

If you want to install in silent mode, but want to use values other than the defaults, you can pass a response file to the installation program. A response file is a text file that contains options that define the choices that the installation wizard makes.

You can tailor several options in the response file to cause installation to be completed in a particular way:

- Specify a non-default installation location
- For runtime components only:
  - Choose a custom installation (typical is the default)
  - Choose which components to install
  - Specify if the program is to check for prerequisite software

You can generate a response file as a template that you can then edit, or you can record a template while you complete the installation process:

Generating a response file template

To generate a response file template, enter the following command:

```
installer -options-template responsefile
```

where *responsefile* is the full path and name of your chosen response file. The installation wizard generates a response file template that contains full instructions on how to edit it to specify your required options. Installation is not performed.

You can now edit the file to change the options to define the installation that you want to be performed. For example, if you want a typical runtime components installation but you want to exclude the Configuration Manager, find this line in the response file:

```
#  -P configManagerFeature.active=true
```

Change this line to read:

```
-P configManagerFeature.active=false
```

If you want to suppress prerequisite software checks for runtime components, find the following line in the file and edit it to set the value to false, which means ignore the check:

```
-P mqPrerequisite.active=true
```

Recording a response file

To record a response file, enter the following command:

```
installer -options-record responsefile
```

where *installer* is the name of the installation wizard on your operating system (listed in "Installation wizard names" on page 60) and *responsefile* is the full path and name of your response file. Specify a directory that is different to the one that you will specify as your installation directory.

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

You can now use this recorded response file for silent installations on other computers where you want the same options to be used.

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

```
installer -options-record responsefile -console
```

Silent mode

When you have created a response file that contains your options, either by generating and editing a template, or by recording your options, you can start the installation wizard and specify that this file is to be used to determine how the installation is performed.

To pass a response file to a silent installation, enter the following command:

installer -options *responsefile* -silent

where *responsefile* is the full path and file name of the response file.

Table 15. Silent mode options

Action	Invocation
The installation wizard performs a default installation with no user interaction.	*installer* -silent
The installation wizard performs an installation with input provided by the response file.	*installer* -silent -options *responsefile*
The installation wizard generates a template response for later modification and use but performs no installation.	*installer* -options-template *responsefile*
The installation wizard performs an installation in graphical mode with user input, and records all specified options in a response file.	*installer* -options-record *responsefile*
The installation wizard performs an installation in console mode with user input, and records all specified options in a response file.	*installer* -options-record -console *responsefile*

Installation wizard names

The installation wizard has a different name on each operating system. To help you find these programs quickly, the names are listed below. Substitute this name where you see *installer* in the text.

AIX   setupaix
HP-UX   setuphp
Linux (x86 platform)   setuplinuxia32 (runtime components)
                                setup.bin (Message Broker Toolkit)
Linux (zSeries platform)   setuplinux390
Solaris   setupsolaris
Windows   setup.exe (runtime components and Message Broker Toolkit)

Part 3. Installation

The third part of the book describes how you install WebSphere Message Broker on distributed systems. It contains the following chapters:
- Chapter 8, "Installing with the Windows Launchpad," on page 63
- Chapter 9, "Installing runtime components," on page 73
- Chapter 10, "Installing the Message Broker Toolkit," on page 77

If you are installing on z/OS, follow the instructions provided in the *Program Directory for WebSphere Message Broker for z/OS* or the *Program Directory for WebSphere Message Broker with Rules and Formatter Extension for z/OS*.

Chapter 8. Installing with the Windows Launchpad

When you install on Windows, you can use the Launchpad to help you to install WebSphere Message Broker and its prerequisite products.

This list summarizes the actions that you must take:

1. Check that you have enough memory and disk space; refer to "Memory and disk space" on page 5.
2. Check the readme file readme.html for any updates to these installation instructions. The readme file location is shown at the start of Chapter 1, "System requirements," on page 3.
3. Decide whether you want to install from a server, or install locally on each system. These choices are described in "Accessing CDs and DVDs" on page 42.
4. Start the Launchpad to install WebSphere Message Broker and the prerequisite products. Full instructions are provided in "Starting the Windows Launchpad."
5. When you have completed installation, see Part 4, "After installation," on page 83 for information about verifying your installation, and what you can do next.
6. If you experience problems during installation, refer to "Dealing with problems during installation" on page 70.

Starting the Windows Launchpad

When you insert the product media, the Launchpad starts automatically if autorun is enabled. If autorun is not enabled, find the file mqsilaunchpad.exe in the root directory of the CD or DVD and double-click, or type mqsilaunchpad in a command window and press Enter. The Launchpad is available on every CD from which product components or prerequisite products might be installed, and on the DVD.

On the first panel, choose how to install WebSphere Message Broker and any of its prerequisite products that you have not previously installed:

- **Express installation** installs a set of products that are required for a minimum configuration of WebSphere Message Broker. The Launchpad completes the installation of each product without your input, using default values where input is required.

  Choose this mode if you are not familiar with WebSphere Message Broker, or its software requirements, or if you want a default installation of the minimum set of software required for a broker domain configuration.

Starting the Launchpad

If you want to perform an Express installation, see "Express installation" on page 65.

- **Advanced installation** displays a larger set of required and optional products that you can install one by one. The Launchpad invokes the installation program for each product you select in full interactive mode, and you must provide all required input.

  Choose this mode if you are familiar with WebSphere Message Broker and its software requirements, or if you want to install products individually and to specify your own values for any options during installation.

  If you want to perform an Advanced installation, see "Advanced installation" on page 68.

Access further information from the left pane:

- Click **Installation Guide** to launch a PDF copy of this book in Acrobat reader.
- Click **Readme** to view the readme file `readme.html` in a new browser window.
- Click **Quick Tour** to take a tour around the product. See Chapter 11, "Configuring and verifying your system," on page 85 for further information.

The Launchpad might have to search for an installation program for some of your selections. If you are installing from DVD, all the required products can be found, but if you are installing from CD, the program might be on another CD, or might not be in the expected location. If necessary, the Launchpad prompts you to take the appropriate action to find the file. Table 16 shows, for each supplied product, the program names and their locations on the CDs.

Table 16. Installation program names and locations

Product	Installation program name	Location on CD
WebSphere Eclipse Platform V3.0	`WebSphere Eclipse Platform V3.0.msi`	`\WebSphere_MQ_V6.0\Prereqs\IES\MSI` on Runtime Disk 2
WebSphere MQ	`IBM WebSphere MQ.msi`	`\WebSphere_MQ_V6.0\MSI` on Runtime Disk 2
ODBC Drivers for Cloudscape	`setup.exe`	`\DB2_Runtime_Client_V8.2` on Runtime Disk 1
Runtime components	`setup.exe`	`\` (root directory) on Runtime Disk 1
Message Broker Toolkit	`setup.exe`	`\setup` on Toolkit Disk 1
DB2 Enterprise Server	`DB2 Enterprise Server Edition.msi`	`\DB2_Enterprise_Server_V8.2\db2\Windows` on Runtime Disk 3
Rational Agent Controller	`setup.exe`	`\windows` on the supplemental disk labelled RAC

Table 16. Installation program names and locations (continued)

Product	Installation program name	Location on CD
WebSphere MQ Everyplace	`setup.exe`	\ (root directory) on supplemental disk labelled WebSphere MQ Everyplace

Express installation

When the Launchpad starts, it displays the Express installation panel.

1. Review the minimum set of products required for a default configuration:
   - WebSphere Eclipse Platform V3.0.1
   - WebSphere MQ V6.0
   - ODBC Drivers for Cloudscape
   - WebSphere Message Broker V6.0 (runtime components)
   - WebSphere Message Broker Toolkit V6.0

2. Check the initial installation status shown for each listed product:
   - **Required** indicates that the product is not installed, and is one of those required for a minimum configuration.
   - **Pending** indicates that the product must be installed to ensure the successful operation of a minimum configuration broker domain. The associated check box is selected to show that this product will be installed.
   - **Installed** indicates that the product is already installed at a supported level. The installed version is shown and no check box is displayed.
   - **Partial Installation** indicates that the product is installed, but not all components that are required to ensure the successful operation of a minimum configuration broker domain are present on the system. The associated check box is selected to show that additional components will be installed.
   - **Incorrect Level** indicates that an unsupported level of the product is installed on the system. This product must be upgraded to a supported level; use the Advanced Installation to complete that task.

     Because the ODBC Drivers for Cloudscape are included in DB2 products, you cannot install this component if you have an installation of DB2 that is at a version prior to 8.2. You are prompted to install DB2 Enterprise Server Version 8.2 from the Advanced panel.

     If a previous level of DB2 or WebSphere MQ is installed, you are directed to run the installation of these products from the Advanced installation, so that you are presented with the full interactive install and you can respond to any decisions that must be made during the upgrade.

If any product is already installed that uses the Rational Application Development (RAD) framework at Version 6 or above, you are directed to run the installation of the Message Broker Toolkit from the Advanced installation so that any potential problems with this installation do not prevent successful completion of Express installation. For more information about compatibility with RAD, see Chapter 10, "Installing the Message Broker Toolkit," on page 77.

3. Click the plus sign to the left of each listed product in turn. The Launchpad displays more information about the product which you can use to decide if you want it installed. The additional information also provides an estimate of the time taken to complete each product installation.

   Not all components of each required product are installed during an Express installation (for example, when the Launchpad installs WebSphere MQ V6.0, it installs the server, WebSphere MQ Explorer, and the Java Messaging component). Check the details provided to ensure that an Express installation will install all the components that you want. If you want additional components, use the Advanced installation.

   WebSphere MQ Explorer requires the WebSphere Eclipse Platform to be installed; when you select WebSphere MQ V6.0, the Eclipse Platform is automatically selected for you.

   The ODBC Drivers for Cloudscape provide drivers that access the default Derby embedded database, and you can use these for test and evaluation purposes. For production use, install your chosen enterprise database product. DB2 Enterprise Server Version 8.2 is provided for you to install if this is your database of choice.

4. If you do not want a listed product, clear the check box associated with the product. Its status is changed to **Required**, because you cannot configure and verify your installation without all of the listed products. However you can complete installation of the remaining products, and install other required products at a later time.

5. Click **Launch Express Installation for WebSphere Message Broker**.

   If you have cleared one or more of the required products, you are asked to confirm your choices.

   The Launchpad installs the products that you have selected in the order shown, prompting you to insert different CDs, if required. You cannot make any changes on the Express installation panel after you have started the installation process. As the Launchpad starts each installation, it updates status from **Pending** to **In Progress**.

   - If you have selected WebSphere Eclipse Platform V3.0.1, the Launchpad starts the installation program in silent mode (default values are used for all options). A progress bar is displayed so that you can check on progress.

- If you have selected WebSphere MQ V6.0, the Launchpad starts the installation program in silent mode (default values are used for all options). A progress bar is displayed so that you can check on progress.
- If you have selected ODBC Drivers for Cloudscape, the Launchpad starts the installation program in silent mode (default values are used for all options). A progress bar is displayed so that you can check on progress. During installation, you see the product name DB2 Run-Time Client on the progress bar; this is also shown in **Add/Remove Programs** when the installation is complete.
- If you have selected WebSphere Message Broker V6.0 (runtime components), the Launchpad invokes the installation wizard in full interactive mode. You must supply the input required by the installation program.

  The installation wizard guides you through a series of panels where you can make choices where to install the components, and which components you want to install. You also have to read and agree to the Software License Agreement that is displayed. This agreement also covers your use of both WebSphere MQ Version 6.0 and the ODBC Drivers for Cloudscape, if you have chosen to install one or both of these products. These products are licensed for use with WebSphere Message Broker only and must not be used for other purposes.

  When you are asked if you want to open a command console when the wizard terminates, select **Yes**. This opens a console that is initialized with the correct environment for command invocation. The command console is explained in "Setting the environment for an installation" on page 23.
- If you have selected the Message Broker Toolkit, the Launchpad starts the installation for you in full interactive, graphical mode.

  The installation program guides you through a series of panels where you can make choices about where to install the component. You must supply the input required by the installation program.

  The wizard checks that any RAD product installed on this system is compatible; if it is not, the installation of the Message Broker Toolkit fails. For details of compatibility, see "Rational Application Developer (RAD)" on page 14, and to resolve this situation, follow the instructions in "Integrating with other RAD installations" on page 78.

  When the installation completes, select the check box **Start Message Broker Toolkit** if you want to launch the Message Broker Toolkit when the wizard terminates.

The status of each product changes to **Installed** when the Launchpad has completed its installation.

When the Launchpad has installed all your selected products, it returns control to the Express installation panel.

6. Click **Exit Launchpad** to end the program.

Advanced installation

When the Launchpad starts, it displays the Express installation panel.

1. Click **Advanced Installation** in the left panel to display the Advanced installation panel. The Launchpad displays a list of the following products:
   - WebSphere Eclipse Platform V3.0.1
   - WebSphere MQ V6.0
   - ODBC Drivers for Cloudscape
   - WebSphere Message Broker V6.0 (runtime components)
   - WebSphere Message Broker Toolkit V6.0
   - Rational Agent Controller Version 6
   - DB2 Enterprise Server Version 8.2 (Optional)
   - Oracle (Optional)
   - Sybase (Optional)
   - Microsoft SQL Server 2000 (Optional)

2. Check the initial installation status shown for each listed product:
   - If the product is not installed, and is one of those required for a minimum configuration, the status is **Required**.
   - If the product is not installed, and is an optional product, the status is **Not Installed**.
   - If the product is already installed, and it is at the supported version (or later), the status is **Installed**.
   - If an earlier, unsupported, version of the product is installed, the status is **Incorrect Level**. You can install the supported version from this panel.
   - If a product is found but has not had a complete installation, the status is **Partial Installation**. You can install the full product from this panel.

     For example, you might previously have completed a typical installation of WebSphere MQ Version 5.3, which is a supported version. However, a typical installation does not install the Java Messaging component, which the broker requires, therefore your installation is shown as partially complete.

3. Click the plus sign to the left of a product to expand the information displayed about the product.

   If you want to install this product, and it is an IBM product that is not already installed, click **Install** in the expanded information to launch the product installation.

The Launchpad launches the installation program in full interactive graphical mode. You must supply the input required by the installation program, including, if appropriate, which components you want to be installed.

Start each required installation in the order of your choice. Each installation is performed separately, and the Launchpad prohibits any other action until the current installation has completed. It also minimizes its window while the installation is in progress, and restores itself to focus when the installation is complete.

If the Launchpad cannot find an installation program because it is on another CD, or is not in the expected location, it prompts you to take the appropriate action to find the file. See Table 16 on page 64 for details of installation program names and locations.

When the Launchpad has completed the installation, it updates the product status to **Installed**.

If you want to use Oracle, Sybase, or SQL Server, but the product that you have installed is not at the required supported version, or is not installed, you must acquire and install the product yourself: the Launchpad does not provide this option. If Oracle is installed, you must check that the installed version is supported, because the Launchpad cannot determine the version of the installed product. Supported databases are shown in Table 4 on page 10.

4. Repeat the previous step for each product that you want to install.

5. When you install WebSphere Message Broker runtime components or the Message Broker Toolkit, the installation programs guide you through a series of panels where you can make choices about where to install the components, and (for runtime component installation only) which components you want to install. You must also read and agree to the Software License Agreement that is displayed when you install the runtime components.

During installation of runtime components, you are asked if you want to open a command console when the wizard terminates. If you do, select **Yes**. This opens a console that is initialized with the correct environment for command invocation. The command console is described in "Setting the environment for an installation" on page 23.

During installation of the Message Broker Toolkit, the wizard checks that any RAD product installed on this system is compatible; if it is not, the installation fails. For details of compatibility, see "Rational Application Developer (RAD)" on page 14, and to resolve this situation, follow the instructions in "Integrating with other RAD installations" on page 78.

If you want to launch the Message Broker Toolkit when its installation wizard has completed, select the check box **Start Message Broker Toolkit**.

6. When an installation has completed, and before you start another installation, you can click **Refresh Advanced Installation List** to check the status of each product listed.

7. When you have completed installation of all your chosen products, click **Exit Launchpad** to end the program.

Dealing with problems during installation

The Launchpad waits for a return code from each installation program it initiates. If the return code indicates that the installation has failed, the Launchpad reports the error in a message dialog, and refers you to the documentation for the product that has failed. Most installation programs roll back from the point of the error and return your system to the state it was in before the failed attempt, and you can therefore try again after you have corrected the error.

If the Launchpad has already successfully installed one or more products before an error occurred, it does not roll back these installations. When you restart the Launchpad, the status of installed products reflects successful installations from the previous invocation.

If a failure occurs:
- If you have chosen an Express installation, you must either correct the error and restart the Launchpad, or return to the Express installation panel and clear the selection of the product that failed.
- If you have chosen an Advanced installation, you can continue to install other products and address any reported errors at a later time.

If you unable to install any of the products:
- Refer to the readme file readme.html for any late changes to the installation instructions.
- If Message Broker runtime components fail to install, check the contents of the installation log mqsi6_install.log, stored in your home directory.
- If the Message Broker Toolkit fails to install, check the contents of the installation log wmbt_install.log, stored in the *install_dir*\logs directory.
- If WebSphere MQ fails to install, check the contents of MQV6_install.*date_time*.log stored in the temp directory of your home directory.
- If DB2 fails to install, check the contents of db2diag.log and other logs created during installation of this product. For details of location and possible content, see the DB2 documentation.
- Review the problem scenarios described in Appendix A, "Installation problems," on page 97 and follow the guidance given.

If you are still unable to resolve the problem, contact your IBM Support Center.

Chapter 9. Installing runtime components

This chapter describes the tasks that you must complete to install one or more runtime components on the following systems:

- AIX
- HP-UX
- Linux (x86 platform)
- Linux (zSeries platform)
- Solaris
- Windows

If you want to install only the Message Broker Toolkit, see Chapter 10, "Installing the Message Broker Toolkit," on page 77.

This list summarizes the actions that you must take:

1. Check that you have enough memory and disk space; refer to "Memory and disk space" on page 5.

2. Check the readme file `readme.html` for any updates to these installation instructions. The readme file location is shown at the start of Chapter 1, "System requirements," on page 3.

3. Decide if you want to install WebSphere MQ before you start.

   When you start the installation wizard for the runtime components in each mode, it checks that you have WebSphere MQ Version 5.3.0.1 or later installed. If this check fails in graphical or console mode, the installation wizard displays a warning that lists potential problems. If you choose, you can stop the installation process, and install the missing software. If you prefer, you can ignore the warnings and continue with the installation of WebSphere Message Broker, but you must complete installation of WebSphere MQ before you create or start any WebSphere Message Broker runtime components.

   If this check fails in silent mode, and you have not modified the default behavior by specifying a tailored response file, the wizard terminates without taking any further action. If you have modified the response file to ignore this check, the installation wizard continues.

4. Decide whether you want to install from a server, or install locally on each system. These choices are described in "Accessing CDs and DVDs" on page 42.

5. Decide which mode of installation you want to use. The alternatives are explained in Chapter 7, "Choosing an installation mode," on page 55.

Installing runtime components

6. Follow the installation instructions provided in "Installing in graphical mode," "Installing in console mode" on page 75, or "Installing in silent mode" on page 75.

   When you start the installation wizard, it checks your system locale setting. If the locale setting is supported (listed in Chapter 3, "National language support," on page 25), the wizard continues in this locale. If the current setting is not supported, the wizard displays a dialog and you must choose from the list of supported languages. This language is used for installation only, and does not affect other processes on your computer.

   If you are installing a broker, a database is required. The installation wizard completes even if a supported database is not present in this system, but you must install one before you can use the broker. For further information about software requirements, see "Software requirements" on page 6.

7. When you have completed installation, see Part 4, "After installation," on page 83 for information about verifying your installation, and what you can do next.

   If you install one or more runtime components on Windows, the **Start** menu is updated. Detailed updates are described in "Menu updates" on page 101.

8. If you experience problems during installation, refer to "Dealing with problems during installation" on page 76.

Installing in graphical mode

To install in graphical mode:

1. Start the installation wizard in graphical mode:
   * For local access, load the product CD or DVD. On Windows, if autorun is enabled, the Launchpad is immediately started. To use the Launchpad, see Chapter 8, "Installing with the Windows Launchpad," on page 63. To cancel the Launchpad, click **Cancel**.

     Find the installation wizard on the CD in the root directory: its name is defined in "Installation wizard names" on page 60. Double-click the file, or type its name with no options at a command prompt and press Enter.

   * For remote access, access the remote CD drive or network drive on which the product media is available. Find the executable file that you want on the CD or mapped drive and start it as described above.

2. When the wizard starts, navigate through the pages and provide input when requested. For example, you are asked to specify where to install the components, and which components you want to install. You must also read and accept the Software License Agreement.

3. When the summary page is displayed, check your choices and click **Next** to complete installation. A progress bar is displayed so that you can check on progress.

Installing in console mode

To install in console mode:

1. Locate the installation wizard in the root directory of the local CD or remote CD or network drive. The wizard name for your operating system is listed in "Installation wizard names" on page 60.

2. Enter the following command for default invocation:

   installer -console

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

   You can specify other options when you start the wizard; these are described in Table 14 on page 57. For example, for improved accessibility, enter the following command:

   installer -accessibility

3. When the wizard starts, follow the prompts given and provide input when requested. For example, you are asked to specify where to install the components, and which components you want to install. You also have to read and accept the Software License Agreement that is displayed.

4. Check and confirm your choices when asked to do so, and enter 1 to complete installation.

If you are installing a broker, a database is required. The installation wizard completes even if a supported database is not present in this system, but you must install one before you can use the broker. For further information about database requirements, see "Databases" on page 8.

Installing in silent mode

To install in silent mode:

1. Locate the installation wizard in the setup directory of the local CD or DVD or remote CD or network drive. The wizard name for your operating system is listed in "Installation wizard names" on page 60.

2. Enter the following command at a command prompt for a typical installation with all default settings.

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

Installing runtime components

Linux and UNIX
> *installer* -silent

Windows
Start the installation wizard within a **start** command with parameter **/w** to ensure that the installation completes before it returns to the command prompt:

> start /w setup.exe -silent

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 "Response files" on page 58.

The installation wizard completes without any user interaction.

Dealing with problems during installation

If you have problems during installation:

- Refer to the readme file readme.html for any late changes to the installation instructions.
- Check the contents of the installation log mqsi6_install.log, stored in your home directory.
- Review the problem scenarios described in Appendix A, "Installation problems," on page 97 and follow the guidance given.

If you are still unable to resolve the problem, contact your IBM Support Center.

Chapter 10. Installing the Message Broker Toolkit

This chapter describes the tasks that you must complete to install the Message Broker Toolkit on the following operating systems:
- Linux (x86 platform)
- Windows

If you want to install only runtime components, see Chapter 9, "Installing runtime components," on page 73.

This list summarizes the actions that you must take:

1. Check the readme file readme.html for any updates to these installation instructions. The readme file location is shown at the start of Chapter 1, "System requirements," on page 3.
2. Check that you have enough memory and disk space; refer to "Memory and disk space" on page 5.

   If you do not have enough temporary space in your default temporary directory, you can specify a different temporary directory when you start the installation. See "Changing the location of the temporary space directory" on page 81 for details.
3. Decide whether you want to install from a server, or install locally on each system. These choices are described in "Accessing CDs and DVDs" on page 42.
4. Check that the installation of the Message Broker Toolkit is compatible with any other RAD or RSA product installed on the target system.

   If you need further information about RAD and RSA compatibility, see "Rational Application Developer (RAD)" on page 14. Check whether you need to choose to install the Language Pack feature when you install Message Broker Toolkit.

   If your system has other RAD or RSA products installed, and they are not compatible, follow the instructions in "Integrating with other RAD installations" on page 78 before you install the Message Broker Toolkit.
5. Decide which mode of installation you want to use. The alternatives are explained in Chapter 7, "Choosing an installation mode," on page 55.
6. Follow the installation instructions provided in "Installing in graphical mode" on page 79, "Installing in console mode" on page 80, or "Installing in silent mode" on page 80.

   If you install the Message Broker Toolkit on Linux (x86 platform), invoke the wizard from a location other than the mount point itself. If you do not do so, the installation program locks up when a change of CD is required.

Installing the Message Broker Toolkit

For example, if your mount point is /media/dvd/, invoke the wizard from another location with the following command:

/media/dvd/setup/setup.bin

When you start the installation wizard, it checks your system locale setting. If the locale setting is supported (listed in Chapter 3, "National language support," on page 25), the wizard continues in this locale. If the current setting is not supported, the wizard displays a dialog and you must choose from the list of supported languages. This language is used for installation only, and does not affect other processes on your computer.

7. When you have completed installation, see Part 4, "After installation," on page 83 for information about verifying your installation, and what you can do next.

   When you install the Message Broker Toolkit on Windows, the **Start** menu is updated. When you install the Message Broker Toolkit on Linux (x86 platform), the main menu is updated. Detailed updates are described in "Menu updates" on page 101.

8. If you experience problems during installation, refer to "Dealing with problems during installation" on page 81.

Integrating with other RAD installations

If you want to install the Message Broker Toolkit on a system on which an incompatible RAD or RSA product exists, determine if that product is at a lower level (lower than Version 6.0.1.1) or a higher level (Version 6.0.2 or later) and follow the instructions below for each affected product. For more information about compatible RAD levels, see "Rational Application Developer (RAD)" on page 14.

If a RAD product is at a lower level

If you start installing the Message Broker Toolkit and the wizard detects an earlier incompatible version of RAD already on this system, the wizard tells you that you must run the Rational Product Updater (RPU) to upgrade your existing installation to version 6.0.1.1 or any subsequent compatible fix level. The wizard cannot continue.

You must complete one of the following two options before you can install the Message Broker Toolkit.

1. Upgrade the existing product installation using the RPU. Click **Help > Software Updates > IBM Rational Product Updater** to access and apply the product updates. The RPU displays all available updates for the installed Rational products.

   Search for updates to RAD 6.0.1.1 or a later compatible fix level. No other level is supported. Select a compatible update and follow the instructions to install it.

2. Remove the existing RAD product installation. Use the appropriate uninstall program to complete this task.

If a RAD product is at a higher level

You must remove the existing product installation before you can install Message Broker Toolkit on this system. Use the appropriate uninstall program to complete this task.

Installing in graphical mode

To install in graphical mode:

1. Start the installation wizard in graphical mode:

   - For local access, load the product CD or DVD. On Windows, if autorun is enabled, the Launchpad is immediately started. To use the Launchpad, see Chapter 8, "Installing with the Windows Launchpad," on page 63. To cancel the Launchpad, click **Cancel**.

     Find the installation wizard on the CD in the setup directory: its name is defined in "Installation wizard names" on page 60. Double-click the file, or type its name with no options at a command prompt and press Enter. If you want to change the temporary space location, you must use a command line invocation and specify the appropriate options, as described in "Changing the location of the temporary space directory" on page 81.

   - For remote access, access the remote CD drive or network drive on which the product media is available. Find the executable file that you want on the CD or mapped drive, and invoke it as described above. If you want to change the temporary space location, you must use a command line invocation and specify the appropriate options, as described in "Changing the location of the temporary space directory" on page 81.

2. When the wizard starts, navigate through the pages and provide input when requested. For example, you are asked to specify where to install the Message Broker Toolkit. You must also read and accept the Software License Agreement that is displayed.

3. When the summary page is displayed, check your choices and click **Next** to complete installation. A progress bar is displayed so that you can check on progress.

4. On Windows only, when installation is complete, select the check box **Start Message Broker Toolkit** if you want to launch the Message Broker Toolkit when the wizard terminates. This option is not available on Linux (x86 platform), because you might want to complete verification logged on as a different user ID without root authority.

Installing the Message Broker Toolkit

Installing in console mode

To install in console mode:

1. Locate the installation wizard in the root directory of the local CD or remote CD or network drive. The wizard name for your operating system is listed in "Installation wizard names" on page 60.

2. Enter the following command for default invocation:

   installer -console

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

   If you want to change the temporary space location, specify the appropriate options, as described in "Changing the location of the temporary space directory" on page 81. For details of other options you can specify, see Table 14 on page 57. For example, for improved accessibility, enter the following command:

   installer -accessibility

3. When the wizard starts, follow the prompts given and provide input when requested. For example, you are asked to specify where to install the components. You must also read and accept the Software License Agreement that is displayed.

4. Check and confirm your choices when asked to do so, and enter 1 to complete installation.

5. On Windows only, when installation is complete, select the option if you want to launch to Message Broker Toolkit when the wizard terminates. This option is not available on Linux (x86 platform), because you might want to complete verification logged on as a different user ID without root authority.

Installing in silent mode

To install in silent mode:

1. Locate the installation wizard in the setup directory of the local CD or DVD or remote CD or network drive. The wizard name for your operating system is listed in "Installation wizard names" on page 60.

2. Enter the following command at a command prompt for a typical installation with all default settings:

   Linux (x86 platform)

   ```
   setup.bin -silent
   ```

   Windows   Start the installation wizard within a **start** command with parameter **/w** to ensure that the installation completes before it returns to the command prompt:

   ```
   start /w setup.exe -silent
   ```

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

If you want to change the temporary space location, specify the appropriate options on the command, as described in "Changing the location of the temporary space directory."

If you want to specify other non-default settings, include a response file on the command. For more details of how to do this, and how to create and edit a response file to define your requirements, see "Response files" on page 58.

You can modify the following options:

```
-P installLocation="fullpath"
-P feature_lang_pack_wmbt_win32.active=true
```

`installLocation` specifies a non-default location into which the Message Broker Toolkit is installed. Enclose the specified path in quotes, and specify a fully qualified path, not a relative path.

`feature_lang_pack_wmbt_win32.active` indicates (on Windows in this example) that the Language Pack feature is to be installed. Set this to `false` if you do not want the feature installed.

Changing the location of the temporary space directory

When you install the Message Broker Toolkit, temporary space of 1.5 GB is required. If it is not available, the installation program fails.

By default, the installation program uses /tmp on Linux (x86 platform) and the directory pointed to by the system variable TEMP on Windows. You can change this default value, for this installation only, by including options when you invoke the installation program from the command line.

Type `-W tempspacecheck.active=false` to indicate that the default directory is not to be checked for sufficient temporary space, and `-is:tempdir"new_temp_dir_location"` to identify the new directory.

For example, enter the following command to start the installation wizard in graphical mode and specify a different temporary directory to use:

Linux
```
./setup.bin -W tempspacecheck.active=false -is:"/mqsi_temp_space"
```

Windows
```
setup.exe -W tempspacecheck.active=false -is:"C:\mqsi\temp_space"
```

Dealing with problems during installation

If you have problems during installation:

Dealing with problems

- Refer to the readme file `readme.html` for any late changes to the installation instructions.
- Check the contents of the installation log `wmbt_install.log`, stored in the *install_dir*\logs directory. Messages written to this file can help you to understand installation failures.
- Check the contents of the RPU log `run_wmbt_rad_update_errout.log`, stored in the *install_dir*\logs directory. Messages written to this file can help you to understand failures encountered by the RPU.

  For example, if you have tried to install the Language Pack feature, but a previous RAD product was installed without the Language Pack feature, you might see a message in the log similar to the following message:

  `Component feature "updater.crystal.nl1.plugins.6011" not found`

  This log might also report out of disk space errors; see Table 2 on page 5 and Appendix A, "Installation problems," on page 97 for further guidance.
- Review the problem scenarios described in Appendix A, "Installation problems," on page 97 and follow the guidance given.

If you are still unable to resolve the problem, contact your IBM Support Center.

Part 4. After installation

This part of the book discusses what to do after installation:

Linux (x86 platform) and Windows

If you have installed all the runtime components and the Message Brokers Toolkit on your Linux (x86 platform) or Windows system, follow the verification procedures described in Chapter 11, "Configuring and verifying your system," on page 85.

The verification procedures are limited to these operating systems because they exploit wizards and sample programs available through the Message Brokers Toolkit that require that all WebSphere Message Broker components are available.

In addition, a database is required for the broker:

- On Linux (x86 platform), you must install DB2 Enterprise Server.
- On Windows, you must install either ODBC Drivers for Cloudscape to use the Derby database, or DB2 Enterprise Server.

No specific verification programs are provided on other operating systems.

All distributed systems and z/OS

Launch the Message Brokers Toolkit and explore the resources that are provided to help you learn about the product and how you can use it on all platforms. Chapter 12, "What's next," on page 91 provides details about how to access Welcome page resources and the information center.

Chapter 11. Configuring and verifying your system

This chapter describes how to verify your installation on Linux (x86 platform) and Windows.

If you have installed only runtime components on other operating systems, or you have installed an incomplete set of components on Linux (x86 platform) or Windows, see the guidance provided in Chapter 12, "What's next," on page 91.

Getting started

When you have completed installation:

1. Launch the Message Brokers Toolkit:

    - On Linux (x86 platform), you do not need root authority to complete verification. This is why you could not launch the Message Brokers Toolkit from the installation wizard. Log off from the user ID with which you have installed the product. Log on as the same ID, or another ID, but do not become root. Launch the Message Brokers Toolkit from the main menu or start the launcher wmbt.bin located within the installation directory.

    - On Windows, you do need Administrator authority to complete verification. It is therefore appropriate to complete verification with the same user ID that you used to complete installation. If you did not launch the Message Brokers Toolkit from the installation wizard, launch it from the **Start** menu or start the launcher wmbt.exe located within the installation directory.

2. When you first launch the Message Brokers Toolkit, you are asked to specify the location of your workspace. This is a file on your local drive where the Message Brokers Toolkit stores all the resources that you create. You can accept the default path and file name shown, or you can specify your own choice by typing it in, or by locating it using the **Browse** button. Select the check box **Use this as the default and do not ask again** to inhibit the display of the workspace dialog next time you launch the Message Brokers Toolkit.

    The Message Brokers Toolkit opens and the Welcome page is displayed.

3. Hover your cursor over the icons on the Welcome page to see what each one describes. The choices displayed on the Welcome page on Linux (x86 platform) and Windows are identical
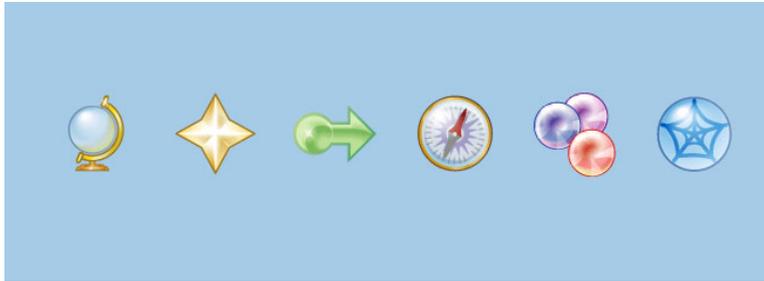
Getting started

Figure 3. The Welcome page choices (Windows)

4. Click the **Getting Started** icon to begin the configuration and verification process.

   Getting Started creates a default configuration that is used by a sample program to verify that your installation is successful. For more information, see "Creating the default configuration" on page 87 and "Running the Pager samples" on page 88.

   Getting Started requires the following conditions to be met:
   - You have installed all runtime components and the Message Brokers Toolkit.
   - On Linux (x86 platform), you have installed DB2 Enterprise Server.
   - On Windows, you have installed either the ODBC Drivers for Cloudscape, or DB2 Enterprise Server.
   - None of the default components already exists (the components are listed in "Creating the default configuration" on page 87).
   - This configuration is required for test and evaluation purposes only.
   - Your current user ID has the following characteristics:
     - It is a member of groups mqbrkrs and mqm.
     - It has Administrator authority (Windows only).
     - It is a local ID, not a domain ID (Windows only).
     - It is authorized to create a database for the broker.

   For more information about these security requirements, see "Setting up security" on page 39.

   You cannot complete the configuration and verification described here if these conditions are not met.

Creating the default configuration

Before you can run any sample programs, create a set of components within a broker domain. You can do this using the Default Configuration wizard, which creates the components that you need with fixed names and properties.

1. Click the **Create the Default Configuration** icon on the Getting Started page. The "Creating the Default Configuration" page opens.

2. Click **Start the Default Configuration wizard**. The Default Configuration wizard starts.

3. Follow the guidance provided by the wizard to navigate through its pages.

   The wizard creates a default configuration that can be used by a sample program to verify that your installation is successful. (Ignore the option to enable a publish/subscribe broker within the domain. This is not required by the sample that you run to verify your installation. After verification, refer to the information center to find out about publish/subscribe.)

   The wizard displays a progress bar that shows which task it is currently performing. It also reports on all the actions that it takes by writing progress information into a scrollable text window from which you can copy and paste some or all of the information displayed.

   The information in the text window is also written to the following log file:

   install_dir/eclipse/workspace/defaultConfiguration.log

   If the wizard encounters an error in processing, it informs you of what has happened and returns any error information, for example a return code from a command. If you know why the error has occurred from the error text, and can correct the situation, you can do so now. Return to the error message display and click **Yes** to continue the wizard.

   If you do not understand the error, and do not know how to fix it, click **No**. The wizard rolls back all the actions that it has taken so far, if it can, so that when it completes, your system is in the same state as it was in before you started the wizard. The text window shows you exactly what the wizard has, and has not, done.

   Click **Open Log File** to access the log from the summary page of the wizard; this option is available if the wizard has succeeded or failed.

Creating the default configuration

The wizard creates the resources shown in Table 17.

Table 17. Resources created by the Default Configuration wizard

Name	Type
DEFBKDB6	Broker database
Local_Domain	Broker domain
LocalProject	Server project
WBRK6_DEFAULT_CONFIGURATION_MANAGER	Configuration Manager that manages the broker domain
WBRK6_DEFAULT_BROKER	Broker
WBRK6_DEFAULT_QUEUE_MANAGER	WebSphere MQ queue manager that hosts the broker and Configuration Manager. The queue manager has a listener at port 2414.

It also starts the Configuration Manager and the broker so that they are ready to process a sample.

4. On the final page, ignore the option to start the Samples Preparation wizard; you will start this wizard later in these instructions.

5. Click **Finish** to close the wizard.

When the wizard completes, it opens the broker topology editor in your workbench. The editor opens in the Broker Administration perspective and displays the resources that the wizard has created. The Domains and Navigator panes within the perspective also show the resources.

You can use the configuration created by the Default Configuration wizard for other purposes, for example running other samples, or creating and deploying your own message flows. You can also run the wizard to remove all the default resources. To start the Default Configuration wizard from the Message Brokers Toolkit, click **File > New > Other > Broker Administration - Getting Started**.

Running the Pager samples

To verify your installation, return to the Getting Started page. If you cannot see this page in your workbench, click **Help > Welcome** to return to the Welcome page, and click the **Getting Started** icon again.

1. Click the **Pager samples** icon .

The Samples Gallery opens in a separate window and displays the "Pager samples" page which presents the following options:

- **Set up the Pager samples**

This option starts the Samples Preparation wizard, which helps you to import the samples into your workspace, and to deploy the samples and associated resources (for example, message flows) to the default broker.

- **Run the Pager samples**

  This option opens the help page with a description of each of three sample programs, and icons that you can click to start each one.

- **Find out what the Pager samples do**

  This option opens a page that describes in detail what the Pager samples do and how they work. You can examine the message flows that implement their function and the messages that are handled by those flows.

2. Click **Set up the Pager samples**. The Samples Preparation wizard starts and displays its first page. The option to import and deploy to the default broker is preselected.

3. Click **Next** and follow the guidance provided by the wizard to navigate through its pages.

   The wizard displays a progress bar that shows which task it is currently performing. It also reports on all the actions that it takes by writing progress information into a scrollable text window. You can copy and paste some or all of the information in this text window. This information is also written to the following log file:

   install_dir/eclipse/workspace/.metadata/samplePreparationWizard.log

   If the wizard encounters an error in processing, it informs you of what has happened and returns any error information, for example a return code from a command. If you know why the error has occurred from the error text, and can correct the situation, you can do so now. Return to the error message display and click **Yes** to continue the wizard.

   If you do not understand the error, and do not know how to fix it, click **No**. The wizard rolls back all the actions that it has taken so far, if it can, so that when it completes, your system is in the same state as it was in before you started the wizard. The text window shows you exactly what the wizard has, and has not, done.

   When the wizard completes, the Pager samples and associated resources are deployed and ready to run.

4. Click **Finish** to close the wizard. The "Pager samples" page (from which you launched the wizard) is redisplayed.

5. Click **Run the Pager samples**. This opens a help page that has two sections:

   - **Running the Text Messenger sample (point-to-point messaging)**

     The Text Messenger sample briefly introduces you to the point-to-point style of messaging, and demonstrates how message transformation works. Click the **Pager** icon to launch the Pager application; click the **Text Messenger** icon to start that application and send messages to the Pager application.

Running the Pager samples

You can start these applications in either order; because they use WebSphere MQ to pass messages between applications, messages can be held safely for an application and can be retrieved by that application when it starts.

- **Running the SurfWatch sample (publish/subscribe messaging)**

  The SurfWatch sample briefly introduces you to the publish/subscribe style of messaging, and demonstrates how message transformation works. Click **Surf Report Publisher** to start the publisher application; click **Pager** to start the Pager application.

  Click **Start** in the Surf Report Publisher window to start sending messages about weather conditions at certain surfing locations to the Pager application. Pager displays all messages that it receives in its window.

  Click **Subscriptions**. The Surf Report Subscriptions dialog opens. Here you can select the locations for which you want to receive surf reports; the messages sent to Pager are controlled by this dialog.

  Refer to the help pages to read and understand more about how these applications work together.

6. When you have sent and received messages successfully, you have verified that your installation is complete. You can now close your Pager applications.

You can start the Samples Preparation wizard to create the resources and start other supplied sample programs. Click **File > New > Other > Broker Administration - Getting Started** in the Message Brokers Toolkit to view the other samples that are available. You can also access the Samples Gallery from the information center.

You can also invoke the Samples Preparation wizard to remove the sample or samples from the broker, and to remove the sample resources from your workspace.

Chapter 12. What's next

When you have completed installation, there are two main sources of information that you can use to help you learn about the product, and to create and deploy a broker domain on all platforms. Launch the Message Brokers Toolkit to access these resources:

The Welcome page

The Welcome page is typically what you see when you first launch the Message Brokers Toolkit. You can also access it at any time; click **Help > Welcome** to display this page. Minimize the Welcome page to view it alongside other open panes in the toolkit; close it when you no longer want it in view.

The Welcome page has been designed to ensure that both new and experienced users can find what they need when they have completed the installation process. It also helps you if you are new to the product or if you are migrating from previous versions.

In addition to Getting Started (covered in Chapter 11, "Configuring and verifying your system," on page 85), the Welcome page displays these additional choices for you to explore:

- If you are new to WebSphere Message Broker, click the **Overview** icon to learn about the product.

  Access the Quick Tour, which provides new users with an overview of key product concepts, and shows its main interfaces in a graphical format. The tour lasts approximately 15 minutes.

- If you have experience of WebSphere Message Broker, click the

  What's New icon to see what new and enhanced function is included in Version 6.

- If you have a previous version installed, click the **Migrating** icon

  to view a description of the steps that you need to take to migrate your current broker domain to Version 6. The information provided includes planning, preparation, and implementation steps.

- Click the **Samples** icon to explore samples that show how to exploit the function of the broker.

What's next

The samples are presented in a Samples Gallery, which includes samples that show how you can develop message flows and message sets that exploit the message routing and transformation capabilities of the broker.

- Click the **Web Resources** icon to link to additional resources on the Web that support WebSphere Message Broker. These include education courses, Business Partners, and IBM support.

The information center

The information center provides full post-installation documentation for the product on all platforms. Click **Help > Help Contents** in the Message Brokers Toolkit to open the information center in a new window. The front page links to topic pages within the information center and to other resources such as Redbooks. You can also read about different ways to find information in the information center, whether you are a new or an experienced user.

The information center is divided into sections that cover tasks and reference information. The task sections listed below are typically those that you might want to explore first.

Configuring the broker domain

The broker domain and its components are explained, and the tasks that you must complete to create a broker domain and the resources that it requires on all platforms are described.

- Use the appropriate **mqsi** commands (for example, **mqsicreatebroker**). Navigate through the Configuring section to find details about the tasks involved in creating your configuration and the commands to use.

  When you issue commands on a distributed system, you must ensure that you issue them in the correct environment and to the correct installation. For the verification process described in Chapter 11, "Configuring and verifying your system," on page 85, the Default Configuration wizard completes this action for you, but you must do this yourself if you are not using the wizard and on platforms on which the wizard is not available.

  Linux and UNIX

  Run the `mqsiprofile` file, supplied in the following directory:

  `install_dir/bin`

  Windows

  Click **Start > IBM WebSphere Message Brokers 6.0 > Command Console** to open a window with the correct environment set up. Invoke the commands in this window.

  For more information about the **Start** menu, see "Menu updates" on page 101.

  See the topics in the information center under **Reference > Operations > Commands** for more details about `mqsiprofile`, and how to initialize the environment.

This is not required on z/OS.

- On Linux (x86 platform) and Windows, use the Default Configuration wizard to create components of fixed names on systems local to the toolkit, as explained in Chapter 11, "Configuring and verifying your system," on page 85. You might find this wizard useful even of you do not want to complete the verification steps.

- On Windows only, use the Command Assistant wizard to create components with your choice of names and characteristics. In the Message Brokers Toolkit, click **File > New > Other > Broker Administration - Getting Started** to access the Command Assistant wizard. This wizard can also modify and delete existing components.

Developing applications

This section provides details about how to develop message flows, message sets, user-defined extensions, publish/subscribe applications, and more.

Deploying

Find out about BAR files, configurations, and topology, and how to deploy the message flows and other resources that you have developed.

Part 5. Appendixes

Appendix A. Installation problems

This appendix describes problem scenarios that you might experience during component installation on distributed systems. Refer to the *Program Directory for WebSphere Message Broker for z/OS* or the *Program Directory for WebSphere Message Broker with Rules and Formatter Extension for z/OS* if you experience problems installing on z/OS.

The installation wizards return zero if installation is successful. If a non-zero return code is returned, check the installation log files for errors and explanations:

- For runtime components, the log file `mqsi6_install.log` is stored in the home directory associated with your account:

  Linux and UNIX
  Enter `echo $HOME` to find your home directory.

  Windows   Your home directory is typically `C:\Documents and Settings\userid`. Enter `echo %HOMEPATH%` to check the location.

- For the Message Broker Toolkit, the log file `wmbt_install.log` is stored in the *install_dir*\logs directory.

Typical problems, with a solution, or a workaround, are described below:

Linux and UNIX: display problems
If you try to install one or more runtime components using the graphical interface, you might see one of two common errors reported. These typically occur if you log in remotely, or you switch user ID.

- `Can't open display localhost:1.0`

  Check that the DISPLAY variable is set to the correct value. If you are logged in locally, the typical value is `:0.0` or `localhost:0.0`.

- `Connection to ":0.0" refused by server`

  Run the following command, where *user* is the user you are logged in as:

  `xauth -merge ~user/.Xauthority`

If you are unable to correct this error, contact your systems administrator for further help.

Installation problems

Linux: java.lang.UnsatisfiedLinkError

If you are installing in graphical mode on Linux, there are additional packages that you must install for this mode to succeed. See Table 3 on page 7 for details.

Linux: RPM query fails

If you invoke an RPM (package monitor) query after you have installed the product, and nothing is returned, it is likely that your system does not have the required RPM support.

An information message similar to the following message might have been reported in the installation log:

```
(01-Jun-2005 09:02:27), mqsi.Setup,
   com.ibm.wizard.platform.linux.LinuxProductServiceImpl, wrn,
   The installer could not successfully add the product information
   into the RPM database. Installation will continue as this is not
   critical to the installation of the product.
```

Install the additional RPM build package described in Table 3 on page 7.

Linux and UNIX: insufficient temporary space

When you install the product, the installation program tries to unpack product files into the local system's temporary file space. On Linux and UNIX systems, the temporary space is typically /tmp. If there is not enough file space available in this directory, the command might fail without reason (the command returns with no comment), or it might report a lack of file space.

To correct this problem, give the installation command (setupaix, setupsolaris, setuphp, and so on), a temporary file system to use. The command line option is -is:tempdir *name of temp directory*.

For example, on AIX, enter the following:

```
./setupaix -is:tempdir /largetemp
```

Do not specify a temporary directory that is NFS mounted from another machine; if you do so, the installation might fail because user permission checks made by the installer sometimes report an error that security principals mqm and mqbrkrs do not exist on the local machine.

See Table 2 on page 5 to check how much temporary space is required.

Windows: user mode and Terminal Services

During installation on Windows, ISMP (InstallShield Multiplatform, the Windows program used for product installation) writes ini and other related files in the local system directory, typically C:\Windows.

If you are running Terminal Services on this system, ISMP writes these files to the current user's home directory rather than to the default system directory. As a result, installation might complete successfully, but the product might not work as expected.

To ensure that installation is completed successfully, enter the following command to change user mode before you retry installation of any product components:

```
change user /install
```

When installation is complete, enter the following command to restore the original user mode:

```
change user /execute
```

Linux (x86 platform) and Windows: RPU problems

When you install the Message Broker Toolkit, the installation program prompts you to upgrade a RAD product, that you have uninstalled, to a newer level.

There is a known problem with the Rational installation, which results in a failure to update an information file that the dependency checker accesses. If this problem occurs, cancel the installation program, and select **Help > Software Updates > IBM Rational Product Updater** to run the RPU. This refreshes the information file so that you can rerun the toolkit installation.

Linux (x86 platform) and Windows: Accessing installation images

When you install the Message Broker Toolkit from copies of the installation images that you have created on a local or remote drive, you might see the following message displayed by the installation wizard:

```
Errors occurred during the installation.
An error occurred and product installation failed. Look at the log file
log_file_location for details.
```

Check the log for a message similar to the following text:

```
21-Jan-2005 124:39:03), Install,
com.ibm.rational.cdi.archive.CDIInstallArchive,
err, ProductException: (error code = 601; message="err";
additional data = [b_rwd:java.io.IOException:
Could not obtain resource: Improper test folder structure.])
```

The installation wizard has failed because it cannot find the images it requires. Check that you have correctly set up the directory structure for the image copies, with all disk images in subdirectories within a single directory. See "Accessing CDs and DVDs on a remote system" on page 45 for details of the structure required.

Installation problems

Appendix B. System changes after installation

The installation program makes changes to your system; for example, it updates menus, creates directories, and creates and modifies environment variables. Details are provided in these sections:
- "Menu updates"
- "Directory structures" on page 102
- "Registry entries" on page 114
- "Environment variables" on page 115
- "Default WebSphere MQ resources" on page 116

Menu updates

If you have installed one or more runtime components on Windows, the **Start** menu is populated with the following entries:
- **Programs > IBM WebSphere Message Brokers 6.0 > Command Console**
- **Programs > IBM WebSphere Message Brokers 6.0 > Java Programming APIs > Configuration Manager Proxy API Documentation**
- **Programs > IBM WebSphere Message Brokers 6.0 > Java Programming APIs > Configuration Manager Proxy API Exerciser**
- **Programs > IBM WebSphere Message Brokers 6.0 > Java Programming APIs > Java Plugin API Documentation**
- **Programs > IBM WebSphere Message Brokers 6.0 > Uninstall > Message Broker**

If you install the Message Broker Toolkit on Linux (x86 platform), the main menu is populated with the following entries:
- **IBM WebSphere MessageBrokers 6.0 > MessageBrokers Toolkit**
- **IBM WebSphere MessageBrokers 6.0 > Readme**

If you install the Message Broker Toolkit on Windows, the **Start** menu is populated with the following entries:
- **Programs > IBM WebSphere MessageBrokers 6.0 > MessageBrokers Toolkit**
- **Programs > IBM WebSphere MessageBrokers 6.0 > Readme**
- **Programs > IBM WebSphere MessageBrokers 6.0 > Start help**
- **Programs > IBM WebSphere MessageBrokers 6.0 > Stop help**
- **Programs > IBM WebSphere MessageBrokers 6.0 > Rational Product Updater**

Directory structures

When you install WebSphere Message Broker, the installation wizard creates a structure of subdirectories under the directory that you specify as the installation directory (*install_dir*).

If you have performed a custom installation of the runtime components, the structure depends on the components that you select and might differ from the structures shown here.

AIX

On AIX, the default home directory *install_dir* is /opt/IBM/mqsi/6.0.

Directories are created in two locations, shown in Table 18 and Table 19 on page 103.

Table 18. AIX installation directory structure

Directories under *install_dir*	Contents
_uninst_runtime	Uninstall programs
bin	Executable binaries
catalina	Web Services support files
classes	Java class files
DataDirect	ODBC files
docs	Java API files
include	Header and other files for samples
itlm	Tivoli License Manager files
jplugin	Java plug-in files (user-defined)
jre	IBM Runtime Environment for the Java Platform
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

Table 19. AIX working directory structure

Directories under /var/mqsi	Contents
brokers	Broker resources
config	Profiles
components	Component details
common/errors	Error files
common/lib	Shared library files
common/lib64	Shared library files
common/locks	Resource locks
common/log	Trace files
odbc	ODBC files
registry	Registry information
XML	User XML file resources
XSL	User style sheet resources

After installation on AIX, the user ID root in group root owns the directories, user mqm owns the files in *install_dir* and user bin owns the files in /var/mqsi.

Directory structures

HP-UX

On HP-UX, the default home directory *install_dir* is /opt/IBM/mqsi/6.0.

Directories are created in two locations, shown in Table 20 and Table 21 on page 105.

Table 20. HP-UX installation directory structure

Directories under *install_dir*	Contents
_uninst_runtime	Uninstall programs
bin	Executable binaries
catalina	Web Services support files
classes	Java class files
DataDirect	ODBC files
docs	Java API files
include	Header and other files for samples
itlm	Tivoli License Manager files
jplugin	Java plug-in files (user-created)
jre	IBM Runtime Environment for the Java Platform
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

Table 21. HP-UX working directory structure

Directories under /var/mqsi	Contents
brokers	Broker resources
config	Profiles
components	Component details
common/errors	Error files
common/lib	Shared library files
common/lib64	Shared library files
common/locks	Resource locks
common/log	Trace files
odbc	ODBC files
registry	Registry information
XML	User XML file resources
XSL	User style sheet resources

After installation on HP-UX, the user ID root in group root owns the directories, user mqm owns the files in *install_dir* and user bin owns the files in /var/mqsi.

Directory structures

Linux

Runtime components

On Linux (x86 platform) and Linux (zSeries platform), the default home directory *install_dir* for runtime components is `/opt/ibm/mqsi/6.0`.

Directories are created in two locations, shown in Table 22 and Table 23 on page 107.

Table 22. Linux installation directory structure (runtime components)

Directories under *install_dir*	Contents
`_uninst_runtime`	Uninstall programs
`bin`	Executable binaries
`catalina`	Web Services support files
`classes`	Java class files
`DataDirect`	ODBC files
`docs`	Java API files
`include`	Header and other files for samples
`itlm`	Tivoli License Manager files
`jplugin`	Java plug-in files (user-created)
`jre`	IBM Runtime Environment for the Java Platform
`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

Table 23. Linux working directory structure (runtime components)

Directories under /var/mqsi	Contents
brokers	Broker resources
config	Profiles
components	Component details
common/errors	Error files
common/lib	Shared library files
common/lib64	Shared library files
common/locks	Resource locks
common/log	Trace files
odbc	ODBC files
registry	Registry information
XML	User XML file resources
XSL	User style sheet resources

After installation on Linux, the user ID root in group root owns the directories, user mqm owns the files in *install_dir* and user bin owns the files in /var/mqsi.

Directory structures

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 Table 24.

Table 24. Linux installation directory structure (Toolkit)

Directories under *install_dir*	Contents
bin	Rational Application Developer (RAD) directories and files
csdev	RAD directories and files
csdevrpt_shared	RAD 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	RAD directories and files
radrsm_shared	RAD directories and files
Resource Adapters	RAD directories and files
runtimes	RAD directories and files
RUP Configuration	RAD directories and files
rwd	RAD directories and files
rwdrpt_shared	RAD directories and files
sdpisv	RAD directories and files
setup	Installation program and file
updater	RAD product updater (RPU)
wmbt_prod	Uninstall programs, readme files, product information

Solaris

On Solaris, the default home directory *install_dir* is /opt/IBM/mqsi/6.0.

Directories are created in two locations, shown in Table 25 and Table 26 on page 110.

Table 25. Solaris installation directory structure

Directories under *install_dir*	Contents
_uninst_runtime	Uninstall programs
bin	Executable binaries
catalina	Web Services support files
classes	Java class files
DataDirect	ODBC files
docs	Java API files
include	Header and other files for samples
itlm	Tivoli License Manager files
jplugin	Java plug-in files (user-created)
jre	IBM Runtime Environment for the Java Platform
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

Directory structures

Table 26. Solaris working directory structure

Directories under /var/mqsi	Contents
brokers	Broker resources
config	Profiles
components	Component details
common/errors	Error files
common/lib	Shared library files
common/lib64	Shared library files
common/locks	Resource locks
common/log	Trace files
odbc	ODBC files
registry	Registry information
XML	User XML file resources
XSL	User style sheet resources

After installation on Solaris, the user ID root in group root owns the directories, user mqm owns the files in *install_dir* and user bin owns the files in /var/mqsi.

Windows

Runtime components

On Windows, the default home directory *install_dir* is `C:\<Program Files folder>\IBM\MQSI\6.0`. The default working directory *work_dir* 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.

Directories are created in two locations, shown in Table 27 and Table 28 on page 112.

Table 27. Windows installation directory structure (runtime components)

Directories under *install_dir*	Contents
`_uninst_runtime`	Uninstall programs
`bin`	Executable files; .exe, .dll, .lil
`catalina`	Web Services support files
`classes`	Java class files
`DataDirect`	ODBC files
`docs`	Java API 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
`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

Directory structures

Table 28. Windows working directory structure (runtime components)

Directories under *work_dir*	**Contents**
brokers	Broker resources
config	Profiles
components	Component details
common\errors	Error files
common\log	Trace files
XML	User XML file resources
XSL	User style sheet resources

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 Table 29.

Table 29. Windows installation directory structure (Toolkit)

Directories under *install_dir*	Contents
bin	Rational Application Developer (RAD) directories and files
csdev	RAD directories and files
csdevrpt_shared	RAD 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	RAD directories and files
radrsm_shared	RAD directories and files
Resource Adapters	RAD directories and files
runtimes	RAD directories and files
RUP Configuration	RAD directories and files
rwd	RAD directories and files
rwdrpt_shared	RAD directories and files
sdpisv	RAD directories and files
setup	Installation programs and files
updater	RAD product updater (RPU)
wmbt_prod	Uninstall programs, readme files, product information

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 HFS paths, see the *Program Directory for WebSphere Message Broker for z/OS* or the *Program Directory for WebSphere Message Broker with Rules and Formatter Extension for z/OS*.

Registry entries

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

Runtime components

On Windows, the system registry is used; on Linux and UNIX systems, equivalent entries are stored in /var/mqsi/registry. Do not alter or remove these entries unless instructed to do so by your IBM Service representative.

Table 30 shows the main Windows registry entries, created under HKEY_LOCAL_MACHINE\SOFTWARE\IBM\WebSphereMQIntegrator. Corresponding entries exist on Linux and UNIX platforms. The number and content of entries depends on the components that you have installed and configured.

Table 30. Registry entries for runtime components

Location	Description
component_name	Top level entry for each component that you have installed and configured.
component_name\CurrentVersion	GA product value is 6000.
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.

For the installed database drivers for Oracle and Sybase, entries that contain driver locations and parameters are created under the following key:

HKEY_LOCAL_MACHINE\SOFTWARE\ODBC\ODBCINST.INI

For Event Log information, an entry is added under the following key:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Eventlog\Application\BIPv600

Message Brokers Toolkit

On Windows, the system registry is used; on Linux (x86 platform), equivalent entries are stored in /etc/IBM/WebSphereMessageBrokersToolkit/. Do not alter or remove these entries unless instructed to do so by your IBM Service representative.

Table 31 shows the main Windows registry entries, created under HKEY_LOCAL_MACHINE\SOFTWARE\IBM\WebSphereMessageBrokersToolkit.

Table 31. Registry entries for the 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

On distributed systems you must run a profile to initialize environment variables to create the product environment before you use the product or configure any resources. Use the profile files provided with WebSphere Message Broker to initialize the environment. Profiles are associated with a specific installation, and are located in the following directory:

install_dir/bin

For the verification process described in Chapter 11, "Configuring and verifying your system," on page 85, this requirement is completed by the Default Configuration wizard, and you do not have to run this profile yourself.

On Windows, you can use the command console (available through the **Start** menu) to set up the required environment. When you start the console, the profile is invoked and the correct environment is set automatically for you.

On z/OS, the PDS *hlq.*SBIPSAMP (where *hlq*is the high-level file system qualifier) includes the following profiles that provide a similar function:
* BIPBPROF: Broker
* BIPCPROF: Configuration Manager
* BIPUPROF: User Name Server

WebSphere MQ resources

Default WebSphere MQ resources

When you create a broker, a Configuration Manager or a User Name Server, WebSphere MQ resources are created to support their configuration.

The resources created have names that begin with the reserved characters SYSTEM. Table 32 lists the resources and indicates the component queue manager with which they are associated. All the resources are queues with the exception of SYSTEM.BKR.CONFIG, which is a channel of type SVRCONN.

Table 32. Default WebSphere MQ resources

Resource name	Queue manager	Description
SYSTEM.BROKER.ADMIN.QUEUE	Broker	Target for messages sent by the Configuration Manager and commands to modify the broker's configuration and operation.
SYSTEM.BROKER.ADMIN.REPLY	Configuration Manager	Target for messages sent by the Configuration Manager to the broker.
SYSTEM.BROKER.AGGR.CONTROL	Broker	Used internally for control messages for aggregation.
SYSTEM.BROKER.AGGR.REPLY	Broker	Used internally for known replies received by the AggregateReply node.
SYSTEM.BROKER.AGGR.REQUEST	Broker	Used internally for requests that form part of an aggregate group.
SYSTEM.BROKER.AGGR.TIMEOUT	Broker	Target for timeout and unknown timeout processing within the AggregateReply node.
SYSTEM.BROKER.AGGR.UNKNOWN	Broker	Target for unknown replies received by the AggregateReply node.
SYSTEM.BROKER.CLIENTS.DATA	Broker	Used internally for publish/subscribe data
SYSTEM.BROKER.CONFIG.QUEUE	Configuration Manager	Target for messages sent to the Configuration Manager from the Message Brokers Toolkit.

Table 32. Default WebSphere MQ resources (continued)

Resource name	Queue manager	Description
SYSTEM.BROKER.CONFIG.REPLY	Configuration Manager	Target for messages sent to the Message Brokers Toolkit by the Configuration Manager.
SYSTEM.BROKER.CONTROL.QUEUE	Broker	Target for publish/subscribe control requests sent to the broker by applications.
SYSTEM.BROKER.EXECUTIONGROUP.QUEUE	Broker	Target for messages sent by the Configuration Manager to the broker.
SYSTEM.BROKER.EXECUTIONGROUP.REPLY	Broker	Target for response messages from the User Name Server to the broker.
SYSTEM.BROKER.INTER.BROKER.COMMUNICATIONS	Broker	Target for publish/subscribe control messages
SYSTEM.BROKER.INTERBROKER.MODEL.QUEUE	Broker	Model for dynamic publication queues.
SYSTEM.BROKER.INTERBROKER.QUEUE	Broker	Target for publish/subscribe messages sent by neighbor brokers.
SYSTEM.BROKER.IPC.QUEUE	Broker	Target for internal control messages.
SYSTEM.BROKER.MODEL.QUEUE	All	Model for dynamic response queues.
SYSTEM.BROKER.SECURITY.QUEUE	User Name Server	Target for messages to the User Name Server from the Configuration Manager, brokers, and the Message Brokers Toolkit.
SYSTEM.BROKER.SECURITY.REPLY	Configuration Manager and broker	Target for response messages from the User Name Server to its requestor.
SYSTEM.BROKER.SUBSCRIPTIONS.DATA	Broker	Used internally for publish/subscribe data
SYSTEM.BROKER.TIMEOUT.QUEUE	Broker	Target for timeout message stored by the TimeoutControl node.

WebSphere MQ resources

Table 32. Default WebSphere MQ resources (continued)

Resource name	Queue manager	Description
SYSTEM.BROKER.WS.ACK	Broker	Used internally for Web Services client support.
SYSTEM.BROKER.WS.INPUT	Broker	Used internally for Web Services client support.
SYSTEM.BROKER.WS.REPLY	Broker	Used internally for Web Services client support.
SYSTEM.BKR.CONFIG	Configuration Manager	Connection channel for Message Brokers Toolkit clients.

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

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Glossary of terms and abbreviations

This glossary defines WebSphere Message
Broker terms and abbreviations used in this
book. A full product glossary is provided in
the information center. For information
about how to access the information center,
see "Where to find more information" on
page xi.

For information about terms and
abbreviations that are not specific to this
product, see the IBM Terminology Web site.

B

broker. A set of execution processes that host
one or more message flows. Also known as
message broker.

broker domain. A collection of brokers that
share a common configuration, together with the
Configuration Manager that controls them.

C

collective. A set of brokers that are fully
interconnected and form part of a multi-broker
network for publish/subscribe applications.

Configuration Manager. The component that
provides an interface between the Message
Brokers Toolkit and a set of runtime brokers. It
provides brokers with their initial configuration,
and updates them with any subsequent changes.
It maintains the broker domain configuration.

D

deploy. To make operational the configuration
and topology of the broker domain.

Derby. Derby refers to IBM Cloudscape Version
10.0, a database product that is built on the
Derby database from the Apache Software

Foundation. Cloudscape does not modify Derby
in any way, but provides additional function
including installers. Derby database support is
embedded in the broker component on Windows
only.

E

execution group. A named process or set of
processes within a broker in which message
flows are executed. The broker is guaranteed to
enforce some degree of isolation between
message flows in distinct execution groups
because it ensures that they execute in separate
address spaces, or as unique processes.

L

local error log. A generic term that refers to the
logs to which WebSphere Message Broker writes
records on the local system. Also known as
system log.

M

message broker. See broker.

Message Brokers Toolkit. The development
environment that integrates with IBM Rational
Application Developer which is based on the
IBM WebSphere Eclipse Platform.

message flow. A sequence of processing steps
that execute in the broker when an input
message is received. A message flow must
include an input node that provides the source of
the messages that are processed. Message flows
are deployed to a broker for execution.

MRM domain. The domain associated with
messages that are modeled in the Message
Brokers Toolkit.

Glossary

P

point-to-point. A style of messaging application in which the sending application knows the destination of the message. Contrast with publish/subscribe.

principal. An individual user ID (for example, a login ID) or a group. A group can contain individual user IDs and other groups, to the level of nesting supported by the underlying facility.

publish/subscribe. A style of messaging application in which the providers of information (publishers) are de-coupled from the consumers of that information (subscribers) using a broker. See also topic. Contrast with point-to-point messaging.

publisher. An application that makes information about a specified topic available to a broker in a publish/subscribe system.

S

subscriber. An application that requests information about a specified topic from a publish/subscribe broker.

system log. See *local error log*.

T

topic. A character string that describes the nature of the data that is published in a publish/subscribe system.

topology. The brokers and collectives (and connections between them) in the broker domain.

Transformation Services. Message transformation and routing services that extend the capability of the broker.

U

User Name Server. A component that interfaces with operating system facilities to determine valid users and groups.

W

workbench. An active instance of the Message Brokers Toolkit that is associated with a user's workspace. The workbench might also include plug-ins from other products that have been integrated with the base plug-ins of WebSphere Message Broker.

workspace. A store of resources accessed by the Message Brokers Toolkit, typically associated with a user or set of users.

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