WebSphere Message Broker

Installation Guide

Version 6.1

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About this book

This book explains how to plan and prepare for the installation of IBM® WebSphere® Message Broker Version 6.1.

This edition of the book is specific to components at the following levels, and to all subsequent releases and modifications unless otherwise stated:
- Runtime components Version 6.1.0.3
- Message Broker Toolkit Version 6.1.0.3

WebSphere Message Broker is supported on the following operating systems:
- IBM AIX®
- HP-UX on Itanium
- HP-UX on PA-RISC
- Linux® on POWER™ for iSeries® and pSeries®
- Linux on x86
- Linux on x86-64
- Linux on System z®
- Sun Solaris Operating Environment on SPARC
- Sun Solaris Operating Environment on x86-64
- Microsoft® Windows® XP and Windows Server 2003
- Microsoft Windows Vista and Windows Server 2008
- IBM z/OS®

This book describes only how to install the product components onto your computers. For all other information, the information center is the primary source of documentation; it covers all post-installation configuration and customization tasks on all operating systems. It also describes how to install optional software, how to apply service, and how to remove the product.

This book is divided into four parts:
- Part 1, "Planning," on page 1 provides a high-level understanding of the installation process, then describes the requirements for installation and the resources that are supplied.
- Part 2, "Preparation," on page 65 tells you how to prepare your computer environments and decide what components you want to install.
- Part 3, "Installation," on page 93 provides detailed instructions of the installation tasks on all platforms except z/OS.

  If you have ordered WebSphere Message Broker with Rules and Formatter Extension for non-z/OS systems, use this book to install WebSphere Message Broker components, then insert the appropriate Rules and Formatter Extension CD for your operating system. The Design-time

About this book

Extension CDs provide extensions to the toolkit, the Run-time Extension CDs provide extensions to the broker runtime components.

If you want to install components on z/OS, you must refer to the *Program Directory for WebSphere Message Broker for z/OS* for additional preparation tasks and installation instructions.

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.

- Part 4, "After installation," on page 123 shows you how to verify your installation on Linux on x86 and Windows and where to find further information to help you to develop and expand your broker configuration.
- Appendixes provide further support and reference information that you might need while you complete these installation tasks.

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 in 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.

Who this book is for

This book is for system administrators of computers 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 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 on Itanium and HP-UX on PA-RISC where their behavior is common.

The term Linux refers to Linux on POWER, Linux on x86, Linux on x86-64, and Linux on System z where their behavior is common.

The term Solaris refers to Solaris on SPARC and Solaris on x86-64 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, Windows Vista, Windows Server 2003, and Windows Server 2008 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). On some systems, you might have to invoke the wizard with more than just its name; for example, on Linux on System z, you must enter ./ before the wizard name.

The term *install_dir* refers to the directory in which you install the product. For the Message Broker Toolkit, this directory refers to the package group installation directory. Default locations are described in Chapter 3, "Coexistence and migration," on page 37.

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® and DB2 Enterprise Server refer to IBM DB2® Universal Database™ Enterprise Server Edition and IBM DB2 Restricted Enterprise Server Edition. WebSphere Message Broker includes DB2 Restricted Enterprise Server Edition Version 9.1 with tailored terms and conditions on all distributed systems. This database edition is functionally identical to DB2 Enterprise Server and no distinction is made in this book. However, if you install the restricted edition, you must register your license; this task is described in Appendix B, "Registering your DB2 license," on page 149.

Other editions of DB2 that are stated to be suitable for production deployment are also supported (for example, Workgroup Server Edition).

Derby refers to the database product based on the Apache Derby open source project from the Apache Software Foundation. Derby database support is embedded in the broker component on Windows only. See "Databases" on page 18 for further information about Derby.

Product terms that are introduced in this book are defined in the "Glossary of terms and abbreviations" on page 155. 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/

Information sources

Where to find more information

The readme file

Always refer to the readme file readme.html before you perform installation, to make sure that you are aware of the latest information about the product and its documentation. The readme file that is supplied with the product contains a minimum level of information, and directs you to the online version which is continually updated.

The readme file is available, in US English only, on the product readmes Web site:

www.ibm.com/support/docview.wss?uid=swg27006913

Translated readme files are available on the documentation FTP site at:

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

However, you should continue to check the latest version in US English on the product readmes Web site for updates made after translation was completed.

The information center

The information about how to use this product after installation is in the information center, which you can access from the **Help > Help Contents** menu in the Message Broker Toolkit.

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

- The Quick Start CD that is included in the product package, and available to download.

  The information center is provided for Linux on x86 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 install it on to one or more computers.

- The documentation FTP site:

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

  Download file `wmb_help_lin.tgz` for Linux on x86 or `wmb_help_win.zip` for Windows, and follow the instructions in the `using_the_infocenter.html` file that is included in each compressed file. You can start these information centers 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.

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

  `www.adobe.com`

- The online IBM WebSphere Message Broker Information Center:

  `publib.boulder.ibm.com/infocenter/wmbhelp/v6r1m0/index.jsp`

The information center that is provided on the Quick Start CD and the FTP site includes documentation plug-ins for WebSphere Message Broker, WebSphere MQ Version 6.0, and WebSphere MQ Everyplace Version 2.0.2.0; the online information center omits these additional plug-ins.

Publications

The following books are available for WebSphere Message Broker:

- *WebSphere Message Broker Installation Guide (GC34-6866)* (this book)
- *Program Directory for WebSphere Message Broker for z/OS (GI13-0521)*
- *Program Directory for WebSphere Message Broker with Rules and Formatter for z/OS (GI13-0522)*

You can view and download these books on the IBM Publications Center:

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

For further information specific to the Rules and Formatter Extension, see the documentation on the supplied Rules and Formatter Extension CDs, or access the `V6.1\Rules and Formatter` directory on the documentation FTP site at:

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

Information about 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.

Information sources

WebSphere MQ
> The WebSphere MQ Version 6.0 documentation is included in the integrated information center provided on the WebSphere Quick Start CD.
>
> You can also access the WebSphere MQ Version 6.0 information center online:
> publib.boulder.ibm.com/infocenter/wmqv6/v6r0/index.jsp
>
> If you choose to install WebSphere MQ Version 7.0, you can access the WebSphere MQ Version 7.0 information center online:
> publib.boulder.ibm.com/infocenter/wmqv7/v7r0/index.jsp

DB2 Enterprise Server
> Access the Version 9.5 information center for distributed systems online:
> publib.boulder.ibm.com/infocenter/db2luw/v9r5/index.jsp
>
> Access the Version 9.1 information center for distributed systems online:
> publib.boulder.ibm.com/infocenter/db2luw/v9/index.jsp
>
> Access the Version 8 information center for distributed systems online:
> publib.boulder.ibm.com/infocenter/db2luw/v8/index.jsp
>
> Access the Version 8 information center for z/OS online:
> publib.boulder.ibm.com/infocenter/dzichelp/v2r2/index.jsp

Derby
> Access further support information:
> db.apache.org/derby/

WebSphere MQ Everyplace®
> The WebSphere MQ Everyplace documentation is included in the integrated information center provided on the WebSphere Quick Start CD.

WebSphere information on the Web

Follow links on the WebSphere Web site at www.ibm.com/software/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

- WebSphere MQ Version 7.0 is supported on all platforms. This support is introduced for Version 6.1.0.3 and is not available for earlier releases.

  WebSphere MQ Version 7.0 includes new and enhanced function that might be of value to you in your broker domain. For details of what is available, access the WebSphere MQ Version 7.0 online information center, as described in "Where to find more information" on page xii.

  When you order WebSphere Message Broker, WebSphere MQ Version 6.0 is included; if you want to work with WebSphere MQ Version 7.0, you must obtain this version yourself.

- Support is added for the Windows Vista and Windows Server 2008 operating systems, both 32–bit and 64–bit editions. On 64–bit editions, all WebSphere Message Broker components run as 32–bit applications.

- Support is added for the Windows XP and Windows Server 2003 operating systems 64–bit editions; all WebSphere Message Broker components run as 32–bit applications.

- Support is added for the following database versions on most platforms:
  - Informix® Dynamic Server Version 10
  - Oracle 11g Release 1
  - The Connect-Time Failover feature of Oracle RAC (Real Application Clusters) in a non-XA environment only is supported on all Linux, UNIX, and Windows systems.
  - Sybase 15

- New nodes that are added in fix packs are not initially made available in the runtime broker environment; you can enable this support as required.

- Instructions for applying service fixes have been replaced by references to the information center and to the installation instructions that are provided on the Web. The documents on the Web are occasionally updated and therefore always provide current information.

Changes

- To align more closely with the terminology used on the WebSphere
  Message Broker Requirements Web site and on the physical media (CDs
  and DVDs), the names used to refer to the supported platforms have been
  changed. The following table shows the updated names and the previous
  names.

  Table 1. Platform terminology changes

Updated name	Previous name
AIX	AIX (no change)
HP-UX on Itanium	HP-UX (Integrity platform)
HP-UX on PA-RISC	HP-UX (PA-RISC platform)
Linux on POWER	Linux (POWER platform)
Linux on x86	Linux (x86 platform)
Linux on x86-64	Linux (x86-64 platform)
Linux on System z	Linux (zSeries platform)
Solaris on SPARC	Solaris (SPARC platform)
Solaris on x86-64	Solaris (x86-64 platform)
Windows	Windows (no change)
z/OS	z/OS (no change)

  No changes have been made to the support; only the terminology has
  changed.
- Minor technical corrections and editorial changes have been made
  throughout the book.

Changes for the second edition GC34–6866–01

- On all systems except z/OS, you can choose one of three license options
  that support a range of features and capacity, according to your
  environment and business requirements. You must configure your brokers
  to operate in a mode that conforms to the license that you purchase.

  A Trial Edition is also available on the Web, which you can download and
  use without charge. See "License requirements" on page 34 and Chapter 5,
  "Installation packages," on page 51 for more information.

  Use the information in this book to prepare for and install all editions,
  including the Trial Edition; the process is unchanged unless otherwise
  stated.
- Operating systems and hardware support; additions and changes have been
  made on some platforms.
- Database support: IBM DB2 Version 9.5 and Oracle 11g is supported on
  most platforms.

- Additional instructions are provided for applying V6.1.0.2 service updates to the Message Broker Toolkit.
- The appendix "System changes after installation" has been removed; the content is included in the information center under **Reference > Installation**.
- Minor technical corrections and editorial changes have been made throughout the book.

Changes

Part 1. Planning

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

Chapter 1. Preparing for installation: read first

Read this chapter first for an overview of the installation tasks, and to prepare for installation of WebSphere Message Broker. The tasks that you perform to complete installation are listed below; each task indicates whether it is required or optional. A summary of each task is provided, along with pointers to later chapters or sections which describe that task in more detail.

1. **Required: make sure that you have acquired the product packages that you need for installation.**

   New users (no previous installations of WebSphere Message Broker Version 6.1)

   The packages that you need depend on the platform or platforms on which you want to install product components:

   Windows

   Physical and electronic packages are available for WebSphere Message Broker Version 6.1.0.3.

   All other platforms

   Physical and electronic packages are available for WebSphere Message Broker Version 6.1.0.2. After installing from these packages, you must apply service for Version 6.1.0.3.

   Existing users (one or more previous installations of WebSphere Message Broker Version 6.1)

   Windows

   Apply service for Version 6.1.0.3 to all existing installations of WebSphere Message Broker Version 6.1 on Windows XP or Windows Server 2003.

   Version 6.1.0.3 is the first version available for Windows Vista and Windows Server 2008; all installations on these platforms must be completed as new installations (see previous section for new users).

   All other platforms

   Apply service for Version 6.1.0.3 to all existing installations of WebSphere Message Broker Version 6.1 on all other relevant platforms.

   For more information about available packages and their contents, see Chapter 5, "Installation packages," on page 51. If you have ordered the product for electronic delivery from IBM Passport Advantage, check that you have downloaded all the images that you need for all components

and all platforms. The contents of the images that are available are exactly equivalent to the CDs that are supplied in the physical packages. Find out how to access, download, and extract product images in Chapter 6, "Preparing the system," on page 67.

For instructions about downloading and applying service updates, see the information center.

2. **Required: make sure that you have access to the product documentation that you need for installation.**
   - The product readme file readme.html contains the latest available information.
   - This Installation Guide describes planning and preparation on all platforms.
   - This Installation Guide describes installation procedures for all components on all distributed platforms.
   - 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* describes installation procedures for all components on z/OS.

   Find out how to get these documents in "Where to find more information" on page xii.

3. **Required: decide which components you want to install on your computers.**

   The information below provides a minimum level of details about WebSphere Message Broker components; read Chapter 7, "Choosing what to install," on page 81 to find out more about them.
   - The Message Broker Toolkit. You must install this component on at least one computer. You can install this component only on Linux on x86 and Windows.

     Use the Message Broker Toolkit to create, manage, deploy, and delete message flows and associated resources.
   - The broker. You must install this component on at least one computer.

     You can create multiple brokers on a single computer if you want. Deploy your message flow resources to one or more brokers to process your application messages.
   - The Configuration Manager. You must install this component on at least one computer.

     A Configuration Manager manages a broker domain that includes one or more brokers. Multiple Message Broker Toolkit users can connect to the same Configuration Manager.
   - The User Name Server. This component is optional.

     If you plan to configure a publish/subscribe domain, install and create this component to manage user permissions for publish/subscribe operations.

4. **Required: decide which platform you want to install your chosen components on.**

   Table 2 shows which components you can install on the supported platforms.

   Table 2. Summary of component and platform support

Component	Platform
Message Broker Toolkit	• Linux on x86 • Windows
Broker	All supported platforms
Configuration Manager	All supported platforms
User Name Server	All supported platforms

5. **Required: prepare each computer on which you are installing one or more components.**

   a. Check that your target computers meet the initial hardware, storage, and software requirements.

      The requirements vary depending on what computers you want to install WebSphere Message Broker on, and what components you are installing; read the details in "Hardware requirements" on page 10 and "Operating system requirements" on page 15.

      The supported hardware and software environments are updated occasionally; view the latest requirements information on the product requirements Web site:

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

   b. Complete appropriate tasks for your computer to set up security and UNIX kernel configuration, and get ready to access the installation media. All these tasks are described in Chapter 6, "Preparing the system," on page 67.

   c. Check that your user ID has the required authority to complete installation:

      • AIX systems: use the user ID root for installation.
      • Linux and other UNIX systems: use either the user ID root, or another ID and become root.
      • Windows systems: your user ID must be a member of the group Administrators, but you cannot use the ID Administrator.
      • z/OS systems: use a user ID that has suitable RACF® privileges to perform installation.

      This information is a summary only: more details are provided in "Setting up security" on page 67.

6. **Required: check the programs that you use to perform component installation.**

   Table 3 lists the programs that are available.

Table 3. Summary of available installation methods

Platform	Tools
Windows only	The Windows Launchpad
	This program installs or upgrades prerequisite products if they are not already installed, or are not at the supported level. See Chapter 9, "Installing with the Windows Launchpad," on page 95.
Linux, UNIX, and Windows systems	Installation wizards on each supported platform have unique names, which are listed in "Installation wizard names" on page 92.
	• To install runtime components, see Chapter 10, "Installing runtime components," on page 109.
	• To install the Message Broker Toolkit, see Chapter 11, "Installing the Message Broker Toolkit," on page 115.
z/OS only	SMP/E
	To install runtime components, 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*.

7. **Required: install additional products that are required by WebSphere Message Broker.**

   WebSphere Message Broker requires other software products to work successfully. The order in which you install these products is not important. However, you must install all required products before you can configure and start WebSphere Message Broker components.

   Table 4 on page 7 gives a summary of these requirements.

Table 4. Summary of prerequisite products

Component	Prerequisite products
Message Broker Toolkit	• Microsoft Visual C++ Runtime V8 SP1 (Windows XP and Windows Server 2003 only) • A Web browser to view the information center
Broker	• Microsoft Visual C++ Runtime V8 SP1 (Windows XP and Windows Server 2003 only) • WebSphere MQ to communicate with other components • A database to store configuration data • The XML Toolkit (z/OS only) • A JRE
Configuration Manager	• Microsoft Visual C++ Runtime V8 SP1 (Windows XP and Windows Server 2003 only) • WebSphere MQ • A JRE
User Name Server	• Microsoft Visual C++ Runtime V8 SP1 (Windows XP and Windows Server 2003 only) • WebSphere MQ • A JRE

Full details of all these requirements are provided in Chapter 2, "System requirements," on page 9:

- For more information about Microsoft Visual C++ Runtime, see "Microsoft Visual C++ Runtime" on page 29.
- For Web browsers, see "Browsers" on page 32.
- For details of supported WebSphere MQ versions, see "WebSphere MQ" on page 27.
- For a list of the database products that are supported on each platform, see"Databases" on page 18.
- To access more information about the XML Toolkit requirement on z/OS only, see "XML Toolkit" on page 32.
- See "Java Runtime Environment" on page 29 for further information about JREs.

In addition to these required products, you can use other optional products to extend your use of WebSphere Message Broker. For more information, see "Optional software and support" on page 33.

8. **Optional: configure a minimum broker domain and verify its operation.**

   To create a minimum broker domain, install the Message Broker Toolkit, the Configuration Manager, and the broker components on a single computer. Because the Message Broker Toolkit is required to complete this task, you must choose a Linux on x86 or Windows computer.

Use the Default Configuration wizard, which you can start from the Message Broker Toolkit, to create the required components after installation.

Use this broker domain to create message flow resources, verify your installation, investigate how the product works, and explore the product samples.

The verification process is described in Chapter 12, "Configuring and verifying your system," on page 125. After verification, read Chapter 13, "What's next," on page 133 to discover how you can learn more about the product.

9. **Optional: change the broker operation mode**

When you install WebSphere Message Broker and create brokers, they are configured with an operation mode set either to trial (if you have installed the Trial Edition) or enterprise (all other editions). You must configure your brokers to conform to the license that you have purchased, therefore if you have purchased the Starter Edition, or the Remote Adapter Deployment, you must set the operation mode of all your brokers to the correct value.

See "Configuring your brokers to conform to your license" on page 137 for more details.

10. **Optional: change the broker function level**

If new message flow nodes are delivered in a fix pack, they appear in the Message Broker Toolkit, but are not enabled in the runtime broker environment. If you deploy a BAR file that includes a message flow that uses a new node, the deploy fails.

If you want to use and test the new nodes, you can enable them on an individual broker basis. See "Changing the broker function level" on page 141 for more details.

Chapter 2. System requirements

Before you install WebSphere Message Broker, check that your systems meet both the hardware and software requirements of the product. Details are provided in these sections:
- "Hardware requirements" on page 10
- "Software requirements" on page 15

The product readme file readme.html might contain updates to the information in this chapter. The readme file includes information pertinent to all components and platforms, and is maintained in US English on the product readmes Web site:

www.ibm.com/support/docview.wss?uid=swg27006913

You must check this file to ensure that you have the latest information. Translated readme files are available on the documentation FTP site:

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

A readme file is included with the product; it contains a minimum level of information and directs you to the online version. It available in 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:
  - DVD (on Linux on x86 and Windows only)
  - Runtime components Disk 1 (all operating systems)
  - Runtime components Disk 2 and Disk 3 (Windows only)
  - Message Broker Toolkit Disk 1
- After installation, in the installation directory:
  - For runtime components, in *install_dir*\readmes*locale*\ (where *locale* identifies country, region, or language, for example en_US).
  - For the Message Broker Toolkit, in *package_group_directory*\wmbt\ documentation*locale*\ (where *locale* identifies country, region, or language, for example en_US).

For further support information, including latest fixes and troubleshooting techniques, visit the product support Web site:

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

The supported hardware and software environments are updated occasionally; view the latest requirements information on the product requirements Web site:

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

For information about license requirements, see "License requirements" on page 34.

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

For further information about requirements specific to the Rules and Formatter Extension, see the installation readme file for that component. View or download the file RF_Install_ReadMe.pdf from the V6.1/ Rules_and_Formatter/ directory on the documentation FTP site:

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

Hardware requirements

Check that your target computers are at the required level of support. Table 5 on page 11 describes what you need.

The Message Broker Toolkit is a required component that can be installed only on Linux on x86 and Windows. Therefore your target computers must be able to support one of these two operating systems. You can install all other components on all supported operating systems.

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

Table 5. Hardware requirements

Operating system	Requirements[1]
AIX	64-bit IBM System p® systems Any hardware from IBM or other vendors that is capable of running trademarked AIX systems[2]
HP-UX on Itanium	Itanium systems
HP-UX on PA-RISC	Hewlett-Packard HP-9000 PA-RISC 2.0 processor servers
Linux on POWER	64-bit System i® and System p IBM POWER processor based systems only
Linux on x86	IBM eserver System x™ or equivalent Intel® based servers[3]
Linux on x86-64	AMD64, EM64T, and compatible processor servers
Linux on System z	Any server capable of running one of the supported Linux on System z releases
Solaris on SPARC	Sun Microsystems SPARC processor servers
Solaris on x86-64	AMD64, EM64T, or compatible processor servers
Windows	Windows x86 technology-compatible PC hardware[3]
z/OS[4]	Any server capable of running one of the supported z/OS releases

Notes:

1. Always check the `readme.html` file and the product requirements Web site for the latest information about supported hardware.
2. AIX systems must have passed a set of verification tests for compliance with the AIX application binary and programming interfaces.
3. The Message Broker Toolkit requires a computer with an Intel Pentium® III processor (or higher) that has a 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. 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.

If you plan to install from CD, your computer requires a CD reader. For Linux on x86 and Windows systems, DVDs are also provided; if you want to install from DVD, your computer must have a DVD reader. For details of the CDs and DVDs supplied, see Chapter 5, "Installation packages," on page 51. If you prefer, you can download and install from images available from IBM 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 Random Access Memory (RAM) is required to support runtime operations (1 MB equals approximately 1 000 000 bytes).
- 512 MB of RAM is required to support Message Broker Toolkit operations on Linux on x86 or Windows systems. 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 computer has at least the space shown in Table 6 on page 13 or Table 7 on page 13, which provide 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.

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

  The installation wizard displays 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 6 on page 13 or Table 7 on page 13, use the larger amount and check that your computer has sufficient space before you continue with the installation.

Table 6. Disk space requirements (Linux and Windows systems)

Component	Linux on POWER	Linux on x86[1]	Linux on x86-64	Linux on System z	Windows[1]
Broker, Configuration Manager, and User Name Server	440 MB plus 300 MB temporary space	440 MB plus 300 MB temporary space	600 MB plus 300 MB temporary space	440 MB plus 300 MB temporary space	460 MB plus 300 MB temporary space
Message Broker Toolkit	Not available	1.9 GB plus 1.5 GB temporary space	Not available	Not available	1.9 GB plus 1.5 GB temporary space

Notes:

1. The space required for the Message Broker Toolkit includes space for the shared resources directory and the package group directory.

Table 7. Disk space requirements (UNIX)

Component	AIX	HP-UX on Itanium	HP-UX on PA-RISC	Solaris on SPARC	Solaris on x86-64
Broker, Configuration Manager, and User Name Server	840 MB plus 300 MB temporary space	740 MB plus 300 MB temporary space	800 MB plus 300 MB temporary space	860 MB plus 300 MB temporary space	540 MB plus 300 MB temporary space
Message Broker Toolkit	Not available	Not available	Not available	Not available	Not available

- 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 18).
  - On Windows systems, ODBC (Open Database Connectivity) drivers for Apache Derby require approximately 105 MB.
- When 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.

Memory and disk space

- If you intend to create more than one broker on any one computer, you will need additional memory and swap space. For example, you might create more than one broker at different versions to complete migration. Plan for 1 GB RAM and 1 GB of swap space for each broker, in addition to the space and memory requirements of other applications.

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

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

Communications

Check that your computer 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:
- "Operating system requirements"
- "Databases" on page 18
- "Additional required products" on page 27
- "Optional software and support" on page 33

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 8.

Table 8. Operating system requirements

Operating system	Requirements[1]
AIX	• IBM AIX Version 5.3 (Technology Level 5 SP2)[2] • IBM AIX Version 6.1
HP-UX on Itanium	• HP-UX 11i V2 (B.11.23) for Itanium (with HP-UX recommended patches for Java 5.0) • HP-UX 11i V3 (B.11.31) for Itanium
HP-UX on PA-RISC	• HP-UX 11i V2 (B.11.23) (with HP-UX recommended patches for Java 5.0) • HP-UX 11i V3
Linux on POWER	• Linux PowerPC® Red Hat Enterprise Linux Version 4.0 (with service level Update 2) • Linux PowerPC Red Hat Enterprise Linux Version 5.0 • Linux PowerPC SUSE Linux Enterprise Server (SLES) 9 RC5 or above • Linux PowerPC SUSE Linux Enterprise Server (SLES) 10
Linux on x86[3]	• Linux Intel Red Hat Enterprise Linux Version 4.0 (with service level Update 2) • Linux Intel Red Hat Enterprise Linux Version 5.0[4] • Linux Intel SUSE Linux Enterprise Server (SLES) 9 • Linux Intel SUSE Linux Enterprise Server (SLES) 10[4]
Linux on x86-64	• Linux Intel Red Hat Enterprise Linux Version 4.0 (with service level Update 2) • Linux Intel Red Hat Enterprise Linux Version 5.0 • Linux Intel SUSE Linux Enterprise Server (SLES) 9 • Linux Intel SUSE Linux Enterprise Server (SLES) 10
Linux on System z	• Linux zSeries® (64-bit) Red Hat Enterprise Linux Version 4.0 (with service level Update 2) • Linux zSeries (64-bit) Red Hat Enterprise Linux Version 5.0 • Linux zSeries (64-bit) SUSE Linux Enterprise Server (SLES) 9 • Linux zSeries (64-bit) SUSE Linux Enterprise Server (SLES) 10
Solaris on SPARC	• Sun Solaris 9 (with SunSolve recommended Patch Cluster level)[5] • Sun Solaris 10 (with SunSolve recommended Patch Cluster level)
Solaris on x86-64	• Sun Solaris 10 (plus SunSolve recommended Patch Cluster level)[6]

Operating system requirements

Table 8. Operating system requirements (continued)

Operating system	Requirements[1]
Windows[7]	• Microsoft Windows XP Professional (with service level SP2) • Microsoft Windows Vista Business Edition (with service level SP1) • Microsoft Windows Vista Enterprise Edition (with service level SP1) • Microsoft Windows Vista Ultimate Edition (with service level SP1) • Microsoft Windows Server 2003 Standard Edition[8] • Microsoft Windows Server 2003 Enterprise Edition[8] • Microsoft Windows Server 2003 R2 Standard Edition[8] • Microsoft Windows Server 2003 R2 Enterprise Edition[8] • Microsoft Windows Server 2008 Standard Edition • Microsoft Windows Server 2008 Enterprise Edition
z/OS[9]	• IBM z/OS Version 1.7 • IBM SMP/E for z/OS Version 3.3 or later

Notes:

1. Always check the `readme.html` file and the product requirements Web site for the latest information about supported software.

2. WebSphere Message Broker requires the xlC runtime libraries at Version 8 or above. If you do not have an xlC or xlC++ compiler at this version installed, you must download and apply a PTF from this Web site:

   `www.ibm.com/support/docview.wss?uid=swg24014302`

3. On Linux on x86, you might require the following additional packages that are available with the operating system.

   • If you choose to use the graphical interface to install on SUSE Linux Enterprise Server, install package `compat` (at version 2002.12.6.0 or later). This package is not required for console or silent installations.

   • If you want to use the Red Hat package manager (RPM), install package `rpm-build`.

4. The Message Broker Toolkit is not supported on this operating system version.

5. If you install the broker or the Configuration Manager component on this operating system version, the recommended Patch Cluster level must include patches 111711-16 (32-bit) and 111712-16 (64-bit).

6. If you install the broker or the Configuration Manager component on Solaris 9, the recommended Patch Cluster level must include patch 119964-08.

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. To ensure a consistent environment, use the same approach to installation for both WebSphere Message Broker and WebSphere MQ. For further details about zone support, see the WebSphere MQ support statement at:

www.ibm.com/support/docview.wss?rs=171&uid=swg21233258

7. 32-bit and 64-bit editions of the listed Windows operating systems products are supported, but all WebSphere Message Broker components run as 32-bit applications.

   On Windows Vista and Windows Server 2008, no features specific to these operating systems are used by WebSphere Message Broker components.

8. On Windows Server 2003 Standard and Enterprise Editions, you can publish both the command console and the Message Broker Toolkit to be accessed through Citrix XenApp (Presentation Server V4.0 and V4.5).

9. z/OS Version 1.7 must be at RSU0609 or later (for the target computer) and you must install PTFs for APARs PK34716 and PK34041

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

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

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

On operating systems where both modes are supported, 64-bit operation is the default mode. You cannot create execution groups for a broker in a mode that is not supported by its underlying hardware and software.

If you are migrating components from Version 6.0, broker operation and execution group support have changed, indicated in Table 9 on page 18, and you might need to make additional changes to your configuration. Read the migration and configuration sections in the information center for further details.

Operating system requirements

The installation tasks that are described in this book do not depend on 32-bit or 64-bit mode. The verification tasks that are described are applicable only to 32-bit operating systems, because the Message Broker Toolkit is supported only in 32-bit environments.

Table 9. Support for 32-bit and 64-bit operation

Platform	Broker core components and commands	32-bit execution groups	64-bit execution groups
AIX[1]	64-bit	Yes	Yes
HP-UX on Itanium	64-bit	No	Yes
HP-UX on PA-RISC[1]	64-bit	Yes	Yes
Linux on POWER[1, 2]	64-bit	No	Yes
Linux on x86	32-bit	Yes	No
Linux on x86-64	64-bit	Yes	Yes
Linux on System z[1, 2]	64-bit	No	Yes
Solaris on SPARC[1]	64-bit	Yes	Yes
Solaris on x86-64[1, 2]	64-bit	No	Yes
Windows[3]	32-bit	Yes	No
z/OS	32-bit	Yes	No

Notes:

1. On this platform, the broker core components operate in 64-bit mode in contrast to Version 6.0, where the broker core components operate in 32-bit mode.
2. On this platform, you can no longer create or run 32-bit execution groups. Execution groups can be only 64-bit mode.
3. The broker runs as a 32-bit application on both 32-bit and 64-bit editions of all supported Windows operating systems.

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 10 on page 20 shows the levels of database that are supported on each operating system.

DB2 Enterprise Server V9.1 is supplied with WebSphere Message Broker for distributed systems. You can install this version of DB2 on all supported operating systems; its use is restricted to WebSphere Message Broker components. 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 and install 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 Derby database is supported; you can use only the database embedded in the broker component.

To use the Derby database, you do not have to install any database server code, but you must install the ODBC Drivers for Apache Derby that provide an interface to that database. These drivers are available with the IBM DB2 Run-Time Client for Windows Version 8.2.5, a copy of which is provided on CD or DVD for WebSphere Message Broker on Windows only. If you use the Windows Launchpad to install, select the option for the ODBC Drivers for Apache Derby. 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 use the Windows Launchpad to install WebSphere Message Broker, 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 10 on page 20. 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 database software that is supported for this purpose (known as *user databases*) is the same as that supported for a broker database, with the addition of DB2 on OS/400®, and Informix on most operating systems, as shown in Table 10 on page 20.

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

Databases

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 25.

Table 10. Supported databases

Operating system	DB2[1, 2, 3]	SQL Server	Oracle[1, 4, 5]	Sybase[1]	Informix[1, 6]
AIX	8.2 9.1 9.5	2000 SP3a[7] 2005 SP1[7]	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10g Release 1 10g Release 2[8] 11g Release 1	12.5 15	Dynamic Server Version 9.4 with UC7 Fix Pack, Client SDK Version 2.90 with UC4 Fix Pack Dynamic Server Version 10.00 with FC5 Fix Pack, Client SDK Version 2.90 with UC4 Fix Pack
HP-UX on Itanium	8.2 9.1 9.5	2005 SP1[7]	10g Release 2 11g Release 1	12.5	Dynamic Server Version 10.00 with FC5 Fix Pack, Client SDK Version 2.90 with FC4R1 Fix Pack
HP-UX on PA-RISC	8.2 9.1[9]	Not supported	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10g Release 1 10g Release 2 11g Release 1	12.5 15	Dynamic Server Version 9.4 with UC7 Fix Pack, Client SDK Version 2.90 with HC4 Fix Pack Dynamic Server Version 10.00 with FC5 Fix Pack, Client SDK Version 2.90 with HC4 Fix Pack
Linux on POWER	8.2 9.1 9.5	Not supported	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10g Release 1 10g Release 2 11g Release 1	12.5 15	Dynamic Server Version 9.4 with UC7 Fix Pack, Client SDK Version 2.90 with UC4 Fix Pack Dynamic Server Version 10.00 with FC5 Fix Pack, Client SDK Version 2.90 with FC4 Fix Pack

Table 10. Supported databases (continued)

Operating system	DB2[1, 2, 3]	SQL Server	Oracle[1, 4, 5]	Sybase[1]	Informix[1, 6]
Linux on x86	8.2[10] 9.1	2000 SP3a[7] 2005 SP1[7]	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10g Release 1 10g Release 2 11g Release 1	12.5 15	Dynamic Server Version 9.4 with UC7 Fix Pack, Client SDK Version 2.90 with UC3 Fix Pack Dynamic Server Version 10.00 with UC5 Fix Pack, Client SDK Version 2.90 with UC4 Fix Pack
Linux on x86-64	8.2[10] 9.1 9.5	2005 SP1[7]	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10g Release 1 10g Release 2 11g Release 1	12.5 15	Dynamic Server Version 9.4 with UC7 Fix Pack, Client SDK Version 2.90 with UC3 Fix Pack Dynamic Server Version 10.00 with FC5 Fix Pack, Client SDK Version 2.90 with UC4 Fix Pack
Linux on System z	8.2 9.1 9.5	Not supported	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10g Release 1 10g Release 2 11g Release 1	Not supported	Dynamic Server Version 9.4 with UC7 Fix Pack, Client SDK Version 2.90 with UC4 Fix Pack Dynamic Server Version 10.00 with FC5 Fix Pack, Client SDK Version 2.90 with FC4 Fix Pack
i5/OS® and OS/400[11]	V5R2 V5R3 V5R4	Not supported	Not supported	Not supported	Not supported
Solaris on SPARC	8.2[12] 9.1 9.5	2000 SP3a[7] 2005 SP1[7]	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10g Release 1 10g Release 2 11g Release 1	12.5 15	Dynamic Server Version 9.4 with UC7 Fix Pack, Client SDK Version 2.90 with UC4 Fix Pack Dynamic Server Version 10.00 with FC5 Fix Pack, Client SDK Version 2.90 with UCX8 Fix Pack

Databases

Table 10. Supported databases (continued)

Operating system	DB2[1, 2, 3]	SQL Server	Oracle[1, 4, 5]	Sybase[1]	Informix[1, 6]
Solaris on x86-64	8.2[12] 9.1 9.5	Not supported	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10g Release 1 10g Release 2 11g Release 1	12.5 15	Not supported
Windows XP and Server 2003	8.2[13] 9.1 9.5	2000 SP3a 2005 SP1	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10g Release 1 10g Release 2 11g Release 1	12.5 15	Dynamic Server Version 9.4 with TC7 Fix Pack, Client SDK Version 2.90 with TC4 Fix Pack Dynamic Server Version 10.00 with TC5 Fix Pack, Client SDK Version 2.90 with TC4 Fix Pack
Windows Vista[14]	9.1.3 9.5	2005 SP2	10g Release 2 11g Release 1	12.5 15	Dynamic Server Version 10.00 with TC5 Fix Pack, Client SDK Version 2.90 with TC4 Fix Pack
Windows Server 2008[14]	9.1.3 9.5	2005 SP2	10g Release 2 11g Release 1	15.0.2 ESD5	Dynamic Server Version 10.00 with TC5 Fix Pack, Client SDK Version 2.90 with TC4 Fix Pack
z/OS	8.1[15] 9.1[15]	Not supported	Not supported	Not supported	Not supported

Notes:

1. Supported releases of DB2, Informix, 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. On z/OS, all transactions are coordinated by Recoverable Resource Services (RRS). In WebSphere Message Broker, this support is referred to as a globally-coordinated message flow.

   - Additional considerations for WebSphere MQ:
     - WebSphere MQ Version 6.0.1.0 or later is required for globally-coordinated transaction support (XA).
     - If you use WebSphere MQ Version 6.0 as a transaction manager, all data sources connected to DB2 from message flows in both 32-bit and 64-bit execution groups must connect to 64-bit DB2 instances.

- – If you use WebSphere MQ Version 7 for XA coordination on Windows, you must configure the queue manager to run under the broker service user ID by specifying the **-si** option on the **strmqm** command; for example, `strmqm -si QM_name`.
- Additional considerations for databases:
  - – 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.
  - – XA coordination for messages in the MRM domain on Windows requires DB2 Version 8 Fix Pack 10 (or later).
  - – Supported connections to databases:
    - ODBC drivers for Oracle and Sybase on all relevant systems, and for SQL Server on Linux and UNIX systems, are supplied with WebSphere Message Broker; alternative drivers are not supported on these systems. For other systems and for other databases on all systems, obtain these files from your database vendor.
    - JDBC drivers are not supplied with WebSphere Message Broker; obtain these files from your database vendor. The following JDBC type 4 drivers are supported:
      - IBM DB2 Driver for JDBC and SQLJ Version 9.1 and 9.5
      - Microsoft SQL Server 2005 JDBC driver 1.1 (non-XA only)
      - Oracle 10gR2 or 11gR1 JDBC Driver
      - Sybase jConnect for JDBC 6.05
      - IBM Informix JDBC 3.00.JC3

      On all distributed platforms, JDBC type 4 transaction support that uses DB2 requires DB2 Version 9.1 Fix Pack 3 or later; support for DB2 Version 8 is not available.

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

   DB2 Version 8.2 is functionally equivalent to Version 8.1 Fix Pack 7.

   DB2 Version 9.1 is supported at GA level except on Windows Vista and Windows Server 2008, where you must install DB2 Version 9.1 Fix Pack 3 or later. The version that is supplied with WebSphere Message Broker includes Fix Pack 3 on all platforms (Fix Pack 3a on Solaris).

   If you define a connection to DB2 Version 8.2 from a broker that operates in 64-bit mode, you must specify that you want to create a 64-bit database instance. If you use DB2 Version 9.1, a 64-bit instance is the default instance created on 64-bit operating systems.

3. Automatic Client Reroute for DB2 is supported on all platforms.

Databases

4. If you install the Oracle Database Server on 32-bit systems, or on mixed mode systems on which you plan to create 32-bit execution groups, you must also install the Oracle Runtime Client.

5. The Connect-Time Failover feature of Oracle RAC (Real Application Clusters) in a non-XA environment only is supported on all Linux, UNIX, and Windows systems.

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

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

   Large Objects (LOBs) are not supported.

7. On Linux and UNIX systems, you can remotely access a SQL Server database on Windows by using a supplied wire protocol driver.

8. On AIX, Oracle 10g Release 2 requires the AIX fix for APAR IY89080.

9. If you use DB2 V9.1 on HP-UX on PA-RISC, you must set the following environment variable, and export it in the broker's environment:

   MQSI_SIGNAL_EXCLUSIONS=10

10. If you have installed Red Hat Enterprise Linux V4.0 and DB2 Version 8 Fix Pack 9 on Linux on x86-64, 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.

11. You can configure message flows to access DB2 databases on i5/OS and OS/400 for user data. The message flows can run on all supported broker platforms. You cannot create a broker database as a remote DB2 database on i5/OS or OS/400 from a broker platform. For further details of these restrictions, and for information about the PTFs that are required with this product, see "Database locations" on page 25.

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

13. For verification, evaluation, and test purposes on Windows XP and Windows Server 2003 only, you can optionally use the Derby database that is embedded in the broker component. If you want to use this option, install the ODBC drivers supplied with the product media. For a production system, install and configure your chosen enterprise database.

14. The Derby database is not supported on Windows Vista or Windows Server 2008.

15. On z/OS, DB2 is a mandatory requirement. You must create a unique database for each broker.

    - If you install DB2 Version 8.1, it must be at RSU0609 or later, and you must install FMID JDB8817 (ODBC support) and PTFs for APAR PK37248.
    - If you install DB2 Version 9.1, you must install FMID JDB9917 (ODBC support) and PTFs for APAR PK41943.

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

Database locations

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

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

    DB2 databases on i5/OS and OS/400

    - You can use only DB2 (UDB) databases on iSeries (System i) running OS/400 or i5/OS.
    - You must install OS/400 V5R2, or i5/OS V5R3 or V5R4.
    - On Linux, UNIX, and Windows you can use DB2® Connect™ to connect. On Windows only, you can also use iSeries Access for Windows.
    - You cannot define globally-coordinated (XA) transactions.
    - You cannot configure message flows that include Rules and Formatter Extension nodes to access a database on OS/400 or i5/OS.
    - You can call stored procedures only if access to the remote database is provided by DB2 Connect.

    DB2 databases on z/OS

    - You can use only DB2 (UDB) on zSeries. If you install DB2 V8.1, you must apply the PTF for APAR PQ84976.
    - You must use DB2 Connect on Linux, UNIX, and Windows.
    - You cannot configure message flows that include Rules and Formatter Extension nodes to access a database on 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* for further details.

Databases

WebSphere Information Integrator databases

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

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

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

Brokers can connect directly to WebSphere Information Integrator Classic Federation for z/OS Version 8.2 by JDBC only.

Brokers can connect indirectly to WebSphere Information Integrator Classic Federation for z/OS Version 8.2 through an intermediate DB2 system on z/OS. If you use this configuration, only an ODBC CAF (Call Attachment Facility) connection is supported between the broker and DB2; this connection therefore does not support two-phase commit.

You must configure all broker ODBC data sources as either CAF (Call Attachment Facility) or RRSAF (Recovery Resource Services attachment facility). If you use CAF, database operations are not coordinated by RRS; this restriction applies to updates to the broker database and to user data.

• 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 required products

WebSphere Message Broker requires additional software products to run successfully:

- "WebSphere MQ"
- "Microsoft Visual C++ Runtime" on page 29
- "Java Runtime Environment" on page 29
- "IBM Installation Manager" on page 30
- "XML Toolkit" on page 32
- "Browsers" on page 32

WebSphere MQ

All WebSphere Message Broker components require WebSphere MQ at the minimum supported level shown in Table 11.

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

WebSphere MQ Version 7 is supported on all operating systems, but is not supplied with WebSphere Message Broker. If you want to install this version, you must obtain it yourself.

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

Table 11. WebSphere MQ requirements

Operating system	Requirements
Windows Vista and Windows Server 2008[1]	WebSphere MQ Version 7.0 (or later)[2, 3, 4]
All distributed systems[1]	WebSphere MQ Version 6.0 (or later)[2, 4, 5]
z/OS[6]	WebSphere MQ Version 6.0.0 with MQ Java™ Classes feature[5]

Notes:

1. WebSphere MQ is not required on Linux on x86 or Windows systems on which you install only the Message Broker Toolkit component.

Additional products

If you want to configure an SSL connection between the Message Broker Toolkit and the Configuration Manager, you must have a certificate keystore installed on the computer on which you have installed the Message Broker Toolkit. If you choose to use WebSphere MQ to provide this configuration, install either the Java Client or the Server; both components include this support.

2. If you choose to install WebSphere MQ Version 7.0, you can configure the broker so that all publish/subscribe application messages and operations are handled by the queue manager. See the information center for further information about this option and its potential advantages in your broker domain.

3. When you have installed WebSphere MQ Version 7.0 on Windows Vista or Windows Server 2008, you must apply the PTF for APAR IC57915.

4. 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. Install WebSphere MQ first for the following benefits:

   - WebSphere MQ user IDs and groups that components use are created for you. See "Setting up security" on page 67 for more details.

   - The runtime components installation wizard checks that a supported version of WebSphere MQ is installed. If you use the graphical or console interface to install, you can choose to continue. However, if you use the silent interface, installation fails unless you change the default behavior of the installation wizard. See Chapter 10, "Installing runtime components," on page 109 for more information about installation options.

   If you have already installed WebSphere MQ Version 6.0 or Version 7.0, check that your installation includes the Java Messaging component; add it from the WebSphere MQ media if it is not already installed.

   On Windows XP or Windows Server 2003 systems, if you choose to install WebSphere MQ Version 6.0 from the 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 installation program directly on any operating system, including Windows, you must select a custom installation and install 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 on x86 and Windows only, install the WebSphere Eclipse Platform Version 3.0.1 (Version 3.3 on Windows Vista and Windows Server 2008) and the WebSphere MQ Explorer components.

   Other WebSphere MQ components are optional.

5. Check the availability of WebSphere MQ Version 6.0 on your operating system; exact GA versions vary on different platforms.

   Some specific broker functions might require later levels of WebSphere MQ:
   - Globally-coordinated (XA) transactions are supported only by WebSphere MQ Version 6.0.1.0 or later.
   - If you develop message flows that use WebSphere MQ Real-time Transport with Multicast PGM support, you must apply APAR IC47032 and USERMOD ANPGM01 on WebSphere MQ Version 6.0.

6. On z/OS, WebSphere MQ is a mandatory requirement and must be installed before you install WebSphere Message Broker.

   If you have installed WebSphere MQ Version 6.0, it must be at RSU0609 or later, and you must install FMID JMS6008 (MQ connectivity) and PTFs for APARs PK53810 and PK55665.

   If you have installed WebSphere MQ Version 7.0, you must apply the PTFs for the following APARs: PK64703, PK68828, PK68831, PK69317, PK70759, and PK73269.

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

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

www.ibm.com/software/integration/wmq/requirements/

Microsoft Visual C++ Runtime
On Windows XP and Windows Server 2003 only, Microsoft Visual C++ Runtime V8 SP1 is required. It is supplied with the product media in US English only. If you use the Launchpad Express installation to install WebSphere Message Broker components, it is installed for you. If you use another method, you must install it yourself.

If you want to install a multicultural version of this product, which displays translated installation interface and product license agreement, you must download the version that you want before installing.

For further information about how to install this product, see Chapter 9, "Installing with the Windows Launchpad," on page 95.

Java Runtime Environment
A Java Runtime Environment (JRE) is required on all platforms:
- On distributed platforms, Java Runtime Environment (JRE) Version 5 SR5 is embedded in product components.

Additional products

- On z/OS, you must acquire and install a JRE which must be at Version 5 (SR5 or a later service release).

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

WebSphere Message Broker supports all JMS providers that conform to the Java Message Service Specification, version 1.1, and requires the minimum JRE levels stated above. You must consider both these factors when you select a JMS provider whose client will be embedded in the broker.

IBM Installation Manager

All Rational® products at Version 7 or later are installed by IBM Installation Manager, which also controls management, updates, licensing, and uninstallation. The Message Broker Toolkit includes some Rational product components, and therefore includes and uses Installation Manager.

The following Rational products are controlled by Installation Manager:
- Message Broker Toolkit Version 6.1
- Rational Application Developer (RAD) Version 7.0
- Rational Software Architect (RSA) Version 7.0
- WebSphere Integration Developer (WID) Version 6.1

Installation Manager is included with the Message Broker Toolkit and with the other products in this list. When you first install the Message Broker Toolkit (or another listed product), Installation Manager installs itself into a directory that you specify, and then drives the installation of the Message Broker Toolkit (or other listed product). If you install another product, Installation Manager detects that it is already installed, and drives only the installation of that product.

The Message Broker Toolkit shares certain resources with these other products, if installed; for example, Eclipse features and plug-ins. All common resources that are used by the installed products must be installed into a single directory, which is known as the *shared resources directory*. You are asked to specify the location of this directory when you first install the Message Broker Toolkit or another Rational product.

If you install another product, Installation Manager finds the shared resources directory and uses its content during the installation process; you cannot change the location of this directory. Installation Manager might also install additional shared resources into the directory, including a single copy of every Eclipse plug-in and feature of every installed Rational product at every installed version.

The shared resources directory must be on a drive that is local to this computer; you cannot specify a mapped or remote drive. The drive that you specify for the shared resources directory must be of sufficient size to handle all your expected installations; you cannot change or expand this directory after installation. When you specify the directory during a first installation, specify a new directory to ensure that it does not contain any files that might cause conflicts.

Memory requirements for the Message Broker Toolkit are listed in "Memory and disk space" on page 12. If you plan to install additional Rational products, allow 2 GB for each additional product.

You must also allocate space in another directory in which you will manage the workspace resources that you create for the installed Rational products.

When you install the Message Broker Toolkit, you are also asked to specify a package group. Products that you install into a single package group share Eclipse features and plug-ins, and these resources are loaded and viewable in a single Eclipse instance. You can choose whether to install a product in a package group with other products, or to install Message Broker Toolkit in a new package group.

Each package group is isolated from products in other package groups, although all package groups access a single shared resources directory. You are asked to specify the location for the package group directory; you must specify a new directory for each new package group. All product-specific files are installed into this directory.

You might choose to use separate package groups to install different combinations of the Message Broker Toolkit and other Rational products, so that users can gain access to tailored Eclipse instances. When you install the first product, the first package group is created with the name **IBM Software Development Platform**. This name is fixed; you cannot change it.

If you choose to install another product into a new package group, another group is created with the name **IBM Software Development Platform_1**. Each new package group name follows this same naming pattern with the numeric suffix incremented by one.

For example, you might have defined the following package groups:
- **IBM Software Development Platform** into which you have installed the Message Broker Toolkit and RAD
- **IBM Software Development Platform_1** into which you have installed the Message Broker Toolkit and RSA

Additional products

- **IBM Software Development Platform_2** into which you have installed WID and RSA

When you start an Eclipse session in one of these package groups, you can access only those resources that are associated with the products installed in that group.

If you install later versions of any of the products in a different package group, the updates are available only in that group. The shared resources directory is also updated with later versions of shared files, which are maintained separately from the original versions and are used only for the upgraded products.

Each Rational product specifies which versions of plug-ins and features it requires, if appropriate. Installation Manager ensures the integrity of these requirements in each package group. If the product that you are currently installing breaks this integrity, Installation Manager prevents the installation into that package group.

Installation Manager also controls uninstallation of the Message Broker Toolkit and the other products listed above; you cannot uninstall Installation Manager until all listed products in all package groups have been removed.

Installation Manager is not required for any of the runtime components.

XML Toolkit
On z/OS only, you must install the IBM XML Toolkit for z/OS Version 1.9.

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

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 systems, or Mozilla 1.4.2 (or later) on Linux on x86 systems.

Some Linux on x86 offerings do not install Mozilla by default. If you plan to install the Message Broker Toolkit on your Linux on x86 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 they interact with WebSphere Message Broker in ways that you might find useful. WebSphere MQ Everyplace is supplied with WebSphere Message Broker; all other listed products are not.

You do not need to install any of these products to complete the verification procedure described in Chapter 12, "Configuring and verifying your system," on page 125.

- "EIS client libraries"
- "WebSphere MQ Everyplace"
- "Tivoli License Manager"
- "Adobe Flash Player" on page 34

EIS client libraries

If you plan to use WebSphere Adapters on any supported operating system, you must obtain the appropriate Enterprise Information System (EIS) client libraries from the relevant EIS vendor (for example, PeopleSoft, Siebel, or SAP). The client libraries are required to complete connections between Adapters nodes and the EIS; install them on each computer on which you run a broker that hosts message flows that include Adapters nodes.

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 on x86 and Windows only) and on CD in the supplemental package, but it is not supported on Windows Vista or Windows Server 2008 operating systems; see "Message Broker Toolkit and Supplemental packages" on page 60. For information about connecting your WebSphere MQ Everyplace clients to 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 monitoring the use of IBM and other product licenses with Tivoli License Manager, see the information center.

Optional software

Adobe Flash Player
If you want to run 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 the Web browsers that are supported by the Message Broker Toolkit from the Adobe Web site:

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

The Adobe Web site has details of the browsers that are supported for each operating system.

License requirements

You can install WebSphere Message Broker to support a full range of transformation and routing operations. If appropriate, you can install an edition that supports a restricted set of functions, if that subset fulfills your business requirements. You must ensure that your use and configuration of the product conforms to the license agreement that you have purchased:

- WebSphere Message Broker Trial Edition. You can download this edition from the Web, at no charge. This edition has its own license and terms and conditions which is valid for 90 days. You can use all available function, and are not limited in the number of resources that you create and maintain.
- WebSphere Message Broker Starter Edition. If you expect to use all or most of the features that are available, but will configure a limited domain because of low capacity requirements, purchase this edition. You can use all available function, but are limited in the number of resources that you create and maintain.
- WebSphere Message Broker Remote Adapter Deployment. If you expect your typical use of WebSphere Message Broker to be integration with Enterprise Information Systems (EIS), purchase this edition. This edition supports the subset of development resources that provide EIS interaction.
- WebSphere Message Broker. If you want to set up a full broker domain that uses most or all of the features available, you require a full (unrestricted) license.

WebSphere Message Broker for z/OS is not available in Remote Adapter Deployment, or in Starter or Trial Editions.

If you choose to change your license agreement from a full license to either of the two specialized licenses, you might find that your current domain configuration is no longer supported. For further details about what features are available for each license, and how to configure your domain, see the **Technical Overview** and the **Configuring** sections in the information center.

You can upgrade to the full license from another edition, if appropriate, by purchasing another license.

Your license also covers use of the product for development and unit test purposes. All developers in your organization, who are working on resources and applications for the WebSphere Message Broker domain, can install one copy of all components on their computer. They can create and configure a broker domain without any functional or resource restrictions. Installation of the Message Broker Toolkit limits this use to Windows and Linux on x86 computers. The unit test environment is limited to these two platforms even if you have purchased a license for WebSphere Message Broker for z/OS.

You can also install the supplied WebSphere MQ and DB2 products on the computers on which your developers create their development and test configurations, regardless of the license agreement that you have purchased.

You can view licenses 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 further details about license agreements, or if you want to purchase additional licenses or change the type of license that you have purchased.

License requirements

Chapter 3. Coexistence and migration

You can install WebSphere Message Broker Version 6.1 on a computer on which you have installed previous versions, but each version must be installed into its own directory, referred to in this book as *install_dir*. Different versions can coexist and can run independently, and you can migrate product components from one version to another, if and when appropriate. You can also install multiple instances of the same version on the same computer, each in its own separate directory.

The following sections provide further details:
- "Coexistence"
- "Migration" on page 45

If you have already installed WebSphere Message Broker Version 6.1 components, and want to update your installations to V6.1.0.3, see "Applying service updates to existing installations" on page 46.

Coexistence

WebSphere Message Broker Version 6.1 can coexist with previous versions as follows:
- All runtime components (broker, Configuration Manager, User Name Server) can coexist with runtime components at Version 5.0 and Version 6.0.
- The Message Broker Toolkit can coexist with the toolkit at Version 5.0, Version 5.1, and Version 6.0.

You can use the Version 6.1 runtime components at every fix pack level with the Message Broker Toolkit at every fix pack level; you do not have to apply the same fix packs to all components at the same time. However, if you want to use new nodes that are delivered in a specific fix pack, you must ensure that your Message Broker Toolkit and brokers are at the same level. See Chapter 14, "Checking the broker operation mode and function level," on page 137 for more information.

The components and their purpose are described in Chapter 7, "Choosing what to install," on page 81. The following sections describe how to achieve coexistence, and the restrictions that apply.

Coexistence

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 that 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* for 32-bit editions
	C:\Program Files(x86)\IBM\MQSI*v.r* for 64-bit editions

These locations define the default value of *install_dir* on each platform.

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 6.1.0). If a later modification level is made available, it will install into the same default location with a *v.r* value of 6.1, and will therefore upgrade the Version 6.1.0 to the higher modification level (for example, Version 6.1.1).

The wizard 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 select the *custom installation* option and specify a unique directory for each installation (one of which can be the default directory).

You can also use 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 a specified directory, the installation wizard indicates this situation on the page on which you choose further components.

If you have never completed a typical installation of the product on the computer 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 attempt to install runtime components into a directory that already contains installed components at a previous version, you are prompted to confirm that you want to continue with the installation, because it will overwrite the existing installation. Cancel the installation and select a different directory to preserve your existing configuration.

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

- If you install the same version and release more than once, the native installer support cannot manage these installations in the normal way. See "Operating system software installer support" on page 43 for more details.
- Brokers created within 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.

You can use multiple installations at different modification or fix pack levels to test out fixes or new functions, or to stage your adoption of a new fix pack level. For more information, see **Installing > Applying service to runtime components** in the information center.

During and after installation, files are also stored in the working directory, which is associated with the user ID with which you are currently logged on. The location depends on the operating system:

Linux and UNIX

> /var/mqsi

Windows %ALLUSERSPROFILE%\Application Data\IBM\MQSI

> The environment variable %ALLUSERSPROFILE% defines the system working directory. The default directory depends on the operating system:
>
> - On Windows XP and Windows Server 2003: C:\Documents and Settings\All Users\Application Data\IBM\MQSI
> - On Windows Vista and Windows Server 2008: C:\ProgramData\IBM\MQSI
>
> The actual location might be different on your computer.

If you have multiple installations on a single computer, 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 6.1 and above, the file is updated with the location and the level.

Coexistence

This example shows the contents of `install.properties` on a Windows 32-bit operating system on which a single installation has completed:

```
C:\\Program\ Files\\IBM\\MQSI\\6.1=6.1.0.0
```

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

If you want to revert from your latest installation to a previous level for any reason, you must uninstall the current version and install the previous level of the 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 6.1 and later releases on the computer on which you have already installed either Version 5.0 or Version 6.0. The Version 6.1 installation can coexist with the Version 6.0 (or Version 5.0) installation; you can operate the two configurations independently.

If you use custom installations for Version 6.1 and later releases, you can specify a unique installation directory for each release, and therefore achieve coexisting releases on a single computer. However, you cannot install Version 5.0 if you have already installed Version 6.1; the installation programs fail because Version 5.0 does not support multiple installations on a single computer. If you want multiple versions, you must install Version 5.0 before you install Version 6.1. This restriction does not apply to installation of Version 6.0 with Version 6.1.

The number of installations of Version 6.1, or later, is limited only by the availability of system resources.

Because different versions and releases can coexist, you can migrate to Version 6.1 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" on page 45.

Runtime components on z/OS

On z/OS you can install multiple copies of the runtime components on the same computer 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; Version 5.0, Version 6.0, and Version 6.1. 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, V6R1M0. This location defines the default value of *install_dir* on this platform.

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 Extension for z/OS*.

Message Broker Toolkit on Linux on x86 and Windows

Linux When you install the Message Broker Toolkit, the default action taken by the installation wizard is to install Installation Manager files, shared files, and product-specific files into the following directories:

- Installation Manager installation directory:

  /opt/IBM/InstallationManager
- Shared resources directory:

  /opt/IBM/SDP70Shared
- Package group directory:

  /opt/IBM/WMBT610

  This location defines the default value of *install_dir* on this platform.

For a description of these directories, see Chapter 2, "System requirements," on page 9.

You can install multiple instances of the Message Broker Toolkit Version 6.1 at the same modification or fix pack level, or at different levels, on a single computer. Each installation must be in a separate package group; package groups are described in more detail in Chapter 2, "System requirements," on page 9.

The Message Broker Toolkit Version 6.1 can coexist with the Message Broker Toolkit Version 6.0. Only one instance of the Message Brokers Toolkit Version 6.0 can be installed on a single computer.

The Message Broker Toolkit Version 6.1 can coexist with multiple installations of runtime components, subject to the restrictions described for those components.

Coexistence

Windows

When you install the Message Broker Toolkit, the default action taken by the installation wizard is to install Installation Manager files, shared files, and product-specific files into the following directories:

- Installation Manager installation directory:
  `C:\Program Files\IBM\InstallationManager` for 32-bit editions
  `C:\Program Files(x86)\IBM\InstallationManager` for 64-bit editions

- Shared resources directory:
  `C:\Program Files\IBM\SDP70Shared` for 32-bit editions
  `C:\Program Files(x86)\IBM\SDP70Shared` for 64-bit editions

- Package group directory:
  `C:\Program Files\IBM\WMBT610` for 32-bit editions
  `C:\Program Files(x86)\IBM\WMBT610` for 64-bit editions

This location defines the default value of *install_dir* on this platform.

For a description of these directories, see Chapter 2, "System requirements," on page 9.

You can install multiple instances of the Message Broker Toolkit Version 6.1 at the same modification or fix pack level, or at different levels, on a single computer. Each installation must be in a separate package group; package groups are described in more detail in Chapter 2, "System requirements," on page 9.

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 flows), 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 6.1 can coexist with the Message Brokers Toolkit Version 6.0. Only one instance of the Message Brokers Toolkit Version 6.0 can be installed on a single computer.

The Message Broker Toolkit Version 6.1 can also coexist with the Message Brokers Toolkit for WebSphere Studio Version 5.0 or Version 5.1 (but not both; Version 5.0 and Version 5.1 cannot be installed on the same computer).

The Message Broker Toolkit Version 6.1 can coexist with multiple installations of runtime components, subject to the restrictions described for those components.

If your toolkit users operate in a team environment, and share resources with each other, upgrade all users to Version 6.1 at the same time to ensure continued access to all resources. Because toolkit resources are stored in a different format when they are first saved in Version 6.1, your users might experience compatibility problems in some circumstances if some of their colleagues are using a previous version of the toolkit.

Setting the environment for an installation

Because you can have more than one installation on a single computer, you must ensure that the commands that you issue on that computer 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, such as **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 systems, a command console is available for each installation. so you must run commands in the correct 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 installed an earlier version of this product on the same computer, check that the earlier profile is not set for the current user ID. The two profiles are incompatible and might cause unpredictable results. Consider using a different user ID for each version and associate the correct profile with each user ID to avoid potential problems.

This requirement is not applicable on z/OS systems.

For more details about `mqsiprofile`, see Chapter 13, "What's next," on page 133.

Operating system software installer support

If you install the same version and release of the runtime components on a single computer (for example, Version 6.1) more than once, the installer support provided by the operating system cannot manage these installations in the normal way.

If you later want to uninstall one of the multiple installations, use the uninstall program *uninstaller* in the `_uninst_runtime` directory of the specific installation that you want to remove, not the facilities provided by the operating system. For further information about uninstalling the product, see the information center.

Coexistence

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 mqsi61. 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 mqsi/61. 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 for any given version and release.

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

To uninstall other instances, navigate to the directory that contains the uninstallation program. For details of uninstallation tasks, see the information center.

Migration

Because you can install WebSphere Message Broker Version 6.1 on the same computer as previous versions and other installations of Version 6.1, you are not required to complete any migration tasks before you install Version 6.1.

WebSphere Message Broker Version 6.1 can coexist with the following products:
- WebSphere Business Integration Event Broker Version 5.0
- WebSphere Business Integration Message Broker Version 5.0
- WebSphere Business Integration Message Broker with Rules and Formatter Extension Version 5.0
- WebSphere Event Broker Version 6.0
- WebSphere Message Broker Version 6.0
- WebSphere Message Broker with Rules and Formatter Extension Version 6.0

You can choose how and when to migrate resources and components by using the instructions provided in the information center. You can migrate all runtime components from the earlier versions listed above.

You cannot migrate the Message Broker Toolkit, but the resources that you have created in previous versions are mostly compatible with later releases, as indicated below. If you do not use a repository such as CVS or ClearCase®, export your workspace to retain the existing content and to support reversion to the previous version. Import the workspace into Message Broker Toolkit Version 6.1.

Version 5.0 and Version 5.1

If you created message mappings (in `.mfmaps` files) in Version 5.0 or Version 5.1, you must migrate them by using the **mqsimigratemfmaps** command.

You can access all other resources in Version 5.0, Version 5.1, and Version 6.1.

If you edit and save resources in Version 6.1, you can no longer access these resources in Message Broker Toolkit Version 5.0 or Version 5.1, and can deploy them only to Version 6.1 brokers.

Version 6.0

You can access all resources that you have created in Version 6.0 in both Version 6.1 and Version 6.0.

If you edit and save resources in Version 6.1, you can no longer access these resources in Message Broker Toolkit Version 6.0, and can deploy them only to Version 6.1 brokers.

Migration

If you are migrating from Version 6.0 or Version 5.0, you can migrate existing brokers only to a full version of WebSphere Message Broker Version 6.1. Do not migrate brokers from an earlier version to the Trial Edition. If you choose to migrate brokers by using the **mqsimigratecomponents** command, the brokers are migrated in enterprise mode. If you have purchased either the Starter Edition or the Remote Adapter Deployment, you must change the mode of all your migrated brokers to comply with the terms of your license. See Chapter 14, "Checking the broker operation mode and function level," on page 137 for further guidance.

To review 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.

Applying service updates to existing installations

Service updates and other fixes are delivered occasionally in the form of Program Temporary Fixes (PTFs) or fix packs. You can download these fixes from the Web and update your existing installations without reinstalling the components. Check regularly for updates and recommended fixes on the product support Web site:

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

For general information about how to download and apply service updates, see the section **Installing** in the information center. This section includes the topics **Applying service to runtime components** and **Applying service to the Toolkit**.

For specific details about individual fix packs, refer to the installation instructions provided with that fix pack on the Web. Some updates might require you to apply additional updates; for example:

- You might have to apply an update to Installation Manager before you apply an associated update to the Message Broker Toolkit.
- When you apply service for V6.1.0.3 on Windows XP or Windows Server 2003, you must install an additional required product, Microsoft Visual C++ Runtime.

> **Warning**
> You cannot apply V6.1.0.3 service to Windows Vista or Windows Server 2008; V6.1.0.3 is the first version that is available on these operating systems and you must complete a full installation with the physical or electronic media that have been refreshed for V6.1.0.3.

Chapter 4. Multicultural 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 by using its message catalogs, or might report problems by using their own techniques.

Multicultural support

Refer to the documentation supplied with any other products that you use to determine the language support that they provide. In particular, check the documentation supplied with the databases that you use, and 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 12. Supported locales

AIX	HP-UX[1]	Linux	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. Because syslog support is limited on HP-UX operating systems, messages are written to the log in US English only.

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

Chapter 5. Installation packages

This chapter describes the packages that are available, and the content of those packages.

Packaging options

Both physical media and electronic images are available for the installation of WebSphere Message Broker:

Available media and images

Media are available for the following versions:

- Windows: Version 6.1.0.3

  Use the physical packages or electronic images for Version 6.1.0.3 to install WebSphere Message Broker components.

  If you have already installed Version 6.1 on Windows XP or Windows Server 2003, apply service for fix pack 6.1.0.3 or later; you do not have to reinstall your components. See the information center for instructions.

  Do not use the Windows electronic or physical media at Version 6.1.0.2 to install WebSphere Message Broker on Windows Vista or Windows Server 2008 because they are incompatible at this version; only the Version 6.1.0.3 media are appropriate on these operating systems.

- All other platforms: Version 6.1.0.2

  Use the physical packages or electronic images for Version 6.1.0.2 to install WebSphere Message Broker components, then apply service for Fix Pack 6.1.0.3 or later, by following the instructions in the information center.

You can apply service for Version 6.1.0.3 to an existing installation of the Trial Edition, provided that you do so within the 90 days trial period.

Installation packages

Physical media

You can order the physical media for WebSphere Message Broker Starter Edition, Remote Adapter Deployment, and the full (unrestricted) licenses. Contents are described in "Package contents" on page 54.

When you install the product from the media, configure your brokers to operate in the mode that conforms to the license you have purchased. See the information center for further details.

Electronic images

If you are registered with IBM Passport Advantage, you can download electronic images from IBM Passport Advantage for WebSphere Message Broker Starter Edition, Remote Adapter Deployment, and the full (unrestricted) licenses. You can also request one set of the physical media.

The electronic images exactly mirror the physical media that are described in "Package contents" on page 54. although are not formatted as CD or DVD images. For further information, and to register, access the IBM Passport Advantage Web site:

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

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

When you install the product from these images, you must configure your brokers to operate in the mode that conforms to the license that you have purchased. See the information center for further details.

Trial Edition electronic images

For distributed systems only, you can download electronic images for WebSphere Message Broker Trial Edition from the developerWorks® WebSphere Message Broker download Web site:

www.ibm.com/developerworks/downloads/ws/wmb/

Images are provided for the runtime components and the Message Broker Toolkit. Use this edition to assess how the product can address your business requirements, and explore how you might use it with existing software in your enterprise.

For the latest information about supported trial versions, always check the WebSphere Message Broker readme.html file on the product readmes Web site:

www.ibm.com/support/docview.wss?uid=swg27006913

The following restrictions apply:

- All product features are available, but the broker component operates for only 90 days after installation.
- Electronic images of WebSphere MQ Version 6 are not included with the WebSphere Message Broker Trial Edition. If you have not already ordered and installed WebSphere MQ Version 6 or Version 7, you can download a trial package from the Web. The WebSphere MQ trial versions include the required Java and Eclipse components.

  - Download Version 6 from the WebSphere MQ download Web site:

    www14.software.ibm.com/webapp/iwm/web/preLogin.do?source=wsmq90

    You are required to enter an IBM ID and password to access this site.

  - Download Version 7 from the WebSphere MQ developerWorks Web site:

    www.ibm.com/developerworks/downloads/ws/wmq/

- Electronic images of DB2 Version 9.1 and ODBC Drivers for Apache Derby are not included with the WebSphere Message Broker Trial Edition. If you have not already ordered and installed DB2 Version 9.1, or an alternative supported database, you can download the latest fix pack for DB2 from the DB2 Version 9.1 fix packs and clients Web site:

  www.ibm.com/support/docview.wss?uid=swg21255572

  DB2 fix packs are complete installable images, and you can download and install one for your chosen platform without charge, and use it for 90 days.

  If you want to use the Derby database, you can download a trial version of IBM DB2 Run-Time Client for Windows Version 8.2.5 from the developerWorks Cloudscape Web site. This version includes the ODBC drivers required by use of the Derby database by WebSphere Message Broker.

  www.ibm.com/developerworks/db2/library/techarticle/dm-0409cline2/

- Physical images are not available for the Trial Edition.
- The Trial Edition is not available for z/OS.

If you choose to buy WebSphere Message Broker during or after the trial period, and want to continue to use the product components that you have installed, you do not have to reinstall them, but you must reconfigure existing brokers, and create new brokers, in the mode that conforms to the license that you have purchased. You can retain all the associated resources that you have developed or imported during

Installation packages

the trial period. For further information, see Chapter 14, "Checking the broker operation mode and function level," on page 137 and the information center.

Unless otherwise stated in this book, you can use electronic images in the same way as the physical CDs or DVDs, and all installation and set up procedures described are identical for the trial and full packages.

Package contents

This section describes the contents of the physical media packages for WebSphere Message Broker Starter Edition, Remote Adapter Deployment, and the full (unrestricted) licenses. The electronic images that you can download have equivalent content.

Content for the Trial Edition packages is restricted; differences are described where they apply.

The contents of the package depend on the product that you have ordered:

WebSphere Message Broker or WebSphere Message Broker with Rules and Formatter Extension

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

- The Quick Start CD, which contains documentation in PDF and stand-alone information center formats. This CD is always at the top of the package. For more detail about its content, see "Message Broker Toolkit and Supplemental packages" on page 60.
- A set of plastic wallets that contain CDs for installation of runtime components and required products, grouped by operating system. The CDs are listed in "Runtime packages" on page 56.
- A plastic wallet that contains CDs for installation of the Message Broker Toolkit on both Linux on x86 and Windows, and for supplemental software. The CDs are listed in "Message Broker Toolkit and Supplemental packages" on page 60.
- A plastic wallet that contains two DVDs, one for Linux on x86 and one for Windows. The DVDs contains all required and optional product code and additional optional software. The structure of the DVD content is described in "DVD package" on page 62.
- If you have ordered **WebSphere Message Broker with Rules and Formatter Extension**, an additional wallet contains the set of CDs shown in "Rules and Formatter Extension packages" on page 64. The Rules and Formatter extension code is not included on DVD; you must install this extension from CD.

- This Installation Guide, printed in US English.
- The Quick Start Guide, printed in US English, French, and Japanese.

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

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

- Two plastic wallets that contain CDs for installation of runtime components and required products, one for Linux on x86 and one for Windows. The CDs are listed in "Runtime packages" on page 56.
- A plastic wallet that contains CDs for installation of the Message Broker Toolkit on both Linux on x86 and Windows, and supplemental CDs. The CDs are listed in "Message Broker Toolkit and Supplemental packages" on page 60.
- A plastic wallet that contains two DVDs, one for Linux on x86 and one for Windows. The DVDs contains all required and optional product code and additional optional software. The structure of the DVD content is described in "DVD package" on page 62.
- 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*.
- This Installation Guide, printed in US English.

Runtime packages

The contents listed in Table 13 are supplied for installation of runtime components and associated products.

WebSphere MQ and DB2 images are not included in the Trial Edition.

If you want to use a different supported version of WebSphere MQ or DB2, you must obtain the version that you require yourself.

The physical packages are marked with the symbol ⚙ .

Table 13. CDs and images supplied for WebSphere Message Broker for runtime components and associated products

Operating System[1]	CD label	Description
AIX	WebSphere Message Broker Version 6.1 AIX (Runtime Disk 1)	Product code Version 6.1.0.2[2]
	WebSphere MQ Version 6.0 AIX (Runtime Disk 2)	Product code
	DB2 V9.1 for WebSphere Broker Products Version 6.1 AIX (Runtime Disk 3)	US English product code and documentation
	DB2 V9.1 for WebSphere Broker Products, NLV Additions Version 6.1 AIX (Runtime Disk 4)	Additions for multicultural support
HP-UX on Itanium	WebSphere Message Broker Version 6.1 HP-UX on Itanium (Runtime Disk 1)	Product code Version 6.1.0.2[2]
	WebSphere MQ Version 6.0 HP-UX on Itanium platform (Runtime Disk 2)	Product code
	DB2 V9.1 for WebSphere Broker Products Version 6.1 HP-UX on Itanium (Runtime Disk 3)	Product code and documentation
	DB2 V9.1 for WebSphere Broker Products, NLV Additions Version 6.1 HP-UX on Itanium (Runtime Disk 4)	Additions for multicultural support
HP-UX on PA-RISC	WebSphere Message Broker Version 6.1 HP-UX (Runtime Disk 1)	Product code Version 6.1.0.2[2]
	WebSphere MQ Version 6.0 HP-UX (Runtime Disk 2)	Product code
	DB2 V9.1 for WebSphere Broker Products Version 6.1 HP-UX (Runtime Disk 3)	Product code and documentation
	DB2 V9.1 for WebSphere Broker Products, NLV Additions Version 6.1 HP-UX (Runtime Disk 4)	Additions for multicultural support

Table 13. CDs and images supplied for WebSphere Message Broker for runtime components and associated products (continued)

Operating System[1]	CD label	Description
Linux on POWER	WebSphere Message Broker Version 6.1 Linux on POWER (Runtime Disk 1)	Product code Version 6.1.0.2[2]
	WebSphere MQ Version 6.0 Linux on POWER platform (Runtime Disk 2)	Product code
	DB2 V9.1 for WebSphere Broker Products Version 6.1 Linux on POWER (Runtime Disk 3)	Product code and documentation
	DB2 V9.1 for WebSphere Broker Products, NLV Additions Version 6.1 Linux on POWER (Runtime Disk 4)	Additions for multicultural support
Linux on x86	WebSphere Message Broker Version 6.1 Linux on x86 (Runtime Disk 1)	Product code Version 6.1.0.2[2]
	WebSphere MQ Version 6.0 Linux on x86 (Runtime Disk 2)	Product code
	DB2 V9.1 for WebSphere Broker Products Version 6.1 Linux on x86 (Runtime Disk 3)	Product code and documentation
	DB2 V9.1 for WebSphere Broker Products, NLV Additions Version 6.1 Linux on x86 (Runtime Disk 4)	Additions for multicultural support
Linux on x86-64	WebSphere Message Broker Version 6.1 Linux on x86-64 (Runtime Disk 1)	Product code Version 6.1.0.2[2]
	WebSphere MQ Version 6.0 Linux on x86-64 platform (Runtime Disk 2)	Product code
	DB2 V9.1 for WebSphere Broker Products Version 6.1 Linux on x86-64 (Runtime Disk 3)	Product code and documentation
	DB2 V9.1 for WebSphere Broker Products, NLV Additions Version 6.1 Linux on x86–64 (Runtime Disk 4)	Additions for multicultural support
Linux on System z	WebSphere Message Broker Version 6.1 Linux on System z (Runtime Disk 1)	Product code Version 6.1.0.2[2]
	WebSphere MQ Version 6.0 Linux on zSeries platform (Runtime Disk 2)	Product code
	DB2 V9.1 for WebSphere Broker Products Version 6.1 Linux on System z (Runtime Disk 3)	Product code and documentation
	DB2 V9.1 for WebSphere Broker Products, NLV Additions Version 6.1 Linux on System z (Runtime Disk 4)	Additions for multicultural support

Runtime packages

Table 13. CDs and images supplied for WebSphere Message Broker for runtime components and associated products (continued)

Operating System[1]	CD label	Description
Solaris on SPARC	WebSphere Message Broker Version 6.1 Solaris (Runtime Disk 1)	Product code Version 6.1.0.2[2]
	WebSphere MQ Version 6.0 Solaris (Runtime Disk 2)	Product code
	DB2 V9.1 for WebSphere Broker Products Version 6.1 Solaris (Runtime Disk 3)	Product code and documentation
	DB2 V9.1 for WebSphere Broker Products, NLV Additions Version 6.1 Solaris (Runtime Disk 4)	Additions for multicultural support
Solaris on x86-64	WebSphere Message Broker Version 6.1 Solaris on x86-64 (Runtime Disk 1)	Product code Version 6.1.0.2[2]
	WebSphere MQ Version 6.0 Solaris on x86-64 (Runtime Disk 2)	Product code
	DB2 V9.1 for WebSphere Broker Products Version 6.1 Solaris on x86-64 (Runtime Disk 3)	Product code and documentation
	DB2 V9.1 for WebSphere Broker Products, NLV Additions Version 6.1 Solaris on x86–64 (Runtime Disk 4)	Additions for multicultural support
Windows	WebSphere Message Broker Version 6.1 Windows (Runtime Disk 1)	Product code Version 6.1.0.3[3]
	WebSphere MQ Version 6.0 Windows (Runtime Disk 2)[4]	Product code[5]
	IBM DB2 V9.1 for WebSphere Broker Products Version 6.1 Windows (Runtime Disk 3)	Product code and documentation[5]

Notes:

1. On all operating systems, the CDs and images for WebSphere MQ (Runtime Disk 2) and DB2 (Runtime Disks 3 and 4) are not included in the Trial Edition. You must obtain prerequisite software from other sources to support the Trial Edition of WebSphere Message Broker. See "Packaging options" on page 51 for more information.

2. Disk 1 for all Linux and UNIX systems includes the following resources:
   * Runtime components installation files Version 6.1.0.2.
   * License files. These files are used by the installation wizard and are supplied in all supported languages.
   * Readme files. The readme.html files contain late updates about the product and its documentation and are supplied in all supported languages.

- Installation Guides. PDF files of this Installation Guide are supplied in all supported languages to which it has been translated. Because the product packages are at Version 6.1.0.2, the PDF files are also at Version 6.1.0.2; for updated PDF files in US English and other languages, access the IBM Publications Center:

  `www.elink.ibmlink.ibm.com/public/applications/publications/cgibin/pbi.cgi`
- Sample scripts. Use these sample response files to run the silent interface to install and uninstall components.

3. Disk 1 for Windows includes the following resources:
   - Runtime components installation files Version 6.1.0.3.
   - IBM DB2 Run-Time Client V8.2.5. If you want to use the Derby database that is embedded in the broker component, install this product to provide the ODBC Drivers for Apache Derby that are required. This product is not included in the Trial Edition. You can obtain a trial version of this software; see "Packaging options" on page 51 for more information.

     You cannot install this product on Windows Vista or Windows Server 2008.
   - Launchpad.
   - Quick Tour stand-alone executable program.
   - License files. These files are used by the installation wizard and are supplied in all supported languages.
   - Readme files. The `readme.html` files contain late updates about the product and its documentation and are supplied in all supported languages.
   - Installation Guides. PDF files of this Installation Guide for Version 6.1.0.3 are supplied in all supported languages to which it has been translated.
   - Sample scripts. Use these sample response files to run the silent interface to install and uninstall components.

4. WebSphere MQ Version 6.0 is not supported on Windows Vista or Windows Server 2008. If you install either of these operating systems, you must acquire and install WebSphere MQ Version 7.0.

5. The Launchpad and stand-alone Quick Tour are also included on Disk 2 and Disk 3 on Windows. The Launchpad has been replaced for Version 6.1.0.3 to support Windows Vista and Windows Server 2008; contents are otherwise unchanged.

Toolkit and Supplemental packages

Message Broker Toolkit and Supplemental packages

The contents listed in Table 14 are supplied for installation of the Message Broker Toolkit and supplemental software products.

Supplemental product images are not included in the Trial Edition.

The physical package is marked with the symbols ⬚ and ⬚ .

Table 14. CDs and images supplied for the Message Broker Toolkit

Operating System	CD label	Description
Linux on x86	WebSphere Message Broker Toolkit Version 6.1 Linux on x86 Disk 1	• Product code Version 6.1.0.2[1] • Installation Manager[2] • Additional resources[3]
	WebSphere Message Broker Toolkit Version 6.1 Linux on x86 Disk 2	Product code
	WebSphere Message Broker Toolkit Version 6.1 Linux on x86 Disk 3	Product code
Windows	WebSphere Message Broker Toolkit Version 6.1 Windows Disk 1	• Product code Version 6.1.0.3[4] • Installation Manager[2] • Additional resources[3]
	WebSphere Message Broker Toolkit Version 6.1 Windows Disk 2	Product code
	WebSphere Message Broker Toolkit Version 6.1 Windows Disk 3	Product code
Multiplatforms	WebSphere MQ Everyplace Version 2.0.2.0 for Multiplatforms	Product code[5]
	Quick Start CD	Documentation[6]

Notes:

1. On this platform the product code is at Version 6.1.0.2 and includes the information center at that version. Service fixes are available for both the product code and the information center. See the information center for details of how to apply these fixes.
2. Installation Manager is installed only if does not already exist on the target computer; this product is required to manage the Message Broker Toolkit installation.

3. Disk 1 includes the following additional resources:
   - License files. These files are used by the installation wizard and are supplied in all supported languages.
   - Readme files. The `readme.html` files contain late updates about the product and its documentation and are supplied in all supported languages.
   - Installation Guides. PDF files of this Installation Guide are supplied in all supported languages to which it has been translated. Because the product packages are at Version 6.1.0.2, the PDF files are also at Version 6.1.0.2; for updated PDF files, access the IBM Publications Center:

     `www.elink.ibmlink.ibm.com/public/applications/publications/cgibin/pbi.cgi`
   - Sample scripts. Use these sample response files to run the silent interface to install and uninstall components.
   - On Windows only, the Launchpad.
   - On Windows only, the Quick Tour stand-alone executable program.

   These files are identical to the equivalent files described in "Runtime packages" on page 56.

4. On this platform the product code is at Version 6.1.0.3 and includes the information center at that version.

5. WebSphere MQ Everyplace Version 2.0.2.0 is not supported on Windows Vista or Windows Server 2008 operating systems.

6. The Quick Start CD is included at the top of the physical product package. When you have finished using this CD, add it to the supplemental package for safe-keeping.

   You can explore the contents of the CD or electronic image on all supported distributed operating systems, but some items have restricted usage, as indicated below:
   - A stand-alone integrated information center that includes documentation plug-ins for WebSphere Message Broker Version 6.1.0.3, WebSphere MQ Version 6.0, and WebSphere MQ Everyplace Version 2.0.2.0.

     An information center is provided for Windows and Linux on x86 only. View or install the one that is appropriate for your operating system.
   - Readme files (US English and translations).
   - PDF files for the Quick Start Guide (US English and translations).
   - PDF files for this Installation Guide at Version 6.1.0.3 (US English and translations).

DVD package

DVDs (type DVD-R, size DVD-5) are supplied for Linux on x86 and Windows only. The DVD labels are WebSphere Message Broker Version 6.1 Linux on x86 and WebSphere Message Broker Version 6.1 Windows.

DVD images are not included in the Trial Edition.

The physical package is marked with the symbol .

The DVDs contain code for the following products:
- WebSphere Message Broker runtime components
- Message Broker Toolkit at Version 6.1.0.2 for Linux on x86 and Version 6.1.0.3 for Windows
- WebSphere MQ Version 6.0
- DB2 Enterprise Server Version 9.1
- DB2 Run-Time Client Version 8.2.5 (Windows only)

If you use the Launchpad to install on Windows (described in Chapter 9, "Installing with the Windows Launchpad," on page 95), the Launchpad navigates the DVD to find the products and components that you have chosen to install, so you do not have to be familiar with the structure of the DVD contents.

If you install on Linux on x86, or you install on Windows and choose not to use the Launchpad, use the DVD structure shown in Table 15 to find what you want.

Table 15. DVD contents

Directory	Description
\ (root)	• Runtime components installation files[1] • (Windows only) Launchpad and Quick Tour[2]
\DB2_Enterprise_Server_V9.1	DB2 Restricted Enterprise Server Version 9.1 installation images
\DB2_Runtime_Client_V8.2	(Windows only) DB2 Runtime Client Version 8.2.5
\IBMInstallationManager	Installation Manager installation images
\installation_guide	Installation Guides[3, 4]
\license	License files[4]
\Message_Broker_Toolkit_V6	Message Broker Toolkit installation repository [5]
\readmes	Readme files[4]
\sample-scripts	Sample response files[4]
\WebSphere_MQ_V6.0	WebSphere MQ installation images

Notes:

1. The DVD for Linux on x86 includes installation files for all WebSphere Message Broker components at Version 6.1.0.2; the DVD for Windows includes installation files for all WebSphere Message Broker components at Version 6.1.0.3.

2. This item is a stand-alone executable version of the Quick Tour, which is available only on Windows. On Linux on x86 and Windows, you can access the Quick Tour from the Message Broker Toolkit.

3. On Linux on x86, this directory has two subdirectories: one for US English and one for translated PDF files, and files are at Version 6.1.0.2. On Windows, files are at Version 6.1.0.3.

4. The files in this directory are identical to the equivalent files described in "Runtime packages" on page 56.

5. The files in this directory are not an installation image for the Message Broker Toolkit but are in the format required by Installation Manager to install the Message Broker Toolkit. Files on the Linux on x86 DVD are Version 6.1.0.2; files on the Windows DVD are Version 6.1.0.3.

Rules and Formatter Extension packages

The contents listed in Table 16 are supplied only if you have purchased WebSphere Message Broker with Rules and Formatter Extension. The Rules and Formatter Extension components are not included on the DVDs.

Rules and Formatter Extension images are not included in the Trial Edition.

The physical package is marked with the symbol .

Table 16. CDs and images supplied for the Rules and Formatter Extension

Operating System[1]	CD label	Description
AIX	Rules and Formatter Run-time Extension V6.1 AIX	Product code and documentation
HP-UX on PA-RISC	Rules and Formatter Run-time Extension V6.1 HP-UX	Product code and documentation
Linux on x86	Rules and Formatter Run-time Extension V6.1 Linux on x86	Product code and documentation
	Rules and Formatter Design-time Extension V6.1 Linux on x86	Product code and documentation
Solaris on SPARC	Rules and Formatter Run-time Extension V6.1 Solaris	Product code and documentation
Windows	Rules and Formatter Run-time Extension V6.1 Windows	Product code and documentation
	Rules and Formatter Design-time Extension V6.1 Windows	Product code and documentation

Notes:

1. The Rules and Formatter Run-time Extension is a 32-bit application. It is not available for HP-UX on Itanium, Linux on POWER, Linux on x86-64, Linux on System z, Solaris on x86-64, Windows Vista, or Windows Server 2008.

   The Rules and Formatter Extension application for z/OS is supplied on tape, as described in "Package contents" on page 54.

Part 2. Preparation

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

- Chapter 6, "Preparing the system," on page 67
- Chapter 7, "Choosing what to install," on page 81
- Chapter 8, "Choosing an installation interface," on page 85

Chapter 6. Preparing the system

On some operating systems, you must complete several tasks before you install WebSphere Message Broker. You might also want to complete other tasks, depending on your installation intentions.

Read the following sections before installing:
- "Setting up security"
- If you are installing on a distributed system, "Accessing CDs and DVDs" on page 72
- If you are installing on Linux or UNIX systems, "Checking the kernel configuration on Linux and UNIX systems" on page 79

When you have completed these tasks, follow the installation instructions for distributed systems in the appropriate chapter:
- On Windows, Chapter 9, "Installing with the Windows Launchpad," on page 95. If you decide not to use the Launchpad, install components by following Chapter 10, "Installing runtime components," on page 109 and Chapter 11, "Installing the Message Broker Toolkit," on page 115.
- On Linux and UNIX, Chapter 10, "Installing runtime components," on page 109 and Chapter 11, "Installing the Message Broker Toolkit," on page 115.
- On z/OS, 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*.

Setting up security

Before you install WebSphere Message Broker, you must set up the required security. This section describes security requirements:
- To install the product
- To complete the procedures described in Chapter 12, "Configuring and verifying your system," on page 125

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.

Setting up security

User ID restrictions: some operating systems and other products impose restrictions on user IDs:

- On Windows systems, user IDs can be up to 12 characters long, but on Linux, UNIX, and z/OS systems, they are restricted to eight characters. Database products, for example DB2, might also restrict user IDs to eight characters. 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.
- 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.
- Check the validity of spaces and special characters in user IDs to ensure that, if used, these characters are accepted by all relevant systems and products in your broker domain.

If your user ID does not conform to these restrictions, you might have problems with installation or verification. If so, use an alternative user ID, or create a new one, to complete installation and verification.

Set up the security appropriate to the operating systems that you are using:
- If you are installing on Linux or UNIX systems, go to "Security on Linux and UNIX systems" on page 69.
- If you are installing on Windows, go to "Security on Windows systems" on page 70.
- If you are installing on z/OS, go to "Security on z/OS systems" on page 71.

Security on Linux and UNIX systems

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

   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. The use of a user ID other than root might also be mandatory if you are logging in from a remote system.

   If you are installing only the Message Broker Toolkit on Linux on x86, continue with step 6.

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 and add it to the mqbrkrs group.

   On a Linux on x86 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 group and user.

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.

   On some systems, you might have to log off and log on again for these new group definitions (mqbrkrs and mqm) to be recognized.

6. Verification procedures are provided for Linux on x86 only. To complete verification, 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 log in with another user ID, and have not already added this ID to the groups mqbrkrs and mqm, do so before you launch the Message Broker Toolkit.

Setting up security

Security on Windows systems

Before you install WebSphere Message Broker runtime components or the Message Broker Toolkit, log on with a user ID that has Administrator authority. The ID must be a member of the Administrators group, but cannot be the ID "Administrator" itself; the installation fails if you are logged on with this specific ID.

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

- Creates a new security group called mqbrkrs.
- Adds your current (logged on) user ID to the group mqbrkrs.
- Adds your current user ID to the group mqm, if that group exists.

  The mqm group exists if you 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 9, "Installing with the Windows Launchpad," on page 95), 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.

If you are running Terminal Services on this computer, 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.

- Before you install any product components, enter the following command to change user mode:

  `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 from 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 Windows 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 by 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 install WebSphere Message Broker on another computer in the domain:

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

2. Install the required product components onto 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 DVDs on the local system, or you can set up a shared drive and access the shared resource from multiple computers.

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 and Windows only.

You can also install or upgrade from installation images that you have obtained from Passport Advantage, if you are registered with this scheme:

- Read the instructions that are provided with the packages.
- Download the images that you require for the operating systems in your environment.
- Extract the contents of the images. Specify a short path for the directory to which you are extracting; the depth of directory structure and the directory names might cause problem if restrictions on some operating systems are reached. For example, the limit of 256 characters on Windows might be exceeded.
- Use the following section to set up local or remote access to these images in the same way that you do 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" on page 73; for remote installations, see "Accessing CDs and DVDs on a remote system" on page 75.

Accessing CDs and DVDs on the local system

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

AIX

1. Log in as root. You cannot complete installation successfully if you have logged in as another ID and become root.
2. Complete the security setup described in "Security on Linux and UNIX systems" on page 69.
3. Create a CD mount point directory:

   mkdir */cdbroker*

   where */cdbroker* is the mount point.
4. Insert the CD into the drive of the computer on to which you want to install 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 and the installation fails with a corrupted directory. You must mount the CD 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 69.
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.

Accessing CDs and DVDs locally

4. Insert the CD into the drive of the computer on to which you want to install product components.

5. Mount the CD by 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 that your user ID has root authority.

2. Complete the security setup described in "Security on Linux and UNIX systems" on page 69.

3. Create a CD mount point directory:

   ```
   mkdir /cdbroker
   ```

   where */cdbroker* is the mount point.

4. Insert the CD into the drive of the computer on to which you want to install 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 that your user ID has root authority.

2. Complete the security setup described in "Security on Linux and UNIX systems" on page 69.

3. Insert the CD into the drive of the computer on to which you want to install 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 by 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.

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 70.
3. Insert the CD into the drive of the computer on to which you want to install product components. The Launchpad opens.

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 by using the silent interface.

If you want to install the Message Broker Toolkit by using the silent interface, 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 (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

Accessing CDs and DVDs remotely

Enterprise Server. However, you must check with the relevant documentation to ensure that remote installation for these products is supported.

Setting up the server

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 or Windows, you must create all three disk subdirectories in the same directory, for example:

   ```
   /instbroker/disk1
   /instbroker/disk2
   /instbroker/disk3
   ```

   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 73. 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 and autorun is enabled, the Launchpad is invoked. 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.

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 that contains 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.

Accessing CDs and DVDs remotely

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 server name:instbroker /remotebroker
   ```

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

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

   ```
   net use x: \\server_name\instbroker
   ```

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

   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 an alternative 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 run the Launchpad (on Windows only) or the installation wizard to install the product from the remote directory to your local system.

Checking the kernel configuration on Linux and UNIX systems

WebSphere Message Broker has no specific requirements for kernel configuration parameters, However, other products might require particular settings. If you do not tune your kernel parameters to suit the products that you have installed, you might see unexpected behavior or experience performance deterioration.

1. Check the documented values for the following products:
   - WebSphere MQ; see the topic "Kernel configuration" for your operating system in the appropriate online WebSphere MQ information center. Version 6 is at:

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

     Version 7 is at:

     `publib.boulder.ibm.com/infocenter/wmqv7/v7r0/index.jsp`
   - DB2, if installed. If you are using Version 9.1, see the online information center at:

     `publib.boulder.ibm.com/infocenter/db2luw/v9/index.jsp`

     If you are using Version 8, see the online information center at:

     `publib.boulder.ibm.com/infocenter/db2luw/v8/index.jsp`
   - Any other software that you have installed to work with WebSphere Message Broker that provides documented values; for example, other database suppliers.

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 documented value, update the current setting by 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, you might have to restart your system for these changes to take effect. Check the documentation for your operating system for further information about these parameters.

Checking the kernel configuration

Chapter 7. Choosing what to install

WebSphere Message Broker consists of three runtime components and the Message Broker Toolkit. You can install one or more runtime components (broker, Configuration Manager, and User Name Server) on all supported operating systems. You can install the Message Broker Toolkit only on Linux on x86 and Windows.

Runtime components

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 of components.

Broker

The broker is a set of execution processes that provides message processing facilities; these interact with a variety of application clients that use both point-to-point and publish/subscribe communications. The message flows that you create are hosted by the broker. A broker can host many message flows, in one or more execution groups, and can support many clients.

You define how messages are received, processed, and delivered to receiving applications or subscribers:

- You can customize some message processing nodes in a message flow with mappings, ESQL, Java, PHP, and XSL style sheets.
- You can create 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.
- You can develop user-defined extensions (nodes and parsers) to support message processing options that are not provided by the supplied nodes and parsers.
- You can debug message flows and step through processing to check paths and results.
- You can use message flow aggregation to manage multiple requests and responses that are generated by a single input message.

Choosing what to install

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 18.

Configuration Manager

A Configuration Manager is an interface between the Message Broker Toolkit and a set of one or more brokers, and 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 by 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 is typically sufficient to handle the publish/subscribe authentication within a broker domain; 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 5.0 or Version 6.0, 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 functionally unchanged in Version 6.1.

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 3, "Coexistence and migration," on page 37.

For installation of runtime components, you can choose between a typical installation and a custom installation. These are explained in Chapter 3, "Coexistence and migration," on page 37.

Message Broker Toolkit

The Message Broker Toolkit is an integrated development environment and graphical user interface that is 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 access a shared repository (for example, CVS) to store resources and make them accessible in a secure manner to multiple users.

Administrators can connect the Message Broker Toolkit to one or more Configuration Managers, and then use them to manage the broker domains; for example, by deploying resources to brokers, and by starting and stopping resources.

Choosing what to install

Chapter 8. Choosing an installation interface

Choose the interface that you want to use to install WebSphere Message Broker from the following options:
- On Windows only, "The Windows Launchpad"
- "Graphical interface" on page 86
- "Console interface (runtime components only)" on page 86
- "Silent interface" on page 87

Each interface has different advantages, which are discussed in the appropriate sections. When you have chosen the interface that you want to use, follow the installation instructions:
- Chapter 9, "Installing with the Windows Launchpad," on page 95
- Chapter 10, "Installing runtime components," on page 109
- Chapter 11, "Installing the Message Broker Toolkit," on page 115

The same interfaces are also available for uninstallation tasks, which are described in the information center.

The Windows Launchpad

On Windows, the Launchpad is the preferred and the default process for installation. The Launchpad helps you through the installation process for WebSphere Message Broker and the prerequisite products (for example, DB2 and WebSphere MQ) that are required for runtime components. You can either install them individually by following the Launchpad prompts, or request that the Launchpad installs your selected products for you, by 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 12, "Configuring and verifying your system," on page 125 for further information).

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

Graphical interface

If you start the installation wizard with no options, it starts the graphical interface (this interface is the default option). The wizard guides you through the installation process with a series of pages that present options and default values. You can accept the default values, or change them to suit your environment and requirements.

The graphical interface provides the highest level of information and guidance to help you complete an installation. Use this interface 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 92; for example, `setupaix` for AIX.

If you click **Cancel** before you start the installation process, 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 page is displayed, your system is not restored to its previous state; the installation wizard stops immediately. If you want to remove a 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 page after clicking **Next**. Progress is not always displayed on all pages. If you click **Next** twice, you might skip an entire page. To ensure that the installer is progressing, you can monitor your CPU usage, which increases significantly during installation.

Console interface (runtime components only)

The console interface is a character-based interface with which you interact in a command window. It presents the same options as the graphical interface.

This interface is not available for installing the Message Broker Toolkit.

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

The name of the installation wizard for your operating system is listed in "Installation wizard names" on page 92. Specify the option `-console` to run the console interface. For example, on AIX:

```
./setupaix -console
```

To navigate through the installation, enter the appropriate value, as follows:

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 interface

If you start a silent installation, the installation wizard runs without any interaction; installation is completed with default options, or according to a set of options that are defined in a response file.

Use the silent interface to run the process unattended for automated installations over a large number of identical systems.

The silent interface 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 106 (runtime components) and "Dealing with problems during installation" on page 122 (Message Broker Toolkit).

The name of the installation wizard for your operating system is listed in "Installation wizard names" on page 92.

Silent installation of runtime components

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
  - Installs to the default directory
  - Installs all selectable features

  Because the installation wizard checks for prerequisite software, 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 if you 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 on x86, enter the following command:

  ```
  ./setuplinuxia32 -silent
  ```

Silent interface

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

  You can create a response file that contains your non-default settings in three ways:

  Edit the sample response file that is provided on the CD or DVD.

  The file is /sample-scripts/install.opt on Linux and UNIX systems and \sample-scripts\install.opt on Windows. It includes detailed information about the options that you can change, and the values that you must enter to change them.

  Modify the response file to take one or more of the following actions:

  – You must update the following line to remove the comment character at the start of the line. If you do not do this, your other options are ignored.

  `#    -W setupTypes.selectedSetypTypeId=`

  Remove the number sign (the character #):

  `-W setupTypes.selectedSetypTypeId=`

  – Choose a custom installation (typical is the default option):

  `-W setupTypes.selectedSetupTypeId=custom`

  – Install to a non-default directory.

  Find the following line, remove the number signs, and insert your chosen installation directory:

  `### -P installLocation=<value>`

  – Choose which components to install.

  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`

  – Specify whether the program is to check for prerequisite software.

  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
  ```

Record a response file that contains your installation preferences.

Run the graphical interface of the installation program from the command line, specifying the option -record. Complete the installation by following the guidance in "Running a graphical installation" on page 111; the response file content is recorded to reflect the choices that you made. For example:

installer -options-record *responsefile*

where *installer* is the name of the installation wizard on your operating system (listed in "Installation wizard names" on page 92) and *responsefile* is the fully qualified path and name of your response file. Specify a different directory to the one that you specify as your installation directory. Do not include a space before -record. On Windows, you must surround the path and name with double quotes if it contains spaces.

Before you use the response 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=

Use the recorded file for subsequent installations, as shown below.

Generate a template response file.

Run the graphical interface of the installation program from the command line, specifying the option -template and the name of the file that you want to record. Navigate through the installation following the guidance in "Running a graphical installation" on page 111; the response file content is generated to reflect the choices that you made, but installation is not performed. For example:

installer -options-template *responsefile*

where *installer* is the name of the installation wizard on your operating system (listed in "Installation wizard names" on page 92) and *responsefile* is the fully qualified path and name of your chosen response file. Specify a directory that is different to the one that you specify as your installation directory. Do not include a space before -template. On Windows, you must surround the path and name with double quotes if it contains spaces.

Edit the template to change any of the options, then use the modified file for subsequent installations, as shown below.

Silent interface

You can also record a response file, or generate a template file, by using the console interface. Add the option `-console` to the commands shown above, and follow the guidance in "Running a console installation" on page 112.

To run a silent installation that uses 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 on x86, enter the following command:

```
./setuplinuxia32 -silent -options /user1/scripts/response1.txt
```

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

Table 17. Options for silent installation of runtime components

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 file for later modification and use but performs no installation.	*installer* `-options-template` *responsefile*
The installation wizard presents the graphical interface for installation with user input, and records all specified options in a response file.	*installer* `-options-record` *responsefile*
The installation wizard presents the console interface for installation with user input, and records all specified options in a response file.	*installer* `-options-record -console` *responsefile*

Silent installation of the Message Broker Toolkit

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:
  - Installs to the default directories
  - Installs all supported locales

  To run a default silent installation, run the following script files. If Installation Manager is not already installed, it is installed before the installation of the Message Broker Toolkit.

  Linux on x86

  ```
  ./installToolkit-silent.sh
  ```

  Windows

  ```
  installToolkit-silent.bat
  ```

  If you prefer, you can enter the full command instead of using the script files:

  Linux on x86

  ```
  ./install -nosplash --launcher.suppressErrors -input mbtoolkit-silent.xml -silent
  ```

  Windows

  ```
  install.exe -nosplash --launcher.suppressErrors -input mbtoolkit-silent.xml -silent
  ```

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

  To create a response file that contains your non-default settings, start the installation program and specify only the option **-record**, and the name and path of the response file.

  Complete an installation by using the graphical interface following the guidance in "Running a graphical installation" on page 117; the toolkit is installed and the response file content is recorded to reflect the choices that you make.

  For example, on Linux on x86, enter the following command to record the response file:

  ```
  install -record /user1/scripts/response1.xml
  ```

  where */user1/scripts/response1.txt* is the fully qualified path of your response file.

  To run a tailored silent installation, specify the recorded response file when you start the installation program for subsequent installations. For example:

  ```
  ./install -nosplash --launcher.suppressErrors -silent -input /user1/scripts/response1.xml
  ```

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 18. Distributed systems: installation wizard names

Operating system	Installation wizard name
AIX	`setupaix`
HP-UX on Itanium	`setuphpia64`
HP-UX on PA-RISC	`setuphp`
Linux on POWER	`setuplinuxppc`
Linux on x86	`setuplinuxia32` (runtime components) `install` (Installation Manager for Message Broker Toolkit)
Linux on x86-64	`setuplinuxx64`
Linux on System z	`setuplinux390`
Solaris on SPARC	`setupsolaris`
Solaris on x86-64	`setupsolarisx64`
Windows	`setup.exe` (runtime components) `install.exe`[1] (Installation Manager for Message Broker Toolkit)

Notes:

1. You can also use `installc.exe` to start Installation Manager. This program operates synchronously and does not return control to the command line until the installation has completed.

Part 3. Installation

This part of the book describes how to install WebSphere Message Broker components on distributed systems by using the Launchpad (available on Windows only) or the installation wizards.

- To install runtime components or the Message Broker Toolkit, or both, on Windows, use the Launchpad. This program also installs prerequisite products if they are not already installed, or upgrades them if they are not at the supported level. This program is described in Chapter 9, "Installing with the Windows Launchpad," on page 95.

- To install runtime components on Linux or UNIX systems, run the appropriate installation wizard for your operating system. Follow the instructions in Chapter 10, "Installing runtime components," on page 109.

  You can also use a wizard on Windows, if you prefer not to use the Launchpad.

- To install the Message Broker Toolkit on Linux on x86, run the installation wizard by following the instructions in Chapter 11, "Installing the Message Broker Toolkit," on page 115.

  You can also use a wizard on Windows, if you prefer not to use the Launchpad.

To install runtime components on z/OS, use the processes described in the *Program Directory for WebSphere Message Broker for z/OS* or the *Program Directory for WebSphere Message Broker with Rules and Formatter Extension for z/OS*.

Chapter 9. Installing with the Windows Launchpad

On Windows only, use the Launchpad for additional help with installing:

- The Message Broker Toolkit
- WebSphere Message Broker runtime components
- Prerequisite products for the runtime components
- Upgrades to the runtime components from earlier Version 6.1 releases

If you use the Launchpad, you can install everything that you need, and do not have to follow the procedures described in Chapter 10, "Installing runtime components," on page 109 or Chapter 11, "Installing the Message Broker Toolkit," on page 115.

The Launchpad works with both physical media (CDs or DVD) and with electronic images that you have downloaded from Passport Advantage; however, if you choose to run Express Installation, the Launchpad depends on a file structure identical to that on the CD, therefore you must not make any changes during or after download.

Multiple installations on a single computer

You can use the Launchpad to install only one instance of the product components on a single computer. If you have selected and installed the runtime or toolkit components, you cannot use the Launchpad to install these components again in a different location.

To install additional instances, run the appropriate installation wizard directly. See Chapter 10, "Installing runtime components," on page 109 or Chapter 11, "Installing the Message Broker Toolkit," on page 115 for instructions about how to complete these tasks.

The Launchpad also manages only one installation of DB2 and WebSphere MQ on a single computer. Refer to the relevant documentation for these products if you want to install multiple instances.

Installation summary

This list summarizes the actions that you must take:

1. Check the readme.html file for any updates to these installation instructions. Its location is shown at the start of Chapter 2, "System requirements," on page 9.
2. Check that you have enough memory and disk space; refer to "Memory and disk space" on page 12.
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 72.
4. Start the Launchpad to install WebSphere Message Broker and its prerequisite products. Full instructions are provided in "Starting the Windows Launchpad."

When you have completed installation, see Part 4, "After installation," on page 123 for information about verifying your installation, checking for and applying service updates, and learning how to create and configure a broker domain.

If you experience problems during installation, refer to "Dealing with problems during installation" on page 106.

Starting the Windows Launchpad

If you are using physical product media, the Launchpad starts automatically if autorun is enabled. If autorun is not enabled, or if you are installing from a downloaded image, navigate to root directory of the CD, DVD, or image, and double-click the file mqsilaunchpad.exe or type mqsilaunchpad in a command window and press Enter. The Launchpad is available on every CD, DVD, and image from which product components or prerequisite products can be installed.

In the first window, 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 depends on your operating system:
  - On Windows XP and Windows Server 2003, Express Installation installs the full set of products that are required for a minimum configuration of WebSphere Message Broker. The Launchpad completes the installation of each prerequisite product, prompting you for input only where it cannot use a default value. The Message Broker Toolkit and runtime components are installed by using the graphical interface.

- On Windows Vista and Windows Server 2008, Express Installation installs the Message Broker Toolkit and the runtime components.

  WebSphere MQ is listed as a required product, but the Launchpad indicates only that Version 7.0 is required and does not install it; you must acquire and install Version 7.0 yourself.

  You can install DB2 Enterprise Server Edition from the Advanced Installation if you want to use the DB2 database.

  Choose this option 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 that is required for a broker domain configuration.

  If you want to perform an Express Installation, see "Express Installation" on page 99.

- **Advanced Installation** shows a larger set of required and optional products. The Launchpad cannot install all of these product; select those products that you want to be installed from those that are available. The Launchpad starts the installation wizard graphical interface, for each product individually, and you must provide all required input. If you want a product that the Launchpad cannot install, you must acquire and install that product yourself.

  - On Windows XP and Windows Server 2003, the Launchpad can install the Message Broker Toolkit, the runtime components, WebSphere MQ Version 6.0, WebSphere Eclipse Platform V3.0.1, DB2 Enterprise Server Edition, the ODBC Drivers for Apache Derby, and Microsoft Visual C++ Runtime.

  - On Windows Vista and Windows Server 2008, the Launchpad can install the Message Broker Toolkit, the runtime components, and DB2 Enterprise Server Edition.

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

  If you want to perform an Advanced Installation, see "Advanced Installation" on page 104.

Access further information from the left pane:

- Click **Installation Guide** to launch a PDF copy of this book in Adobe 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 13, "What's next," on page 133 for further information.

Starting the Launchpad

The Launchpad might have to search for an installation wizard for some of your selections. If you are installing from DVD, all the required products are available, 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 19 shows, for each supplied product, the program names and their locations on the CDs.

Table 19. Installation wizard names and locations used by the Windows Launchpad

Product	Installation wizard name	Directory	CD
WebSphere Eclipse Platform V3.0[1]	`IBM WebSphere Eclipse Platform V3.0.msi`	`\WebSphere_MQ_V6.0\Prereqs\IES\MSI`	Runtime Disk 2
WebSphere MQ V6.0[1, 2]	`IBM WebSphere MQ.msi`	`\WebSphere_MQ_V6.0\MSI`	Runtime Disk 2
ODBC Drivers for Apache Derby[1, 3]	`setup.exe`	`\DB2_Runtime_Client_V8.2`	Runtime Disk 1
Message Broker runtime components	`setup.exe`	`\` (root directory)	Runtime Disk 1
Message Broker Toolkit	`install.exe`	`\IBMInstallationManager`[4]	Toolkit Disk 1
DB2 Enterprise Server Edition[1]	`DB2 Enterprise Server Edition.msi`	`\DB2_Enterprise_Server_V9.1\db2\Windows`	Runtime Disk 3
Microsoft Visual C++ Runtime[5]	`vcredist_x86.exe`	`\` (root directory)	Runtime Disk 1

Notes:

1. WebSphere Message Broker Trial Edition does not include this product. See Chapter 5, "Installation packages," on page 51 for further information.
2. This product is not supported on Windows Vista or Windows Server 2008. You must acquire and install WebSphere MQ Version 7.0 for these operating systems.
3. This product is not supported on Windows Vista or Windows Server 2008.
4. The Launchpad starts Installation Manager, which installs itself (if required), and starts the Message Broker Toolkit installation.
5. This product is not required on Windows Vista or Windows Server 2008.

Express Installation

When the Launchpad starts, it opens the Express Installation window.

1. The minimum set of products that are required for a default configuration is listed:

   Windows XP and Windows Server 2003
   - Microsoft Visual C++ Runtime V8 SP1
   - WebSphere Eclipse Platform V3.0.1
   - WebSphere MQ V6.0.0
   - ODBC Drivers for Apache Derby
   - WebSphere Message Broker, V6.1.0.3
   - WebSphere Message Broker Toolkit, V6.1

   Windows Vista and Windows Server 2008
   - WebSphere Eclipse Platform V3.3
   - WebSphere MQ V7.0
   - DB2 Enterprise Server Edition
   - WebSphere Message Broker, V6.1.0.3
   - WebSphere Message Broker Toolkit, V6.1

2. Check the initial installation status that is shown for each listed product:
   - **Required** indicates that the product is not installed, it is one of the products that is required for a minimum configuration, and either you have cleared the associated check box, or the Launchpad cannot install it (and no check box is shown).
   - **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:

  Windows XP and Windows Server 2003

    - If an unsupported level of DB2 is installed, you can install DB2 Enterprise Server Edition from the Advanced Installation.
    - If an unsupported level of WebSphere MQ is installed, you can install WebSphere MQ Version 6.0 from the Advanced Installation. The Launchpad starts the full interactive graphical installation so that you can respond to any decisions that must be made during the upgrade.

  Windows Vista and Windows Server 2008

    - If an unsupported level of DB2 is installed, you can install DB2 Enterprise Server Edition from the Advanced Installation. This product is marked as required, because you must install it if you want to use the Default Configuration Wizard and some of the WebSphere Message Broker samples.
    - If an unsupported level of WebSphere MQ is installed, you cannot use the Launchpad to upgrade this product; you must acquire and install WebSphere MQ Version 7.0 yourself.

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, if appropriate.

   On Windows XP and Windows Server 2003, the description for Microsoft Visual C++ Runtime V8 SP1 includes a Web site from which you can download multicultural versions of this product, so that the installation process and the license agreement display in your chosen language. Express Installation installs only the US English version; you must separately install this product if you want a different version.

   Multicultural versions are available from the Microsoft Web site:

   `microsoft.com/downloads/details.aspx?familyid=200B2FD9-AE1A-4A14-984D-389C36F85647`

4. If you are installing on Windows XP or Windows Server 2003:

   - Not all components of each required product are installed during an Express Installation; for example, when the Launchpad installs WebSphere MQ V6.0 on Windows XP, it installs only the server, WebSphere MQ Explorer, and the Java Messaging component. Check the details that are provided to ensure that an Express Installation installs all the components that you want. If you want additional components, use the Advanced Installation option.

- WebSphere MQ Explorer requires the WebSphere Eclipse Platform to be installed; when you select WebSphere MQ V6.0, the Eclipse Platform is automatically selected and installed.
- The ODBC Drivers for Apache Derby are used only to support access to the default Derby embedded database, which you can use for test and evaluation purposes. If you already have a supported version of DB2 installed on the computer, you cannot install this component.

  If you install the ODBC Drivers and use the embedded Derby database for test or evaluation, install your chosen enterprise database product on computers that you set up for production use, for which Derby is not suitable.

  If DB2 is your database of choice, install DB2 Enterprise Server Edition from the Advanced Installation.

5. If you are installing on Windows Vista or Windows Server 2008, Express Installation installs only the WebSphere Message Broker runtime components and the Message Broker Toolkit. Install DB2 Enterprise Server Edition from the Advanced Installation, and WebSphere MQ and the WebSphere Eclipse Platform from the WebSphere MQ Version 7.0 media.

6. If you do not want to install a listed product, clear the check box that is 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.

   If you are installing WebSphere Message Broker Trial Edition, clear the selections for WebSphere MQ, the Eclipse platform, and the ODBC Drivers for Apache Derby. These products are not supplied with the Trial Edition. You must obtain prerequisite software from other sources to support the WebSphere Message Broker Trial Edition. See Chapter 5, "Installation packages," on page 51 for more information.

7. 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 window after you have started the installation process. When the Launchpad starts each installation, it updates status from **Pending** to **In Progress**.

   - If you have selected Microsoft Visual C++ Runtime V8 SP1 on Windows XP or Windows Server 2003, the Launchpad starts the installation wizard by using the silent interface; default values are used for all options. A progress bar is displayed.

Express Installation

- If you have selected WebSphere Eclipse Platform V3.0.1 on Windows XP or Windows Server 2003, the Launchpad starts the installation wizard silent interface; default values are used for all options. A progress bar is displayed.

- If you have selected WebSphere MQ V6.0 on Windows XP or Windows Server 2003, the Launchpad starts the installation wizard silent interface; 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 Apache Derby on Windows XP or Windows Server 2003, the Launchpad starts the installation wizard silent interface; default values are used for all options. A progress bar is displayed. During installation, you see the product name DB2 Run-Time 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 V6.1.0.3 (runtime components), the Launchpad invokes the installation wizard graphical interface. You must supply the input that is required by the installation wizard.

  The installation wizard guides you through a series of windows 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.

  On Windows XP and Windows Server 2003, the license agreement covers your use of both WebSphere MQ Version 6.0 and the ODBC Drivers for Apache Derby if you have chosen to install one or both of them. These products are licensed for use with WebSphere Message Broker only, and must not be used for other purposes.

  You are asked if you want to open a command console when the wizard terminates; select **Yes** to open a console window that is initialized with the correct environment for command invocation. The command console is explained in "Setting the environment for an installation" on page 43. If yo do not want to enter any commands at this time, select **No**.

- If you have selected the Message Broker Toolkit, the Launchpad starts the installation wizard graphical interface.

  The process is controlled by Installation Manager, which installs itself if it is not already installed on this computer. For further information about Installation Manager, see "IBM Installation Manager" on page 30.

  The installation wizard guides you through a series of windows where you can make choices about where to install the component, which package group to install it in, and what language support you want to

install. You must supply all input that is required by the installation wizard. You must also accept the Software License Agreement that is displayed.

If you want to launch the Message Broker Toolkit when its installation wizard has completed, select **Message Broker Toolkit** in the list of installed products that is displayed on the completion window. When you click **Finish**, the wizard ends and returns control to the Launchpad, and the Message Broker Toolkit is started.

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 window.

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

Advanced Installation

When the Launchpad starts, it opens the Express Installation window.

1. Click **Advanced Installation** in the left pane to open the Advanced Installation window. The window shows a list of products, depending on your operating system:

   Windows XP and Windows Server 2003
   - Microsoft Visual C++ Runtime V8 SP1
   - WebSphere Eclipse Platform V3.0.1
   - WebSphere MQ V6.0.0
   - ODBC Drivers for Apache Derby
   - WebSphere Message Broker, V6.1.0.3
   - WebSphere Message Broker Toolkit, V6.1
   - DB2 Enterprise Server Edition (Optional)
   - Oracle (Optional)
   - Sybase (Optional)
   - Microsoft SQL Server 2000 (Optional)

   Windows Vista and Windows Server 2008
   - WebSphere Eclipse Platform V3.3
   - WebSphere MQ V7.0
   - DB2 Enterprise Server Edition (Optional)
   - WebSphere Message Broker V6.1.0.3
   - WebSphere Message Broker Toolkit V6.1
   - 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 it 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 either from this window or from your own product media.
   - If a product is found but has not had a complete installation, the status is **Partial Installation**. Install the full product from this window.

For example, you might previously have completed a typical installation of WebSphere MQ on Windows XP, which does not include 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.

   On Windows XP and Windows Server 2003, the description for Microsoft Visual C++ Runtime V8 SP1 includes a Web site from which you can download multicultural versions of this product, so that the installation process and the license agreement display in your chosen language. Advanced Installation installs only the US English version; you must separately install this product if you want a different version.

   Multicultural versions are available from the Microsoft Web site:

   `microsoft.com/downloads/details.aspx?familyid=200B2FD9-AE1A-4A14-984D-389C36F85647`

4. If you want to install a listed product, it is an IBM product that is not already installed, and its installation is supported by the Launchpad, click **Install** in the expanded information to launch the product installation.

   The Launchpad launches the installation wizard graphical interface. You must supply the input required by the installation wizard, including, if appropriate, which components you want to install.

   If you are installing WebSphere Message Broker Trial Edition, you can install only the runtime components and the Message Broker Toolkit. No other IBM products are available with the Trial Edition. You must obtain prerequisite software from other sources to support the Trial Edition. See Chapter 5, "Installation packages," on page 51 for more information.

   The ODBC Drivers for Apache Derby, which are available on Windows XP and Windows Server 2003 only, are used only to support access to the default Derby embedded database, which you can use for test and evaluation purposes. If you already have a supported version of DB2 installed on this computer, you cannot install this component.

   If you install the ODBC Drivers and use the embedded Derby database for test or evaluation, install your chosen enterprise database product on computers that you set up for production use, for which Derby is not suitable.

   If DB2 is your database of choice, install DB2 Enterprise Server Edition. If you do so, you must register your license for this product; this task is described in Appendix B, "Registering your DB2 license," on page 149.

   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.

Advanced Installation

If the Launchpad cannot find an installation wizard 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 19 on page 98 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 it 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 10 on page 20.

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

6. When you install WebSphere Message Broker runtime components or the Message Broker Toolkit, the installation wizards guide you through a series of windows where you can make choices about where to install the components, which components you want to install, and (for the Message Broker Toolkit only) what multicultural support you want to be installed. 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 43.

   If you want to launch the Message Broker Toolkit when its installation wizard has completed, select **Message Broker Toolkit** in the list of installed products that is displayed on the completion window. When you click **Finish**, the wizard ends and the Message Broker Toolkit is started.

7. 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.

8. 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 wizard 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 wizards 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 window and deselect 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 a product:

- 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 file mqsi6_install.log, stored in your home directory.
- If the Message Broker Toolkit fails to install, check the contents of the installation log file *YYYYMMDD_TIME*.xml, where *YYYYMMDD_TIME* is the date and time of installation. The log file location is defined in Appendix A, "Installation problems," on page 145.
- If WebSphere MQ Version 6.0 fails to install on Windows XP or Windows Server 2003, check the contents of MQV6_install.*date_time*.log stored in the temp directory of your home directory.
- If the ODBC Drivers for Apache Derby fail to install on Windows XP or Windows Server 2003, check the contents of the installation log file \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.
- Review the problem scenarios described in Appendix A, "Installation problems," on page 145 and follow the guidance given.

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

Chapter 10. Installing runtime components

This chapter describes the tasks that you must complete to install one or more runtime components on all supported operating systems.

If you are installing runtime components on Windows, you can use the Launchpad to complete this task; see Chapter 9, "Installing with the Windows Launchpad," on page 95. If you do not want to use the Launchpad, or you are installing from download packages (which the Launchpad cannot process), complete the tasks in this chapter instead. Perform installation by following the instruction in Chapter 9, "Installing with the Windows Launchpad," on page 95, or in this chapter; you do not have to do both.

If you have already installed runtime components at V6.1.0.0, V6.1.0.1, or V6.1.0.2 on this computer, and you want to apply the update to V6.1.0.3, follow the instructions in the section **Installing > Applying service** in the information center in your existing installation.

If you want to install only the Message Broker Toolkit, see Chapter 11, "Installing the Message Broker Toolkit," on page 115.

Installation summary

This list summarizes the actions that you must take:

1. Check the `readme.html` file for any updates to these installation instructions. The readme file location is shown at the start of Chapter 2, "System requirements," on page 9.
2. Check that you have enough memory and disk space; refer to "Memory and disk space" on page 12.
3. 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 when you are using the graphical or console interface, 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.

Installing runtime components

> If you start the installation silent interface, the check for WebSphere MQ fails. If you have not modified the default behavior by specifying a tailored response file, the wizard terminates without taking any further action. If you have modified the response file to ignore this check, the installation wizard continues.

4. Decide if you want to install from a server, or to install locally on each system. These choices are described in "Accessing CDs and DVDs" on page 72 for both CDs or DVDs, and for 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 installation interface you want to use. The alternatives are explained in Chapter 8, "Choosing an installation interface," on page 85.

6. Follow the installation instructions provided in "Running a graphical installation" on page 111, "Running a console installation" on page 112, or "Running a silent installation" on page 113.

   When you start the installation wizard, it checks your system locale setting. If the locale setting is supported (listed in Chapter 4, "Multicultural support," on page 47), 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 the directory that you specify for installation already contains a previous version of WebSphere Message Broker, for example Version 6.0.0.3, the installation wizard prevents you from installing Version 6.1 (all releases) in this location. You must specify a different location. You can then migrate components to Version 6.1 from the previous version when appropriate.

   If you are installing the broker component, you must install a supported database before you can use the broker. However, the installation wizard completes even if a supported database is not present on this system. For further information about software requirements, see "Software requirements" on page 15.

7. If you are installing runtime components on Windows XP or Windows Server 2003, you must also install Microsoft Visual C++ Runtime V8 SP1. The installation program, vcredist_x86.exe, is in the root directory of Disk 1. It is supplied in US English only; for information about how to download and install multicultural versions, see "Express Installation" on page 99.

When you have completed installation, see Part 4, "After installation," on page 123 for information about verifying your installation, checking for and applying service updates, and learning how to create and configure a broker domain.

If you install one or more runtime components on Windows, the **Start** menu is updated. Detailed updates are described in the information center.

If you experience problems during installation, refer to "Dealing with problems during installation" on page 113.

Running a graphical installation

To perform a graphical installation:

1. Start the installation wizard graphical interface:
   - For local access, load the product CD or DVD.

   Linux and UNIX
   > Open a command prompt and navigate to the root directory of the CD. Type the program name with no options, and press Enter.

   Windows
   > Take one of the following actions:
   > - If autorun is enabled, the Launchpad is started immediately. To use the Launchpad, see Chapter 9, "Installing with the Windows Launchpad," on page 95. 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 92. 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.

   - 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 windows and provide input when requested. For example, you are asked to specify where to install the components, and which components you want to install. You must also read and accept the Software License Agreement.

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

Running a console installation

To perform a console installation:

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 92.

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

   installer -console

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

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.

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

Running a silent installation

To perform a silent installation:

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 92.

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 must specify a response file, for example, if you want to install Version 6.1.0.0 in a customized 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 "Silent installation of runtime components" on page 87.

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, which is stored in your home directory. The log file location is defined in Appendix A, "Installation problems," on page 145.
- Review the problem scenarios described in Appendix A, "Installation problems," on page 145 and follow the guidance given.

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

Chapter 11. Installing the Message Broker Toolkit

This chapter describes the tasks that you must complete to install the Message Broker Toolkit on Linux on x86 or Windows operating systems.

If you are installing the Message Broker Toolkit on Windows, you can use the Launchpad to complete this task; see Chapter 9, "Installing with the Windows Launchpad," on page 95. If you do not want to use the Launchpad, complete the tasks in this chapter instead. Perform installation by following the instruction in Chapter 9, "Installing with the Windows Launchpad," on page 95, or in this chapter; you do not have to do both.

If you want to install only runtime components, see Chapter 10, "Installing runtime components," on page 109.

Installation summary

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

1. Check the `readme.html` file for any updates to these installation instructions. The readme file location is shown at the start of Chapter 2, "System requirements," on page 9.
2. Check that you have enough memory and disk space; refer to "Memory and disk space" on page 12.
3. Decide how you want to run the installation. Choose from the following methods:
   - Insert the media into the appropriate drive and access the installation wizard 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.

   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.
4. If any Rational products are running, stop or close them before you start the installation.

Installing the Message Broker Toolkit

5. Complete the installation:

   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 72.

   b. Decide which installation interface you want to use. The alternatives are explained in Chapter 8, "Choosing an installation interface," on page 85. (The console interface is not supported by the Message Broker Toolkit installation wizard.)

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

      The installation of the Message Broker Toolkit is controlled by Installation Manager. If Installation Manager is not already installed on the computer, it installs both itself and the Message Broker Toolkit.

   d. If you are installing the Message Broker Toolkit on Windows XP or Windows Server 2003, you must also install Microsoft Visual C++ Runtime V8 SP1. The installation program, vcredist_x86.exe, is in the root directory of Disk 1. It is supplied in US English only; for information about how to download and install multicultural versions, see "Express Installation" on page 99.

When you have completed installation, see Part 4, "After installation," on page 123 for information about verifying your installation, checking for and applying service updates, and learning how to create and configure a broker domain.

When you install the Message Broker Toolkit on Windows, the **Start** menu is updated. When you install the Message Broker Toolkit on Linux on x86, the main menu is updated. Detailed updates are described in the information center.

If you experience problems during installation, refer to "Dealing with problems during installation" on page 122.

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 CDs to a hard disk, and install from the copy, because the installation wizard can continue unattended and does not require your attention to swap CDs when requested. If you copy the CDs to disk, ensure

that you create the directory structure correctly; if you do not, the process might fail. Follow the instructions in "Setting up CD copies on disk" on page 121, 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 4, "Multicultural support," on page 47), the wizard continues in this locale. If the current setting is not supported, the wizard continues in US English. This language is used for installation only, and does not affect other processes on your computer.

If you install the Message Broker Toolkit directly from CD on Linux on x86, 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/IBMInstallationManager/install

Install the Message Broker Toolkit with your chosen installation interface:
- "Running a graphical installation"
- "Running a silent installation" on page 120

Running a graphical installation

To perform a graphical installation:

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

   Windows
   > Take one of the following actions:
   > - If autorun is enabled, the Launchpad is immediately started. To use the Launchpad, see Chapter 9, "Installing with the Windows Launchpad," on page 95. To cancel the Launchpad, click **Exit Launchpad**.
   > - In Windows Explorer, navigate to the \IBMInstallationManager directory of the CD. Locate the wizard: its name is defined in "Installation wizard names" on page 92. Double-click the wizard to start it.
   > - Open a command prompt and navigate to the \IBMInstallationManager directory of the CD. Type the program name with no options, and press Enter.

   Linux Open a command prompt and navigate to the /IBMInstallationManager directory of the CD. Type the program name (defined in "Installation wizard names" on page 92) with no options, and press Enter.

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.
- To install from a remote 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 prefer, you can run the batch file `installToolkit.sh` (on Linux) or `installToolkit.bat` (on Windows) to start the installation wizard graphical interface. The files are in the root directory of disk 1.

   Installation Manager starts and the Install Packages window opens.

2. The installation wizard is preconfigured to install both Installation Manager and the Message Broker Toolkit, therefore the Message Broker Toolkit packages are already selected in this window. If Installation Manager has not been installed on this computer, its packages are also selected. You cannot clear Installation Manager selections. Click **Next** to continue. The Software License Agreement window opens.

3. Read the license agreement, select **I accept the terms in the license agreements**, and click **Next**. If you do not accept the license, the installation wizard ends.

   If you have not installed Installation Manager on this computer, or if you have installed Installation Manager, but have not yet installed any product that is managed by Installation Manager, the Shared Directory window opens; continue with step 4. If Installation Manager is already installed, the Package group directory window opens; continue with step 5 on page 119.

4. Specify the location of the shared resources directory. The default location is displayed:
   - Linux on x86: `/opt/IBM/SDP70Shared/`
   - Windows: `C:\Program Files\IBM\SDP70Shared\` for 32–bit editions
     `C:\Program Files(x86)\IBM\SDP70Shared\`*v.r* for 64-bit editions

   To specify a different location, type over the default location, or click **Browse**.

   The shared resources directory must not contain another installation of Message Broker Toolkit, or other files or products; *you must specify a new directory in this field*.

If Installation Manager is not yet installed, you must also specify its installation directory. The default location is displayed:
- Linux on x86: `/opt/IBM/InstallationManager/`
- Windows: `C:\Program Files\IBM\InstallationManager\` for 32–bit editions

  `C:\Program Files(x86)\IBM\InstallationManager\` for 64-bit editions

To specify a different location, type over the default location, or click **Browse**.

Click **Next**. The Package group directory window opens.

5. Specify the package group into which you want to install Message Broker Toolkit. If you have not installed Message Broker Toolkit (or another related product) on this computer, the option **Create a new package group** is selected automatically and the default values are displayed:

   - Package group name: **IBM Software Development Platform**
   - Installation directory:
     - Linux on x86: `/opt/IBM/WMBT610/`
     - Windows: `C:\Program Files\IBM\WMBT610\` for 32–bit editions

       `C:\Program Files(x86)\IBM\WMBT610\` for 64-bit editions

   Type over the default location, or click **Browse**, to specify a different location.

   The package group installation directory must not contain another installation of Message Broker Toolkit, shared resources, or other files or products; *you must specify a new directory in this field*.

   If you have previously installed another product that is managed by Installation Manager, you can install Message Broker Toolkit into an existing package group, or create a new one. Select the correct option for the action that you want to complete. If you install into an existing package group, the package group installation directory is already finalized; you cannot change it.

   This window displays the current setting of the shared resources directory for information.

   Click **Next** to continue. The Language Selection window opens.

6. If you want to use the Message Broker Toolkit in a locale other than US English, select additional support from the list presented. English is always selected and installed; you cannot clear this selection. If you select one or more alternative locales, documentation and properties files for all supported languages are installed. Click **Next** to continue. The Summary window opens.

Installing from CD or DVD

7. Check your choices and click **Back** if you want to make any changes to your responses on any of the previous windows. This window displays guidance information for the space required for the packages that you are about to install and indicates that your disk has sufficient space.

   Click **Next** to start installation. The Install Progress window opens.

8. The features that you are installing, their associated directories, and the locales that you have selected, are displayed for information. A progress bar is displayed so that you can check the status of the installation. When installation has finished, the Completion window opens.

9. The wizard displays an indication of success or failure, and lists the products and options that have been installed. Click **View Log File** to check the results of the installation.

   On Windows only you can indicate that you want the Message Broker Toolkit to be launched when you click **Finish** to close the wizard. This option is not available on Linux on x86, because you might want to complete verification while logged on as a different user ID that does not have root authority.

If you do not choose to install optional locales at this time, you can install them later in the following way:

- On Linux on x86, navigate to the /eclipse directory within the Installation Manager installation directory, and start the Installation Manager program IBMIM.

  (You cannot use the main menu entries unless you are already logged on as root; the menu item does not provide an option to become root, and root authority is required for all installation tasks.)

- On Windows, click **Start > Programs > IBM Installation Manager > IBM Installation Manager** to launch Installation Manager, and click **Modify Packages** to change your installation.

  If you prefer to use the command line, navigate to the \eclipse directory within the Installation Manager installation directory, and start the Installation Manager program IBMIM.exe.

Running a silent installation

You cannot install the Message Broker Toolkit directly from CD if you use the silent interface, because you are required to swap CDs when prompted. Therefore, for a silent installation, you must install either from DVD, or from CD images that you have copied on to a local or remote drive. For more information about copying CD images, see "Setting up CD copies on disk" on page 121.

To perform a silent installation:

1. Locate the installation wizard in the `IBMInstallationManager` 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 92.

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

   Linux on x86

   `./install -nosplash --launcher.suppressErrors -input mbtoolkit-silent.xml -silent`

   Windows

   `install.exe -nosplash --launcher.suppressErrors -input mbtoolkit-silent.xml -silent`

   where `mbtoolkit-silent.xml` is the name of the response file that contains all the default settings for installation.

   If you want to specify non-default settings, include a different response file on the invocation. To create a different response file, complete the first installation by using the graphical interface, specifying the `-record` option. The installation wizard records a response file that includes all your chosen selections. For more information about how to record and use response files, see "Silent installation of the Message Broker Toolkit" on page 91.

   If you prefer, you can install the Message Broker Toolkit by using the batch files `installToolkit-silent.sh` or `installToolkit-silent.bat`, which use the response file `mbtoolkit-silent.xml`. The batch files are in the root directory of disk 1.

3. When the wizard starts, it installs Installation Manager (if it is not already installed), then installs the Message Broker Toolkit by using default values, or a response file if specified.

4. The installation wizard runs to completion. Check the log for success or failure of the installation process.

Setting up CD copies on disk

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

```
/instbroker/disk1
/instbroker/disk2
/instbroker/disk3
```

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 wizard does not prompt for location and wait for input, and does not fail because it cannot find the right images or files.

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 file *YYYYMMDD_TIME*`.xml`, where *YYYYMMDD_TIME* is the date and time of installation. The log file location is defined in Appendix A, "Installation problems," on page 145.
- Review the problem scenarios described in Appendix A, "Installation problems," on page 145 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 describes what to do after installation:

Verify your installation on Linux on x86 or Windows

> You can perform verification only on Linux on x86 or Windows computers, because it exploits wizards and sample programs which are available when you launch the Message Broker Toolkit. The samples require that all WebSphere Message Broker components are installed on the same computer. No specific verification programs are provided on other operating systems. Follow the procedures described in Chapter 12, "Configuring and verifying your system," on page 125.

Learn about the product

> After you have installed the Message Broker Toolkit, you can access the WebSphere Message Broker information center, which is installed as an integral part of the Message Broker Toolkit on Linux on x86 and Windows. Explore the Welcome page resources and the information center to learn about the product and how you can use it. Chapter 13, "What's next," on page 133 provides information about what resources are available and how you can access them. It also tells you how to check for any service fixes that you can apply to your installation to keep it up to date.

Develop and unit-test domain configurations and resources

> After you have purchased a license for WebSphere Message Broker, all developers in your organization can install one copy of all components on their own test computer to develop and unit-test components and business resources. This option applies only to computers that are running Linux on x86 or Windows, because you must install the Message Broker Toolkit to complete unit-testing. You can also install the supplied WebSphere MQ and DB2 products on your test computers for use only with WebSphere Message Broker.

Check the broker operation mode and function level

> When you have completed installation, verification, and testing, you might need to change the operation mode of your brokers. You might also want to enable the use of new nodes supplied in fix packs. Chapter 14, "Checking the broker operation mode and function level," on page 137 describes when and how to make these changes.

Chapter 12. Configuring and verifying your system

This chapter describes how to verify your installation on Linux on x86 or Windows. You must install all runtime components and the Message Broker Toolkit on a single computer to complete these verification procedures. You must also install a database product for use by the broker.

After verification, you can keep all the components to carry out further development and unit test. Development and test environments are restricted to Linux on x86 and Windows computers on which one copy of each component is installed on each computer. You can also create additional components and resources on your test computers to investigate the ways in which your business requirements can be met by this product.

If you have purchased WebSphere Message Broker Remote Adapter Deployment or Starter Edition, you must modify the operation mode of the broker after you have completed the procedures in this chapter (unless you are running a test environment). The broker operation mode is always set to the default `enterprise` when you install the broker component from the full product runtime packages. If you intend to keep and use the default broker that you create in this chapter, you are required to modify its mode to conform to the terms of your license. See Chapter 14, "Checking the broker operation mode and function level," on page 137 for details of this task.

Getting started

When you have completed installation:

1. Launch the Message Broker Toolkit:

   - On Linux on x86, you do not need root authority to complete verification. You cannot launch the Message Broker Toolkit from the installation wizard because if you were to create resources such as brokers when you are logged in as root, you might experience problems during operation and this option is therefore unavailable.

     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 Broker Toolkit from the main menu or run the script file provided. On a command line, navigate to the root directory of the package group and enter the following command:

     ```
     ./mb.bin
     ```

The script file runs the following command; you can use this command yourself if you prefer:

```
./eclipse -product com.ibm.etools.msgbroker.tooling.ide
```

- On Windows, you cannot complete verification unless you have Administrator authority; carry out verification with the same user ID that you used to complete installation.

  If you did not launch the Message Broker Toolkit from the installation wizard, launch it from the **Start** menu, or run the script file provided. On a command line, navigate to the root directory of the package group and enter the following command:

```
mb.exe
```

  The script file runs the following command; you can use this command yourself if you prefer:

```
eclipse.exe -product com.ibm.etools.msgbroker.tooling.ide
```

2. When you first launch the Message Broker Toolkit, you are asked to specify the location of your workspace. This directory exists on your local drive, and is where the Message Broker Toolkit stores all the resources that you create. You can accept the default directory shown, or you can specify your own choice either by typing it in, or by clicking **Browse** to specify the location. Select **Use this as the default and do not ask again** to inhibit the display of the workspace dialog next time you launch the Message Broker Toolkit.

   The Message Broker Toolkit opens and the Welcome page is displayed.
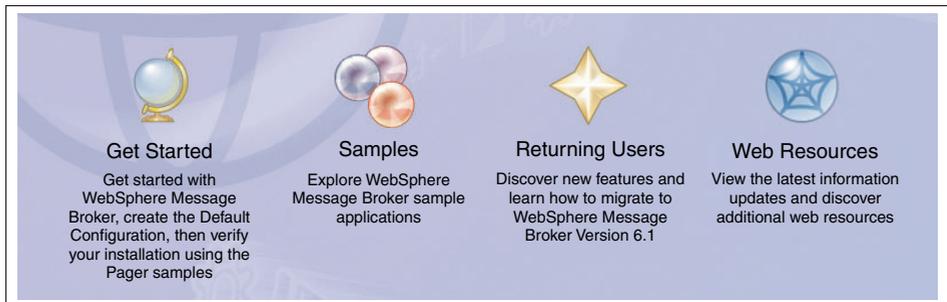
Figure 1. The Welcome page choices (Windows)

3. Click the **Get Started** icon to begin the configuration and verification process.

   The Get Started page opens, from which you can start the Quick Tour (see Chapter 13, "What's next," on page 133) or create a default configuration that is used by a sample program to verify that your installation is successful. To continue configuration and verification, follow the

instructions in "Creating the default configuration" and "Running the Pager samples" on page 129.

Creating the default configuration

Before you can run sample programs, you must use the Default Configuration wizard to create the components of a broker domain with fixed names and properties that the samples depend on.

The Default Configuration wizard requires that the following conditions are met:

- You have installed all runtime components and the Message Broker Toolkit.
- On Linux on x86, Windows Vista, or Windows Server 2008, you have installed DB2 Enterprise Server Edition, and you have run the DB2 profile for your current user ID. For example, on Linux on x86:

  `. ~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 your computer).
- On Windows XP or Windows Server 2003, you have installed either the ODBC Drivers for Apache Derby, or DB2 Enterprise Server.

  If you have installed DB2 Enterprise Server Edition supplied with either Linux on x86 or Windows, you have registered your license; this task is described in Appendix B, "Registering your DB2 license," on page 149.
- None of the default components already exist (the components are listed in Table 20 on page 129).
- 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 67.

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

Creating the default configuration

To create the default components within a broker domain:

1. On the Get Started page, click the link to **Create the Default Configuration** . The "Creating the Default Configuration" page opens.

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

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.

   The information in the text window is also written to a log file in your workspace directory structure. The default workspace directory is shown below, but you can choose another location when you start the Message Broker Toolkit. The default value for your *user_home_dir* is defined in Appendix A, "Installation problems," on page 145.

   Linux on x86
   > *user_home_dir*/IBM/wmbt61/workspace/.metadata/DefaultConfigurationWizard.log

   Windows
   > *user_home_dir*\IBM\wmbt61\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 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 20.

Table 20. Resources created by the Default Configuration wizard

Name	Type
DEFBKD61	Broker database
Local_Domain	Broker domain
LocalProject	Server project
WBRK61_DEFAULT_CONFIGURATION_MANAGER	Configuration Manager that manages the broker domain
WBRK61_DEFAULT_BROKER	Broker
WBRK61_DEFAULT_QUEUE_MANAGER	WebSphere MQ queue manager that hosts the broker and Configuration Manager. The queue manager has a listener at the first available port greater than or equal to 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.

Running the Pager samples

To verify your installation, click **Help > Samples Gallery** to open the Samples Gallery. The Samples Gallery opens in a separate window.

1. Click **Application Samples**, expand **Message Broker**, and click **Pager** to open the "Pager samples" page. The following options are displayed:

   • **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 that contains a description of each of three sample programs, and icons that you can click to start each one.

Running the Pager samples

- **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 the sample 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 that is reported in this text window. This information is also written to the following log file:

   Linux on x86
   > *user_home_dir*/IBM/wmbt610/workspace/.metadata/samplePreparationWizard.log

   Windows
   > *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 that have been 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**. On the page that opens, click **How to use the applications** to read about the Text Messenger and Surf report publisher applications. When you understand what the applications do, and how to use them, click on the icon that represents the application that you want to run.

If you want more detailed information about the contents of these applications, and how the message flows work, click **Find out what the Pager samples do**.

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

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 Broker Toolkit, and select **Prepare the Samples**. The Samples Preparation wizard opens, and lists other samples that are available.

After verification

To remove the sample or samples when you have finished with them, run the Samples Preparation wizard again and remove the samples that you have added. This action removes the samples from the broker, and removes the sample resources from your workspace.

When you have completed your verification tests, run the Default Configuration wizard to remove all the default resources. Use the same workspace and the same user ID that you used to create the resources. To start the wizard from the Message Broker Toolkit, click **File > New > Other** and expand **Broker Administration - Getting Started**. Select **Create the Default Configuration** and click **Next**.

After verification

Chapter 13. What's next

When you have completed installation and verification, you can use two main sources of information to help you learn about the product, and to create and deploy a broker domain on all operating systems. Launch the Message Broker Toolkit to access these resources:

The Welcome page

> The Welcome page is typically what you see when you first launch the Message Broker 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 has information that is relevant if you are migrating from previous versions.

> In addition to Getting Started (covered in Chapter 12, "Configuring and verifying your system," on page 125), the Welcome page displays these choices for you to explore:

> - If you are new to WebSphere Message Broker, click the **Get Started** 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 a previous version installed, click the **Returning Users** icon to see what new and enhanced functions are included in Version 6.1. From here you can also access a description of the steps that you need to take to migrate your current broker domain to Version 6.1. The information provided describes planning, preparation, and implementation.

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

>   The Samples Gallery 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 Broker 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 IBM Redbooks. You can also read about different ways to find information in the information center, whether you are a new or an experienced user.

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

Installing > Applying service

After you have installed Version 6.1.0.2, check the availability of fixes on the Recommended Fixes Web site:

www.ibm.com/support/docview.wss?uid=swg27006041

Follow the instructions in the information center, and the installation instructions provided with the fix pack, to download and install updates.

Start here

The **Start here** section provides new users with information that introduces the product and what you can do with it. It provides explanations of the main terminology and components, and presents a set of initial tasks in an order that you would typically follow as a new user.

Start here topics link to other areas of the information center, and to external links, to help you to understand more about the product, and to employ its varied functions to solve your business problems.

Start here also contains hints and tips for more experienced users who have installed previous versions.

Configuring the broker domain

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

- Navigate through the Configuring section to find details about the tasks involved in creating your configuration, and which commands you can 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:

  Linux and UNIX
  > Run the `mqsiprofile` file, supplied in the following directory:
  >
  > *install_dir*/bin

  Windows
  > Click **Start > IBM WebSphere Message Brokers 6.1 > Command Console** to open a window with the correct environment setup. Invoke the commands in this window.

  z/OS This action is not required on z/OS.

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

- On Linux on x86 and Windows, use the Default Configuration wizard to create components of fixed names on systems local to the toolkit, as explained in Chapter 12, "Configuring and verifying your system," on page 125. You might find this wizard useful even if you do not want to complete the verification steps.

  The Default Configuration wizard also sets up the command environment for you, so you do not have to do that before you perform verification process described in Chapter 12, "Configuring and verifying your system," on page 125, or before you use the wizard in other circumstances.

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

What's next

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 broker archive files, configurations, and topology, and how to deploy the message flows and other resources that you have developed.

Chapter 14. Checking the broker operation mode and function level

You must ensure that you configure your production brokers to conform to the terms of your license. You might also want to change the function level to enable the use of nodes that are supplied in the latest fix pack.

Configuring your brokers to conform to your license

If you are upgrading from the Trial Edition

If you installed WebSphere Message Broker Trial Edition, and have now purchased the product, you can keep the components and all the associated resources that you have already created and configured. You do not have to uninstall the Trial Edition and reinstall the purchased packages. However, if you do not reinstall, the operation mode of your existing brokers, and the default operation mode of all new brokers that you create, has the value `trial`, and you must change this value:

- If you intend to keep the brokers that you created for your trial domain for further development and unit test by your developers, change the operation mode of each broker to `enterprise`, as described in "Changing the broker operation mode" on page 140.

  After this change, your brokers are no longer restricted by the trial period, but check the license agreement file to ensure that your configuration conforms to any restrictions for development and unit test. Development and unit test conditions are described in "License requirements" on page 34.

- If you intend to use the brokers that you created for your trial domain for production purposes, change the operation mode to conform to the license that you have purchased:

  - If you have purchased Remote Adapter Deployment, change the operation mode to `adapter`.
  - If you have purchased Starter Edition, change the operation mode to `starter`.
  - If you have purchased the full (unrestricted) license, change the operation mode to `enterprise`.

Checking the broker operation mode and function level

If you do reinstall the runtime components with the new physical or electronic packages for your purchased product, the default operation mode of all new brokers that you create has the value `enterprise`. If you have purchased Starter Edition or Remote Adapter Deployment, you must always change the mode to conform to the license that you have purchased.

If you also installed trial versions of WebSphere MQ, DB2, or both, you are now entitled to install the restricted license version of those products that are supplied as part of WebSphere Message Broker. You do not have to make any further purchases if the supplied products meet your requirements, and you intend to use them only with WebSphere Message Broker.

WebSphere MQ

Take the following steps to upgrade your trial version of WebSphere MQ:

1. Uninstall the trial version.
2. Install a licensed version of WebSphere MQ:

   - Version 6.0 is included with WebSphere Message Broker for use only with WebSphere Message Broker. Use either the supplied media or the images that you have downloaded to install this version. If you are installing on Windows, you can use the Launchpad to help you to install this product.

     This version is not supported on Windows Vista or Windows Server 2008; see "WebSphere MQ" on page 27 for more details.

   - If you want to use WebSphere MQ for applications that are not related to your use of WebSphere Message Broker, you must purchase a separate license (Version 6.0 or Version 7.0).

     You can also purchase a separate license if you want to use additions or enhancements that are included in WebSphere MQ Version 7.0.

DB2

To upgrade your trial version of DB2, you must register your license on each computer on which you installed this version of DB2. This process is described in Appendix B, "Registering your DB2 license," on page 149.

You do not have to uninstall the trial version and then install the version of DB2 that is included with WebSphere Message Broker.

If you want to use an alternative supported version of DB2, or you want to use DB2 for applications that are not related to your use of WebSphere Message Broker, you must purchase a separate license for DB2 at that version and install the product again.

If you already have licensed copies of WebSphere MQ, DB2, or both, you do not have to take any further action, provided that the licensed products that you have installed meet the requirements of WebSphere Message Broker, shown in Chapter 2, "System requirements," on page 9.

If you have purchased Remote Adapter Deployment or Starter Edition
If you have purchased WebSphere Message Broker Remote Adapter Deployment or WebSphere Message Broker Starter Edition, and installed components from the full runtime package:

- All brokers that you have created (for example, by completing the verification procedures) have an operation mode set to enterprise, which is the default setting for this installation. You can keep these brokers for further development and unit test, subject to any restrictions that apply for unit test environments, as indicated in your license. Development and unit test conditions are described in "License requirements" on page 34.
- If you intend to use these brokers for production purposes, follow the instructions in "Changing the broker operation mode" on page 140, to conform to the license that you have purchased:
  - If you have purchased Remote Adapter Deployment, change the operation mode to adapter.
  - If you have purchased Starter Edition, change the operation mode to starter.
- When you create new brokers, you must set the operation mode to conform to the license that you have purchased, because by default the operation mode is set to the value enterprise. You can either override this default value by specifying an alternative value of adapter or starter with the **-o** flag on the **mqsicreatebroker** command, or you can change the mode by using the **mqsimode** command for the created broker.

Checking the broker operation mode and function level

If you have purchased a full (unrestricted) license for WebSphere Message Broker

> If you have purchased a full (unrestricted) license and installed components from the full runtime package, all brokers that you create have an operation mode set to the default value of `enterprise`, which is the correct setting for your license.
>
> Whenever you create a new broker, on existing installations or on different installations or computers, the operation mode is set to `enterprise`, and you never have to change this value.
>
> You can continue to work with all the components and associated resources that you have already created. For example, after you have completed verification, you might keep the resources that you have created for further development and unit test (subject to any restrictions that apply for unit test environments, as indicated in your license). Development and unit test conditions are described in "License requirements" on page 34.

For a full description of the broker operation mode, and behavior associated with each mode, see the information center. If you want to know more about your license and terms and conditions, see "License requirements" on page 34, or contact your IBM representative for further information.

Changing the broker operation mode

To change the broker operation mode:

1. On Linux on x86, run the **mqsiprofile** command to initialize the command environment. On Windows, click **Start > Programs > IBM WebSphere Message Brokers 6.1 > Command Console** to open a command console.

2. Enter the following command:

   ```
   mqsimode –i ip_address –p port –q queue_manager -b broker –o new_mode
   ```

   The command parameters are:

   ip_address
   > The host name or the IP address of the computer on which the Configuration Manager is started. You can omit this parameter if you created the broker and Configuration Manager on the same computer.

   port The port number on which the Configuration Manager's queue manager is listening.

   queue_manager
   > The name of the queue manager that hosts the Configuration Manager; for example, WBRK61_DEFAULT_QUEUE_MANAGER.

broker

The name of the broker; for example,
WBRK61_DEFAULT_BROKER.

new_mode

The operation mode that is required for this broker. You can set
the mode to enterprise, adapter, or starter.

For more information about this command, and other examples of its use,
see the information center.

Changing the broker function level

When a fix pack is delivered, it might include new nodes that you can add to
your message flows to provide specific functions. In Version 6.1.0.3 (Fix Pack
3), the following nodes are available:

- IMSRequest node
- PHPCompute node

The default function level of the broker is not set to a specific value; this
default value is equivalent to the value 6.1.0.2, which represents the level for
Fix Pack 2. At this level, nodes that are added by later fix packs are not
supported by the broker.

Nodes that are added in later fix packs, for example Version 6.1.0.3 (Fix Pack
3), are available in the Message Broker Toolkit, and you can include these
nodes in a message flow, but you can deploy the message flow to a broker
only if you have set the function level of that broker to the value that
represents the fix pack in which the nodes are first delivered.

Because you can control the function level of each broker, you can try out new
nodes on test brokers without affecting the operation of your production
brokers. When you are satisfied that the nodes provide the function that you
require, and work as you expect, you can set the function level of other
brokers in your domain, as and when appropriate.

To change the function level of a broker, use the **mqsichangebroker**
command, specifying the **-f** flag with the appropriate value; for example
6.1.0.3 for Fix Pack 3.

For more information about nodes added in fix packs, and the use of the
mqsichangebroker command, see the information center.

Part 5. Appendixes

Appendix A. Installation problems

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

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

- Problems associated with installation of the runtime components are recorded in the log file mqsi6_install.log, which is stored in the home directory associated with your account:

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

  Windows
  Enter echo %HOMEPATH% to find your home directory. Typically the location is set to the following default values:
  - On Windows XP and Windows Server 2003, C:\Documents and Settings*userID*
  - On Windows Vista and Windows Server 2008, C:\Users*userID*

- Problems associated with installation of the Message Broker Toolkit are recorded in the Installation Manager log file, *YYYYMMDD_TIME*.xml, where *YYYYMMDD_TIME* is the date and time of installation. The file is stored in the following location:
  - On Linux: /var/ibm/InstallationManager/logs
  - On Windows systems, the directory is created at %ALLUSERSPROFILE%\ Application Data\IBM\Installation Manager\logs where %ALLUSERSPROFILE% is the environment variable that defines the system working directory. The default directory depends on the operating system:
    - On Windows XP and Windows Server 2003: C:\Documents and Settings\All Users\Application Data\IBM\Installation Manager\logs
    - On Windows Vista and Windows Server 2008: C:\ProgramData\IBM\ Installation Manager\logs

  The actual location might be different on your computer.

Installation problems

Typical problems, with a corresponding solution or 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 using the graphical interface to install on Linux, you must install additional packages for the interface to work correctly. See Table 8 on page 15 for details.

Linux: RPM query fails

> If you invoke a Red Hat package manager (RPM) 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 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 that is described in Table 8 on page 15.

Linux and UNIX: display problems

> If you try to install runtime components by 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 ID 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 located in /tmp. If sufficient file space is not 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 7 on page 13 to check how much temporary space is required.

Linux on x86 and Windows: Installation Manager

If you click **Next** in the Installation Manager when it first opens, you might cause the Installation Manager to hang. Close the window and reopen it.

Linux on x86 and Windows: Installation Manager

If you are installing the Message Broker Toolkit, and the initial Install Packages page that is displayed by Installation Manager does not show the Message Broker Toolkit components, the location of the update repository has not been set correctly.

Select **File > Preferences** and click **Add Preferences**. Enter the URL or directory where the installation packages are stored or click **Browse** to search for the correct location.

Click **OK**. The packages are listed in the Install Packages page.

Installation problems

Appendix B. Registering your DB2 license

If you have installed DB2 Restricted Enterprise Server Version 9.1 from the media supplied with WebSphere Message Broker, you must register the associated license. Complete this task on every computer on which you have installed DB2 from the WebSphere Message Broker media.

1. Log in to the computer. On Linux and UNIX systems, your user ID must have root authority. On Windows, you must have Administrator authority.
2. Issue the register command:

   AIX systems
   > `/usr/opt/db2_09_01/adm/db2licm -a` *`db2_installation_directory`*`/license/db2ese_o.lic`

   Linux and other UNIX systems
   > `/opt/IBM/db2/V9.1/adm/db2licm -a` *`db2_installation_directory`*`/license/db2ese_o.lic`

   Windows systems
   > Open a DB2 command window and enter the following command:
   >
   > `db2licm -a` *`db2_installation_directory`*`\license\db2ese_o.lic`

   where *db2_installation_directory* identifies the directory into which you have installed DB2 Restricted Enterprise Server Version 9.1.

The DB2 product license key information is now stored in the following directories:

AIX systems
> `/var/ifor`

Linux and other UNIX systems
> `/var/lum`

Windows systems
> `DB2PATH/sqllib/license`

Registering your DB2 license

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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 Broker 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. The database product based on the Apache Derby open source project from the Apache Software Foundation. The Derby database is embedded in the broker component on Windows only.

E

execution group. A named grouping of message flows that have been assigned to a broker. The broker enforces a degree of isolation between message flows in distinct execution groups by ensuring that they execute in separate address spaces, or as unique processes.

L

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

M

message broker. See broker.

Message Broker Toolkit. The integrated development environment that includes IBM Rational features and plug-ins, and 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.

O

operation mode. A property of a broker that determines what operations it can perform.

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) by 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.

S

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

system log. See *local error log*.

T

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 Broker 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 Broker Toolkit, typically associated with a user or set of users.

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