WebSphere Message Broker

Installation Guide

Version 6.1

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> **Note!**
>
> Before using this information and the product it supports, be sure to read the general information under Appendix D, "Notices," on page 145.

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About this book

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

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

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

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

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

The information center is the primary source of documentation for this
product. After you have installed the required components on one or more
operating systems, see the information center for instructions about tasks that
are not included in this book. You can access the information center from the
Message Broker Toolkit when you have installed that component, or you can

About this book

access it from other locations before installation. See "Where to find more information" on page xii for details of the options that are available.

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

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

This book is divided into four parts:
- Part 1, "Planning," on page 1
- Part 2, "Preparation," on page 47
- Part 3, "Installation," on page 77
- Part 4, "After installation," on page 103

Appendixes provide further support and reference information.

If you have ordered WebSphere Message Broker with Rules and Formatter Extension for Multiplatforms, use this book to install WebSphere Message Broker, then insert the appropriate Rules and Formatter Extension CD for your operating system. The Design-time Extension CDs provide extensions to the toolkit, the Run-time Extension CDs provide extensions to the broker runtime components.

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

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

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

Who this book is for

This book is for system administrators of 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 (Integrity platform) and HP-UX (PA-RISC platform) where their behavior is common.

The term Linux refers to Linux (POWER platform), Linux (x86 platform), Linux (x86-64 platform), and Linux (zSeries platform) where their behavior is common.

The term Solaris refers to Solaris (SPARC platform) and Solaris (x86-64 platform) where their behavior is common.

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

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

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

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

The term *install_dir* refers to the directory in which you install the product. For the Message Broker Toolkit, this directory refers to the package group installation directory.

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 for Multiplatforms includes DB2 Restricted Enterprise Server Edition Version 9.1 with tailored terms and conditions. This 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 C, "Registering your DB2 license," on page 143.

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

Terms used in this book

Derby refers to 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 12 for further information about Derby.

Key terms introduced in this book are defined in the "Glossary of terms and abbreviations" on page 149. For a full product glossary, see the information center.

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

www.ibm.com/software/globalization/terminology/

Where to find more information

This book contains only installation information. Most of the information that you need to use this product is in the information center, which you can access after installation 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.

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

  You can access the information center directly on CD, or you can 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 (x86 platform) or wmb_help_win.zip for Windows, and follow the instructions in the installing_and_managing.htm file that is included in each compressed file. The downloaded information center can also be started in stand-alone mode or Web server mode.

  On this site you can also find PDF files of topic collections for printing, and translated versions of product readme files.
* The online IBM WebSphere Message Broker Information Center :

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

The information center that is provided on the Quick Start CD, and that available from the FTP site, include documentation plug-ins for WebSphere Message Broker, WebSphere MQ Version 6.0, and WebSphere MQ Everyplace Version 2.0.2.0.

The latest product readme file, in US English only, is available from the product support Web site:

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

Publications

The following books are available for WebSphere Message Broker:

- *WebSphere Message Broker Installation Guide (GC34-6866)* (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)*

Related products

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

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

Direct links are provided below.

WebSphere MQ

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

You can also access the WebSphere MQ information center online:

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

DB2 Enterprise Server

Access the Version 9.1 information center online:

publib.boulder.ibm.com/infocenter/db2luw/v9/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.

Information sources

WebSphere information on the Web

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

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

Part 1. Planning

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

- Chapter 1, "System requirements," on page 3
- Chapter 2, "Coexistence and migration," on page 25
- Chapter 3, "National language support," on page 33
- Chapter 4, "Installation packages," on page 37

Chapter 1. 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 4
- "Software requirements" on page 9

The product readme file readme.html might contain updates to the information in this chapter. Therefore, always check for later information in the readme file. A single file is provided for WebSphere Message Broker that includes information pertinent to all components and is 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:
  - On DVD (on Linux (x86 platform) and Windows only)
  - On runtime components Disk 1 (all operating systems)
  - On runtime components Disk 2 and Disk 3 (Windows only)
  - On Message Broker Toolkit Disk 1

- After installation, in 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).

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

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

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 24.

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

Hardware requirements

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

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

Table 1. Hardware requirements

Operating system	Requirements[1]
AIX	IBM e(logo)server pSeries IBM RS/6000® processor servers IBM e(logo)server i5
HP-UX (Integrity platform)	Hewlett-Packard Integrity servers
HP-UX (PA-RISC platform)	Hewlett-Packard HP-9000 PA-RISC 2.0 processor servers
Linux (POWER platforms)	IBM e(logo)server iSeries Server using the IBM Integrated xSeries® Server or Linux PowerPC IBM e(logo)server pSeries IBM RS/6000 processor servers
Linux (x86 platform)	IBM e(logo)server xSeries or equivalent Intel® based servers[2]
Linux (x86-64 platform)	AMD64, EM64T, or compatible processor servers[3]
Linux (zSeries platform)	IBM e(logo)server zSeries 600 or e(logo)server 700 Server
Solaris (SPARC platform)	Sun Microsystems SPARC processor servers
Solaris (x86-64 platform)	Sun Microsystems AMD64, EM64T, or compatible processor servers[3]
Windows	Windows x86 technology-compatible PC hardware[2+3]
z/OS[4]	Any server capable of running one of the supported z/OS releases

Notes:

1. Always check the readme.html file for the latest information about supported hardware.
2. The Message Broker Toolkit is supported on 32-bit computers only. It requires an Intel Pentium® III (or higher) processor-based computer with a processor speed of at least 700 MHz. This specification is the minimum supported level; for improved performance, use a 2 GHz processor.

   A minimum display resolution of at least 1024 x 768 is required for some dialog boxes (for example, the Preferences dialog box).
3. The server must be capable of running a compatible supported operating system and have enough storage to meet the combined requirements of the WebSphere Message Broker components that you install, and all prerequisite products.
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.

DVDs are provided for Linux (x86 platform) and Windows; if you want to install from DVD, your computer must have a DVD reader. If you plan to install from CD, your computer requires a CD reader. For details of the CDs and DVDs supplied, see Chapter 4, "Installation packages," on page 37. If you prefer, you can download and install from images available from Passport Advantage, if you are registered with this scheme.

Memory and disk space

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

Distributed systems

- 512 MB of 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 (x86 platform) or Windows. This specification is the minimum supported level; for improved performance, provide 1 GB of RAM (1 GB equals approximately 1 000 000 000 bytes).
- Disk space requirements are dependent on the components that you install and the working space that is required by those components (for example, for WebSphere MQ queues and persistent messages).

  Check that your computer has at least the space shown in Table 3 on page 7, which provides guidance for both permanent product requirements and temporary space. If you install just one or two of the runtime components, the amount of storage that is required is reduced by only a small amount.

Memory and disk space

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, so 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 3 on page 7 or Table 2, check that your computer has sufficient space before you continue with the installation.

Table 2. Disk space requirements (Linux and Windows)

Component	Linux (POWER platform)	Linux (x86 platform)[1]	Linux (x86-64 platform)	Linux (zSeries platform)	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	1.52 GB plus 2.1 GB temporary space	Not available	Not available	1.58 GB plus 2.1 GB temporary space

Notes:

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

Table 3. Disk space requirements (UNIX)

Component	AIX	HP-UX (Integrity platform)	HP-UX (PA-RISC platform)	Solaris (SPARC platform)	Solaris (x86-64 platform)
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 12).
  - On Windows, 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.
- 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 12
- "Additional required products" on page 18
- "Optional software and support" on page 23

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 4.

Table 4. Operating system requirements

Operating system	Requirements[1]
AIX	• AIX Version 5.3 (Technology Level 4)[2]
HP-UX (Integrity platform)	• HP-UX 11i V2 (B.11.23) for Integrity • HP-UX 11i V3 (B.11.31) for Integrity
HP-UX (PA-RISC platform)	• HP-UX 11i V2 (B.11.23)
Linux (POWER platform)	• Linux PowerPC® Red Hat Enterprise Linux Advanced Server Version 4.0 (with service level Update 2) • Linux PowerPC Red Hat Enterprise Linux Advanced Server Version 5.0 • Linux PowerPC SUSE Linux Enterprise Server (SLES) 9 RC5 or above • Linux PowerPC SUSE Linux Enterprise Server (SLES) 10
Linux (x86 platform)[3]	• Linux Intel Red Hat Enterprise Linux Advanced Server Version 4.0 (with service level Update 2) • Linux Intel Red Hat Enterprise Linux Advanced Server Version 5.0[4] • Linux Intel SUSE Linux Enterprise Server (SLES) 9 • Linux Intel SUSE Linux Enterprise Server (SLES) 10[4]
Linux (x86-64 platform)	• Linux Intel Red Hat Enterprise Linux Advanced Server Version 4.0 (with service level Update 2) • Linux Intel Red Hat Enterprise Linux Advanced Server Version 5.0 • Linux Intel SUSE Linux Enterprise Server (SLES) 9 • Linux Intel SUSE Linux Enterprise Server (SLES) 10
Linux (zSeries platform)	• Linux zSeries (64-bit) Red Hat Enterprise Linux Advanced Server Version 4.0 (with service level Update 2) • Linux zSeries (64-bit) Red Hat Enterprise Linux Advanced Server Version 5.0 • Linux zSeries (64-bit) SUSE Linux Enterprise Server (SLES) 9 • Linux zSeries (64-bit) SUSE Linux Enterprise Server (SLES) 10

Operating system requirements

Table 4. Operating system requirements (continued)

Operating system	Requirements[1]
Solaris (SPARC platform)	• Solaris 9 (with SunSolve recommended Patch Cluster level)[5] • Solaris 10 (with SunSolve recommended Patch Cluster level)
Solaris (x86-64 platform)	• Solaris 10 (plus SunSolve recommended Patch Cluster level)[6]
Windows[7]	• Windows XP Professional (with service level SP2) • Windows Server 2003 Standard Edition • Windows Server 2003 Enterprise Edition
z/OS[8]	• IBM z/OS Version 1.7 at RSU0609 or later (for the target computer) with PTFs for APARs PK34716 and PK34041 • IBM SMP/E for z/OS Version 3.3 or later

Notes:

1. Always check the `readme.html` file 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 apply a PTF from this Web site:

   `www.ibm.com/support/docview.wss?rs=2239&uid=swg24014302`
3. On Linux (x86 platform), you might require the following additional packages that are available with the operating system.
   - If you choose to install in graphical mode 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 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 Configuration Manager on this operating system version, the recommended Patch Cluster level must include patches 111711-16 (32-bit) and 111712-16 (64-bit).
6. 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.
7. Windows operating systems are supported in 32-bit mode only.
8. 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".

Support for 32-bit and 64-bit operation

WebSphere Message Broker operates in both 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 has changed, indicated in Table 5, and you might need to make additional changes in your configuration. Read the migration and configuration sections in the information center for further details.

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 5. Support for 32-bit and 64-bit operation

Platform	Broker core components and commands	32-bit execution groups	64-bit execution groups
Linux (x86 platform)	32-bit	Yes	No
Windows	32-bit	Yes	No
z/OS	32-bit	Yes	No
AIX[1]	64-bit	Yes	Yes
HP-UX (PA-RISC platform)[1]	64-bit	Yes	Yes
Linux (x86-64 platform)	64-bit	Yes	Yes
Solaris (SPARC platform)[1]	64-bit	Yes	Yes
HP-UX (Integrity platform)	64-bit	No	Yes
Linux (POWER platform)[1+2]	64-bit	No	Yes
Linux (zSeries platform)[1+2]	64-bit	No	Yes
Solaris (x86-64 platform)[1+2]	64-bit	No	Yes

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.

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 6 on page 13 shows the levels of database that are supported on each operating system.

DB2 Enterprise Server V9.1 is supplied with WebSphere Message Broker for Multiplatforms. 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 for Multiplatforms on Windows only. If you install using the Windows Launchpad, 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 install WebSphere Message Broker using the Windows Launchpad, you can install DB2 Enterprise Server at the same time.

Microsoft SQL Server, Oracle, and Sybase Adaptive Server Enterprise (ASE) databases are also supported, as shown in Table 6 on page 13. You must acquire your own version of these products; they are not supplied with WebSphere Message Broker.

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

You can configure message flows to access databases that hold data associated with your message processing. The databases supported for this purpose (known as user databases) are those supported for a broker database, with the addition of DB2 on OS/400® and Informix® on most operating systems, as shown in Table 6.

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

In most situations, the broker that accesses the database does not have to be running on the same operating system as the database server. For details about local and remote database use, and existing restrictions, see "Database locations" on page 16.

Table 6. Supported databases

Operating system	DB2[1]	SQL Server	Oracle[1 + 2]	Sybase[1]	Informix[1+3]
AIX	8.2[4] 9.1[4]	2000 SP3a[5] 2005 SP1[5]	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10G Release 1 10G Release 2[6]	12.5	Dynamic Server Version 9.4 with UC7 fix pack Client SDK Version 2.90 with UC4 fix pack
HP-UX (Integrity platform)	8.2[4] 9.1[4]	Not applicable	10G Release 2	Not supported	Not supported
HP-UX (PA-RISC platform)	8.2[4] 9.1[4+7]	Not applicable	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10G Release 1 10G Release 2	12.5	Dynamic Server Version 9.4 with UC7 fix pack Client SDK Version 2.90 with HC4 fix pack
Linux (POWER platform)	8.2[4] 9.1[4]	Not applicable	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10G Release 1 10G Release 2	12.5	Dynamic Server Version 9.4 with UC7 fix pack Client SDK Version 2.90 with UC4 fix pack
Linux (x86 platform)	8.2[4+8] 9.1[4]	2000 SP3a[5] 2005 SP1[5]	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10G Release 1 10G Release 2	12.5	Dynamic Server Version 9.4 with UC7 fix pack Client SDK Version 2.90 with UC3 fix pack
Linux (zSeries platform)	8.2[4] 9.1[4]	Not applicable	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10G Release 1 10G Release 2	Not supported	Dynamic Server Version 9.4 with UC7 fix pack Client SDK Version 2.90 with UC4 fix pack

Databases

Table 6. Supported databases (continued)

Operating system	DB2[1]	SQL Server	Oracle[1 + 2]	Sybase[1]	Informix[1+3]
OS/400[9]	8.2[4]	Not applicable	Not applicable	Not applicable	Not applicable
Solaris (SPARC platform)	8.2[4+10] 9.1[4]	2000 SP3a[5] 2005 SP1[5]	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10G Release 1 10G Release 2	12.5	Dynamic Server Version 9.4 with UC7 fix pack Client SDK Version 2.90 with UC4 fix pack
Solaris (x86-64 platform)	8.2[4+10] 9.1[4]	Not applicable	10G Release 1 10G Release 2	12.5	Not supported
Windows	8.2[4+11] 9.1[4]	2000 SP3a 2005 SP1	9i Release 2 Patch Set 4 (9.2.0.5, patch 3501955) 10G Release 1 10G Release 2	12.5	Dynamic Server Version 9.4 with TC7 fix pack Client SDK Version 2.90 with TC4 fix pack
z/OS	8.1[12] 9.1[12]	Not applicable	Not supported	Not applicable	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. In WebSphere Message Broker, this support is referred to as a globally-coordinated message flow. On z/OS, all transactions are coordinated by Recoverable Resource Services (RRS).

   WebSphere MQ Version 6.0.1.0 or later is required for globally-coordinated transaction support (XA).

   If you use WebSphere MQ Version 6 as a transaction manager, all datasources connected to DB2 from message flows in both 32-bit and 64-bit execution groups must connect to 64-bit DB2 instances.

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

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

2. If you install the Oracle Database Server, you must also install the Oracle Runtime Client.

3. Informix is supported only as a user database that is accessed by message flows. Each broker system requires only the client SDK; install the Dynamic Server only on the system on which you create databases. You cannot create a broker database as an Informix database; this option is not supported. Large Objects (LOBs) are not supported.

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

   DB2 Version 8.2 is functionally equivalent to Version 8.1 FixPak 7.

   If you connect to DB2 Version 8.2 with 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.

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

6. On AIX, Oracle 10G Release 2 requires the AIX fix for APAR IY89080.

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

   `MQSI_SIGNAL_EXCLUSIONS=10`

8. If you have installed Red Hat Enterprise Linux AS V4.0 and DB2 Version 8 FixPak 9 on Linux (x86-64 platform), 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.

9. You can configure message flows to access DB2 databases on OS/400 for user data. The message flows can run on any supported broker platform. You cannot create a broker database on OS/400 as a remote DB2 database from any broker platform. For further details of these restrictions, and for information about the PTFs that are required with this product, see "Database locations" on page 16.

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

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

12. On z/OS, DB2 is a mandatory requirement. If you install Version 8.1, it must be at RSU0609 or later. You must create a unique database for each broker. See the *Program Directory for WebSphere Message Broker for z/OS* or the *Program Directory for WebSphere Message Broker with Rules and Formatter Extension for z/OS* for further details and the latest information. In particular, review the information in "Preventative Service Planning".

Databases

Database locations

You can create and configure databases that you use with WebSphere Message Broker on the local system, or on a remote system, subject to the following restrictions:

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

  DB2 database on OS/400

  – Database support on OS/400 is DB2 only.
  – You must have OS/400 Version 5.2, Version 5.3, or Version 5.4 installed on the iSeries server.
  – On Linux, UNIX, and Windows you can connect using DB2 Connect™. On Windows only, you can also use iSeries Access for Windows.
  – Globally-coordinated (XA) transactions are not supported.
  – Message flows that include Rules and Formatter Extension nodes cannot access a database on OS/400.
  – You can call stored procedures only if access to the remote database is provided by DB2 Connect.

  DB2 database on z/OS

  – Database support on zSeries is DB2 only. DB2 V8.1 with the PTF for APAR PQ84976 is required.
  – You must use DB2 Connect on Linux, UNIX, and Windows.
  – Large database objects (LOBs) are supported by DB2 Universal Database for z/OS Version 7.1 (or later).
  – Message flows that include Rules and Formatter Extension nodes cannot 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.

  WebSphere Information Integrator support

  – Message flows on brokers on all distributed systems can access data sources on WebSphere Information Integrator for Linux, UNIX, and Windows Version 8.2.

  Message flows on distributed systems can also access data sources on WebSphere Information Integrator Classic Federation for z/OS Version 8.2, on broker platforms for which WebSphere Information Integrator Classic Federation client code is provided.

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

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

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

See the documentation for your database product to determine the best
options for your specific environment and requirements, and for information
about how to configure remote database access.

Additional products

Additional required products

WebSphere Message Broker requires additional software products to run successfully:

- "WebSphere MQ"
- "Java Runtime Environment" on page 20
- "IBM Installation Manager" on page 20
- "XML Toolkit" on page 22
- "Browsers" on page 23

WebSphere MQ

WebSphere MQ is required for all WebSphere Message Broker components at the minimum supported level shown in Table 7.

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

Table 7. WebSphere MQ requirements

System	Requirements
AIX	WebSphere MQ Version 6.0 (or later)[1+2+3]
HP-UX (Integrity platform)	
HP-UX (PA-RISC platform)	
Linux (POWER platform)	
Linux (x86 platform)[3]	
Linux (zSeries platform)	
Solaris (SPARC platform)	
Solaris (x86-64 platform)	
Windows[3]	
z/OS[4]	WebSphere MQ Version 6.0.0 at RSU0609 (or later) with MQ Java™ Classes feature[3]

Notes:

1. The minimum set of components that you must install are the server and Java Messaging components. You can install WebSphere MQ before or after you install WebSphere Message Broker.

   If you have WebSphere MQ Version 6.0 already installed, the Java Messaging component is not installed by default. Check that your installation includes it; add this component from the WebSphere MQ Version 6.0 CD if it is not installed.

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

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

   Other components are optional for use with WebSphere Message Broker.

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

3. For some specific broker functions, later levels of WebSphere MQ might be required:

   - Globally-coordinated (XA) transactions are supported only by WebSphere MQ V6.0.1.0 or later.
   - If you develop message flows that use WebSphere MQ Real-time Transport with Multicast PGM support, you must install an iFix on WebSphere MQ V6.0; see the `readme.html` file for the latest information.

4. WebSphere MQ is not required on systems on which you install only the Message Broker Toolkit component.

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

`www.ibm.com/support/docview.wss?rs=171&uid=swg27007431`

Additional products

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

  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 any JMS 1.1 provider. You must consider both this level of support and the supported JRE when you select a JMS provider whose client will be embedded in the broker.

IBM Installation Manager

IBM Installation Manager is required to install all Rational® products at Version 7 or later, and controls installation, management, updates, licensing, and uninstallation. The Message Broker Toolkit includes some Rational product components, and therefore 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; it does not allow you to change the location of this directory. It might also install additional shared resources into the directory. Because installation of multiple products might increase the size of the shared resources directory, you must identify an appropriate location for this directory when you install the first product, so that the directory can expand in size if required. The shared resources directory contains a single copy of every Eclipse plug-in and feature 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. When you specify the directory during a first installation, specify a new directory to ensure that it does not contain conflicting resources or files from other installations.

Memory requirements for the Message Broker Toolkit are provided in "Memory and disk space" on page 5. If you plan to install additional Rational products, allow 2 GB for each additional product. 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. You must also allocate space in the directory in which you will manage the workspace resources that you create for those 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 empty 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, to allow users to 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.

Additional products

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

When you launch 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, or Mozilla 1.4.2 (or later) on Linux (x86 platform).

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

Optional software and support

The products listed in this section are not required, but interact with WebSphere Message Broker in some way that you might find useful. 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 11, "Configuring and verifying your system," on page 105.

EIS   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 (x86 platform) and Windows only) and on supplemental CD; see "Supplemental CDs" on page 44. For more information about how you can connect your WebSphere MQ Everyplace clients with brokers, see the information center.

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

Optional software

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

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

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

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

Chapter 2. Coexistence and migration

You can install WebSphere Message Broker Version 6.1 on a computer on which you have installed previous versions; each version must be installed into a unique 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

The following sections provide further details:
- "Coexistence"
- "Migration" on page 32

Coexistence

You can install WebSphere Message Broker Version 6.1 on computers on which you have installed previous versions:

- 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.

The components and their purpose are described in Chapter 6, "Choosing what to install," on page 65. The following sections describe how to achieve coexistence, and the restrictions that apply.

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`

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

Coexistence

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

You can also use a custom installation to install into a non-default directory, or to install a subset of the runtime components into the default, or another, directory. If you have already installed one or more of the runtime components into the specified directory, the installation wizard indicates this situation on the 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.

You cannot install runtime components into a directory that already contains a previous installed version of these components. For example, you cannot install Version 6.1 into a directory in which Version 6.0 is installed.

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 "Native software installer support" on page 30 for more details.
- Brokers associated with one installation cannot share a database with brokers associated with a different installation.
- Components created in one installation cannot share a queue manager with components created in a different installation.

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

Linux and UNIX /var/mqsi

Windows %ALLUSERSPROFILE%\Application Data\IBM\MQSI

(%ALLUSERSPROFILE% is the environment variable that defines the working directory; the default value is C:\Documents and Settings\All Users but this setting might have a different value 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.

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

C:\\Program\ Files\\IBM\\MQSI\\6.1=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 your installation to a previous level for any reason, you must uninstall the current version and install the previous product. Before you uninstall, back up any resources (for example, databases) that you want to return to a previous state.

Because the version and release are included in the directory structure when you complete a typical installation, you can also install Version 6.1 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.

Coexistence

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 32.

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.

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 (x86 platform) 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

For a description of these directories, see Chapter 1, "System requirements," on page 3.

You can install multiple instances of the Message Broker Toolkit Version 6.1 on a single computer; each one must be in a separate package group. Package groups are described in more detail in Chapter 1, "System requirements," on page 3.

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.

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`

- Shared resources directory:

  `C:\Program Files\IBM\SDP70Shared`

- Package group directory:

  `C:\Program Files\IBM\WMBT610`

For a description of these directories, see Chapter 1, "System requirements," on page 3.

You can install multiple instances of the Message Broker Toolkit Version 6.1 on a single computer; each one must be in a separate package group. Package groups are described in more detail in Chapter 1, "System requirements," on page 3.

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).

Coexistence

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 they are using an older 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, for example, **mqsicreatebroker**. The profile file is stored in *install_dir*/bin.

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

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

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

If you have an earlier version of this product installed on this 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 12, "What's next," on page 113.

Native software installer support

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

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

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

AIX The first installation is recorded as mqsi*vr*, for example 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, according to 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 resources that you have created in previous versions are mostly compatible with later releases. 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 using the command **mqsimigratemfmaps**.

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

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.

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.

Chapter 3. National language support

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

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

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

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

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

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

National language 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 documentation provided with any user-defined node or parser that you integrate into the WebSphere Message Broker environment.

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

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

Locales

WebSphere Message Broker supports messages for the following locales.

Table 8. Supported locales

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

Notes:

1. These values are the same for HP-UX (Integrity platform) and HP-UX (PA-RISC platform). Because syslog support is limited on HP-UX operating systems, messages are written to the log in US English only.
2. These values are the same for Linux (POWER platform), Linux (x86 platform), Linux (x86-64 platform), and Linux (zSeries platform).

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

Chapter 4. Installation packages

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

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

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

- The Quick Start Guide, printed in US English, French, and Japanese. PDF files for all translated versions are available on the Quick Start CD (see Table 12 on page 44).
- This Installation Guide, printed in US English.
- A DVD that contains all required and optional code for Linux (x86 platform). The structure of the DVD content is described in "DVD contents" on page 39.
- A DVD that contains all required and optional code for Windows. The structure of the DVD content is described in "DVD contents" on page 39.
- A set of CDs for installation of runtime components and required products on all operating systems. They are listed in Table 10 on page 40.
- A set of CDs for installation of the Message Broker Toolkit on both Linux (x86 platform) and Windows. These are listed in Table 11 on page 43.
- Supplemental CDs. These CDs contain additional products and documentation that you might choose to install, and are listed in Table 12 on page 44. For further information about why these products might be required, see "Optional software and support" on page 23.
- If you have ordered **WebSphere Message Broker with Rules and Formatter Extension for Multiplatforms**, your package includes the set of CDs shown in Table 13 on page 45. The Rules and Formatter extension code is not included on DVD; you must install this extension from CD.

Installation packages

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

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

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

- This Installation Guide, printed in US English.
- A DVD that contains all required and optional code for Linux (x86
  platform). The structure of the DVD content is described in "DVD
  contents" on page 39.
- A DVD that contains all required and optional code for Windows.
  The structure of the DVD content is described in "DVD contents"
  on page 39.
- A set of CDs for installation of runtime components and required
  products on Linux (x86 platform) and Windows. They are included
  in Table 10 on page 40.
- A set of CDs for installation of the Message Broker Toolkit on Linux
  (x86 platform) and Windows. These are listed in Table 11 on page
  43.
- Supplemental CDs. These CDs contain additional products and
  documentation that you might choose to install. These CDs are
  listed in Table 12 on page 44. For further information about why
  these products might be required, see "Optional software and
  support" on page 23.
- z/OS tapes

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

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

DVD contents

DVDs (type DVD-R, size DVD-5) are supplied for Linux (x86 platform) and Windows only. The DVD labels are WebSphere Message Broker V6.1 Linux x86 and WebSphere Message Broker V6.1 Windows.

These packages are marked with the symbol .

The DVDs contain code for the following products:
- WebSphere Message Broker Version 6.1.0.0 runtime components
- Message Broker Toolkit Version 6.1.0.0
- WebSphere MQ Version 6.0
- DB2 Enterprise Server Version 9.1
- DB2 Run-Time Client Version 8.2.5 (Windows only)

If you install on Windows using the Launchpad (described in Chapter 8, "Installing with the Windows Launchpad," on page 79), the Launchpad navigates the DVD to find the products and components that you have chosen to install, and you do not have to be familiar with the structure of the DVD contents.

If you install on Linux (x86 platform), or you install on Windows and choose not to use the Launchpad, use the DVD structure shown in Table 9 to find what you want.

Table 9. DVD contents

Directory	Description
\ (root)	• Runtime components Version 6.1.0.0 installation files • (Windows only) Launchpad and Quick Tour[1]
\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 Guide PDF files (US English and translations)
\license	License files used by the installation wizard (US English and translations)
\Message_Broker_Toolkit_V6	Message Broker Toolkit Version 6.1.0.0 installation repository[2]
\readmes	WebSphere Message Broker readme.html files (US English and translations)
\sample-scripts	Sample response files for installing and uninstalling
\WebSphere_MQ_V6.0	WebSphere MQ installation images

DVD contents

Notes:

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

2. 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.

Runtime component CDs

The CDs listed in Table 10 are supplied for installation of runtime components and associated products.

The packages are marked with the symbol ⚙ .

Table 10. CDs supplied for WebSphere Message Broker for Multiplatforms runtime components and associated products

Operating System	CD label	Description
AIX	WebSphere Message Broker V6.1 AIX (Runtime Disk 1)	Product code Version 6.1.0.0
	WebSphere MQ for AIX V6.0 (Runtime Disk 2)	Product code
	DB2 V9.1 for WebSphere Broker products - AIX (Runtime Disk 3) - English/French/German/Italian	Product code and documentation
	DB2 V9.1 for WebSphere Broker products - AIX (Runtime Disk 3) - English/Spanish/Brazilian Portuguese	Product code and documentation
	DB2 V9.1 for WebSphere Broker products - AIX (Runtime Disk 3) - English/Japanese/Korean/Simplified Chinese/Traditional Chinese	Product code and documentation
HP-UX (Integrity platform)	WebSphere Message Broker V6.1 HP-UX (Runtime Disk 1)	Product code Version 6.1.0.0
	WebSphere MQ for HP-UX V6.0 (Runtime Disk 2)	Product code
	DB2 V9.1 for WebSphere Broker products - HP-UX (Runtime Disk 3)	Product code and documentation

Table 10. CDs supplied for WebSphere Message Broker for Multiplatforms runtime components and associated products (continued)

Operating System	CD label	Description
HP-UX (PA-RISC platform)	WebSphere Message Broker V6.1 HP-UX (Runtime Disk 1)	Product code Version 6.1.0.0
	WebSphere MQ for HP-UX V6.0 (Runtime Disk 2)	Product code
	DB2 V9.1 for WebSphere Broker products - HP-UX (Runtime Disk 3)	Product code and documentation
Linux (POWER platform)	WebSphere Message Broker V6.1 Linux (POWER platform) (Runtime Disk 1)	Product code Version 6.1.0.0
	WebSphere MQ for Linux (POWER platform) V6.0 (Runtime Disk 2)	Product code
	DB2 V9.1 for WebSphere Broker products - Linux (POWER platform) (Runtime Disk 3)	Product code and documentation
Linux (x86 platform)	WebSphere Message Broker V6.1 Linux x86 (Runtime Disk 1)	Product code Version 6.1.0.0
	WebSphere MQ for Linux x86 V6.0 (Runtime Disk 2)	Product code
	DB2 V9.1 for WebSphere Broker products - Linux x86 (Runtime Disk 3)	Product code and documentation
Linux (x86-64 platform)	WebSphere Message Broker V6.1 Linux x86-64 (Runtime Disk 1)	Product code Version 6.1.0.0
	WebSphere MQ for Linux x86-64 V6.0 (Runtime Disk 2)	Product code
	DB2 V9.1 for WebSphere Broker products - Linux x86-64 (Runtime Disk 3)	Product code and documentation
Linux (zSeries platform)	WebSphere Message Broker V6.1 Linux zSeries (Runtime Disk 1)	Product code Version 6.1.0.0
	WebSphere MQ for Linux zSeries V6.0 (Runtime Disk 2)	Product code
	DB2 V9.1 for WebSphere Broker products - Linux zSeries (Runtime Disk 3)	Product code and documentation
Solaris (SPARC platform)	WebSphere Message Broker V6.1 Solaris SPARC (Runtime Disk 1)	Product code Version 6.1.0.0
	WebSphere MQ for Solaris SPARC V6.0 (Runtime Disk 2)	Product code
	DB2 V9.1 for WebSphere Broker products - Solaris SPARC (Runtime Disk 3)	Product code and documentation

Runtime component CDs

Table 10. CDs supplied for WebSphere Message Broker for Multiplatforms runtime components and associated products (continued)

Operating System	CD label	Description
Solaris (x86-64 platform)	WebSphere Message Broker V6.1 Solaris (x86-64 platform) (Runtime Disk 1)	Product code Version 6.1.0.0
	WebSphere MQ for Solaris (x86-64 platform) V6.0 (Runtime Disk 2)	Product code
	DB2 V9.1 for WebSphere Broker products - Solaris (x86-64 platform) (Runtime Disk 3)	Product code and documentation
Windows	WebSphere Message Broker V6.1 Windows (Runtime Disk 1)	• Runtime components installation files Version 6.1.0.0 • IBM DB2 Run-Time Client V8.2.5[1] • Launchpad and Quick Tour[2] • License files[3] • Readme files[3] • Installation Guides[3] • Sample scripts[3]
	WebSphere MQ for Windows V6.0 (Runtime Disk 2)	• Product code • Launchpad and Quick Tour[2]
	IBM DB2 V9.1 for WebSphere Broker products - Windows (Runtime Disk 3)	• Product code and documentation • Launchpad and Quick Tour[3]

Notes:

1. Install this product to install the ODBC Drivers for Apache Derby that are required if you want to use the Derby database that is embedded in the broker component.
2. This item is a stand-alone executable version of the Quick Tour.
3. These items are identical to equivalent items on the DVD, as described in "DVD contents" on page 39.

Message Broker Toolkit CDs

The CDs shown in Table 11 are supplied for the Message Broker Toolkit installation. The product code includes the information center.

The packages are marked with the symbol .

Table 11. CDs supplied for Message Broker Toolkit

Operating System	CD label	Description
Linux (x86 platform)	WebSphere Message Broker Toolkit V6.1 Disk 1 (Linux x86)	• Product code Version 6.1.0.0 • Installation Manager[1]
	WebSphere Message Broker Toolkit V6.1 Disk 2 (Linux x86)	Product code
	WebSphere Message Broker Toolkit V6.1 Disk 3 (Linux x86)	Product code
Windows	WebSphere Message Broker Toolkit V6.1 Disk 1 (Windows)	• Product code Version 6.1.0.0 • Installation Manager[1] • Launchpad and Quick Tour[2] • License files[3] • Readme files[3] • Installation Guides[3]
	WebSphere Message Broker Toolkit V6.1 Disk 2 (Windows)	Product code
	WebSphere Message Broker Toolkit V6.1 Disk 3 (Windows)	Product code

Notes:

1. 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.
2. This item is a stand-alone executable version of the Quick Tour.
3. These items are identical to equivalent items on the DVD, as described in "DVD contents" on page 39.

Supplemental CDs

The CDs listed in Table 12 are supplied for supplemental (optional) products.

The packages are marked with the symbol .

Table 12. Supplemental CDs supplied with WebSphere Message Broker

Operating System	CD label	Description
Multiplatforms	Quick Start CD[1]	Documentation
	WebSphere MQ Everyplace Version 2.0.2.0	Product code

Notes:

1. The Quick Start CD contains a stand-alone integrated information center that includes documentation plug-ins for WebSphere Message Broker Version 6.1, WebSphere MQ Version 6.0, and WebSphere MQ Everyplace Version 2.0.2.0. For more information about how you can use this information center, see "Where to find more information" on page xii.

   The CD also contains PDF files for the Quick Start Guide (US English and translations) and this Installation Guide (US English and translations).

Rules and Formatter Extension CDs

If you have purchased WebSphere Message Broker with Rules and Formatter Extension for Multiplatforms, your package also contains the CDs listed in Table 13. The contents of these CDs are not included on the DVDs.

The packages are marked with the symbol .

Table 13. Additional CDs supplied for WebSphere Message Broker with 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 (PA-RISC platform)	Rules and Formatter Run-time Extension V6.1 HP-UX	Product code and documentation
Linux (x86 platform)	Rules and Formatter Run-time Extension V6.1 Linux x86	Product code and documentation
	Rules and Formatter Design-time Extension V6.1 Linux x86	Product code and documentation
Solaris (SPARC platform)	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 and is not available for HP-UX (Integrity platform), Linux (POWER platform), Linux (x86-64 platform), Linux (zSeries platform), or Solaris (x86-64 platform).

Rules and Formatter Extension CDs

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 5, "Preparing the system," on page 49
- Chapter 6, "Choosing what to install," on page 65
- Chapter 7, "Choosing an installation mode," on page 69

Chapter 5. Preparing the system

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

Always read the following section:
- "Setting up security"

If you are installing on a distributed system, read the following section:
- "Accessing CDs and DVDs" on page 54

If you are installing on Linux or UNIX systems, read the following section:
- "Checking the kernel configuration on Linux and UNIX systems" on page 61

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

Setting up security

This section describes security requirements:
- To install the product
- To complete the procedures described in Chapter 11, "Configuring and verifying your system," on page 105

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 and UNIX systems, and on z/OS, they are restricted to eight characters. Database products, for example DB2, might restrict also 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. Use an alternative user ID, or create a new one, to complete installation and verification.

Set up the required security for the operating systems that you are using:

- If you are installing on Linux or UNIX systems, go to "Security on Linux and UNIX systems."
- If you are installing on Windows, go to "Security on Windows systems" on page 52.
- If you are installing on z/OS, go to "Security on z/OS systems" on page 53.

Security on Linux and UNIX systems

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

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

Complete the following actions:

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

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

   If you are installing only the Message Broker Toolkit on Linux (x86 platform), 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. If you create a new ID, add it to the mqbrkrs group.

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

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

5. Add to the group mqm the user ID that you logged in with, the new user ID (if you created one), and the user ID mqm.

6. Verification procedures are provided for Linux (x86 platform) 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 have not already done so, add your post-installation user ID to the groups mqbrkrs and mqm 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, but is not the Administrator ID.

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

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

   The mqm group exists if have already installed WebSphere MQ on this system. If you have not, call the **mqsisetsecurity** command when you have completed WebSphere MQ installation. If you use the Windows Launchpad (described in Chapter 8, "Installing with the Windows Launchpad," on page 79), it completes WebSphere MQ installation first.

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

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

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

```
change user /install
```

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

```
change user /execute
```

To complete verification, your user ID must have Administrator authority. If you log in with a different user ID 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 domain environment

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

If you install WebSphere Message Broker on the domain controller:

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

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

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

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

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

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 DVD 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 platform) 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. If you want to use this option, read the instructions that are provided with the packages that explain how to download and extract the images. Use this section to set up local or remote access to these images in the same way 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"; for remote installations, see "Accessing CDs and DVDs on a remote system" on page 57.

Accessing CDs and DVDs on the local system

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

AIX

1. Log in and ensure that your user ID has root authority.
2. Complete the security setup described in "Security on Linux and UNIX systems" on page 50.
3. Create a CD mount point directory:

   mkdir */cdbroker*

   where */cdbroker* is the mount point.
4. Insert the CD that you want to access into the drive of the computer on which you want to install one or more product components.

5. Use SMIT to mount the CD, or use the following command:

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

   where */dev/cd0* is the CD device and */cdbroker* is the mount point.

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

HP-UX

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

If the CD is mounted incorrectly, some of the files cannot be read 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 50.
3. Create a CD mount point directory and grant read-only access to all users:

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

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

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

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

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

Linux

1. Log in and ensure that your user ID has root authority.
2. Complete the security setup described in "Security on Linux and UNIX systems" on page 50.
3. Create a CD mount point directory:

   ```
   mkdir /cdbroker
   ```

   where */cdbroker* is the mount point.

Accessing CDs and DVDs locally

4. Insert the CD that you want to access into the drive of the computer on which you want to install one or more product components.
5. Run the following command:

   ```
   mount -o ro -t iso9660 /dev/cdrom /cdbroker
   ```

   where */dev/cdrom* is the name of your CD device (for example, /dev/hdc) and */cdbroker* is the mount point.

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

Solaris

1. Log in and ensure that your user ID has root authority.
2. Complete the security setup described in "Security on Linux and UNIX systems" on page 50.
3. Insert the CD that you want to access into the drive of the computer on which you want to install one or more product components.
4. Enter the following command to check whether the Volume Manager is running on your system:

   ```
   /usr/bin/ps -ef | /bin/grep vold
   ```

   If the Volume Manager is running, the CD is mounted on /cdrom/*vol_label* automatically, where *vol_label* is the volume label of the current CD; for example, wmb6_sol for Runtime Disk 1.
5. If the Volume Manager is not started, run the following commands to mount the CD:

   ```
   mkdir -p /cdbroker
   mount -F hsfs -o ro /dev/dsk/cdrom /cdbroker
   ```

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

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

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

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 52.
3. Insert the CD that you want to access into the drive of the computer on which you want to install one or more product components.

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

Accessing CDs and DVDs on a remote system

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

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

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

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

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

Accessing CDs and DVDs remotely

Setting up the server

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

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

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

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

      Linux and UNIX
          Enter the following command:

          `mkdir /instbroker`

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

      Windows   Enter the following command:

          `md m:\instbroker`

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

      If you are creating directories for the Message Broker Toolkit on Linux (x86 platform) or Windows, you must create all 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 54. 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 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 install the product in that directory.

Checking the kernel configuration on Linux and UNIX systems

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

Check the current values of the kernel configuration parameters, and increase any values to the minimum values that are documented for the operation of the products shown:

1. Check the documented values for the following products:
   - WebSphere Message Broker:
     – For HP-UX, see Figure 1 on page 62.
     – For Solaris, see Figure 2 on page 63.
     – Linux and other UNIX platforms do not have specific requirements for WebSphere Message Broker.
   - WebSphere MQ; see the topic "Kernel configuration" for your operating system in the online WebSphere MQ information center at:
     `publib.boulder.ibm.com/infocenter/wmqv6/v6r0/index.jsp`
   - DB2, if installed.
   - Any other software that you are running that provides documented values.
2. Take the highest value for each parameter and compare it to the corresponding value in your kernel configuration.
3. If the current value is lower than the highest documented value, update the current setting using the appropriate tool; for example, SAM on HP-UX. If the current value is higher, leave it unchanged.
4. On Solaris, increase the maximum number of concurrent open file descriptors on your system to at least 256.
5. If you have changed any kernel values, restart your system for these changes to take effect.

Checking the kernel configuration

HP-UX

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

Figure 1. Values for HP-UX kernel configuration parameters

Solaris

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

Figure 2. Values for Solaris kernel configuration parameters

Checking the kernel configuration

Chapter 6. Choosing what to install

WebSphere Message Broker delivers 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 (x86 platform) 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 that interact with a variety of application clients using both point-to-point and publish/subscribe communications. The message flows that you create are hosted by the broker. 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, 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 12.

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, using access control lists based on operating system definitions. Install this component only if you want to restrict the publish/subscribe activity of users or groups.

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

If you are migrating from Version 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 unchanged in function 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 2, "Coexistence and migration," on page 25.

For installation of runtime components, you can choose between a typical installation and a custom installation. These are explained in Chapter 2, "Coexistence and migration," on page 25.

Message Broker Toolkit

The Message Broker Toolkit is an integrated development environment and graphical user interface 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 manage the broker domains through those Configuration Managers, for example by deploying resources to brokers, and starting and stopping resources.

Choosing what to install

Chapter 7. Choosing an installation mode

Choose the mode that you want to use to install WebSphere Message Broker from the following options:
- On Windows only, "The Windows Launchpad"
- "Graphical mode" on page 70
- "Console mode (runtime components only)" on page 70
- "Silent mode" on page 71

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

The same modes 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 mode of 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, using default options.

From the Launchpad you can also view this book in PDF format, review the readme file `readme.html`, and launch the Quick Tour (see Chapter 11, "Configuring and verifying your system," on page 105 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 mode

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

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

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

If you click **Cancel** before starting 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; CPU usage increases greatly during installation.

Console mode (runtime components only)

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

This mode is not available when you install the Message Broker Toolkit.

Use console mode 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 75. Specify the option `-console` to start the installation program in console mode. For example, on AIX:

```
setupaix -console
```

To navigate through the installation, enter the following values:

1   Move to the next panel
2   Return to the previous panel
3   Cancel and terminate the install program
4   Redisplay the current screen

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

Silent mode

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

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

Silent mode does not provide any feedback to the caller; therefore, you must check the installation log to determine whether the installation was successful. The location of the installation log is given in "Dealing with problems during installation" on page 87 (runtime components) and "Dealing with problems during installation" on page 101 (Message Broker Toolkit).

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

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 (x86 platform), enter the following command:

  ```
  setuplinuxia32 -silent
  ```

Silent mode

- 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 installation program in graphical mode from the command line, specifying the option `-record`. Complete the installation following the guidance in "Installing in graphical mode" on page 91; 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 75) and *responsefile* is the fully qualified path and name of your response file. Specify a directory that is different to the one that you specify as your installation directory. 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 installation program in graphical mode 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 "Installing in graphical mode" on page 91; 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 75) 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. 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.

You can also record a response file, or generate a template file, in console mode. Add the option `-console` to the commands shown above, and follow the guidance in "Installing in console mode" on page 92.

To run a silent installation using a response file called `response1.txt`, specify the `-silent` option and the fully qualified path and name of the file on the installation command. For example, on Linux (x86 platform), enter the following command:

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

Silent mode

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

Table 14. 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 for later modification and use but performs no installation.	*installer* -options -template *responsefile*
The installation wizard performs an installation in graphical mode with user input, and records all specified options in a response file.	*installer* -options -record *responsefile*
The installation wizard performs an installation in console mode with user input, and records all specified options in a response file.	*installer* -options -record -console *responsefile*

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, enter the following command. If Installation Manager is not already installed, it is installed before the Message Broker Toolkit is installed.

  Linux (x86 platform)
  ```
  ./install -nosplash --launcher.suppressErrors -silent -input mbtoolkit-silent.xml
  ```

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

- 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 in graphical mode following the guidance in "Installing in graphical mode" on page 97; the toolkit is installed and the response file content is recorded to reflect the choices that you make.

For example, on Linux (x86 platform), 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 15. Installation wizard names

Operating system	Installation wizard name
AIX	`setupaix`
HP-UX (Integrity platform)	`setuphpia64`
HP-UX (PA-RISC platform)	`setuphp`
Linux (POWER platform)	`setuplinuxppc`
Linux (x86 platform)	`setuplinuxia32` (runtime components) `install` (Installation Manager for Message Broker Toolkit)
Linux (x86-64 platform)	`setuplinuxx64`
Linux (zSeries platform)	`setuplinux390x`
Solaris (SPARC platform)	`setupsolaris`
Solaris (x86-64 platform)	`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 in synchronous mode and does not return control to the command line until the installation has completed.

Installation wizard names

Part 3. Installation

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

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

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

Chapter 8. Installing with the Windows Launchpad

On Windows only, use the Launchpad for additional help:

- To install the Message Broker Toolkit
- To install WebSphere Message Broker runtime components
- To install prerequisite products for the runtime components
- To upgrade runtime components to Version 6.1.0.0

The Launchpad uses the DVD or CDs to install and upgrade components; you cannot use the Launchpad if you want to install or upgrade components from update packages that you have downloaded from Passport Advantage. For these alternative methods, and their potential advantages, see Chapter 9, "Installing runtime components," on page 89 or Chapter 10, "Installing the Message Broker Toolkit," on page 95.

Installation summary

This list summarizes the actions that you must take:

1. Check the readme file `readme.html` for any updates to these installation instructions. The readme file location is shown at the start of Chapter 1, "System requirements," on page 3.
2. Check that you have enough memory and disk space; refer to "Memory and disk space" on page 5.
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 54.
4. Start the Launchpad to install WebSphere Message Broker and the prerequisite products. Full instructions are provided in "Starting the Windows Launchpad" on page 80.

When you have completed installation, see Part 4, "After installation," on page 103 for information about verifying your installation, and what you can do next.

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

Starting the Windows Launchpad

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

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

- **Express installation** installs the set of products that are required for a minimum configuration of WebSphere Message Broker. The Launchpad completes the installation of each prerequisite product with minimal input, using default values where input is required. The Message Broker Toolkit and runtime components are installed in graphical mode.

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

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

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

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

  If you want to perform an Advanced installation, see "Advanced installation" on page 85.

Access further information from the left pane:

- Click **Installation Guide** to launch a PDF copy of this book in Acrobat® reader.
- Click **Readme** to view the readme file `readme.html` in a new browser window.
- Click **Quick Tour** to take a tour around the product. See Chapter 12, "What's next," on page 113 for further information.

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

Table 16. Installation program names and locations

Product	Installation program name	Directory	CD
WebSphere Eclipse Platform V3.0	IBM WebSphere Eclipse Platform V3.0.msi	\WebSphere_MQ_V6.0\Prereqs\IES\MSI	Runtime Disk 2
WebSphere MQ	IBM WebSphere MQ.msi	\WebSphere_MQ_V6.0\MSI	Runtime Disk 2
ODBC Drivers for Apache Derby	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[1]	Toolkit Disk 1
DB2 Enterprise Server	DB2 Enterprise Server Edition.msi	\DB2_Enterprise_Server_V9.1\db2\Windows	Runtime Disk 3
WebSphere MQ Everyplace	setup.exe	\ (root directory)	WebSphere MQ Everyplace supplemental disk

Notes:

1. The Launchpad starts Installation Manager, which installs itself (if required), and initiates the Message Broker Toolkit installation.

Express installation

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

1. Review the minimum set of products that are required for a default configuration:

   - WebSphere Eclipse Platform V3.0.1
   - WebSphere MQ V6.0
   - ODBC Drivers for Apache Derby
   - WebSphere Message Broker V6.1.0.0 (runtime components)
   - WebSphere Message Broker Toolkit V6.1.0.0

2. Check the initial installation status shown for each listed product:

   - **Required** indicates that the product is not installed, and is one of the products that is required for a minimum configuration, and its selection is cleared.

   - **Pending** indicates that the product must be installed to ensure the successful operation of a minimum configuration broker domain. The associated check box is selected to show that this product will be installed.

   - **Installed** indicates that the product is already installed at a level that is supported by WebSphere Message Broker. The installed version is shown and no check box is displayed.

   - **Partial Installation** indicates that the product is installed, but not all components that are required to ensure the successful operation of a minimum configuration broker domain are present on the system. The associated check box is selected to show that additional components will be installed.

   - **Incorrect Level** indicates that a level of the product that is not supported by WebSphere Message Broker is installed on the system. Use the Advanced Installation to upgrade this product to a supported level.

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

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

   Not all components of each required product are installed during an Express installation; for example, when the Launchpad installs WebSphere MQ V6.0, it installs the server, WebSphere MQ Explorer, and the Java Messaging component. Check the details that are provided to ensure that

an Express installation will install all the components that you want. If you want additional components, use the Advanced installation.

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

The ODBC Drivers for 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 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 Version 9.1 from the Advanced installation. If you do so, you must register your license for this product; this task is described in Appendix C, "Registering your DB2 license," on page 143.

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

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

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

The Launchpad installs the products that you have selected in the order shown, prompting you to insert different CDs, if required. You cannot make any changes on the Express installation page 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 WebSphere Eclipse Platform V3.0.1, the Launchpad starts the installation program in silent mode (default values are used for all options). A progress bar is displayed.

- If you have selected WebSphere MQ V6.0, the Launchpad starts the installation program in silent mode (default values are used for all options). A progress bar is displayed so that you can check on progress.

- If you have selected ODBC Drivers for Apache Derby, the Launchpad starts the installation program in silent mode (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 V6.1.0.0 (runtime components), the Launchpad invokes the installation wizard in full interactive graphical mode. You must supply the input that is required by the installation program.

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

  You must also read and accept the Software License Agreement that is displayed. This agreement covers your use of both WebSphere MQ Version 6.0 and the ODBC Drivers for Apache Derby, if you have chosen to install one or both of these products. These products are licensed for use with WebSphere Message Broker only, and must not be used for other purposes.

  When you are asked if you want to open a command console when the wizard terminates, select **Yes**. A console window opens, initialized with the correct environment for command invocation. The command console is explained in "Setting the environment for an installation" on page 30.

- If you have selected the Message Broker Toolkit, the Launchpad starts the installation in full interactive graphical mode.

  The 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 20.

  The installation program guides you through a series of pages 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 also accept the Software License Agreement that is displayed. You must supply all input that is required by the installation program.

  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 page. 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 page.

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

Advanced installation

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

1. Click **Advanced Installation** in the left pane to display the Advanced installation page. The Launchpad displays a list of the following products:

   - WebSphere Eclipse Platform V3.0.1
   - WebSphere MQ V6.0
   - ODBC Drivers for Apache Derby
   - WebSphere Message Broker V6.1.0.0 (runtime components)
   - WebSphere Message Broker Toolkit V6.1.0.0
   - DB2 Enterprise Server Version 9.1 (optional)
   - Oracle (optional)
   - Sybase (optional)
   - Microsoft SQL Server 2000 (optional)

2. Check the initial installation status that is shown for each listed product:

   - If the product is not installed, and is one of those required for a minimum configuration, the status is **Required**.
   - If the product is not installed, and 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 from this page.
   - If a product is found but has not had a complete installation, the status is **Partial Installation**. Install the full product from this page.

     For example, you might previously have completed a typical installation of WebSphere MQ, 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.

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

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

   Start each required installation in the order of your choice. Each installation is performed separately, and the Launchpad prohibits any

other action until the current installation has completed. It also minimizes its window while the installation is in progress, and restores itself to focus when the installation is complete.

If the Launchpad cannot find an installation program because it is on another CD, or is not in the expected location, it prompts you to take the appropriate action to find the file. See Table 16 on page 81 for details of installation program names and locations.

When the Launchpad has completed the installation, it updates the product status to **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 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 Version 9.1. If you do so, you must register your license for this product; this task is described in Appendix C, "Registering your DB2 license," on page 143.

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 6 on page 13.

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

5. When you install WebSphere Message Broker runtime components or the Message Broker Toolkit, the installation programs guide you through a series of pages 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 language 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 30.

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 page. When you click **Finish**, the wizard ends and the Message Broker Toolkit is started.

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

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

Dealing with problems during installation

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

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

If a failure occurs:

- If you have chosen an Express installation, you must either correct the error and restart the Launchpad, or return to the Express installation page 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 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 file is stored in the directory /var/ibm/InstallationManager/uninstall/logs on Linux or %ALLUSERSPROFILE%\Application Data\IBM\Installation Manager\logs on Windows (%ALLUSERSPROFILE% is the environment variable that defines the working directory; the default value is C:\Documents and Settings\All Users but this setting might have a different value on your computer.)
- If WebSphere MQ fails to install, check the contents of MQV6_install.*date_time*.log stored in the temp directory of your home directory.

Dealing with problems

- If the ODBC Drivers for Apache Derby fail to install, check the contents of the installation log `\DB2LOG\db2.log` stored in your home directory.
- If DB2 fails to install, check the contents of `db2diag.log` and other logs created during the installation of this product. For details of location and possible content, see the DB2 documentation.
- Review the problem scenarios described in Appendix A, "Installation problems," on page 119 and follow the guidance given.

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

Chapter 9. Installing runtime components

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

If you are installing runtime components on Windows, you can use the Launchpad to complete this task; see Chapter 8, "Installing with the Windows Launchpad," on page 79.

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

Installation summary

This list summarizes the actions that you must take:

1. Check the readme file `readme.html` for any updates to these installation instructions. The readme file location is shown at the start of Chapter 1, "System requirements," on page 3.
2. Check that you have enough memory and disk space; refer to "Memory and disk space" on page 5.
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 in graphical or console mode, the installation wizard displays a warning that lists potential problems. If you decide to continue, you must complete the installation of WebSphere MQ before you create or start any WebSphere Message Broker runtime components.

   If the check for WebSphere MQ fails in silent mode, and you have not modified the default behavior by specifying a tailored response file, the wizard terminates without taking any further action. If you have modified the response file to ignore this check, the installation wizard continues.
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 54 for both CDs or DVDs, and images that you have downloaded from Passport Advantage (if you are registered with the scheme). The instructions here do not differentiate between CDs and downloaded images; their behavior is the same.
5. Decide which mode of installation you want to use. The alternatives are explained in Chapter 7, "Choosing an installation mode," on page 69.

Installing runtime components

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

   When you start the installation wizard, it checks your system locale setting. If the locale setting is supported (listed in Chapter 3, "National language support," on page 33), 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 6.1.0.0 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 a broker, a database is required. The installation wizard completes even if a supported database is not present on this system, but you must install one before you can use the broker. For further information about software requirements, see "Software requirements" on page 9.

When you have completed installation, see Part 4, "After installation," on page 103 for information about verifying your installation, and what you can do next.

If you install one or more runtime components on Windows, the **Start** menu is updated. Detailed updates are described in "Menu updates" on page 123.

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

Installing in graphical mode

To install in graphical mode:

1. Start the installation wizard in graphical mode:

   - For local access, load the product CD or DVD.

     Windows

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

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

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

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

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

Installing runtime components

Installing in console mode

To install in console mode:

1. Locate the installation wizard in the root directory of the local CD or remote CD or network drive. The wizard name for your operating system is listed in "Installation wizard names" on page 75.

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

   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.

If you are installing a broker, a database is required. The installation wizard completes even if a supported database is not present on this system, but you must install one before you can use the broker. For further information about database requirements, see "Databases" on page 12.

Installing in silent mode

To install in silent mode:

1. Locate the installation wizard in the setup directory of the local CD or DVD or remote CD or network drive. The wizard name for your operating system is listed in "Installation wizard names" on page 75.

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

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

   Linux and UNIX

                     installer `-silent`

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

   `start /w setup.exe -silent`

   If you want to specify non-default settings, include a response file on the invocation. You 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 71.

The installation wizard completes without any user interaction.

Dealing with problems during installation

If you have problems during installation:

- Refer to the readme file `readme.html` for any late changes to the installation instructions.
- Check the contents of the installation log `mqsi6_install.log`, stored in your home directory.
- Review the problem scenarios described in Appendix A, "Installation problems," on page 119 and follow the guidance given.

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

Chapter 10. Installing the Message Broker Toolkit

This chapter describes the tasks that you must complete to install the Message Broker Toolkit on Linux (x86 platform) 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 8, "Installing with the Windows Launchpad," on page 79.

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

Installation summary

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

1. Check the readme file `readme.html` for any updates to these installation instructions. The readme file location is shown at the start of Chapter 1, "System requirements," on page 3.
2. Check that you have enough memory and disk space; refer to "Memory and disk space" on page 5.
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 process directly.
   - Copy the media contents to disk and install from the copy.
   - Download the electronic media images from Passport Advantage (if you are registered with this scheme), and install from the local images.

   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.

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 54.

b. Decide which mode of installation you want to use. The alternatives are explained in Chapter 7, "Choosing an installation mode," on page 69. (Console mode is not supported by the Message Broker Toolkit installation program.)

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.

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

When you have completed installation, see Part 4, "After installation," on page 103 for information about verifying your installation, and what you can do next.

When you install the Message Broker Toolkit on Windows, the **Start** menu is updated. When you install the Message Broker Toolkit on Linux (x86 platform), the main menu is updated. Detailed updates are described in "Menu updates" on page 123.

If you experience problems during installation, refer to "Dealing with problems during installation" on page 101.

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 process can continue unattended and does not require your attention to swap CDs when requested. If you make CD copies, 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 101, then continue with the appropriate section below.

When you start the installation wizard, it checks your system locale setting. If the locale setting is supported (listed in Chapter 3, "National language support," on page 33), 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 (x86 platform), 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 in your chosen installation mode:
- "Installing in graphical mode"
- "Installing in silent mode" on page 100

Installing in graphical mode

To install in graphical mode:

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

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

Installing from CD or DVD

Installation Manager starts and the Install Packages page opens.

2. The installation program is preconfigured to install both Installation Manager and the Message Broker Toolkit, therefore the Message Broker Toolkit packages are already selected on this page. 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 page 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 terminates.

   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 page opens; continue with step 4. If Installation Manager is already installed, The Package group directory page opens; continue with step 5.

4. Specify the location of the shared resources directory. The default location is displayed:
   - Linux (x86 platform): `/opt/IBM/SDP70Shared`
   - Windows: `C:\Program Files\IBM\SDP70Shared`

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

   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 (x86 platform): `/opt/IBM/InstallationManager`
   - Windows: `C:\Program Files\IBM\InstallationManager`

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

   Click **Next**. The Package group directory page 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 (x86 platform): `/opt/IBM/WMBT610`
     - Windows: `C:\Program Files\IBM\WMBT610`

   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 page displays the current setting of the shared resources directory for information.

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

7. Check your choices and click **Back** if you want to make any changes to your responses on any of the previous pages. This page 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 page 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 page 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 terminate the wizard. This option is not available on Linux (x86 platform), because you might want to complete verification 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:

• On Linux (x86 platform), 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 logged on as root; the menu item does not provide an option to become root, and root authority is required for all installation tasks.)

Installing from CD or DVD

- On Windows, click **Start > Programs > IBM Installation Manager > IBM Installation Manager** to launch Installation Manager, and click **Modify Packages** to change your installation. Start menu content is described in "Menu updates" on page 123.

  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.

Installing in silent mode

You cannot install the Message Broker Toolkit directly from CD in silent mode, because you are required to swap CDs when prompted. Therefore, for a silent mode installation, you must either install from DVD, or copy the CD images on to a local or remote drive. For more information about copying CD images, see "Setting up CD copies on disk" on page 101.

To install in silent mode:

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 75.

2. Enter the following command at a command prompt for an installation with all default settings. If you start the installation from a directory other than the one in which the wizard exists, include the absolute or relative path with the command name.

   Linux (x86 platform)
   ```
   install -nosplash -launcher.suppressErrors -silent
   ```

   Windows
   ```
   install.exe -nosplash -launcher.suppressErrors -silent
   ```

   If you want to specify non-default settings, include a response file on the invocation. For the first installation, complete an installation in graphical mode with the -record option to generate 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 74.

3. When the wizard starts, it installs Installation Manager (if it is not already installed), then installs the Message Broker Toolkit 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 the contents of the installation CDs on Linux (x86 platform) or Windows to disk, 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 program 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 file is stored in the directory /var/ibm/InstallationManager/uninstall/logs on Linux or %ALLUSERSPROFILE%\Application Data\IBM\Installation Manager\logs on Windows (%ALLUSERSPROFILE% is the environment variable that defines the working directory; the default value is C:\Documents and Settings\All Users but this setting might have a different value on your computer.)
* Review the problem scenarios described in Appendix A, "Installation problems," on page 119 and follow the guidance given.

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

Part 4. After installation

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

Verify your installation on Linux (x86 platform) or Windows

You can perform verification on Linux (x86 platform) or Windows computers only. You must install all the runtime components and the Message Broker Toolkit component on a single computer. Follow the procedures described in Chapter 11, "Configuring and verifying your system," on page 105.

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

In addition, a database is required for the broker:
- On Linux (x86 platform), install DB2 Enterprise Server.
- On Windows, install either ODBC Drivers for Apache Derby to use the Derby database, or DB2 Enterprise Server.

No specific verification programs are provided on other operating systems.

Learn about the product

Information about the product is available in the information center, which is installed as an integral part of the Message Broker Toolkit on Linux (x86 platform) or Windows.

After you have installed the Message Broker Toolkit, explore the Welcome page resources and the information center. These resources are provided to help you learn about the product, and how you can use it on all operating systems. Chapter 12, "What's next," on page 113 provides information about what resources are available and how you can access them.

Chapter 11. Configuring and verifying your system

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

If you have installed only runtime components on other operating systems, or you have installed an incomplete set of components on Linux (x86 platform) or Windows, see the guidance provided in Chapter 12, "What's next," on page 113.

Getting started

When you have completed installation:

1. Launch the Message Broker Toolkit:

   - On Linux (x86 platform), you do not need root authority to complete verification. You cannot launch the Message Broker Toolkit from the installation wizard; if you create resources such as brokers when you are logged in as root, you might experience problems during operation 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 issue the following command on a command line. The command is located in the root directory of the package group; either navigate to that directory before you enter the command, or specify a fully qualified path.

     `./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 issue the following command on a command line. The command is located in the root directory of the package group; either navigate to that directory before you enter the command, or specify a fully qualified path.

     `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 locating it using **Browse**.

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.
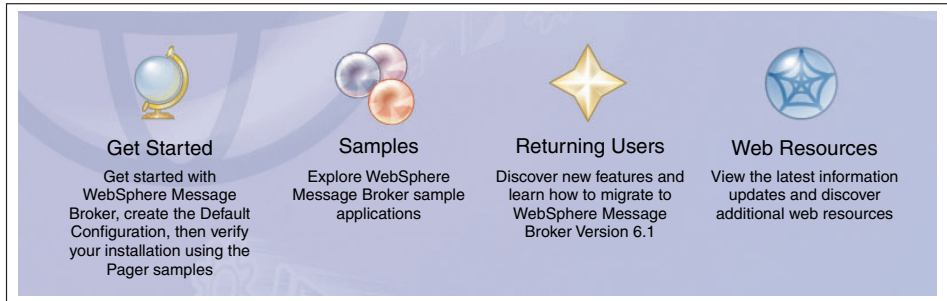
Figure 3. The Welcome page choices (Windows)

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 12, "What's next," on page 113) 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 109.

Creating the default configuration

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

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

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

  `. ~db2inst1/sqllib/db2profile`

  where db2inst1 is the user ID of the DB2 instance owner (db2inst1 is the default name; substitute the name that is in use on this system).

- On Windows, you have installed either the ODBC Drivers for Apache Derby, or DB2 Enterprise Server.

  If you have installed DB2 Enterprise Server Version 9.1 supplied with either Linux (x86 platform) or Windows, you have registered your license; this task is described in Appendix C, "Registering your DB2 license," on page 143.

- None of the default components already exist (the components are listed in Table 17 on page 108).
- 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 49.

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

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**. The Default Configuration wizard starts.
3. Follow the guidance provided by the wizard to navigate through its pages.

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

Creating the default configuration

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, the location of which is shown below. If you have not specified the default workspace directory, wmbt610 is replaced by your chosen value.

Linux (x86 platform)

> *user_home_dir*/IBM/wmbt610/workspace/.metadata/DefaultConfigurationWizard.log

Windows

> *user_home_dir*\eclipse\workspace\.metadata\DefaultConfigurationWizard.log

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

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

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

The wizard creates the resources shown in Table 17.

Table 17. 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. You can also run the wizard to remove all the default resources. To start the Default Configuration wizard from the Message Broker Toolkit, click **File > New > Other > Broker Administration - Get Started**.

Running the Pager samples

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

1. Click the link to **Run the Pager samples** .

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

   - **Set up the Pager samples**

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

   - **Run the Pager samples**

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

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

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

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

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

   The wizard displays a progress bar that shows which task it is currently performing. It also reports on all the actions that it takes by writing progress information into a scrollable text window.

Running the Pager samples

You can copy and paste some or all of the information in this text window. This information is also written to the following log file:

Linux (x86 platform)
> *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 completed by the wizard. The confirmation page is displayed.
5. Click **Finish** to close the wizard. The "Pager samples" page (from which you launched the wizard) is redisplayed.
6. Click **Run the Pager samples**. A help page opens and displays two sections:

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

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

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

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

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

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

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

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

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

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

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

Running the Pager samples

Chapter 12. What's next

When you have completed installation, there are two main sources of information that you can use to help you learn about the product, and to create and deploy a broker domain on all operating systems. Launch the Message 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 11, "Configuring and verifying your system," on page 105), 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 covers 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 user 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.

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 take 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 that you must complete to create a broker domain and the resources that it requires on all operating systems are described.

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

  When you issue commands on a distributed system, you must ensure that you issue them in the correct environment and to the correct installation.

For the verification process described in Chapter 11, "Configuring and verifying your system," on page 105, the Default Configuration wizard completes this action for you, but you must set up the environment yourself if you are not using the wizard, or if you are working on operating systems on which the wizard is not available:

Linux and UNIX

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

`install_dir/bin`

Windows

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

For more information about the **Start** menu, see "Menu updates" on page 123.

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

This action is not required on z/OS.

- On Linux (x86 platform) and Windows, use the Default Configuration wizard to create components of fixed names on systems local to the toolkit, as explained in Chapter 11, "Configuring and verifying your system," on page 105. You might find this wizard useful even if you do not want to complete the verification steps.
- On Windows only, use the Command Assistant wizard to create components with your choice of names and characteristics. In the Message 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.

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.

What's next

Part 5. Appendixes

Appendix A. Installation problems

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

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

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

- 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 directory `/var/ibm/InstallationManager/uninstall/logs` on Linux or `%ALLUSERSPROFILE%\Application Data\IBM\Installation Manager\logs` on Windows (`%ALLUSERSPROFILE%` is the environment variable that defines the working directory; the default value is `C:\Documents and Settings\All Users` but this setting might have a different value on your computer.)

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

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

Linux: java.lang.UnsatisfiedLinkError
If you are installing in graphical mode on Linux, you must install additional packages for this mode to succeed. See Table 4 on page 9 for details.

Installation problems

Linux: RPM query fails

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

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

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

Install the additional RPM build package that is described in Table 4 on page 9.

Linux and UNIX: display problems

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

- `Can't open display localhost:1.0`

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

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

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

  `xauth merge ~user/.Xauthority`

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

Linux and UNIX: insufficient temporary space

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

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

For example, on AIX, enter the following command:

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

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

See Table 3 on page 7 to check how much temporary space is required.

Linux (x86 platform) and Windows: Installation Manager

If you click **Next** in the Installation Manager immediately when it first opens, you might cause the Installation Manager to hang. Close the window and reopen it.

Linux (x86 platform) 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 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. System changes after installation

The installation program makes changes to your system; for example, it updates menus, creates directories, and creates and modifies environment variables. Details are provided in these sections:
- "Menu updates"
- "Directory structures" on page 125
- "Environment variables" on page 137
- "Registry entries" on page 137
- "Default WebSphere MQ resources" on page 139

Menu updates

The Linux (x86 platform) main menu and the Windows Start menu are updated during installation:

Message Broker Toolkit on Red Hat Linux (x86 platform)

> The main menu is populated with the following entries:
>
> - **Programming > IBM WebSphere Message Broker Toolkit**
> - **Programming > IBM Installation Manager**
>
> If you install multiple products with Installation Manager on this operating system, a single entry exists in the main menu and refers to the last product that you installed. The package groups of installed products are not reflected in the main menu. To invoke applications that you installed previously, including other installations of the Message Broker Toolkit, you must use the command line interface. See "Getting started" on page 105 for information about command line invocation of the Message Broker Toolkit.
>
> If you want to start Installation Manager, for example to update or uninstall one or more packages, you cannot use the main menu items, because these actions require root authority. Become root, navigate to the `/eclipse` directory within the Installation Manager installation directory, and start the Installation Manager program `IBMIM` on the command line.

Menu updates

Message Broker Toolkit on SUSE Linux (x86 platform)

The main menu is populated with the following entries:

- **All Applications > Development > IBM WebSphere Message Broker Toolkit**
- **All Applications > Development > IBM Installation Manager**

If you install multiple products with Installation Manager on this operating system, a single entry exists in the main menu and refers to the last product that you installed. The package groups of installed products are not reflected in the main menu. To invoke applications that you installed previously, including other installations of the Message Broker Toolkit, you must use the command line interface. See "Getting started" on page 105 for information about command line invocation of the Message Broker Toolkit.

If you want to start Installation Manager, for example to update or uninstall one or more packages, you cannot use the main menu items, because these actions require root authority. Become root, navigate to the `/eclipse` directory within the Installation Manager installation directory, and start the Installation Manager program `IBMIM` on the command line.

Message Broker Toolkit on Windows

The **Start** menu is populated with the following entries:

- **IBM Software Development Platform > IBM WebSphere Message Broker Toolkit > WebSphere Message Broker Toolkit**
- **IBM Software Development Platform > IBM WebSphere Message Broker Toolkit > IBM Support Assistant**
- **IBM Software Development Platform > IBM WebSphere Message Broker Toolkit > Release Notes**

These entries assume that you have installed into the first or default package group. Additional products that you install in this package group might also appear in this start list.

Entries are also added to the **Start** menu when Installation Manager is first installed:

- **Programs > IBM Installation Manager > IBM Installation Manager**
- **Programs > IBM Installation Manager > Release Notes**
- **Programs > IBM Installation Manager > Uninstall IBM Installation Manager**
- **Programs > IBM Installation Manager > View Installed Packages**

Runtime components on Windows

The **Start** menu is populated with the following entries:

- **Programs > IBM WebSphere Message Brokers 6.1 > Command Console**
- **Programs > IBM WebSphere Message Brokers 6.1 > Java Programming APIs > Configuration Manager Proxy API Documentation**
- **Programs > IBM WebSphere Message Brokers 6.1 > Java Programming APIs > Configuration Manager Proxy API Exerciser**
- **Programs > IBM WebSphere Message Brokers 6.1 > Java Programming APIs > Java Plugin API Documentation**

Directory structures

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

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

Directory structures

AIX, HP-UX (PA-RISC platform), Linux (x86-64 platform), and Solaris (SPARC platform)

On AIX, HP-UX (PA-RISC platform), Linux (x86-64 platform), and Solaris (SPARC platform), the default home directory *install_dir* is /opt/IBM/mqsi/6.1 and the default working directory is /var/mqsi.

The directories that are created in these two locations are shown in Table 18 and Table 19 on page 127.

Table 18. Installation directory structure: AIX, HP-UX (PA-RISC platform), Linux (x86 platform, 64-bit), and Solaris (SPARC platform)

Directories under *install_dir*	Contents
_uninst_runtime	Uninstall programs
_uninst_runtime_jvm	Uninstall programs (JVM)
adapters	WebSphere Adapters files
bin	Executable binaries
catalina	Web Services support files
classes	Java class files
DD64	Device drivers (64-bit)
docs	Java API files
exmltConfig	XSL transformation files
include	Header and other files for samples
itlm	Tivoli License Manager files
jplugin	Java plug-in files
jre15	IBM Runtime Environment for the Java Platform Version 5
lib	Shared library files
license	License files
lil	Loadable library files (64-bit)
lil32	Loadable library files (32-bit)
merant	Database drivers
messages	Description files for messages and exceptions
migration	Migration files
ODBC32	Sample 32-bit ODBC configuration files
ODBC64	Sample 64-bit ODBC configuration files
readmes	Product readme files
sample	C, C++, and Java sample files

Table 18. Installation directory structure: AIX, HP-UX (PA-RISC platform), Linux (x86 platform, 64-bit), and Solaris (SPARC platform) (continued)

Directories under *install_dir*	Contents
SecurityProviders	Security files (64-bit)
SecurityProviders32	Security files (32-bit)
webservices	Web Services files
xlxpc	Product library files
xml4c	XML processing files

Table 19. Working directory structure: AIX, HP-UX (PA-RISC platform), Linux (x86 platform, 64-bit), and Solaris (SPARC platform)

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

Directory structures

HP-UX (Integrity platform), Linux (POWER platform), Linux (zSeries platform), and Solaris (x86-64 platform)

On HP-UX (Integrity platform), Linux (POWER platform), Linux (zSeries platform), and Solaris (x86-64 platform), the default home directory *install_dir* is /opt/ibm/mqsi/6.1 and the default working directory is /var/mqsi.

The directories that are created in these two locations are shown in Table 20 and Table 21 on page 129.

Table 20. Installation directory structure: HP-UX (Integrity platform), Linux (POWER platform), Linux (zSeries platform), and Solaris (x86-64 platform)

Directories under *install_dir*	Contents
_uninst_runtime	Uninstall programs
_uninst_runtime_jvm	Uninstall programs (JVM)
adapters	WebSphere Adapters files
bin	Executable binaries
catalina	Web Services support files
classes	Java class files
DD64	ODBC drivers and related support (64-bit support)
docs	Java API files
exmltConfig	XSL transformation files
include	Header and other files for samples
itlm	Tivoli License Manager files
jplugin	Java plug-in files
jre15	IBM Runtime Environment for the Java Platform Version 5
lib	Shared library files
license	License files
lil	Loadable library files
messages	Description files for messages and exceptions
migration	Migration files
ODBC64	Sample 64-bit ODBC configuration files
readmes	Product readme files
sample	C, C++, and Java sample files
SecurityProviders	Security files
webservices	Web Services files
xlxpc	Product library files

Table 20. Installation directory structure: HP-UX (Integrity platform), Linux (POWER platform), Linux (zSeries platform), and Solaris (x86-64 platform) (continued)

Directories under *install_dir*	Contents
xml4c	XML processing files

Table 21. Working directory structure HP-UX (Integrity platform), Linux (POWER platform), Linux (zSeries platform), and Solaris (x86-64 platform)

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

Directory structures

Linux (x86 platform, 32-bit)

Runtime components

On Linux (x86 platform, 32-bit), the default home directory *install_dir* is /opt/ibm/mqsi/6.1 and the default working directory is /var/mqsi.

The directories that are created in these two locations are shown in Table 22 and Table 23 on page 131.

Table 22. Installation directory structure, runtime components: Linux (x86 platform, 32-bit)

Directories under *install_dir*	Contents
_uninst_runtime	Uninstall programs
_uninst_runtime_jvm	Uninstall programs (JVM)
adapters	WebSphere Adapters files
bin	Executable binaries
catalina	Web Services support files
classes	Java class files
docs	Java API files
exmltConfig	XSL transformation files
include	Header and other files for samples
itlm	Tivoli License Manager files
jplugin	Java plug-in files
jre15	IBM Runtime Environment for the Java Platform Version 5
lib	Shared library files
license	License files
lil	Loadable library files (32-bit)
merant	ODBC driver and related files
messages	Description files for messages and exceptions
migration	Migration files
ODBC32	Sample 32-bit ODBC configuration files
readmes	Product readme files
sample	C, C++, and Java sample files
SecurityProviders	Security files
webservices	Web Services files
xlxpc	Product library files

Table 22. Installation directory structure, runtime components: Linux (x86 platform, 32-bit) (continued)

Directories under *install_dir*	Contents
xml4c	XML processing files

Table 23. Working directory structure, runtime components: Linux (x86 platform, 32-bit)

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

Directory structures

Message Broker Toolkit

On Linux (x86 platform, 32-bit), the default root directory for Installation Manager is /opt/IBM/InstallationManager, the default shared resources directory is /opt/IBM/SDP70Shared, and the default package group directory is /opt/IBM/WMBT610. The default workspace directory is /ibm/WMBT610/workspace in your home directory.

The Installation Manager directories that are created are shown in Table 24.

Table 24. Installation Manager directory structure, Toolkit: Linux (x86 platform)

Directories under /InstallationManager	Contents
eclipse	Eclipse plug-in directories and files
license	License files

Other files are also stored by the Installation Manager in the directory /var/ibm/InstallationManager (for example, registry items described in "Registry entries" on page 137).

The shared resource directories that are created are shown in Table 25.

Table 25. Shared resource directory structure, Toolkit: Linux (x86 platform)

Directories under /SDP70Shared	Contents
atoc	Eclipse plug-in directories and files
extra	License files
features	Product files for features installed on this computer
native	
plugins	Eclipse plug-in directories and files common to features installed on this computer

The package group directories that are created are shown in Table 26.

Table 26. Package group directory structure, Toolkit: Linux (x86 platform)

Directories under /WMBT610	Contents
bin	Directories and files for products within the package group
configuration	Configuration files
eclipse	Eclipse files
features	Directories and files for products within the package group
jdk	Java directories and files
lum	License files
plugins	Eclipse plug-ins and related files
ResourceAdapters	Rational directories and files
runtimes	Rational directories and files
samples	Sample response files
uninstall	Product uninstall files
wmbt	Message Broker files

Directory structures

Windows

Runtime components

On Windows, the default home directory *install_dir* is `C:\<Program Files folder>\IBM\MQSI\6.1`. The default working directory *work_dir* is `%ALLUSERSPROFILE%\Application Data\IBM\MQSI` where `%ALLUSERSPROFILE%` is the environment variable that defines the system working directory. The default value of `%ALLUSERSPROFILE%` is `C:\Documents and Settings\All Users`; this setting might have a different value on your computer, but the remainder of the product working directory path is fixed.

The directories that are created in these two locations are shown in Table 27 and Table 28 on page 135.

Table 27. Installation directory structure, runtime components: Windows

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

Table 28. Working directory structure, runtime components: Windows

Directories under *work_dir*	Contents
Common\dbinstmgr	Derby database files
Common\errors	Error files
Common\locks	Resource locks
Common\log	Trace files
Common\profiles	User profiles
components	Component details
config	Profiles
odbc	ODBC files
shared-classes	User installed user-defined node classes
XML	XML files
XSL	XSL style sheets

Message Broker Toolkit

On Windows, the default root directory for Installation Manager is C:\Program Files\IBM\InstallationManager, the default shared resources directory is C:\Program Files\IBM\SDP70Shared, and the default package group directory is C:\Program Files\IBM\IBM\WMBT610. The default workspace directory is \IBM\WMBT610\workspace in your home directory.

The Installation Manager directories that are created are shown in Table 29.

Table 29. Installation Manager directory structure, Toolkit: Windows

Directories under \InstallationManager	Contents
eclipse	Eclipse plug-in directories and files
license	License files

Other files are also stored by the Installation Manager in the directories C:\Documents and Settings\All Users\Application Data\IBM\Installation Manager and C:\Documents and Settings\Administrator\IBM\ InstallationManagerInstaller. Your system might have a different value for Documents and Settings, but the remainder of these paths are fixed.

Directory structures

The shared resource directories that are created are shown in Table 30.

Table 30. Shared resource directory structure, Toolkit: Windows

Directories under \SDP70Shared	Contents
atoc	Eclipse plug-in directories and files
extra	License files
features	Product files for features installed on this computer
native	
plugins	Eclipse plug-in directories and files common to features installed on this computer

The package group directories that are created are shown in Table 31.

Table 31. Package group directory structure, Toolkit: Windows

Directories under \WMBT610	Contents
bin	Directories and files for products within the package group
configuration	Configuration files
features	Directories and files for products within the package group
jdk	Java directories and files
lum	License files
plugins	Eclipse plug-ins and related files
ResourceAdapters	Rational directories and files
runtimes	Rational directories and files
samples	Sample response files
uninstall	Product uninstall files
wmbt	Message Broker files

z/OS

The default installation directory is /usr/lpp/mqsi/*VxRxMx* where *VxRxMx* represents Version X, Release X, Modification X, for example, V6R1M0.

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*.

Environment variables

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

install_dir/bin

For the verification process described in Chapter 11, "Configuring and verifying your system," on page 105, this requirement is completed by the Default Configuration wizard, and you do not have to run this profile yourself.

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

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

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

Registry entries

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

Runtime components

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

Registry entries

Table 32 shows the main Windows registry entries that are created under HKEY_LOCAL_MACHINE\SOFTWARE\IBM\WebSphereMQIntegrator. Corresponding entries exist on Linux and UNIX systems. The number and content of entries depends on the components that you have installed and configured.

Table 32. Registry entries for runtime components

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

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

HKEY_LOCAL_MACHINE\SOFTWARE\ODBC\ODBCINST.INI

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

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

Message Broker Toolkit

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

The installation directory for Installation Manager is stored in HKEY_LOCAL_MACHINE\SOFTWARE\IBM\Installation Manager under the location value.

Uninstall keys are created for all products that are installed by Installation Manager under HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\Current\Version\Uninstall\IBM Installation Manager, under the name IM-*packagegroupname* where *packagegroupname* is the name of the package group in which the product is installed; for example, IBM Software Development Platform.

Default WebSphere MQ resources

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

The resources that are created have names that begin with the reserved characters SYSTEM. Table 33 lists the resources and indicates the component queue manager with which they are associated. All the resources are queues with the exception of SYSTEM.BKR.CONFIG, which is a channel of type SVRCONN.

Table 33. Default WebSphere MQ resources

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

WebSphere MQ resources

Table 33. Default WebSphere MQ resources (continued)

Resource name	Queue manager	Description
SYSTEM.BROKER.CONFIG.REPLY	Configuration Manager	Target for messages sent to the Message Broker Toolkit by the Configuration Manager
SYSTEM.BROKER.CONTROL.QUEUE	Broker	Target for publish/subscribe control requests sent to the broker by applications
SYSTEM.BROKER.EDA.COLLECTIONS	Broker	Used internally to store event handler information for message collections generated by the Collector node.
SYSTEM.BROKER.EDA.EVENTS	Broker	Used internally to store messages received by the Collector node.
SYSTEM.BROKER.EXECUTIONGROUP.QUEUE	Broker	Target for messages sent by the Configuration Manager to the broker
SYSTEM.BROKER.EXECUTIONGROUP.REPLY	Broker	Target for response messages from the User Name Server to the broker
SYSTEM.BROKER.INTER.BROKER.COMMUNICATIONS	Broker	Target for publish/subscribe control messages
SYSTEM.BROKER.INTERBROKER.MODEL.QUEUE	Broker	Model for dynamic publication queues
SYSTEM.BROKER.INTERBROKER.QUEUE	Broker	Target for publish/subscribe messages sent by neighbor brokers
SYSTEM.BROKER.IPC.QUEUE	Broker	Target for internal control messages
SYSTEM.BROKER.MODEL.QUEUE	All	Model for dynamic response queues
SYSTEM.BROKER.SECURITY.QUEUE	User Name Server	Target for messages to the User Name Server from the Configuration Manager, brokers, and the Message Broker Toolkit

Table 33. Default WebSphere MQ resources (continued)

Resource name	Queue manager	Description
SYSTEM.BROKER.SECURITY.REPLY	Configuration Manager and broker	Target for response messages from the User Name Server to its requestor
SYSTEM.BROKER.SUBSCRIPTIONS.DATA	Broker	Used internally for publish/subscribe data
SYSTEM.BROKER.TIMEOUT.QUEUE	Broker	Target for timeout message stored by the TimeoutControl node
SYSTEM.BROKER.WS.ACK	Broker	Used internally for Web Services client support
SYSTEM.BROKER.WS.INPUT	Broker	Used internally for Web Services client support
SYSTEM.BROKER.WS.REPLY	Broker	Used internally for Web Services client support
SYSTEM.BKR.CONFIG	Configuration Manager	Connection channel for Message Broker Toolkit clients

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

WebSphere MQ resources

Appendix C. Registering your DB2 license

If you have installed DB2 Restricted Enterprise Server Version 9.1 from the media supplied with WebSphere Message Broker for Multiplatforms, 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
> `/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 process or set of processes within a broker in which message flows are run. The broker is guaranteed to enforce some degree of isolation between message flows in distinct execution groups because it ensures that they run in separate address spaces, or as unique processes.

L

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

M

message broker. See broker.

Message 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.

Glossary

P

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

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

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

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

R

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

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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