WebSphere Message Broker

Installation Guide

Version 6.0

IBM

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> **Note!**
>
> Before using this information and the product it supports, be sure to read the general information under
> Appendix C, "Notices," on page 155.

Fourth edition (December 2006)

This edition applies to version 6, release 0 of IBM WebSphere Message Broker for Multiplatforms (product number
5724-J05), IBM WebSphere Message Broker for z/OS (product number 5655-M74), IBM WebSphere Message Broker
with Rules and Formatter Extension for Multiplatforms (product number 5724-J06), and IBM WebSphere Message
Broker with Rules and Formatter Extension for z/OS (product number 5697-J09), and to all subsequent releases and
modifications until otherwise indicated in new editions.

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About this book

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

This edition of the book is specific to components at the following levels, and
to all subsequent releases and modifications unless otherwise indicated in new
editions:
- Runtime components Version 6.0.0.3
- Message Broker Toolkit Version 6.0.2.0

WebSphere Message Broker for Multiplatforms and WebSphere Message
Broker for z/OS are supported on the following operating systems:
- Multiplatforms:
  - IBM AIX®
  - HP-UX (Itanium® platform)
  - HP-UX (PA-RISC platform)
  - Linux® (POWER™ platform) for iSeries™ and pSeries®
  - Linux (x86 platform)
  - Linux (zSeries® platform)
  - Sun Solaris Operating Environment (SPARC platform)
  - Sun Solaris Operating Environment (x86-64 platform)
  - Microsoft® Windows® XP and Windows 2003
- IBM z/OS

If you have ordered WebSphere Message Broker for Multiplatforms, use this
book to plan your installation, and prepare your systems before you install
this product. Follow the instructions provided to complete an initial
installation, or to upgrade an existing installation. If you have installed all
components on a single system, this book tells you how to verify that your
installation is successful.

If you have ordered WebSphere Message Broker for z/OS, use this book to
plan your installation, and use the *Program Directory for WebSphere Message
Broker for z/OS* or the *Program Directory for WebSphere Message Broker with Rules
and Formatter for z/OS* for system preparation and installation tasks.

This book does not cover configuration or customization tasks on any
operating system; it describes only how to install the product components
onto your computers. Also, it does not provide details about how to install
optional software, or how to remove the product.

About this book

The information center is the primary source of documentation for this product. After you have installed the required components on one or more operating systems, see the information center for instructions about tasks that are not included in this book. You can access the information center from the Message Broker Toolkit when you have installed that component, or you can access it from other locations before installation. See "Where to find more information" on page xii for details of the options that are available.

Physical media and electronic images are available for the installation of WebSphere Message Broker. Physical media are supplied when you order the product. Electronic images are available through IBM Passport Advantage®. You must register with this scheme before you can access the download images. For further information, and to register, access the Passport Advantage Web site:

ibm.com/software/sw-lotus/services/cwepassport.nsf/wdocs/passporthome

This book is divided into four parts:
- Part 1, "Planning," on page 1
- Part 2, "Preparation," on page 49
- Part 3, "Installation," on page 77
- Part 4, "After installation," on page 111

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 appropriate Rules and Formatter Extension CD for your operating system. The Design-time Extension CDs provide extensions to the toolkit, the Run-time Extension CDs provide extensions to the broker runtime components.

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 for z/OS* to install both broker and broker runtime component extensions.

For further information specific to the Rules and Formatter Extension, see the documentation on the supplied Rules and Formatter Extension CD, or access the V6.0\Rules and Formatter directory on the documentation FTP site at:

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

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

The term HP-UX refers to HP-UX (Itanium platform) and HP-UX (PA-RISC platform) where their behavior is common.

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

The term Solaris refers to Solaris (SPARC platform with Solaris 8, Solaris 9, or Solaris 10) and Solaris (x86-64 platform with Solaris 10) where their behavior is common.

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

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

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).

Terms used in this book

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 10 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 159. 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:

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 after installation from the **Help > Help Contents** menu in the Message Brokers Toolkit.

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

- The documentation CD that is included in the product package.

  The information center is provided for Linux (x86 platform) and Windows, and you can start it in both stand-alone 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 the installing_and_managing.htm file on the CD.

- The documentation FTP site:

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

Download file `wmb_help_lin.tgz` for Linux (x86 platform) or `wmb_help_win.zip` for Windows, and follow the instructions in the `installing_and_managing.htm` file that is included in each compressed file. The downloaded information center can also be started in stand-alone 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.

- The online IBM WebSphere Message Brokers Information Center:

  `publib.boulder.ibm.com/infocenter/wmbhelp/v6r0m0/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 file, in US English only, is available from the product support Web site:

`www.ibm.com/software/integration/wbimessagebroker/support/`

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 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:

`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:

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

DB2 Enterprise Server

Access the information center online:

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

Information sources

Cloudscape

Access the information center online:

`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.

Rational Agent Controller
The Rational® Agent Controller documentation is provided on the supplemental CD that contains the code for this product.

WebSphere information on the Web

Follow links on the WebSphere Web site at `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

Summary of changes

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

Changes for this edition

- Support is added for the following platform:
  - HP-UX (Itanium platform)
- Support is added for Java™ Version 1.5 (also known as Java 5) SR2.
- An Extensions, Samples, and Demos CD has been added to the product package to help you appreciate the features of the product.
- Information has been modified to reflect that runtime components have been updated to version 6.0.0.3 and the Message Broker Toolkit has been updated to version 6.0.2.0.
- Minor technical corrections and editorial changes have been made throughout the book.

Changes for the third edition (GC34-6621-02)

- Support is added for the following platforms:
  - Linux (POWER platform) for iSeries and pSeries
  - Solaris (x86-64 platform)
- Support is added for the following operating systems:
  - Linux Red Hat Enterprise Advanced Server V4 (Intel® (32-bit) and zSeries (31-bit))
  - Solaris 10
- Support is added for the following databases:
  - Microsoft SQL Server 2000 accessed from Linux and UNIX platforms
  - Informix Dynamic Server V9.4
- Information has been modified to reflect that runtime components have been updated to version 6.0.0.1.
- Minor technical corrections and editorial changes have been made throughout the book.

Changes

Changes for the second edition (GC34-6621-01)

- Information that concerns the Message Broker Toolkit has been updated to reflect its new version, 6.0.0.1. Instructions for installing on new systems, and for upgrading a current Version 6.0.0.0 installation are provided.
- Installation instructions for systems that have multiple Rational products installed have been updated.
- Minor technical corrections and editorial changes have been made throughout the book.

Part 1. Planning

The first part of this book describes the environment that you need before you can install WebSphere Message Broker. The information here addresses z/OS and distributed systems.

- Chapter 1, "System requirements," on page 3
- Chapter 2, "Coexistence and migration," on page 25
- Chapter 3, "National language support," on page 35
- Chapter 4, "Installation packages," on page 39

Chapter 1. System requirements

Before you install WebSphere Message Broker, check that your system meets both the hardware and software requirements of the product. Details are provided in these sections:
- "Hardware requirements" on page 4
- "Software requirements" on page 8

The product readme file readme.html might contain updates to the information in this chapter. Therefore, always check for later information in the readme file, which is available from these locations:
- Before installation, on the product media.

  The readme file is included in location \readmes*locale*\ (where *locale* identifies country, region, or language, for example en_US) on all of the following disks:
    - On DVD (on Linux (x86 platform) and Windows only)
    - On runtime components Disk 1 (all operating systems)
    - On runtime components Disk 2 and Disk 3 (Windows only)
    - On Message Broker Toolkit Disk 1
- After installation, in *install_dir*\readmes*locale*\ (where *locale* identifies country, region, or language, for example en_US).

The readme file is updated occasionally; access the product support Web site to check that you have the latest level:

www.ibm.com/software/integration/wbimessagebroker/support/

For information about license requirements, see "License requirements" on page 24.

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

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

The Message Broker Toolkit is a required component that can be installed only on Linux (x86 platform) and Windows. Therefore your target systems must include one of these two options. You can install all other components on all supported operating systems.

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 (Itanium platform)	Hewlett-Packard Itanium machines
HP-UX (PA-RISC platform)	Hewlett-Packard HP-9000 PA-RISC 2.0 processor machines[2]
Linux (POWER platforms)	IBM e(logo)server iSeries Server using the IBM Integrated xSeries Server or Linux PowerPC IBM e(logo)server pSeries IBM RS/6000 processor machines
Linux (x86 platform)	IBM e(logo)server xSeries® or equivalent Intel based systems[3]
Linux (zSeries platform)	IBM e(logo)server zSeries 600 or e(logo)server 700 Server
Solaris (SPARC platform)	Sun Microsystems SPARC processor machines
Solaris (x86-64 platform)	Sun Microsystems AMD64 or equivalent EM64T based systems
Windows	IBM e(logo)server xSeries or equivalent Intel based systems 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 PA-RISC 1.1 chips are no longer supported.
3. The Message Broker Toolkit requires an Intel Pentium® III (or higher) processor-based computer with a processor speed of at least 700 MHz. This specification is the minimum supported level; for improved performance, use a 2 GHz processor.

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

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 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. If you plan to install from CD, your system requires a CD reader. For details of the CDs and DVDs supplied, see Chapter 4, "Installation packages," on page 39. If you prefer, you can download and install from images available from Passport Advantage, if you are registered with this scheme.

Memory and disk space

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

Distributed systems

- 512 MB of RAM are required to support runtime operations (1 MB equals approximately 1 000 000 bytes).

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

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

  Check that your system has at least the space shown in Table 2 on page 6, which provides guidance for both permanent product requirements and temporary space. If you install just one or two of the runtime components, the amount of storage that is required is reduced by only a small amount. Check that these requirements have not been updated in the latest product readme file readme.html (the location of this file is described at the beginning of this chapter).

  If the installation directory and the temporary space are on the same partition or drive, add together the two figures to check that you have enough space available. If you do not, increase the available storage or change the location of either the temporary space or the installation directory. The temporary files are deleted when installation has completed.

Memory and disk space

– On AIX, HP-UX, and Linux systems, the default temporary space directory is /tmp.

– On Solaris systems, the default temporary space directory is /var/tmp.

– On Windows, the default temporary space directory is pointed to by the TEMP system variable. On some systems, the variable TMP exists and is used before TEMP, so you might need to check or change the setting of both these variables.

If you are installing the Message 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 109.

The installation wizard displays the requirements for permanent space, but not for temporary space. If the figure that the installation wizard displays is greater than the figure shown in Table 2, check that your system has sufficient space before you continue with the installation.

Table 2. Disk space requirements

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

Notes:

1. Requirements vary slightly on different Linux and Solaris offerings; maximum figures are shown.

2. The Message Broker Toolkit is available on Linux (x86 platform) and Windows only. The maximum space shown as the requirement in the installation directory is required by the installation wizard; when it completes, the final allocation of permanent space is approximately 3.85 GB.

- If you install one of the database products supplied with WebSphere Message Broker, you need additional disk space:
  - DB2 Enterprise Server requires approximately 300 MB. This specification is for a Compact installation, which provides sufficient function for WebSphere Message Broker; if you choose a Typical or Custom installation, additional storage might be required (see "Databases" on page 10).
  - 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 databases to store data that is accessed during message processing, additional space is required on those systems.

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

Communications

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 10
- "Additional required products" on page 16
- "Optional software and support" on page 21

Operating system requirements

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.

Table 3. Operating system requirements

Operating system	Requirements[1]
AIX	• AIX Version 5.2 with Maintenance Level 3 • AIX Version 5.3 with Maintenance Level 2
HP-UX (Itanium platform)	• HP-UX 11i V2 (11.23) for IPF
HP-UX (PA-RISC platform)	• HP-UX 11i V1 (B.11.11) (plus December 2003 QPK)
Linux (POWER platform)[2]	• Linux PowerPC Red Hat Enterprise Linux Advanced Server Version 4 (plus Update 2) • Linux PowerPC SUSE Linux Enterprise Server (SLES) 9 RC5 or above
Linux (x86 platform)[2+3+4]	• Linux Intel (32-bit) Red Hat Enterprise Linux Advanced Server Version 3.0 (plus Update 2) • Linux Intel (32-bit) Red Hat Enterprise Linux Advanced Server Version 4.0 (plus Update 2) • Linux x86 (64-bit) Red Hat Enterprise Linux Advanced Server Version 4.0 (plus Update 2) • Linux Intel (32-bit) SUSE Linux Enterprise Server (SLES) 9
Linux (zSeries platform)[2]	• Linux zSeries (31-bit) Red Hat Enterprise Linux Advanced Server Version 3.0 (plus Update 2) • Linux zSeries (64-bit) Red Hat Enterprise Linux Advanced Server Version 4.0 (plus Update 2)[5] • Linux zSeries (31-bit) SUSE Linux Enterprise Server (SLES) 9 • Linux zSeries (64-bit) SUSE Linux Enterprise Server (SLES) 9[5]
Solaris (SPARC platform)	• Solaris 8 (plus SunSolve recommended Patch Cluster level and Patch ID 111308-05)[6] • Solaris 9 (plus SunSolve recommended Patch Cluster level) • Solaris 10 (plus SunSolve recommended Patch Cluster level)[7]

Table 3. Operating system requirements (continued)

Operating system	Requirements[1]
Solaris (x86-64 platform)	• Solaris 10 (plus SunSolve recommended Patch Cluster level)[7]
Windows	• Windows XP Professional (plus SP2) • Windows Server 2003 Standard Edition • Windows Server 2003 Enterprise Edition
z/OS[8]	• z/OS Version 1.5 (or later)

Notes:

1. Always check the readme.html file for the latest information about supported software.

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

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

   All these libraries are available with the operating systems media.

3. The Message Broker Toolkit is supported on Linux Intel (32-bit) Red Hat Enterprise Linux Advanced Server Version 3.0 and Linux Intel (32-bit) SUSE Linux Enterprise Server (SLES) 9 only.

   Linux x86 (64-bit) Red Hat Enterprise Linux AS V4.0 supports broker components only. WebSphere Message Broker is a 32-bit application and requires 32-bit C and C++ libraries, which are available through the Red Hat Enterprise Linux compatibility hardware architecture runtime support options.

4. On Linux (x86 platform), you might require the following additional packages that are available with the operating system.

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

   These packages are not required for console or silent installations.

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

Operating system requirements

5. On Linux (zSeries platform), WebSphere Message Broker operates in 31-bit mode on 64-bit versions. Ensure that 31-bit versions of the C and C++ libraries, WebSphere MQ, and DB2 are installed.

6. This patch provides multithreaded malloc support on Solaris 8. The standard system malloc library is optimized for single-threaded applications, but the broker typically runs many threads and requires the multithreaded mtmalloc. Therefore this patch must be applied for successful broker operation.

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

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

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. Table 4 on page 12 shows the levels of database that are supported on each operating system.

DB2 Enterprise Server is supplied with WebSphere Message Broker for Multiplatforms. You can install and use DB2 Enterprise Server on all supported operating systems. 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 drivers 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

install using the Windows Launchpad, 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. If you install WebSphere Message Broker using the Windows Launchpad, you can install DB2 Enterprise Server at the same time.

Microsoft SQL Server, Oracle, and Sybase Adaptive Server Enterprise (ASE) databases are also supported, as shown in Table 4 on page 12. 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 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 those supported for a broker database, with the addition of DB2 on OS/400 and Informix[®] on most operating systems, as shown in Table 4 on page 12.

You can exploit stored procedure support on all supported databases except Informix.

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 14.

Databases

Operating system	DB2[1]	SQL Server	Oracle[1]	Sybase[1]	Informix[2]
AIX	8.2[3]	2000 SP3a[4]	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10G Release 1 10G Release 2	12.5	Dynamic Server Version 9.4 with UC7 fix pack Client SDK Version 2.90 with UC4 fix pack
HP-UX (Itanium platform)	8.2[3]	Not applicable	10G Release 2	Not supported	Not supported
HP-UX (PA-RISC platform)	8.2[3]	2000 SP3a[4]	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10G Release 1 10G Release 2	12.5	Dynamic Server Version 9.4 with UC7 fix pack Client SDK Version 2.90 with UC4 fix pack
Linux (POWER platform)	8.2[3+5]	Not applicable	Not supported	Not supported	Not supported
Linux (x86 platform)	8.2[3+6]	2000 SP3a[4]	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10G Release 1 10G Release 2	12.5	Dynamic Server Version 9.4 with UC7 fix pack Client SDK Version 2.90 with UC4 fix pack
Linux (zSeries platform)	8.2[3+7]	Not applicable	Not supported	Not supported	Not supported
OS/400[8]	8.2	Not applicable	Not applicable	Not applicable	Not applicable
Solaris (SPARC platform)	8.2[3+9+10]	2000 SP3a[4]	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10G Release 1 10G Release 2	12.5.3	Dynamic Server Version 9.4 with UC7 fix pack Client SDK Version 2.90 with UC4X8 fix pack
Solaris (x86-64 platform)	8.2[3+9]	Not applicable	10G Release 1 10G Release 2	12.5.3	Not supported
Windows	8.2[3+11]	2000 SP3a	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10G Release 1[12] 10G Release 2[12]	12.5	Dynamic Server Version 9.4 with UC7 fix pack Client SDK Version 2.90 with UC4 fix pack
z/OS	7.1[13] 8.1[13]	Not applicable	Not supported	Not applicable	Not supported

Notes:

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

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

   XA coordination for messages in the MRM domain on Windows requires DB2 Version 8 FixPak 10 (or later).

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

2. Informix is supported only as a user database that is accessed by message flows. The client SDK only is required on each broker system; install the Dynamic Server only on the system on which you create databases. You cannot create a broker database as an Informix database; this option is not supported. 64-bit databases, XA coordination, and Large Objects (LOBs) are not supported.

   If you install the client SDK on Solaris (SPARC platform), request fix pack UC4X8 from Informix.

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

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

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

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

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

   - DB2 is the only database that is supported on this operating system.
   - If you have installed DB2 V8 FP9, you must use a 32-bit database instance. If you have a later release of DB2, you can use both 32-bit and 64-bit database instances.
   - XA is not supported.

Databases

7. If you have installed Linux zSeries (64-bit) Red Hat Enterprise Linux AS V4.0, and you install a 31-bit DB2 Runtime Client, the client must be at DB2 V8 FP10 or higher, and no other DB2 product can be installed on the same system. Therefore, the 64-bit DB2 server must be located on a separate Linux zSeries image from the one in which the broker is installed.

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

9. Solaris 10 on Solaris (SPARC platform) requires DB2 Version 8 FixPak 9; Solaris 10 on Solaris (x86-64 platform) requires DB2 Version 8 FixPak 11.

10. On Solaris (SPARC platform), XA coordination is restricted to 32-bit brokers only.

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

12. On Windows, for XA coordination with Oracle 10G you must install Patch Set 3 for Oracle 10G (10.1.0.4.0).

13. 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 for z/OS* for further details.

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 defined and created 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 Version 5.2 or Version 5.3.
- On Linux, UNIX, and Windows you can connect using DB2 Connect™. On Windows only, you can also use iSeries Access for Windows.
- Globally coordinated (XA) transactions are not supported.

   – New Era of Network nodes within message flows cannot access
     an iSeries database.
   – You can call stored procedures only if access to the remote
     database is provided by DB2 Connect.

DB2 database on zSeries

   – Database support on zSeries (z/OS) is DB2 only.
   – You must use DB2 Connect on Linux, UNIX, and Windows.
   – Large database objects (LOBs) are supported by DB2 Universal
     Database for z/OS Version 7.1 (or later).
   – New Era of Network nodes within message flows cannot access
     a database on zSeries.

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

WebSphere Information Integrator support

   – Message flows on all distributed systems brokers can access
     databases on WebSphere Information Integrator for Linux, UNIX,
     and Windows Version 8.2.
   – Message flows on z/OS can access WebSphere Information
     Integrator Classic Federation for z/OS Version 8.2. This support
     provides direct SQL connectivity with the following z/OS data
     sources:
     - IMS™
     - VSAM
     - ISAM
     - Sequential files
     - CA-IDMS
     - CA-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 to determine the best
options for your specific environment and requirements, and for information
about how to configure remote database access.

Additional products

Additional required products

WebSphere Message Broker requires additional software products to run successfully:

- "WebSphere MQ"
- "Java Runtime Environment" on page 18
- "Rational Application Developer (RAD)" on page 19
- "Browsers" on page 21

WebSphere MQ

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

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

Table 5. WebSphere MQ requirements

System	Requirements
AIX	WebSphere MQ Version 5.3.0.1 (or later)[1][2][3]
HP-UX (PA-RISC platform)	
Linux (x86 platform) with Red Hat Enterprise Linux AS V3.0 or SUSE Linux Enterprise Server 9	
Linux (zSeries platform) with Red Hat Enterprise Linux AS V3.0 or SUSE Linux Enterprise Server 9	
Solaris (SPARC platform)	
Windows	
Linux (POWER platform)	WebSphere MQ Version 6.0.0.0 (or later)[1][2][3]
Linux (x86 platform) with Linux Intel (32-bit) Red Hat Enterprise Linux AS V4.0	
Linux (x86 platform) with Linux x86 (64_bit) Red Hat Enterprise Linux AS V4.0	
Linux (zSeries platform) with Red Hat Enterprise Linux AS V4.0	

Table 5. WebSphere MQ requirements (continued)

System	Requirements
HP-UX (Itanium platform) Solaris (x86-64 platform)	WebSphere MQ Version 6.0.1.1 (or later)[1][2]
z/OS[4]	WebSphere MQ Version 5.3.1 (or later) with MQ Java Classes feature[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 Java Messaging is not installed.

   If you choose to install WebSphere MQ Version 6.0 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 at least the server and Java Messaging components.

   If you start the WebSphere MQ Version 6.0 installation program directly on any operating system, including Windows, you must select a custom installation and include at least the server and Java Messaging components.

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

   Other components are optional for use with WebSphere Message Broker.

2. WebSphere Message Broker requires a full WebSphere MQ product and cannot function correctly with the WebSphere MQ product that is included with WebSphere Application Server Version 5 (known as Embedded Messaging). For further clarification, see "Optional software and support" on page 21.

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.

Additional products

- If you develop message flows that include the MQOptimizedFlow node, you must install WebSphere MQ Version 5.3.0.10 (or later) on each affected broker system.
- Support for JMS SSL requires WebSphere MQ Version 5.3.0.11 (or later).
- 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.
- 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 deployed to a single execution group.
- If you want to exploit 64-bit execution groups on systems on which this support is available, you must install WebSphere MQ Version 6.0 (or later) on each affected broker system.

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

For details of WebSphere MQ products and supported versions, see the WebSphere Business Integration software requirements Web site:

`www.ibm.com/software/integration/websphere/mqplatforms/supported.html`

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

Distributed systems

- Java Version 1.4.2 is embedded in the product components. This version is the product default; no configuration is necessary if you require this level of support. All components that are installed and created on this system use Java 1.4.2.
- Java Version 1.5 SR2 is supplied with the product components. If you want product components to use Java 1.5 SR2, configure your system to access this optional version. If you make this change, all components that are installed and created on this system will use Java 1.5 SR2.

z/OS
- Java Version 1.4.2 (Fix Pack 2) is supported but must be separately installed. You can configure the profile of each component that you install and create on this system to use Java 1.4.2 if appropriate.
- Java Version 1.5 SR2 (32-bit) is supported but must be separately installed. You can configure the profile of each component that you install and create on this system to use Java 1.5 SR2 if appropriate.

For additional information, see the Java 2 on z/OS Web site at:

`www.ibm.com/servers/eserver/zseries/software/java/`

Details of how to configure your systems to use a particular level of Java are provided in the information center.

Rational Application Developer (RAD)
The Message Broker Toolkit includes components of the Rational Application Developer (RAD) integrated development environment. These components provide a common Rational framework.

All Rational software products that are installed on a single system share the same common framework. This technique is known as *shell-sharing*. The first Rational product that you install installs the common framework. When you install further Rational products, the existing framework is used and only product-specific plug-ins are installed. Shell-sharing is enforced and cannot be deactivated. When you install Message Broker Toolkit, the RAD framework is installed only if another Rational product does not already exist on the system.

The common framework saves space and installation time. Workbenches that are associated with the installed products are integrated together so that you can view and access all the supported functions in a single session.

Shell-sharing demands that all products that you install are based on a compatible level of Rational. If a product that you are installing is not based on a compatible level, the installation reports that it cannot work with the existing Rational installation, and tells you that you must upgrade the existing installation.

The Message Broker Toolkit Version 6.0.2.0 includes components from RAD Version 6.0.1.1 and is compatible with that release and later Version 6.0.1 updates. It requires the following minimum supported levels of Rational products if one or more are installed on the same system:
- Rational Application Developer (RAD) Version 6.0.1.1 with iFix001, iFix002, and iFix003a
- Rational Software Architect (RSA) Version 6.0.1.1

Additional products

- WebSphere Integration Developer (WID) Version 6.0.1.0
- WebSphere Developer for zSeries (WDz) Version 6.0.1.0

The Message Broker Toolkit Version 6.0.2.0 cannot coexist with Rational products based on earlier versions (Version 6.0, for example 6.0.0.1).

Before you install the Message Broker Toolkit, see "Integrating with other Rational products" on page 99 for information about how to resolve Rational product incompatibilities.

The Message Broker Toolkit Version 6.0.2.0 also requires, and includes, J2EE Connector architecture (J2C) Version 6.0.1.3.

If you install the Message Broker Toolkit on Linux (x86 platform), and you later install another Rational product, the default directory that is 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 Rational product into a different directory, you will not be able to upgrade your product. This restriction also applies if you install the toolkit onto a system on which another Rational product is already installed; you must install the toolkit into the existing product directory.

This limitation does not apply on Windows; you can install each Rational product, including the toolkit, into any installation directory. Some files from products installed later might be stored in the directory structure created for the product that you created first.

The Rational framework and RAD are not required for any of the runtime components.

The Language Pack feature: If you work in one or more locales other than US English, you can install the Language Pack feature that is offered with all Rational products. This feature provides additional support for the display of messages, menus, properties, and so on, in the nine locales other than US English that are listed in Chapter 3, "National language support," on page 35.

When you install a product that is based on the Rational framework, you can select or clear an option to install the additional Language Pack feature according to your locale requirements. If locales other than US English are detected when you install the Message Broker Toolkit, the Language Pack feature option is selected; if none are detected, the option is cleared.

If you select the Language Pack feature for one Rational product, you must select it for all subsequent Rational products; if you do not, the installation fails because the later installation does not match the features installed for the

first installation. If you have not selected it for previous Rational product installations, do not select it when you install the Message Broker Toolkit. If you are upgrading the Message Broker Toolkit to Version 6.0.2.0, select the option that you selected when you installed the previous version.

If you decide you require the Language Pack feature on a product after you have installed it, for example because you want to install the Language Pack feature on a second Rational product, you can do so; instructions are provided in "Adding the Language Pack feature after installation" on page 109.

Browsers

Documentation and online help is provided in an information center that is accessed from the Message Broker Toolkit. For best viewing results, use Internet Explorer Version 6.0 (or later) on Windows, or Mozilla 1.4.2 (or later) on Linux (x86 platform).

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

Optional software and support

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.

You do not need to install any of these products to complete the verification procedure described in Chapter 11, "Configuring and verifying your system," on page 113.

Rational Agent Controller

Rational Agent Controller (RAC) Version 5.0.2.1 or Version 6.0.1 is required to support message flow debugging. This support is not available on HP-UX (Itanium platform).

If you want to use the debugger, you must install RAC on each system on which you start a broker that hosts message flows. The RAC component that you install on the broker is a server that communicates with the RAC client that is embedded in the Message Brokers Toolkit.

RAC Version 6.0.1 is supplied on a supplemental CD, and on DVD (on Linux (x86 platform) and Windows only); see "Supplemental CDs" on page 47. 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.

Additional libraries or packages might be required on Linux platforms; these are described in "Operating system requirements" on page 8.

If you have previous versions of RAC installed, consider the following points:

- Although you can install WebSphere Message Broker Version 6.0 on a system on which Version 5.0 is already installed, you cannot install RAC Version 6.0 on a system on which RAC Version 5.0 is installed. If RAC Version 5.0 is running, stop it, and either uninstall it or upgrade it to Version 6.0.
- If your broker domain includes WebSphere Message Broker Version 6.0 brokers and Version 5.0 brokers, check that RAC Version 5.0.2.1 is installed on the Version 5.0 brokers and do not upgrade it to Version 6.0.1. For details of RAC required with Version 5.0 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 DVD (on Linux (x86 platform) and Windows only) and on supplemental CD; see "Supplemental CDs" on page 47. For more information about how you can connect your WebSphere MQ Everyplace clients with brokers, see the information center.

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.

WebSphere Application Server

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

WebSphere Message Broker interacts with WebSphere Application Server Version 5 and Version 6:

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

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

Adobe Flash Player

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

`www.adobe.com/products/flashplayer/`

For Linux (x86 platform), Adobe Flash Player plug-ins are available for the following browsers:
- Mozilla Version 1.0 (or later)
- Firefox Version 0.9.3 (or later)
- Konqueror Version 3.2.2 (or later)

For Windows, Adobe Flash Player plug-ins are available for the following browsers:
- Internet Explorer Version 4.0 (or later)
- Netscape Navigator Version 4 (or later)
- Netscape Version 6.3 (or later)
- AOL Version 7
- Mozilla Version 1.0 (or later)
- Opera Version 6

Internet Protocol version 4, version 6

Internet Protocol version 4 and version 6 are both supported in all situations in which an IP address is valid.

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 that are displayed by the installation wizard. 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.

Contact your IBM representative if you want information about licenses on z/OS, or further details about license agreements, or if you want to make further purchases.

Chapter 2. Coexistence and migration

When you install WebSphere Message Broker Version 6.0, 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 6.0 on a system that has another installation of Version 6.0, and previous product versions, on all operating systems.

If you have more than one version installed, the versions can coexist, and you can migrate components to Version 6.0 whenever you choose. The following sections provide further details:
- "Coexistence"
- "Migration and upgrade" on page 32

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 65.

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 the installation of a previous modification level or fix pack over a more recent 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 more recent one.

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

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 into the specified directory, the installation wizard indicates this situation 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 task with a custom installation. For example, if a Version 6.1 is released, you can force this version 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 default value to your chosen value.

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

- If you install the same version and release more than once, for example 6.0, the native installer support cannot manage these installations in the normal way. See "Native software installer support" on page 30 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.

During and after installation, files are also stored in the working directory, which is associated with 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 setting 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=6.0.0.3`

(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, a space, 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. Before you uninstall, back up any resources (for example, databases) that you want to return to a previous state.

Because the version and release are included in the directory structure when you complete a typical installation, you can also install Version 6.0 and later releases on the system on which you have already installed either Version 2.1 or Version 5.0. The Version 6.0 installation can coexist with the Version 5.0 (or Version 2.1) installation; you can operate the two configurations independently.

If you use custom installations for Version 6,0 and later releases, you can specify a unique installation directory for each release, and therefore achieve coexisting releases on a single system.

However, you cannot install Version 2.1 or Version 5.0 if you have already installed Version 6.0; the installation programs fail. If you want multiple versions on a single system, you must install Version

Coexistence

2.1 or Version 5.0 before you install Version 6.0. Coexistence of Version 2.1 with Version 5.0 is not supported.

The number of installations of Version 6.0, or later, is limited only by the availability of system resources.

This coexistence means that you can migrate to Version 6.0 from an earlier version in a controlled manner, and do not have to migrate all components at the same time. For more information, see "Migration and upgrade" on page 32.

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 different version and release levels, including Version 2.1 and Version 5.0. The number of installations is restricted only by the availability of system 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 file system paths, see the *Program Directory for WebSphere Message Broker for z/OS* or the *Program Directory for WebSphere Message Broker with Rules and Formatter for z/OS*.

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 the following directory:

/opt/ibm/MessageBrokersToolkit/6.0

Only one instance of the Message Broker Toolkit can be installed on a single system, but can coexist on that system with multiple installations of runtime components, subject to the restrictions described for those components.

Previous versions of the Message Broker Toolkit were not available on Linux.

Windows

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

`C:\Program Files\IBM\MessageBrokersToolkit\6.0`

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 Windows file
systems. This limit 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.

The Message Broker Toolkit Version 6.0 can coexist with the
Message Brokers Toolkit for WebSphere Studio Version 5.0 or
Version 5.1 (but not both). Only one instance of the Message
Broker Toolkit of each version can be installed on a single
system.

The Message Broker Toolkit Version 6.0 can coexist with a
Version 2.1 Control Center.

The Message Broker Toolkit Version 6.0 can coexist with
multiple installations of runtime components, subject to the
restrictions described for those components.

If you have installed a previous version of the Message Broker Toolkit
(that is, either Version 6.0.0.0, 6.0.0.1, or 6.0.0.2) and your toolkit users
operate in a team environment, and share resources with each other,
compatibility problems might be encountered in some circumstances
unless all members of the team upgrade to Version 6.0.2.0 at the same
time.

Message Broker Toolkit Version 6.0.2.0 includes enhanced function in
the Mapping node; if a toolkit user saves a message flow that uses
this new function, that message flow can no longer be opened or
edited by a user with a previous version of the toolkit, for example
Version 6.0.0.2. No other nodes are affected by this change.

If this situation might arise in your environment, all members of the
team who are working on the same projects must upgrade to Version
6.0.2.0 to ensure continued access to these resources.

Coexistence

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.

- On Linux and UNIX systems, you must run the profile file `mqsiprofile` to set up the correct environment before you run other WebSphere Message Broker commands, for example, **mqsicreatebroker**. The profile file is stored in *install_dir*/bin.

  If you add the profile file to your system logon profile, it is run automatically whenever you log on.

- On Windows, a command console is available for each installation and you must invoke commands in the window for a particular installation.

  If you prefer, you can run the `mqsiprofile.cmd` file, which is stored in *install_dir*\bin.

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.

This requirement is not applicable on z/OS systems.

For more details about `mqsiprofile`, see Chapter 12, "What's next," on page 121.

Native software installer support

If you install the same version and release (for example, 6.0) on a single system more than once, 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*vr*, for example mqsi60. Subsequent installations at the same *vr* level are displayed 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*vr*, for example mqsi60. Subsequent installations at the same *vr* level are recorded as mqsi*vr*-2, and so on.

Windows

The most recent installation that you completed for any given version and release is displayed 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 that you completed on the system are not reinstated in that view.

Migration and upgrade

Because you can install WebSphere Message Broker Version 6.0 on the same system as previous versions and other installations of Version 6.0, you are not required to complete any migration tasks before you install Version 6.0.

WebSphere Message Broker Version 6.0 can coexist with any 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 6.0, 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 migration section in the information center.

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

Upgrading runtime components to Version 6.0.0.3

If you are upgrading to Version 6.0.0.3 from Version 6.0.0.0, Version 6.0.0.1, or Version 6.0.0.2, you have a choice of how to complete the task. These options are summarized below. Further details, including potential advantages, are described in Chapter 9, "Installing runtime components," on page 89.

Runtime components at Version 6.0.0.3, or later, cannot interact with the Message Broker Toolkit at Version 6.0.0.0. If you upgrade runtime components from Version 6.0.0.0, you must also upgrade your toolkit.

Select from the following options:
1. Use the CDs or DVDs for Version 6.0.0.3 (dated March 2007).

   Upgrade an existing Version 6.0 installation in its current location or install Version 6.0.0.3 at another location.
2. Access the download images on Passport Advantage, if you are registered with this scheme.

   Upgrade an existing Version 6.0 installation in its current location or install Version 6.0.0.3 at another location.

Upgrading the Message Broker Toolkit to Version 6.0.2.0

If you are upgrading to Version 6.0.2.0 from Version 6.0.0.0, Version 6.0.0.1, or Version 6.0.0.2, you have a choice of how to complete the task. These options are summarized below. Further details, including potential advantages, are described in Chapter 10, "Installing the Message Broker Toolkit," on page 95.

The Message Broker Toolkit Version 6.0.2.0 interacts with runtime components at Version 6.0.0.0 and later.

If you have other Rational products installed on this system, always check that these products are at compatible levels before upgrading the Message Broker Toolkit. See "Rational Application Developer (RAD)" on page 19 for further details about integration with other Rational products.

The following options are available to upgrade your existing installation at Version 6.0.0.0, Version 6.0.0.1, or Version 6.0.0.2, in its current location:

1. Use the Rational Product Updater (RPU).

   Download the compressed file images that you require to a system somewhere in your network, and set up a common resource for multiple users to upgrade your existing Version 6.0 Message Broker Toolkit in its current location. Alternatively, individual users can access the RPU and install updates directly from the Internet.

   If you already have Version 6.0.0.2 installed, delta upgrade packages are available. The delta packages are much smaller; use these to reduce download and installation time.

2. Use the CDs or DVDs for Version 6.0.2.0 (dated March 2007).

3. Access the download images on Passport Advantage, if you are registered with this scheme.

Migration and upgrade

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 the associated 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 box 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 products 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 (POWER platform), 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 physical media package, which depend on the product that 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 41.
- A DVD that contains all required and optional code for Windows. The structure of the DVD content is described in "DVD contents" on page 41.
- A set of CDs for installation of runtime components and required products on all operating systems. They are listed in Table 8 on page 43.
- A set of CDs for installation of the Message Broker Toolkit on both Linux (x86 platform) and Windows. These are listed in Table 9 on page 46.
- Supplemental CDs. These CDs contain additional products that you might choose to install, and are listed in Table 10 on page 47. For further information about why these products might be required, see "Optional software and support" on page 21.
- If you have ordered **WebSphere Message Broker with Rules and Formatter Extension for Multiplatforms**, your package includes the set of CDs shown in Table 11 on page 48. The Rules and Formatter extension code is not included on DVD; you must install this extension from CD.

Electronic images are also provided for WebSphere Message Broker for Multiplatforms on the Passport Advantage Web site. The images that are available exactly mirror the physical media that are described in this chapter. Except where specifically stated otherwise in this book, you can use the images in the same way as the physical CDs or DVDs.

Installation packages

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 that contains all required and optional code for Linux (x86 platform). The structure of the DVD content is described in "DVD contents" on page 41.
- A DVD that contains all required and optional code for Windows. The structure of the DVD content is described in "DVD contents" on page 41.
- A set of CDs for installation of runtime components and required products on Linux (x86 platform) and Windows. They are included in Table 8 on page 43.
- A set of CDs for installation of the Message Broker Toolkit on Linux (x86 platform) and Windows. These are listed in Table 9 on page 46.
- Supplemental CDs. These CDs contain additional products that you might choose to install. These CDs are listed in Table 10 on page 47. For further information about why these products might be required, see "Optional software and support" on page 21.
- 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 for z/OS*.

Electronic images are available on request for WebSphere Message Broker for z/OS. Contact your IBM representative for further information and assistance.

DVD contents

DVDs (type DVD-R, size DVD-5) are supplied for Linux (x86 platform) and Windows only. The DVD labels are WebSphere Message Broker V6.0 Linux x86 and WebSphere Message Broker V6.0 Windows. The release date on the DVD labels is March 2007.

These packages are marked with the symbol .

The DVDs contain code for the following products:
- WebSphere Message Broker Version 6.0.0.3 runtime components
- Message Broker Toolkit Version 6.0.2.0
- WebSphere MQ Version 6.0
- DB2 Enterprise Server Version 8.2
- DB2 Run-Time Client Version 8.2 (Windows only)
- Rational Agent Controller Version 6.0.1

If you install on Windows using the Launchpad (described in Chapter 8, "Installing with the Windows Launchpad," on page 79), the Launchpad navigates the DVD to find the products and components that you have chosen to install, and 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 42 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.

DVD contents

Table 7. DVD contents

Directory	Description
\ (root)	• Runtime components Version 6.0.0.3 installation files • (Windows only) Launchpad and Quick Tour[1]
\DB2_Enterprise_Server_V8.2	DB2 Enterprise Server Version 8.2
\DB2_Runtime_Client_V8.2	(Windows only) DB2 Runtime Client Version 8.2
\ibmjre	(Windows only) Java Runtime Environment
\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	Message Broker Toolkit Version 6.0.2.0 installation images
\Rational_Agent_Controller_V6	Rational Agent Controller Version 6.0.1 installation images
\readmes	WebSphere Message Broker readme.html files (US English and translations)
\sample-scripts	Sample response files for installing and uninstalling
\WebSphere_MQ_V6.0	WebSphere MQ installation images

Notes:

1. This item is a stand-alone 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 8 are supplied for installation of runtime components and associated products.

The packages are marked with the symbol .

The release date on the CD labels for these components is March 2007 unless otherwise stated.

Table 8. 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 Version 6.0.0.3
	WebSphere MQ for AIX V6.0 (Runtime Disk 2)	Product code Release date October 2005
	DB2 V8.2 for WebSphere Broker products - AIX (Runtime Disk 3) - English/French/German/ Italian	Product code and documentation Release date October 2005
	DB2 V8.2 for WebSphere Broker products - AIX (Runtime Disk 3) - English/Spanish/Brazilian Portuguese	Product code and documentation Release date October 2005
	DB2 V8.2 for WebSphere Broker products - AIX (Runtime Disk 3) - English/Japanese/Korean/ Simplified Chinese/Traditional Chinese	Product code and documentation Release date October 2005
HP-UX (Itanium platform)	WebSphere Message Broker V6.0 HP-UX (Runtime Disk 1)	Product code Version 6.0.0.3
	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
HP-UX (PA-RISC platform)	WebSphere Message Broker V6.0 HP-UX (Runtime Disk 1)	Product code Version 6.0.0.3
	WebSphere MQ for HP-UX V6.0 (Runtime Disk 2)	Product code Release date October 2005
	DB2 V8.2 for WebSphere Broker products - HP-UX (Runtime Disk 3)	Product code and documentation Release date October 2005

Runtime component CDs

Table 8. CDs supplied for WebSphere Message Broker for Multiplatforms runtime components and associated products (continued)

Operating System	CD label	Description
Linux (POWER platform)	WebSphere Message Broker V6.0 Linux (POWER platform) (Runtime Disk 1)	Product code Version 6.0.0.3
	WebSphere MQ for Linux (POWER platform) V6.0 (Runtime Disk 2)	Product code Release date April 2006
	DB2 V8.2 for WebSphere Broker products - Linux (POWER platform) (Runtime Disk 3)	Product code and documentation Release date April 2006
Linux (x86 platform)	WebSphere Message Broker V6.0 Linux x86 (Runtime Disk 1)	Product code Version 6.0.0.3
	WebSphere MQ for Linux x86 V6.0 (Runtime Disk 2)	Product code Release date October 2005
	DB2 V8.2 for WebSphere Broker products - Linux x86 (Runtime Disk 3)	Product code and documentation Release date October 2005
Linux (zSeries platform)	WebSphere Message Broker V6.0 Linux zSeries (Runtime Disk 1)	Product code Version 6.0.0.3
	WebSphere MQ for Linux zSeries V6.0 (Runtime Disk 2)	Product code Release date October 2005
	DB2 V8.2 for WebSphere Broker products - Linux zSeries (Runtime Disk 3)	Product code and documentation Release date October 2005
Solaris (SPARC platform)	WebSphere Message Broker V6.0 Solaris SPARC (Runtime Disk 1)	Product code Version 6.0.0.3
	WebSphere MQ for Solaris SPARC V6.0 (Runtime Disk 2)	Product code Release date October 2005
	DB2 V8.2 for WebSphere Broker products - Solaris SPARC (Runtime Disk 3)	Product code and documentation Release date October 2005

Table 8. CDs supplied for WebSphere Message Broker for Multiplatforms runtime components and associated products (continued)

Operating System	CD label	Description
Solaris (x86-64 platform)	WebSphere Message Broker V6.0 Solaris (x86-64 platform) (Runtime Disk 1)	Product code Version 6.0.0.3
	WebSphere MQ for Solaris (x86-64 platform) V6.0 (Runtime Disk 2)	Product code Release date April 2006
	DB2 V8.2 for WebSphere Broker products - Solaris (x86-64 platform) (Runtime Disk 3)	Product code and documentation Release date April 2006
Windows	WebSphere Message Broker V6.0 Windows (Runtime Disk 1)	• Runtime components installation files Version 6.0.0.3 • 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 item is a stand-alone executable version of the Quick Tour.
3. These items are identical to equivalent items on the DVD, as described in "DVD contents" on page 41.

Message Broker Toolkit CDs

The CDs shown in Table 9 are supplied for the Message Broker Toolkit installation. The product code includes the information center.

The packages are marked with the symbol [icon] .

The release date on the CD labels for this component is March 2007.

Table 9. CDs supplied for Message Broker Toolkit

Operating System	CD label	Description
Linux (x86 platform)	WebSphere Message Broker Toolkit V6.0 Disk 1 (Linux x86)	Product code Version 6.0.2.0
	WebSphere Message Broker Toolkit V6.0 Disk 2 (Linux x86)	Product code
	WebSphere Message Broker Toolkit V6.0 Disk 3 (Linux x86)	Product code
	WebSphere Message Broker Toolkit V6.0 Disk 4 (Linux x86)	Product code
	WebSphere Message Broker Toolkit V6.0 Disk 5 (Linux x86)	Product code
Windows	WebSphere Message Broker Toolkit V6.0 Disk 1 (Windows)	• Product code Version 6.0.2.0 • Launchpad and Quicktour[1] • License files[2] • Readme files[2] • Installation Guides[2]
	WebSphere Message Broker Toolkit V6.0 Disk 2 (Windows)	Product code
	WebSphere Message Broker Toolkit V6.0 Disk 3 (Windows)	Product code
	WebSphere Message Broker Toolkit V6.0 Disk 4 (Windows)	Product code
	WebSphere Message Broker Toolkit V6.0 Disk 5 (Windows)	Product code

Notes:

1. This item is a stand-alone executable version of the Quick Tour.
2. These items are identical to equivalent items on the DVD, as described in "DVD contents" on page 41.

Supplemental CDs

The CDs listed in Table 10 are supplied for supplemental (optional) products.

The packages are marked with the symbol .

The release date on the CD labels is March 2007 unless otherwise stated.

Table 10. Supplemental CDs supplied with WebSphere Message Broker

Operating System	CD label	Description
Multiplatforms	WebSphere Documentation[1]	Documentation
	Rational Agent Controller V6.0.1[2]	Product code and documentation for all supported broker platforms
	WebSphere MQ Everyplace Version 2.0.2.0	Product code Release date October 2005
	WebSphere Message Brokers Extensions, Samples, and Demos[3]	Demonstrations of some aspects of the product, with working samples

Notes:

1. The WebSphere Documentation CD contains an integrated information center that 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 xii.
2. Rational Agent Controller is not provided for HP-UX (Itanium platform).
3. The WebSphere Message Brokers Extensions, Samples, and Demos CD contains a collection of SupportPacs with tailored installation programs, a number of samples to complement those included with WebSphere Message Broker, and demonstrations that highlight some of the product functions.

Rules and Formatter Extension CDs

If you have purchased WebSphere Message Broker with Rules and Formatter Extension for Multiplatforms, your package also contains the CDs listed in Table 11. The contents of these CDs are not included on the DVDs.

The packages are marked with the symbol ⬚ .

The release date on the CD labels for the Rules and Formatter Extension is March 2007.

Table 11. 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)[1]	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)[1]	Rules and Formatter Run-time Extension V6.0 Solaris	Product code and documentation
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

Notes:

1. The Rules and Formatter Run-time Extension is not available for HP-UX (Itanium platform), Linux (POWER platform), and Solaris (x86-64 platform).

Part 2. Preparation

This part of the book describes the tasks that you might need to complete before you start installation of WebSphere Message Broker. The information here addresses z/OS and distributed systems.

- Chapter 5, "Preparing the system," on page 51
- Chapter 6, "Choosing what to install," on page 65
- Chapter 7, "Choosing an installation mode," on page 69

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 that 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 55

If you are installing on Linux or UNIX systems, read the following section:
- "Checking the kernel configuration" on page 62

When you have completed these tasks, follow the installation instructions in the appropriate chapter:
- Chapter 8, "Installing with the Windows Launchpad," on page 79
- Chapter 9, "Installing runtime components," on page 89
- Chapter 10, "Installing the Message Broker Toolkit," on page 95

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 113

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 that 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, uppercase and lowercase 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 53.
- If you are installing on z/OS, go to "Security on z/OS systems" on page 55.

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, the Systems Management Interface Tool (SMIT) on AIX, or the System Administration Manager (SAM) on HP-UX.

Complete the following actions:

1. Log in to the system. Your user ID must have root authority to complete installation. Follow your local security guidelines to acquire root authority; either log in as root, or log in as another user and become root.

   The use of a user ID other than root itself has some advantages; it provides an audit trail of the user ID that performs installation and it limits the scope of root authority to tasks performed in a single session. It might also be required if you are logging in from a remote system.

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

2. Create a new security group called mqbrkrs.

3. Add your current logon ID to the group mqbrkrs.

   If you are installing on a system that will run as a production server (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 the ID that you logged in 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 to the group mqm the user ID that you logged in with, the new user ID (if you created one), and the user ID mqm.

6. To complete installation verification on Linux (x86 platform) only, you do not require root authority. If you do not want to complete verification with root authority, log off when you have completed installation. Log in 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 79), 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 these tasks.

If you are running Terminal Services on this system, you must also change user mode to ensure that actions taken during installation are completed correctly; for example, the creation of `ini` files and other related files in the default system directory `C:\Windows`. If you do not make this change, files might be written to other locations and, although the installation might complete successfully, the product might not work as expected.

Setting up security

Enter the following command to change user mode before you install any product components:

```
change user /install
```

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

```
change user /execute
```

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 command 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:
  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 the file system paths specified during the SMP/E APPLY processing.

Accessing CDs and DVDs

When you install or upgrade WebSphere Message Broker, you can access 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.

You can also install or upgrade from downloaded images of the software obtained from Passport Advantage, if you are registered with this scheme. If you want to use this option, read the instructions that are provided with the packages that explain how to download and extract the images. Use this section to set up local or remote access to these images in the same way as for a CD or DVD.

If you are installing on Windows, you cannot enter a Universal Naming Convention (UNC) path (\\server\drive) to access the installation program; you must map the drive, as shown in a later example, otherwise the Java process times out. If you cannot map the drive, or choose not to map the drive, copy the contents of the CD to a local drive and install from that drive.

For local installations, see "Accessing CDs and DVDs on the local system"; for remote installations, see "Accessing CDs and DVDs on a remote system" on page 58.

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 in and ensure your user ID has root authority.
2. Complete the security setup described in "Security on Linux and UNIX systems" on page 52.

Accessing CDs and DVDs locally

3. Create a CD mount point directory:

   ```
   mkdir /cdbroker
   ```

   where */cdbroker* is the mount point.
4. Insert the CD that you want to access into 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.

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. The installation fails with a corrupted directory. It is important that you check that the CD is mounted with Rockridge extensions enabled.

1. Log in and ensure that your user ID has root authority.
2. Complete the security setup described in "Security on Linux and UNIX systems" on page 52.
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 into the drive of the system on which you want to install one or more product components.
5. Mount the CD using the following command:

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

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

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

Linux

1. Log in and ensure your user ID has root authority.
2. Complete the security setup described in "Security on Linux and UNIX systems" on page 52.
3. Create a CD mount point directory:

   `mkdir /cdbroker`

   where */cdbroker* is the mount point.
4. Insert the CD that you want to access into 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.

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

Solaris

1. Log in and ensure your user ID has root authority.
2. Complete the security setup described in "Security on Linux and UNIX systems" on page 52.
3. Insert the CD that you want to access into the drive of the system on which you want to install one or more product components.
4. Enter the following command to check whether 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.

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

Accessing CDs and DVDs locally

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 53.
3. Insert the CD that you want to access into the drive of the system on which you want to install one or more product components.

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 method 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 copy 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.

Setting up the server system

You can either share the CD drive on the server, or copy the installation images onto 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 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 each subdirectory, 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 55. The installation programs for the runtime components and the Message Broker Toolkit are on separate CDs; insert the correct CD for the components that you want to install from this server.

    If you have inserted a runtime or toolkit CD on Windows, the Launchpad is invoked if autrorun 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 f:\*.* m:\instbroker /e
    ```

    where *f* is the CD drive.

Accessing CDs and DVDs remotely

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 box.

Setting up the target system

1. On Linux and UNIX systems, create a new directory on which 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:

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 map the drive, copy the contents of the CD onto a local drive and install from that drive. In addition, you cannot enter a UNC path when the installation wizard requests a path as input; the wizard cannot interpret a UNC path.

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

Checking the kernel configuration

WebSphere Message Broker has minimum required values for system kernel configuration parameters on some systems. On other systems, other required products might also have requirements that affect WebSphere Message Broker operation.

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 the products shown:

1. Check the recommended values for the following products:
   - WebSphere Message Broker:
     – For HP-UX (PA-RISC platform), see Figure 1 on page 63.
     – For Solaris, see Figure 2 on page 64.
     – Other platforms do not have specific requirements for WebSphere Message Broker.
   - WebSphere MQ; see the *Quick Beginnings* book for your operating system for the version of WebSphere MQ that you have installed.

     If you have WebSphere MQ Version 6.0, see the topic "Kernel configuration" for your operating system in the online WebSphere MQ information center at:

     publib.boulder.ibm.com/infocenter/wmqv6/v6r0/index.jsp
   - DB2, if installed.
   - Any other software that you are running that provides recommended values.
2. Take the highest value 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.

HP-UX (PA-RISC platform)

```
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 (PA-RISC platform) kernel configuration parameters

Checking the kernel configuration

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. 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 provides 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 component and the database in any order. For information about supported databases, see "Databases" on page 10.

> **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 more extensive 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 Broker 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 Broker 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 than 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 25.

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 25.

Message Broker Toolkit

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

Application developers work in separate instances of the Message Broker Toolkit to develop message flows, message sets, and user-defined nodes and parsers.

You can connect the Message Broker 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 Broker Toolkit is available only on Linux (x86 platform) (excluding Red Hat Enterprise Advanced Server V4) and Windows.

Table 12 summarizes the components that you can install on each operating system.

Table 12. Installation choices

Operating system	Broker	Transformation Services	Configuration Manager	User Name Server	Message Broker Toolkit
AIX	✔	✔	✔	✔	
HP-UX	✔	✔	✔	✔	
Linux (POWER platform)	✔	✔	✔	✔	
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 70
- "Silent mode" on page 71

Each mode has different advantages, which are discussed in the appropriate sections. When you have chosen the mode that you want to use, follow the installation instructions:
- Chapter 8, "Installing with the Windows Launchpad," on page 79
- Chapter 9, "Installing runtime components," on page 89
- Chapter 10, "Installing the Message Broker Toolkit," on page 95

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 by 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 113 for further information).

The Launchpad exists on the Windows DVD, and on every Windows CD from which product components or prerequisite products might be installed. If autorun is enabled, the Launchpad 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 mode is the default option). The wizard guides you through the installation process with a series of panels 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 75.

If you click **Cancel** before the **Install Progress** panel is displayed, you can exit the setup. If you decide to exit, your system returns to the state that it was in before the installation wizard was launched. However, if you cancel the installation wizard after the installation has completed, and the final summary panel is displayed, your system is not restored to its previous state; the installation wizard stops immediately. If you want to remove any program that has been installed, 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 character-based interface with which you interact in a command window. It presents the same options as the graphical interface.

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

The name of the installation wizard for your operating system is listed in "Installation wizard names" on page 75. Specify the option `-console` to start the installation program in console mode:

```
installer -console
```

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 default value is your required choice, press Enter to continue.

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 copy the CD images onto a local or remote drive. For more information about copying CD images, see "Accessing CDs and DVDs on a remote system" on page 58.

Silent mode does not provide any feedback to the caller; therefore, you must check the installation log to determine whether the installation was successful. The location of the installation log is given in "Dealing with problems during installation" on page 87 (runtime components) and "Dealing with problems during installation" on page 110 (Message Broker Toolkit).

The name of the installation wizard for your operating system is listed in "Installation wizard names" on page 75.

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

  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.

Silent mode

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 fully qualified path and name of the file on the installation command. For example, on Linux (x86 platform), enter the following command:

```
setuplinuxia32 -silent -options /user1/scripts/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 the 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 whether 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 *installer* is the name of the installation wizard on your operating system (listed in "Installation wizard names" on page 75) and *responsefile* is the fully qualified path and name of your chosen response file. On Windows, you must surround the path and name with double quotes if it contains spaces.

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.

Editing a response file

If you have generated a response file as shown above, or if you have copied the sample file that is supplied with the product, edit the file to define the installation that you want to be performed:

- To indicate that non-default options are specified in this file, update the following line:

```
#    -W setupTypes.selectedSetypTypeId=
```

Remove the comment character at the start of the line. If you do not do this, your other options are ignored.

```
-W setupTypes.selectedSetypTypeId=
```

- To exclude a component from a typical runtime components installation, for example, to exclude the Configuration Manager, find this line in the response file:

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

Change the line to read:

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

- To suppress prerequisite software checks for the runtime components, add one or both of the following lines to the file to instruct the installation wizard to ignore the check for specific software:

```
# don't check for WebSphere MQ
-P mqPrerequisite.active=false
```

```
# don't check for Java Messaging
-P javaMessagingPrerequisite.active=false
```

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 75) and *responsefile* is the fully qualified path and name of your response file. On Windows, you must surround the path and name with double quotes if it contains spaces. Specify a directory that is different to the one that you 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.

Silent mode

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

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

Before you can use the file, check for the following line:

```
-W setupTypes.selectedSetupId=custom
```

Remove the value `custom` so that the line has the content shown below; if you do not, a full installation is completed:

```
-W setupTypes.selectedSetupId=
```

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

Employing a response file

When you have created a response file that contains your options, either by generating and editing a template or a supplied sample, 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 fully qualified path and name of the response file. On Windows, you must surround the path and name with double quotes if it contains spaces.

The following table provides a summary of the options you can use with response files.

Table 13. 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 shown in the table below. Substitute this name where you see `installer` in the text.

Table 14. Installation wizard names

Operating system	Installation wizard name
AIX	`setupaix`
HP-UX (Itanium platform)	`setuphpia64`
HP-UX (PA-RISC platform)	`setuphp`
Linux (POWER platform)	`setuplinuxppc`
Linux (x86 platform)	`setuplinuxia32` (runtime components) `setup.bin` (Message Broker Toolkit)
Linux (zSeries platform)	`setuplinux390`
Solaris (SPARC platform)	`setupsolaris`
Solaris (x86-64 platform)	`setupsolarisx86`
Windows	`setup.exe` (runtime components and Message Broker Toolkit)

Installation wizard names

Part 3. Installation

This part of the book describes how you install WebSphere Message Broker. The information here addresses installation of runtime components on distributed systems. It also addresses installation of the Message Broker Toolkit for z/OS and distributed system users.

- Chapter 8, "Installing with the Windows Launchpad," on page 79
- Chapter 9, "Installing runtime components," on page 89
- Chapter 10, "Installing the Message Broker Toolkit," on page 95

If you are installing runtime components 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 for z/OS*.

Chapter 8. Installing with the Windows Launchpad

On Windows, you can use the Launchpad to help you:
- To install WebSphere Message Broker and its prerequisite products
- To upgrade runtime components to Version 6.0.0.3
- To upgrade the Message Broker Toolkit to Version 6.0.2.0

The Launchpad uses the DVD or CDs to install and upgrade components; you cannot use the Launchpad if you want to install or upgrade runtime components or the Message Broker Toolkit from downloaded update packages from Passport Advantage. Neither can you use the Launchpad to upgrade the Message Broker Toolkit using the Rational Product Updater (RPU). For these alternative methods, and their potential advantages, see Chapter 9, "Installing runtime components," on page 89 or Chapter 10, "Installing the Message Broker Toolkit," on page 95.

Installation summary

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 55.
4. Start the Launchpad to install WebSphere Message Broker and the prerequisite products. Full instructions are provided in "Starting the Windows Launchpad" on page 80.

When you have completed installation, see Part 4, "After installation," on page 111 for information about verifying your installation, and what you can do next.

If you experience problems during installation, refer to "Dealing with problems during installation" on page 87.

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.

  If you want to perform an Express installation, see "Express installation" on page 82.

- **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 that 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 85.

Access further information from the left pane:

- Click **Installation Guide** to launch a PDF copy of this book (in US English) 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 113 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 15 shows, for each supplied product, the program names and their locations on the CDs.

Table 15. Installation program names and locations

Product	Installation program name	Directory	CD
WebSphere Eclipse Platform V3.0	`IBM WebSphere Eclipse Platform V3.0.msi`	\WebSphere_MQ_V6.0\Prereqs\IES\MSI	Runtime Disk 2
WebSphere MQ	`IBM WebSphere MQ.msi`	\WebSphere_MQ_V6.0\MSI	Runtime Disk 2
ODBC Drivers for Cloudscape	`setup.exe`	\DB2_Runtime_Client_V8.2	Runtime Disk 1
Message Broker runtime components	`setup.exe`	\ (root directory)	Runtime Disk 1
Message Broker Toolkit	`setup.exe`	\setup	Toolkit Disk 1
DB2 Enterprise Server	`DB2 Enterprise Server Edition.msi`	\DB2_Enterprise_Server_V8.2\db2\Windows	Runtime Disk 3
Rational Agent Controller	`setup.exe`	\winia32	RAC supplemental disk
WebSphere MQ Everyplace	`setup.exe`	\ (root directory)	WebSphere MQ Everyplace supplemental disk

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 V6.0.0.3 (runtime components)
   - WebSphere Message Broker Toolkit V6.0.2.0
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 level that is supported by WebSphere Message Broker. 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 a level of the product that is not supported by WebSphere Message Broker is installed on the system. Use the Advanced Installation to upgrade this product to a supported level.

     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 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 other Rational products, see Chapter 10, "Installing the Message Broker Toolkit," on page 95.

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.

   The ODBC Drivers for Cloudscape 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

Express installation

Client on the progress bar; this name is also shown in **Add/Remove Programs** when the installation is complete.

- If you have selected WebSphere Message Broker V6.0.0.3 (runtime components), the Launchpad invokes the installation wizard in full interactive mode. You must supply the input that is required by the installation program.

  The installation wizard guides you through a series of panels where you can make choices about where to install the components, and which components you want to install.

  You must also read and accept the Software License Agreement that is displayed. This agreement 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**. A console window opens, initialized with the correct environment for command invocation. The command console is explained in "Setting the environment for an installation" on page 30.

- If you have selected the Message Broker Toolkit, the Launchpad starts the installation 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, and accept the Software License Agreement that is displayed. You must also decide whether to install the Language Pack feature. For information about this selection, see "The Language Pack feature" on page 20. You must supply all input that is required by the installation program.

  The wizard checks that any Rational product that is installed on this system is compatible; if it is not, the installation of the Message Broker Toolkit cannot continue. For details of compatibility, see "Rational Application Developer (RAD)" on page 19, and, to resolve this situation, follow the instructions in "Integrating with other Rational products" on page 99.

  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 V6.0.0.3 (runtime components)
   - WebSphere Message Broker Toolkit V6.0.2.0
   - Rational Agent Controller Version 6.0.1
   - DB2 Enterprise Server Version 8.2 (Optional)
   - Oracle (Optional)
   - Sybase (Optional)
   - Microsoft SQL Server 2000 (Optional)

2. Check the initial installation status that is 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 a version that is supported by WebSphere Message Broker (or later), the status is **Installed**.
   - If an earlier version of the product that is not supported by WebSphere Message Broker is installed on the system, the status is **Incorrect Level**. Install the supported version from this panel.
   - If a product is found but has not had a complete installation, the status is **Partial Installation**. 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 supported by WebSphere Message Broker. 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 that is 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 install.

Advanced installation

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 15 on page 81 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 12.

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 accept the Software License Agreement that is displayed.

   During the installation of runtime components, you are asked whether you want to open a command console when the wizard terminates. If you do, select **Yes**. A console window opens, initialized with the correct environment for command invocation. The command console is described in "Setting the environment for an installation" on page 30.

   During installation of the Message Broker Toolkit, you must also decide whether to install the Language Pack feature. For information about this selection, see "The Language Pack feature" on page 20. You must supply all input required by the installation program.

   The wizard checks that any Rational product installed on this system is compatible; if it is not, the installation of the Message Broker Toolkit cannot continue. For details of compatibility, see "Rational Application Developer (RAD)" on page 19, and to resolve this situation, follow the instructions in "Integrating with other Rational products" on page 99.

   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 the 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 that it initiates. If the return code indicates that the installation has failed, the Launchpad reports the error 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 installed one or more products successfully 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 are 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 the ODBC Drivers for Cloudscape fail to install, check the contents of the installation log \DB2LOG\db2.log stored in your home directory.
- If DB2 fails to install, check the contents of db2diag.log and other logs created during the installation of this product. For details of location and possible content, see the DB2 documentation.

Dealing with problems

- Review the problem scenarios described in Appendix A, "Installation problems," on page 127 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, or to upgrade one or more components to Version 6.0.0.3 from a previous release of Version 6, on the following systems:
- AIX
- HP-UX (Itanium platform) (new installations only)
- HP-UX (PA-RISC platform)
- Linux (POWER platform)
- Linux (x86 platform)
- Linux (zSeries platform)
- Solaris (SPARC platform)
- Solaris (x86-64 platform)
- Windows

If you want to install only the Message Broker Toolkit, see Chapter 10, "Installing the Message Broker Toolkit," on page 95.

Installation summary

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. (New installations only) If you do not already have WebSphere MQ installed, install it before you install the runtime components.

   Although you can install WebSphere MQ after you have installed runtime components, the installation wizard checks that you have the supported level of WebSphere MQ, or later, installed. If this check fails in graphical or console mode, the installation wizard displays a warning that lists potential problems. If you decide to continue, you must complete the installation of WebSphere MQ before you create or start any WebSphere Message Broker runtime components.

   If the check for WebSphere MQ 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.

Installing runtime components

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 55 for both CDs or DVDs, and images that you have downloaded from Passport Advantage (if you are registered with the scheme). The instructions here do not differentiate between CDs and downloaded images; their behavior is the same.

5. Decide which mode of installation you want to use. The alternatives are explained in Chapter 7, "Choosing an installation mode," on page 69.

6. Follow the installation instructions provided in "Installing in graphical mode" on page 91, "Installing in console mode" on page 92, or "Installing in silent mode" on page 93.

   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 35), the wizard continues in this locale. If the current setting is not supported, the wizard displays a dialog box, 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 on this system, but you must install one before you can use the broker. For further information about software requirements, see "Software requirements" on page 8.

7. When you have completed installation, see Part 4, "After installation," on page 111 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 133.

8. If you experience problems during installation, refer to "Dealing with problems during installation" on page 93.

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.

     Windows
     - If autorun is enabled, the Launchpad is started immediately. To use the Launchpad, see Chapter 8, "Installing with the Windows Launchpad," on page 79. To cancel the Launchpad, click **Exit Launchpad**.
     - In Windows Explorer, navigate to the root directory of the CD. Locate the wizard: its name is defined in "Installation wizard names" on page 75. Double-click the wizard to start it.
     - Open a command prompt and navigate to the root directory of the CD. Type the program name with no options, and press Enter.

     Linux Open a command prompt and navigate to the root directory of the CD. Type the program name with no options, and press Enter.
   - For remote access, access the remote CD drive or network drive on which the product media is available. Find the program 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.

   If you have an existing Version 6 installation, you can upgrade it to Version 6.0.0.3, or you can request a custom installation and install Version 6.0.0.3 in a different location.

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 runtime components

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 75.

2. Enter the following command at a command prompt for default invocation.

   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.

   installer -console

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 must also read and accept the Software License Agreement that is displayed.

   If you have an existing Version 6 installation, you can upgrade it to Version 6.0.0.3, or you can request a custom installation and install Version 6.0.0.3 in a different location.

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 10.

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 75.

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.

   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, include a response file on the invocation. You need a response file, for example, if you have an existing Version 6 installation, and want to specify a custom installation to install Version 6.0.0.3 in a different location.

   For more details of how to use response files, how to create response files, and how to edit them to define your requirements, see "Response files" on page 72.

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 127 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, or to upgrade an existing installation, on the following systems:
- Linux (x86 platform) (excluding Red Hat Enterprise Linux Advanced Server V4)
- Windows

If you want to install only runtime components, see Chapter 9, "Installing runtime components," on page 89.

Installation summary

This list identifies the choices that you have for installing or upgrading the Message Broker Toolkit, and the actions that you must take to complete your chosen task:

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 109 for details.
3. Decide how you want to run the installation. Your choice depends on your preferences and on the current state of the system on which you are installing. The options are described in "Installation options" on page 97.
4. If any Rational products are running, stop or close them before you start the installation.

5. Complete the installation using your chosen method:

   - To update your current installation through the Rational Product Updater (RPU), follow the instructions in "Upgrading the Message Broker Toolkit with the RPU" on page 100, then continue with step 6.

   - To perform a new installation, or to update your current installation from CD, DVD, or downloaded images:

     a. 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 55.

     b. Check that the installation of the Message Broker Toolkit is compatible with other Rational products that are installed on the target system.

        For further information about Rational product compatibility, see "Rational Application Developer (RAD)" on page 19. Check whether to install the Language Pack feature when you install Message Broker Toolkit; the choice is discussed in the same section.

        If your system has other Rational products installed, and they are not compatible, follow the instructions in "Integrating with other Rational products" on page 99 before you install the Message Broker Toolkit.

     c. Decide which mode of installation you want to use. The alternatives are explained in Chapter 7, "Choosing an installation mode," on page 69.

     d. Follow the installation instructions provided in "Installing from CD or DVD" on page 104. The instructions do not differentiate between CDs, DVDs, and downloaded images; their behavior is the same.

6. When you have completed installation, see Part 4, "After installation," on page 111 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 133.

7. If you experience problems during installation, refer to "Dealing with problems during installation" on page 110.

Installation options

You can install the toolkit using several different methods, according to your preferences and to the current state of the system on to which you are installing:

Warning: If you have an existing installation of the toolkit, and consider uninstalling the current product before you install the latest version, be aware that all Rational products including the toolkit might cause problems if they are uninstalled. A known problem in the Rational uninstallation process causes files and directories to be left behind, and these can cause subsequent reinstallations to be unsuccessful. This problem, and its solution, is described in more detail in Appendix A, "Installation problems," on page 127.

New installations

If you have never installed the Message Broker Toolkit on this system, choose from the following options:

- Insert the media into the appropriate drive and access the installation process directly.
- Copy the media contents to disk and install from the copy.
- Download the electronic media images from Passport Advantage (if you are registered with this scheme), and install from the local images.

On Windows, the Launchpad is the default method of installation for all these options, and provides information and assistance during installation. For further details, see Chapter 8, "Installing with the Windows Launchpad," on page 79. If you prefer, you can cancel the Launchpad and start the installation program directly.

On Linux (x86 platform), your choice of installation directory might be restricted by the existence of other Rational shell-sharing products on this system. If a Rational product has already been installed, you must install the Message Broker Toolkit into the same installation directory. For more information, see "Rational Application Developer (RAD)" on page 19.

If you set up a remote server for any of these options, users on different systems can access the same images. You can also create a tailored response file so that all your users can complete a silent installation.

Installing the Message Broker Toolkit

Existing installations

If you have an existing installation of the Message Broker Toolkit on this system, choose from the following options:

- Use the Rational Product Updater. You can use this method in two ways:
  - Install the RPU packages from the Web.

    This method is the most convenient for a single system. However, you might be affected by network delays, and if your connection is interrupted during the update, you must start again from the beginning.
  - Install the RPU packages from a local system.

    Download the RPU packages from the Web to a local device, for example a network drive, and access the local copy to update each system on which you have installed the toolkit. This option has the following advantages:

    - A single user can download the update packages, and therefore only one user and one system require Internet access.
    - Multiple installations of the toolkit in your network can access the downloaded image on a local system.
    - Connections within your network are typically quicker and more reliable than connections to the Internet.

  If your existing installation is at Version 6.0.0.2, you can select a delta update, which is smaller, and therefore installs more quickly. For all other existing versions, you must select the full update package.
- Use one of the three options listed for new installations, above.

  You might choose one of these option because you are familiar with the process. If you are installing on Windows, you might also choose these options because you can use the Launchpad to control the installation process.

Existing installations of Event Broker Toolkit

If you have an existing installation of the Event Broker Toolkit, and are upgrading your product from WebSphere Event Broker to WebSphere Message Broker, you must update your existing Event Broker Toolkit installation to Version 6.0.2.0 using one of the options described above for existing Message Broker Toolkit installations.

When that task is complete, complete the upgrade to Message Broker Toolkit using one of the options listed for new installations, above. You cannot use the RPU to complete this step.

Integrating with other Rational products

If you want to install the Message Broker Toolkit on a system on which you have one or more Rational products installed, all installed products must be at compatible levels to operate successfully. Check the requirements and restrictions in "Rational Application Developer (RAD)" on page 19.

If one or more existing products are not at a compatible level, follow the instructions below:

If an existing Rational product installation is at a lower level

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

Upgrade the existing product installation using the RPU before you install the Message Broker Toolkit:

1. Click **Help > Software Updates > IBM Rational Product Updater** to access and apply the product updates. The RPU displays all available updates for the Rational products that you have installed on this system.

2. Search for the latest updates for the installed product. For example, for RAD, search for Version 6.0.1.1 or a later compatible fix level. Select a compatible update and follow the instructions to install it.

You can also consider removing the existing Rational product installation. However, you must take account of all installed Rational products, because they all use a single shared framework which is not removed until the last dependent product is uninstalled. If you choose to remove one shell-sharing product, you must remove them all. Use the appropriate uninstall programs to uninstall each product.

If an existing Rational product is at a higher level

Before you install the Message Broker Toolkit, check the product readme file (its location is shown at the start of Chapter 1, "System requirements," on page 3) in case problems have been identified with later Rational products. If no problems are listed, continue with the installation.

Upgrading the Message Broker Toolkit with the RPU

The RPU offers packages to upgrade the toolkit from Version 6.0.0.0, Version 6.0.0.1, and Version 6.0.0.2 to Version 6.0.2.0.

Before you start installation, access the IBM Support site:

www.ibm.com/software/integration/wbimessagebroker/support/

and follow the **Recommended Fixes** link to check for updates or additions to the processes described here.

When you have made your choices about how to install the RPU packages, start the RPU (as described in "Starting the RPU"), and follow the appropriate instructions:

- "Installing RPU packages directly from the Web" on page 101
- "Installing RPU packages from a local system" on page 101

Starting the RPU

You can start the RPU from the main menu (on Linux (x86 platform)) or **Start** menu (on Windows), or from the command line:

Linux (x86 platform)

You must have root authority to run the RPU.

If you are logged in as root, use the main menu to start the RPU:

- On Red Hat Linux (x86 platform) (GNOME desktop environment), select **Programming > Rational Product Updater**. If your desktop environment is not the default, this shortcut might be displayed in another location.
- On SUSE Linux (x86 platform) (K Desktop Environment), select **IBM WebSphere Message Brokers 6.0 > Rational Product Updater**. If your desktop environment is not the default, this shortcut might be displayed in another location.

If you are logged in as another user and have become root, you must use the command line. Run the file rpu in directory *install_dir*/updater/eclipse/.

Windows

You must have Administrator authority to run the RPU.

Select **Start > Programs > IBM WebSphere Message Brokers 6.0 > Rational Product Updater**.

To start the RPU from the command line, run the file rpu.exe in directory *install_dir*\updater\eclipse\.

Installing RPU packages directly from the Web

To install the RPU packages directly from the Web:

1. If you have an active Message Brokers Toolkit session, close it. You cannot apply updates while the toolkit is running.
2. Start the RPU from the **Start** or main menu, or from the command line; the RPU opens in a new window.
3. Check that your RPU update site is set to point to the update Web site, not to a local site; select **Preferences > Update Sites** and click **Restore Default** to address the correct Web site.

   If the RPU program itself requires an update, a message is displayed, and you must install that update before you can install any other updates. The RPU must be at Version 6.0.1 to complete these updates. When it has installed the update, the RPU restarts itself.
4. If you have previously disabled any product features by editing the `feature.xml` files or selecting **Help > Software Updates > Manage Configuration**, you must enable the features before you can continue.
5. Check the list of Rational products that you currently have installed; the RPU presents the list in the **Installed Products** pane.
6. Click **Find Updates**. The RPU searches for all updates for the selected product and displays them in the **Updates** pane. This action might take a few minutes to complete, depending on network traffic and connection speeds.
7. All items are selected by default; clear any selections that you do not want to install at this time. For the upgrade of the Message Brokers Toolkit, you must install both **IBM WebSphere Message Brokers Toolkit** Version 6.0.2.0 and **J2EE Connector Tools** Version 6.0.1.3.
8. Click **Install Updates** and follow the instructions that are given. The RPU installs the Message Brokers Toolkit update, followed by the J2EE Connector Tools. If you choose to update these two packages separately, you must install them in this order; the J2EE Connector Tools update will not install unless the Message Brokers Toolkit package is already installed.
9. When the updates have been installed, close the RPU.

Installing RPU packages from a local system

To install updates from downloaded RPU packages, you must first download the packages, then change the RPU settings to access the downloaded package on each system on which you want to install the updates.

To download the update packages

1. Access the IBM Support site:

   www.ibm.com/software/integration/wbimessagebroker/support/

2. First check whether an update to the RPU itself is required. The RPU must be at Version 6.0.1 or later. If your systems are not at this level, download this update and make sure that users who install from the local system install this update first.

   a. In the section with the heading **Other support sites**, click the **Rational** link.

   b. Under **Support for specific Rational products**, click **Rational Application Developer for WebSphere software**.

   c. Under **Download**, click **View all downloads**, then find and click **Rational Product Updater 6.0.1**. The page that opens describes the update, and gives access to the update package and to detailed installation instructions.

   d. Click the **FTP** link to download and save the update package `rpu_601.zip` to a local drive. To complete the download, you must accept the terms and conditions.

3. Return to the WebSphere Message Broker support page to access the update packages:

   a. In the section with the heading **Download**, click **Recommended Updates**.

   b. Click the link for IBM WebSphere Message Broker Version 6.0.

   c. Find the **Message Brokers Toolkit Version 6.0.2.0** update. This package includes the corequisite J2EE Connector Tools update that must be installed at the same time.

      If your existing installation is at Version 6.0.0.2, you can select either a full update package, or a delta update package, The latter is smaller and installs more quickly. For all other existing versions, only the full update can be selected.

   d. Click the **Download** option, and click **Save** to save the file to disk.

   e. Enter the directory in which you want to save the package. The file name of the full update package is `MB60_602.zip`; you can keep this name or choose a different one.

      The file name of the delta update package is `MB6002_602.zip`; you can keep this name or choose a different one.

   f. Click **Save**. The file is downloaded to your system. This action might take a few minutes, depending on network traffic and the speed of your connection.

4. Extract the files from the compressed update package files using your chosen extraction program. You can extract the files to the directory in which the compressed file is stored, or you can specify a different directory, a different device, or both, if you prefer.

   Extract files from each different product package into its own directory. Each package includes a file named `policy_product_identifier.xml` that is used by the RPU to determine the contents of the update package.

5. If necessary, authorize users to access the location of the extracted files. For example, on Windows you might have to change the properties of the disk or folder so that other users can share it. On Linux (x86 platform), you can use the **exportfs** command.

To install the packages from the local system

If an update is required to the RPU itself, you must complete its installation before you can install any other update. Follow the steps below for both RPU and Message Brokers Toolkit updates.

1. If you have an active Message Brokers Toolkit session, close it. You cannot apply updates while the toolkit is running.

2. Start the RPU from the **Start** or main menu, or from the command line; the RPU opens in a new window. A list of the Rational products that you currently have installed is displayed in the **Installed Products** pane.

3. Select **Preferences > Update Sites**. The dialog box asks for the path or URL of a new policy file. Click **Browse** to find the `policy.xml` file in the directory for the update package, or type the path and file name into the entry field, supplying the location given to you by the person who created local packages. Click **OK**.

4. Click **Find Updates**. The RPU displays the available update, as defined by the `policy.xml` file, in the **Updates** pane.

5. Select the displayed item, click **Install Updates**, and follow the instructions given.

6. For each further update that you have to install, find the `policy.xml` file for the package and repeat the immediately preceding two steps.

7. When you have installed all the required updates, close the RPU.

Upgrading the Event Broker Toolkit to Message Broker Toolkit Version 6.0.2.0

If you have installed the Event Broker Toolkit Version 6.0.0.0 (General Availability, September 2005), Version 6.0.0.1 (Fix Pack 1, January 2006), or Version 6.0.0.2 (Fix Pack 2, July 2006) and have now purchased WebSphere Message Broker, which includes Message Broker Toolkit Version 6.0.2.0, you can upgrade your toolkit installation without uninstalling and reinstalling.

Complete the following steps in the order shown. Use the same Language Pack feature option as you did for your original installation at each step.

1. Upgrade the Event Broker Toolkit to Event Broker Version 6.0.2.0 by following the instructions in "Upgrading the Message Broker Toolkit with the RPU" on page 100. All of the options described there are suitable for this step.

   If you decide to upgrade by downloading and creating a local copy of the RPU upgrade package, download the appropriate package for your current installation:

   • If you have Event Broker Toolkit Version 6.0.0.2 installed, download EB6002_602.zip to upgrade using the delta package.

   • If you have any other version installed, download EB60_602.zip to upgrade using the full package. You can also choose to use the full package to upgrade from Version 6.0.0.2.

2. Upgrade the Event Broker Toolkit Version 6.0.2.0 to Message Broker Toolkit Version 6.0.2.0. You must use the Message Broker Toolkit CDs, DVD, or downloaded images to complete this step. Follow the instructions in "Installing from CD or DVD."

Installing from CD or DVD

This section provides instructions for installing directly from CD or DVD. You can also follow these instructions if you have copied the contents of the CDs or DVD to disk, or if you have downloaded electronic images from Passport Advantage; the task is identical except where specified otherwise.

If you choose to use CDs, you might find it more convenient to copy the content of the five CDs to a disk, and install from the copy, because the installation process can continue unattended and does not require your attention to swap CDs when requested. If you make CD copies, you must ensure that you create the directory structure correctly; if you do not, the process might fail or hang. Follow the instructions in "Setting up CD copies on disk" on page 108, then continue with the appropriate section below.

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 35), the wizard continues in this locale. If the current setting is not supported, the wizard displays a dialog box, 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 install the Message Broker Toolkit on Linux (x86 platform) directly from CD, invoke the wizard from a location other than the mount point itself. If you do not do so, you cannot change CDs because the CD drive is locked. For example, if your mount point is /media/dvd/, invoke the wizard from another location with the following command:

```
/media/dvd/setup/setup.bin
```

Install the Message Broker Toolkit in your chosen installation mode:
- "Installing in graphical mode"
- "Installing in console mode" on page 106
- "Installing in silent mode" on page 107

Installing in graphical mode

To install in graphical mode:

1. Start the installation wizard in graphical mode:
   - To install directly from CD or DVD, load the media in the appropriate drive.

     Windows
     - If autorun is enabled, the Launchpad is immediately started. To use the Launchpad, see Chapter 8, "Installing with the Windows Launchpad," on page 79. To cancel the Launchpad, click **Exit Launchpad**.
     - In Windows Explorer, navigate to the root directory of the CD. Locate the wizard: its name is defined in "Installation wizard names" on page 75. Double-click the wizard to start it.
     - Open a command prompt and navigate to the root directory of the CD. Type the program name with no options, and press Enter.

     Linux Open a command prompt and navigate to the root directory of the CD. Type the program name (defined in "Installation wizard names" on page 75) with no options, and press Enter.

   If you want to change the temporary space location, use a command-line invocation and specify the appropriate options, as described in "Changing the location of the temporary space directory" on page 109.

Installing from CD or DVD

- To install from local downloaded images, or copies of the media, navigate to the location, find the installation file, and invoke it as described above.

  If you want to change the temporary space location, use a command-line invocation and specify the appropriate options, as described in "Changing the location of the temporary space directory" on page 109.

- To install from a remove server, access the remote CD or DVD drive, or network drive, on which the product images are available. Find the program file that you want on the CD or network drive, and invoke it as described above.

  If you want to change the temporary space location, use a command-line invocation and specify the appropriate options, as described in "Changing the location of the temporary space directory" on page 109.

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. On Linux (x86 platform), your choice might be limited by the existence of other Rational shell-sharing products on this system. See "Installation options" on page 97 for further details.

   Decide whether you want to install the Language Pack feature; for guidance on this decision, see "The Language Pack feature" on page 20. If you are upgrading from a previous version to Version 6.0.2.0, or from Event Broker to Message Broker Version 6.0.2.0, make the same choice as you did when you installed the previous version.

   You must also read and accept the Software License Agreement that is displayed.

   If you have already installed the Message Broker Toolkit at a version later than Version 6.0.2.0, installation is prevented.

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 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 75.

2. Enter the following command for default invocation. 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.

   installer -console

   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 109.

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 Message Broker Toolkit. On Linux (x86 platform), your choice might be limited by the existence of other Rational shell-sharing products on this system. See "Installation options" on page 97 for further details.

   Decide whether you want to install the Language Pack feature; for guidance on this decision, see "The Language Pack feature" on page 20. If you are upgrading from a previous version to Version 6.0.2.0, or from Event Broker to Message Broker Version 6.0.2.0, make the same choice as you did when you installed the previous version.

   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 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 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 75.

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.

   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`

Installing from CD or DVD

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" on page 109.

If you want to specify non-default settings, include a response file on the invocation. For more details of how to use response files, how to create response files, and how to edit them to define your requirements, see "Response files" on page 72.

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. On Linux (x86 platform), your choice of installation directory might be limited by the existence of other Rational shell-sharing products on this system. See "Installation options" on page 97 for further details.

feature_lang_pack_wmbt_win32.active indicates (on Windows in this example) that the Language Pack feature is to be installed; for guidance on this decision, see "The Language Pack feature" on page 20. Set this option to false if you do not want the feature installed. If you are upgrading from a previous version to Version 6.0.2.0, or from Event Broker to Message Broker 6.0.2.0, make the same choice as you did when you installed the previous version.

Setting up CD copies on disk

If you want to copy the contents of the installation CDs on Linux (x86 platform) or Windows to disk, you must create all five disk subdirectories in the same directory, for example:

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

where each subdirectory, for example disk1, is the root level of the corresponding CD image. Copy the appropriate CD contents to each directory.

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

Changing the location of the temporary space directory

When you install the Message Broker Toolkit, temporary space of 1.9 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 -is:tempdir *new_temp_dir_location* to identify the new fully-qualified directory. On Windows, if the new temporary directory or path includes a space, specify double quotes around the new name.

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 -is:tempdir /mqsi_temp_space
```

Windows
```
setup.exe -is:tempdir C:\mqsi\temp_space
```

Adding the Language Pack feature after installation

If you have installed, or upgraded, the Message Broker Toolkit without selecting the Language Pack feature, you can decide to add this feature later. To do so, you must reinstall the component, and you must run the Rational Product Updater to resolve dependencies.

1. Run the installation wizard again for your installation at Version 6.0.2.0. You must use the CDs or DVD to complete this step, and you must complete the full installation process. Select the Language Pack feature when it is offered.

   This step generates the following errors:

   - In the RAD log run_wmbt_rad_update_errout.log:
     ```
     Component feature "updater.j2c.nl1.plugins.601" not found
     ```
   - In the J2C log run_wmbt_j2c_update_errout.log:
     ```
     Component feature "updater.csdev.nl1.plugins.601" not found
     ```

   You can safely ignore these errors and continue with step 2, which resolves the missing features.

2. Access the Version 6.0.2.0 RPU update package to resolve dependencies. Use one of the following two methods:

   - Start the RPU and access the update site directly: select **Preferences > Update Sites** and click **Restore Defaults** to ensure that you are addressing the right site. When the RPU determines the Rational

Adding the Language Pack feature

products on your system, it completes the resolution of dependencies required by the addition of the Language Pack feature.

- Download the update package `MB60_602.zip` to a local system (as described in "Installing RPU packages from a local system" on page 101).

  Start the RPU and address the local package `policy.xml` file. When it accesses this file to determine the updates available, the RPU resolves the dependencies required by the addition of the Language Pack feature.

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 `wmbt_install.log`, stored in the *install_dir*\logs directory. Messages written to this file can help you to understand installation failures.
- If you have upgraded the toolkit to Version 6.0.2.0 using the RPU, 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 Rational 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 6 for space requirements, and Appendix A, "Installation problems," on page 127 for further guidance.

- Review the problem scenarios described in Appendix A, "Installation problems," on page 127 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 Broker Toolkit component on your Linux (x86 platform) or Windows system, follow the verification procedures described in Chapter 11, "Configuring and verifying your system," on page 113.

The verification procedures are limited to these operating systems because they exploit wizards and sample programs that are available when you launch the Message Brokers Toolkit. The sample programs require that all WebSphere Message Broker components are installed on the same system.

In addition, a database is required for the broker:

- On Linux (x86 platform), install DB2 Enterprise Server.
- On Windows, 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 on your chosen operating system and explore the resources that are provided to help you learn about the product, and how you can use it on all operating systems. Chapter 12, "What's next," on page 121 provides details about how to access the 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) or 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 121.

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. The lack of a requirement for root authority means that you cannot safely launch the Message Brokers Toolkit from the installation wizard; if you create resources such as brokers when you are logged in as root, you might experience problems during operation.

     Log off from the user ID with which you have installed the product. Log in as the same ID (if this is not root), or log in as another ID, but do not become root. Launch the Message Brokers Toolkit from the main menu or start the program `wmbt.bin` that is located within the installation directory.
   - On Windows, you cannot complete verification unless you have Administrator authority, therefore 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 program `wmbt.exe` that is 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 file exists on your local drive, and is 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 either 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.

Getting started

The Message Brokers Toolkit opens and the Welcome page is displayed.
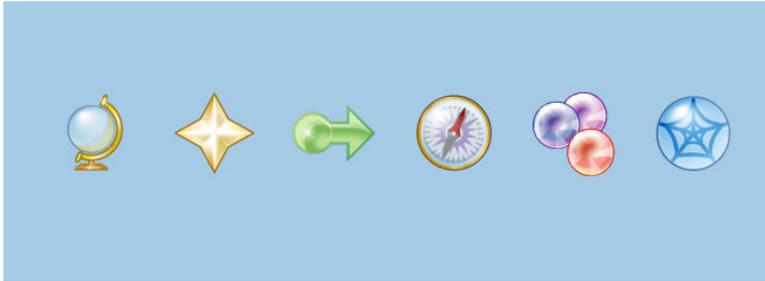
Figure 3. The Welcome page choices (Windows)

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

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 115 and
    "Running the Pager samples" on page 117.

    Getting Started requires that the following conditions are met:

    *   You have installed all runtime components and the Message Brokers
        Toolkit.
    *   On Linux (x86 platform), you have installed DB2 Enterprise Server, and
        you have run the DB2 profile for your current user ID, for example:

        `. ~db2inst1/sqllib/db2profile`

        where `db2inst1` is the user ID of the DB2 instance owner (db2inst1 is
        the default name; substitute the name that is in use on this system).
    *   On Windows, you have installed either the ODBC Drivers for
        Cloudscape, or DB2 Enterprise Server.
    *   None of the default components already exist (the components are listed
        in "Creating the default configuration" on page 115).
    *   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:
    - On Linux, add your user ID to the DB2 instance manager owner group.

      On some Linux systems, you might also need to add your user ID to the DB2 administrator group.
    - On Windows, add your user ID to the DB2 administrator group.

  For more information about these security requirements, see "Setting up security" on page 51.

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 complete this task using the Default Configuration wizard, which creates the components that you need with fixed names and properties.

1. Click the **Create the Default Configuration** text (Linux) or icon (Windows)

   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. Publish/subscribe enablement 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.

Creating the default configuration

The information in the text window is also written to a log file, the location of which is shown below. If you have not specified the default workspace directory, `wmbt6.0` is replaced by your chosen value.

Linux (x86 platform)
> *user_home_dir*/IBM/wmbt6.0/workspace/.metadata/DefaultConfigurationWizard.log

Windows
> *user_home_dir*\eclipse\workspace\.metadata\DefaultConfigurationWizard.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 whether the wizard has succeeded or failed.

The wizard creates the resources shown in Table 16.

Table 16. 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 that is created by the Default Configuration wizard for other purposes. For example, you can import, deploy and run the supplied samples, or you can create and deploy 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 **Run the Pager samples** text (Linux) or icon (Windows) .

   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:

   user_home_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.

The wizard displays information messages to show that the Pager samples and associated resources are deployed and ready to run.

4. Click **Next** when you have read the messages about the actions completed by the wizard. The confirmation page is displayed.

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

6. Click **Run the Pager samples**. A help page opens and displays 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.

     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 and Pager** to start the publisher application and 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.

7. 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 and select **Preparing the Samples**. The Samples Preparation wizard opens and lists 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.

Running the Pager samples

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 operating systems. 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 migrating from
> previous versions.
>
> In addition to Getting Started (covered in Chapter 11, "Configuring
> and verifying your system," on page 113), 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 functions
>   are included in Version 6.0.
> - 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 6.0. The information
>   provided includes planning, preparation, and implementation steps.

What's next

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

  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 operating systems. 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 user 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 operating systems 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 113, the Default Configuration wizard completes this action for you, but you must set up the environment yourself if you are not using the wizard, or if you are working on operating systems 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 setup. Invoke the commands in this window.

For more information about the **Start** menu, see "Menu updates" on page 133.

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

This action 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 113. You might find this wizard useful even if 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 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:

All operating systems: runtime component installation process is interrupted
If you are installing runtime components, and the process is interrupted before completion, for example due to a power failure, delete the *install_dir* and all its contents before you restart the program.

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 8 for details.

Installation problems

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 8.

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.

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 wizard (for example, **setupaix**) a temporary file system to use. The command-line option is `-is:tempdir` *name of temp directory*.

For example, on AIX, enter the following command:

```
./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 6 to check how much temporary space is required.

Linux (x86 platform) and Windows: RPU problems

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

The Rational installation program has a known problem that 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 action refreshes the information file so that you can rerun the toolkit installation.

Linux (x86 platform) and Windows: accessing toolkit 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.
```

Installation problems

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 58 for details of the structure required.

Linux (x86 platform) and Windows: adding the Language Pack feature after installation

If you choose to add the Language Pack feature after installation, as described in "Adding the Language Pack feature after installation" on page 109, error messages similar to the following messages are generated by step 1:

- In the RAD log run_wmbt_rad_update_errout.log:

  ```
  Component feature "updater.j2c.nl1.plugins.601" not found
  ```

- In the J2C log run_wmbt_j2c_update_errout.log:

  ```
  Component feature "updater.csdev.nl1.plugins.601" not found
  ```

You can safely ignore these errors and continue with step 2 which resolves the missing features.

Linux (x86 platform) and Windows: function missing or unexpected behavior in toolkit

After you have installed the Message Broker Toolkit, some of the expected function seems to be missing or not working as expected.

Select **Help > Software Updates > IBM Rational Product Updater** to run the RPU. If the RPU shows the toolkit to be version 1.0.0, the installation has not completed successfully. Check the probable causes listed below for symptoms that match your situation:

1. The installation has not completed due to insufficient temporary space.

   Check the amount of temporary space that is required in "Memory and disk space" on page 5, and run the installation again.

2. The Language Pack feature has not been installed consistently with other installations.

   Find the log file run_wmbt_rad_update_errout.log in *install_dir*\logs and look for error messages similar to the following message:

   ```
   Component feature "updater.crystal.nl1.plugins.6001" not found
   ```

You selected the Language Pack feature when you installed the Message Broker Toolkit, but existing Rational products have not included this feature, and therefore required Rational framework components are missing. Either run the installation again, and clear the option that installs the Language Pack feature, or re-install the existing Rational product with the Language Pack feature. For more information about this feature, see "The Language Pack feature" on page 20.

3. You uninstalled an earlier version of the Message Broker Toolkit before you installed the latest version.

A known problem with RPU updates can cause uninstallation of any Rational product to leave files and directories behind after installation. If you choose to uninstall the toolkit before reinstalling, follow the instructions provided below for your current system installation.

- **The Message Broker Toolkit was the only Rational product installed on this system**

  When the uninstallation wizard for the Message Broker Toolkit has completed, delete all remaining files and directories in the installation directory. Rerun the installation wizard to install the latest version.

- **Other Rational products are installed on this system**

  Check whether other Rational products are currently installed on the system:

  a. Navigate to the following directory:
     - On Linux (x86 platform): `/etc/IBM/RAT60/.sdpinst`
     - On Windows: `Windows_installation_directory\IBM\RAT60\.sdpinst`

       The file might be hidden; enable the display of hidden files before you check for its existence.

  b. Look for the properties file `cdi_ref.properties`:
     - If the file exists, and its size is greater than zero bytes, Rational products are installed on the system. You must uninstall all existing Rational products. When you have uninstalled the last product, check for the properties file again.
     - If the file does not exist, or it is present but has a size of zero bytes, no Rational products are installed. Delete the files and directories that remain in the installation directories of the products that you have uninstalled.

  Do not manipulate this properties file in any way; check only its size and existence.

c. When you have uninstalled all Rational products, and removed any files and directories left behind, reinstall the Rational products and the toolkit.

For more information about other compatible Rational products, see "Rational Application Developer (RAD)" on page 19.

Windows: installation ends with mqsisetsecurity error

If you are installing runtime components on Windows, and the process displays the following message just before completion, the required security groups have not been created:

```
mqsisetsecurity.exe has encountered a problem and needs to close
```

The probable cause of this error is that you have uninstalled the Windows component File and Printer Sharing for Microsoft Networks. The security program depends on APIs provided by this component and cannot complete successfully unless the component is installed. The component can be disabled, if not required.

To run the installation program successfully, complete the following steps:

1. Install the File and Printer Sharing component:

   a. Select **Start > Control Panel** and open **Network Connections**.

   b. View the Properties for your main network adapter; installed services used by this connection are listed here.

   c. Click **Install**. Select Service and click **Add**.

   d. Select the **File and Printer Sharing** component and click **OK**.

   e. The component is installed. If you do not want to use this component to allow users to share printers or files on this system, disable the component by clearing the check box for this service in the list shown in the Properties for this connection.

2. Restart your Windows system.

3. Reinstall the runtime components. (You do not have to uninstall these components before you reinstall.)

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 134
- "Environment variables" on page 149
- "Registry entries" on page 149
- "Default WebSphere MQ resources" on page 151

Menu updates

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

If you install the Message Broker Toolkit on Red Hat Linux (x86 platform), the main menu is populated with the following entries:
- **Programming > Rational Product Updater**
- **Programming > Readme**
- **Programming > WebSphere Message Brokers Toolkit**

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

Menu updates

If you install 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**

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 and the default working directory is /var/mqsi.

The directories that are created in these two locations are shown in Table 17 and Table 18 on page 136.

Table 17. AIX installation directory structure

Directories under *install_dir*	Contents
_uninst_runtime	Uninstall programs
_uninst_runtime_jvm	Uninstall programs (JVM)
bin	Executable binaries
catalina	Web Services support files
classes	Java class files
DD64	ODBC driver and related files (64-bit support)
docs	Java API files
exmltConfig	XML transformation files
include	Header and other files for samples
itlm	Tivoli License Manager files
jplugin	Java plug-in files
jre	IBM Runtime Environment for the Java Platform V1.4.2
jre15	IBM Runtime Environment for the Java Platform V1.5
lib	Shared library files
license	License files
lil	Loadable library files (32-bit)
lil64	Loadable library files (64-bit)
merant	ODBC driver and related files
messages	Description files for messages and exceptions
migration	Migration files
readmes	Product readme files
sample	C, C++, and Java sample files
xml4c	XML processing files

Directory structures

Table 18. AIX working directory structure

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

HP-UX (Itanium platform)

On HP-UX (Itanium platform), the default home directory *install_dir* is /opt/IBM/mqsi/6.0 and the default working directory is /var/mqsi.

The directories that are created in these two locations are shown in Table 19 and Table 20 on page 138.

Table 19. HP-UX (Itanium platform) installation directory structure

Directories under *install_dir*	Contents
_uninst_runtime	Uninstall programs
_uninst_runtime_jvm	Uninstall programs (JVM)
bin	Executable binaries
catalina	Web Services support files
classes	Java class files
DD64	ODBC driver and related files (64-bit support)
docs	Java API files
exmltConfig	XML transformation files
include	Header and other files for samples
itlm	Tivoli License Manager files
jplugin	Java plug-in files
jre	IBM Runtime Environment for the Java Platform V1.4.2
jre15	IBM Runtime Environment for the Java Platform V1.5
lib	Shared library files
license	License files
lil	Loadable library files
messages	Description files for messages and exceptions
migration	Migration files
readmes	Product readme files
sample	C, C++, and Java sample files
xml4c	XML processing files

Directory structures

Table 20. HP-UX (Itanium platform) working directory structure

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

HP-UX (PA-RISC platform)

On HP-UX (PA-RISC platform), the default home directory *install_dir* is /opt/IBM/mqsi/6.0 and the default working directory is /var/mqsi.

The directories that are created in these two locations are shown in Table 21 and Table 22 on page 140.

Table 21. HP-UX (PA-RISC platform) installation directory structure

Directories under *install_dir*	Contents
_uninst_runtime	Uninstall programs
_uninst_runtime_jvm	Uninstall programs (JVM)
bin	Executable binaries
catalina	Web Services support files
classes	Java class files
DD64	ODBC driver and related files (64-bit support)
docs	Java API files
exmltConfig	XML transformation files
include	Header and other files for samples
itlm	Tivoli License Manager files
jplugin	Java plug-in files
jre	IBM Runtime Environment for the Java Platform V1.4.2
jre15	IBM Runtime Environment for the Java Platform V1.5
lib	Shared library files
license	License files
lil	Loadable library files (32-bit)
lil64	Loadable library files (64-bit)
merant	ODBC driver and related files
messages	Description files for messages and exceptions
migration	Migration files
readmes	Product readme files
sample	C, C++, and Java sample files
xml4c	XML processing files

Directory structures

Table 22. HP-UX (PA-RISC platform) working directory structure

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

Linux

Runtime components

On Linux (POWER platform), Linux (x86 platform), and Linux (zSeries platform), the default home directory *install_dir* is /opt/ibm/mqsi/6.0 and the default working directory is /var/mqsi.

The directories that are created in these two locations are shown in Table 23 and Table 24 on page 142.

Table 23. Linux installation directory structure (runtime components)

Directories under *install_dir*	Contents
_uninst_runtime	Uninstall programs
_uninst_runtime_jvm	Uninstall programs (JVM)
bin	Executable binaries
catalina	Web Services support files
classes	Java class files
docs	Java API files
exmltConfig	XML transformation files
include	Header and other files for samples
itlm	Tivoli License Manager files
jplugin	Java plug-in files
jre	IBM Runtime Environment for the Java Platform V1.4.2
jre15	IBM Runtime Environment for the Java Platform V1.5
lib	Shared library files
license	License files
lil	Loadable library files (32-bit)
merant	ODBC driver and related files (Linux (POWER platform) and Linux (x86 platform) only)
messages	Description files for messages and exceptions
migration	Migration files
readmes	Product readme files
sample	C, C++, and Java sample files
xml4c	XML processing files

Directory structures

Table 24. Linux working directory structure (runtime components)

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

Message Brokers Toolkit

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

The directories created are shown in Table 25.

Table 25. Linux installation directory structure (Toolkit)

Directories under *install_dir*	Contents
bin	Rational directories and files
csdev	Rational directories and files
csdevrpt_shared	Rational directories and files
eclipse	Toolkit features and plug-ins
evtoolkit	Event Broker specific plug-ins
ibtoolkit	Message Broker specific plug-ins
logs	Installation logs
rad	Rational directories and files
radrsm_shared	Rational directories and files
Resource Adapters	Rational directories and files
runtimes	Rational directories and files
rwd	Rational directories and files
rwdrpt_shared	Rational directories and files
sdpisv	Rational directories and files
setup	Installation program and file
updater	Rational product updater (RPU) files
updater/eclipse	RPU executable file for command-line execution
wmbt_prod	Readme files, product information
wmbt_prod/_uninst	Uninstall files

Directory structures

Solaris

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

The directories that are created in these two locations are shown in Table 26 and Table 27 on page 145.

Table 26. Solaris installation directory structure

Directories under *install_dir*	Contents
_uninst_runtime	Uninstall programs
_uninst_runtime_jvm	Uninstall programs (JVM)
bin	Executable binaries
catalina	Web Services support files
classes	Java class files
DD64	ODBC driver and related files (64-bit support)
docs	Java API files
exmltConfig	XML transformation files
include	Header and other files for samples
itlm	Tivoli License Manager files
jplugin	Java plug-in files
jre	IBM Runtime Environment for the Java Platform V1.4.2
jre15	IBM Runtime Environment for the Java Platform V1.5
lib	Shared library files
license	License files
lil	Loadable library files (32-bit)
lil64	Loadable library files (64-bit)
merant	ODBC driver and related files
messages	Description files for messages and exceptions
migration	Migration files
readmes	Product readme files
sample	C, C++, and Java sample files
xml4c	XML processing files

Table 27. Solaris working directory structure

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

Directory structures

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.

The directories that are created in these two locations are shown in Table 28 and Table 29 on page 147.

Table 28. Windows installation directory structure (runtime components)

Directories under *install_dir*	Contents
`_uninst_runtime`	Uninstall programs
`_uninst_runtime_jvm`	Uninstall programs (JVM)
`bin`	Executable files; .exe, .dll, .lil
`catalina`	Web Services support files
`classes`	Java class files
`DataDirect`	ODBC files
`docs`	Java API files
`exmltConfig`	XML transformation files
`include`	Header and other files for samples
`itlm`	Tivoli License Manager files
`jplugin`	Java plug-in files
`jre`	IBM Runtime Environment for the Java Platform V1.4.2
`jre15`	IBM Runtime Environment for the Java Platform V1.5
`lib`	Shared library files
`license`	License files
`messages`	Description files for messages and exceptions
`migration`	Migration files
`readmes`	Product readme files
`sample`	C, C++, and Java sample files

Table 29. Windows working directory structure (runtime components)

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

Directory structures

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 30.

Table 30. Windows installation directory structure (Toolkit)

Directories under *install_dir*	Contents
`bin`	Rational directories and files
`csdev`	Rational directories and files
`csdevrpt_shared`	Rational directories and files
`eclipse`	Toolkit features and plug-ins
`evtoolkit`	Event Broker specific plug-ins
`ibtoolkit`	Message Broker specific plug-ins
`logs`	Installation logs
`rad`	Rational directories and files
`radrsm_shared`	Rational directories and files
`Resource Adapters`	Rational directories and files
`runtimes`	Rational directories and files
`rwd`	Rational directories and files
`rwdrpt_shared`	Rational directories and files
`sdpisv`	Rational directories and files
`setup`	Installation programs and files
`updater`	Rational product updater (RPU)
`updater\eclipse`	RPU executable file for command-line execution
`wmbt_prod`	Readme files, product information
`wmbt_prod\_uninst`	Uninstall programs

z/OS

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

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

Environment variables

Before you can use the product or configure any resources on distributed systems, you must run a profile to initialize environment variables to create the product environment. Use the profile files supplied 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 113, 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 for you automatically.

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

Further information about profiles on all systems are included in the information center.

Registry entries

When you install WebSphere Message Broker on distributed systems, 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 31 on page 150 shows the main Windows registry entries, created under HKEY_LOCAL_MACHINE\SOFTWARE\IBM\WebSphereMQIntegrator. Corresponding entries exist on Linux and UNIX systems. The number and content of entries depends on the components that you have installed and configured.

Registry entries

Table 31. Registry entries for runtime components

Location	Description
component_name	Top level entry for each component that you have installed and configured.
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.
component_name\CurrentVersion\DataSourceName	Name of database 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 32 shows the main Windows registry entries, created under `HKEY_LOCAL_MACHINE\SOFTWARE\IBM\WebSphereMessageBrokersToolkit`.

Table 32. 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

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 33 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 33. 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 response messages sent by the broker to the Configuration Manager
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

WebSphere MQ resources

Table 33. 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

Table 33. 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.

WebSphere MQ resources

Appendix C. Notices

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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 xii.

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 run. The broker is guaranteed to enforce some degree of isolation between message flows in distinct execution groups because it ensures that they run 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.

R

Rational Application Developer (RAD). A comprehensive integrated development environment, based on the Eclipse open source platform, that accelerates application development and deployment. The Message Brokers Toolkit is based on RAD.

Rational Product Updater (RPU). A component of all Rational software products that connects to an IBM update server on the Web that provides update (service) packages for those software products.

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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