Quick Beginnings for AIX

Contents

Welcome to WebSphere MQ for AIX

This book describes IBM® WebSphere® MQ for AIX®, Version 7.0 and explains how to plan for the product, install it, and verify that the installation has worked.

See the:

- *WebSphere MQ Glossary* for an explanation of terms used in this book
- *WebSphere MQ System Administration Guide* for further information on using the control commands *crtmqm*, *strmqm*, and *endmqm*

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1. Migrating to WebSphere MQ for AIX® Version 7.0

Instructions for migrating to WebSphere® MQ Version 7.0.

About this task

If you want to migrate to WebSphere MQ Version 7.0, complete this task.

If you migrate from a previous level of this product without first backing up your system, you **cannot** revert to your previous level, so back up your system **before** you install WebSphere MQ Version 7.0. You can then back out the upgrade if necessary. If you back out the upgrade, however, you cannot recover any work, such as changes to messages and objects, performed by WebSphere MQ Version 7.0.

Procedure

1. Stop all MQ applications on the machine and the applications accessing remote machines.
2. End all WebSphere MQ activity.
   a. Log in as a user in `group mqm`.
   b. Use the **dspmq** command to display the state of all the queue managers on the system.
   c. Use the **endmqm** command to stop all running queue managers.
   d. Stop any listeners associated with the queue managers, using the command:

```
endmqlsr -m QMgrName
```

e. To check that you have stopped all of them, enter the following:

```
ps -ef | grep mq
```

Check that there are no processes listed that are running command lines beginning `amq` or `runmq`. Ignore any that start with `amqi`.

3. Log in as root.
4. Function supplied by the SupportPacs in Table 1 has been superseded by function in WebSphere MQ Version 7.0. Remove these SupportPacs before installing WebSphere MQ Version 7.0.

Table 1. SupportPacs superseded by WebSphere MQ Version 7.0

SupportPac Number	Description
MA0Y	WebSphere MQ Bridge for HTTP

Note: If you installed SupportPac MACS, remove the directory `/usr/mqm/inc64` and its contents. Review any other installed SupportPacs for their applicability to WebSphere MQ Version 7.0.

5. If you are migrating from WebSphere MQ Version 5.3 to WebSphere MQ Version 7.0, you must uninstall WebSphere MQ Version 5.3. If you are migrating from WebSphere MQ Version 6.0 to WebSphere MQ Version 7.0, you do not have to uninstall WebSphere MQ because the installation process does it for you. However, when migrating from WebSphere MQ Version 6.0 to WebSphere MQ Version 7.0, before installing you must ensure that you manually remove the file sets which have been retired from WebSphere MQ Version 7.0.
   - Remove the following file sets before migrating from WebSphere MQ Version 6.0 to WebSphere MQ Version 7.0:

     ```
     mqm.msg.De_DE
     mqm.msg.Es_ES
     mqm.msg.Fr_FR
     mqm.msg.It_IT
     ```
6. Install WebSphere MQ Version 7.0 by following the tasks set out in Installing a WebSphere MQ server.
7. Restart WebSphere MQ.

Important information for Beta driver users
If you have previously installed a WebSphere MQ Version 7.0 Beta driver, you **must** uninstall this driver and clean up any remaining files **before** you install the GA version of WebSphere MQ Version 7.0

After you have migrated to WebSphere MQ Version 7.0
Perform these tasks immediately after you migrate to WebSphere MQ Version 7.0.

Parent topic: Welcome to WebSphere MQ for AIX

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1.1. Important information for Beta driver users

If you have previously installed a WebSphere® MQ Version 7.0 Beta driver, you **must** uninstall this driver and clean up any remaining files **before** you install the GA version of WebSphere MQ Version 7.0

Parent topic: Migrating to WebSphere MQ for AIX Version 7.0

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1.2. After you have migrated to WebSphere MQ Version 7.0

Perform these tasks immediately after you migrate to WebSphere® MQ Version 7.0.

About this task

Immediately after you migrate to WebSphere MQ Version 7.0, you must start your queue managers at least once to migrate your file system structure before you start any WebSphere MQ listeners. Otherwise, you will not be able to start WebSphere MQ listeners after migration.

If you cannot connect to a migrated queue manager using MQ Explorer and receive the error message "SYSTEM.MQEXPLORER.REPLY.MODEL not defined", run the following command on that queue manager:

```
strmqm -c
```

This command refreshes existing system objects with default values (for example, setting the MCAUSER attribute of a channel definition to blanks), and creates the queue required by the WebSphere MQ Explorer.

Parent topic: Migrating to WebSphere MQ for AIX Version 7.0

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2. Installing a WebSphere MQ server

Information describing how to install a WebSphere® MQ server.

This section describes how to install a WebSphere MQ Version 7.0 server. The information covers topics such as preparing for installation and verifying your installation, as well as installation itself. If you already have an installation of WebSphere MQ, and are migrating to WebSphere MQ Version 7.0 see Migrating to WebSphere MQ for AIX Version 7.0 before installing WebSphere MQ Version 7.0.

WebSphere MQ for AIX® can be installed as a server or a client.

A WebSphere MQ server is an installation of one or more queue managers that provide queueing services to one or more clients. All the WebSphere MQ objects, for example queues, exist only on the queue manager machine (the WebSphere MQ server machine), and not the client. A WebSphere MQ server can also support local WebSphere MQ applications.

A WebSphere MQ client is a component that allows an application running on one system to communicate with a queue manager running on another system. The output from the call is sent back to the client, which passes it back to the application. To install a WebSphere MQ client see, Installing a WebSphere MQ client.

It is possible to have both a server and a client installation on the same machine, for instructions on how to do this see, Installing a client on the same machine as a server.

See the WebSphere MQ System Administration Guide for an introduction to WebSphere MQ concepts and objects.

For information on the components that can be included in the server and client installations see, WebSphere MQ Components.

The installation process is divided into the following group of topics, complete all of these tasks in sequence:

Preparing for installation

Server installation procedure

Verifying the server installation
This is an overview of various methods for verifying a WebSphere MQ installation.

Parent topic: Welcome to WebSphere MQ for AIX

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2.1. Preparing for installation

Before you install WebSphere® MQ, complete the following tasks:

Checking hardware and software requirements
Before you install WebSphere MQ for AIX, check that your system meets the hardware and operating system software requirements set for this product and the particular components you intend to install.

Setting up the user ID and group ID

Creating WebSphere MQ file systems

Implications of a 64-bit queue manager

Parent topic: Installing a WebSphere MQ server

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2.1.1. Checking hardware and software requirements

Before you install WebSphere MQ for AIX, check that your system meets the hardware and operating system software requirements set for this product and the particular components you intend to install.

Hardware and software requirements are set out at WebSphere MQ system requirements on AIX on the IBM Web site.

WebSphere MQ does not support host names that contain spaces. If you install WebSphere MQ on a computer with a host name that contains spaces, you are unable to create any queue managers.

Prerequisite software for optional components and platform-specific system settings are detailed in the following sections:

Java Messaging and SOAP transport
If you want to use Java Messaging and SOAP (Simple Object Access Protocol) Support with WebSphere® MQ, you need a Java Runtime Environment Version 5 or later.

For a list of supported JDKs, see the WebSphere MQ system requirements page at http://www.ibm.com/software/integration/wmq/requirements/.

For further information about using Java with Websphere MQ, see WebSphere MQ Using Java.

For further information about SOAP with WebSphere MQ, see WebSphere MQ Using Web Services .

If you use a JDK that is not in the list of supported JDKs you should be aware that:

- The JDK might not be FIPS level 140-2 compliant and by using it with WebSphere MQ, WebSphere MQ for AIX®, Version 7.0 will not comply with FIPS 140-2 standards.

- SOAP is not supported.
- The WebSphere MQ Web service deployment utility, amqwdeployWMQService, requires IBM Java 2 SDK.

You can check the version installed using the following command:

```
java -version
```

Secure Sockets Layer (SSL)

If you want to use the SSL support, you need IBM® Global Security Kit V7. This is supplied with WebSphere MQ as one of the components available for installation.

You must also have installed version 7.0.4.11 (or later) of the C++ runtime to use the SSL support.

File descriptors

When running a multi-threaded process such as the agent process, you might reach the soft limit for file descriptors. This gives you the WebSphere MQ reason code `MQRC_UNEXPECTED_ERROR (2195)` and, if there are enough file descriptors, a WebSphere MQ FFST™ file.

To avoid this problem, you can increase the process limit for the number of file descriptors. To do this, alter the `nofiles` attribute in `/etc/security/limits` to 10,000 for the `mqm` user id or in the default stanza. For information about the `mqm` user id see, Setting up the user ID and group ID.

System Resource Limits

Set the system resource limit for data segment and stack segment to unlimited using the following commands in a command prompt:

```
ulimit -d unlimited
ulimit -s unlimited
```

Parent topic: Preparing for installation

2.1.2. Setting up the user ID and group ID

WebSphere® MQ requires a user ID of the name `mqm`, with a primary group of `mqm`. The `mqm` user ID owns the directories and files that contain the resources associated with the product. Create the user ID and group IDs as described in the following topics.

- Creating the user ID and group
- Adding existing user IDs to the group

Creating the user ID and group

Adding existing user IDs to the group
How to add existing user IDs to the `mqm` group.

Parent topic: Preparing for installation

2.1.2.1. Creating the user ID and group

Create the required user ID and group ID ***before*** you install WebSphere® MQ. Both user ID and group ID must be set to mqm. For stand-alone machines, you can create the new user ID and group IDs locally; for machines administered in a network information services (NIS) domain, an administrator must create the IDs on the NIS master server machine.

You can use the System Management Interface Tool (**smit**), for which you require root authority.

1. To create the mqm group, display the required window using this sequence:

   ```
   Security & Users
     Groups
       Add a Group
   ```

   Set the group name field to mqm.

2. To create the new user, mqm, display the required window using this sequence:

   ```
   Security & Users
     Users
       Add a User
   ```

   Set the user name field to mqm. It is also suggested that you set the mqm user's home directory to /var/mqm.

3. To add a password to the new user ID, display the required window using this sequence:

   ```
   Security & Users
      Passwords
       Change a User's Password
   ```

   Set the password as required.

Parent topic: Setting up the user ID and group ID

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2.1.2.2. Adding existing user IDs to the group

How to add existing user IDs to the mqm group.

If you want to run administration commands, for example **crtmqm** (create queue manager) or **strmqm** (start queue manager), your user ID must be a member of the mqm group.

Users do not need mqm group authority to run applications that use the queue manager; it is needed only for the administration commands.

You can use **smit** to add an existing user ID to the mqm group. Display the required menu using this sequence:

```
Security & Users
  Users
    Change / Show Characteristics of a User
```

Type the name of the user in the **User Name** field and press **Enter**. Add mqm to the **Group SET** field, which is a comma-separated list of the groups to which the user belongs. Users need not have their primary group set to mqm. Provided that mqm is in their set of groups, they can use the administration commands.

UNIX platforms generally restrict the length of a user ID to 12 characters. AIX® Version 5.3 has raised this limit but WebSphere® MQ continues to observe a 12 character restriction on all UNIX platforms. If you use a user ID of greater than 12 characters, WebSphere MQ replaces it with the value "UNKNOWN". Do not define a user ID with a value of "UNKNOWN".

Parent topic: Setting up the user ID and group ID

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2.1.3. Creating WebSphere MQ file systems

The installation directory for the WebSphere® MQ product code is `/usr/mqm`. Working data is stored in `/var/mqm`. You cannot change these locations. The GSKit must also be installed into its default location.

The topics contained in this section describe how to prepare your file system for installing WebSphere MQ. Perform these tasks before installation.

Creating a file system for the product code
This topic describes how to prepare the `/usr/mqm` file system into which the WebSphere MQ code will be installed and what to do should you not have enough storage space available in the file system.

Creating a file system for the working data

Parent topic: Preparing for installation

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2.1.3.1. Creating a file system for the product code

This topic describes how to prepare the `/usr/mqm` file system into which the WebSphere® MQ code will be installed and what to do should you not have enough storage space available in the file system.

About this task

The WebSphere MQ product code is installed in `/usr/mqm`. If you cannot install the product code in the `/usr/mqm` file system because the file system is too small to contain the product, you can do one of the following:

1. Create a new file system and mount it as `/usr/mqm`. If you choose this option, the new file system must be created and mounted before installing the product code.
2. Create a new directory anywhere on your machine, and create a symbolic link from `/usr/mqm` to this new directory. For example:
   ```
   mkdir /bigdisk/mqm
   ln -s /bigdisk/mqm /usr/mqm
   ```
   If you choose this option, the new directory must be created, and the link created, before installing the product code.
3. Allow the install program to expand the file system.

The file system into which the code is installed can be a remote network device, for example, NFS. However, you must define the mount options defined on that device to allow **setuid** programs, including those which are **setuid** root, to run.

Parent topic: Creating WebSphere MQ file systems

This topic's URL:
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2.1.3.2. Creating a file system for the working data

About this task

Before you install WebSphere® MQ for AIX®, create and mount a file system called `/var/mqm` which is

owned by user and is of group mqm. If possible, use a partition strategy with a separate volume for the WebSphere MQ data. This means that other system activity is not affected if a large amount of WebSphere MQ work builds up.

To determine the size of the `/var/mqm` file system for a server installation, consider:

- The maximum number of messages in the system at one time
- Contingency for message buildups, if there is a system problem
- The average size of the message data, plus 500 bytes for the message header
- The number of queues
- The size of log files and error messages
- The amount of SSL trace that is written to the `/var/mqm/trace` directory

Allow 130 MB as a minimum for a WebSphere MQ server.

Parent topic: Creating WebSphere MQ file systems

Creating separate file systems for working data

About this task

You can also create separate file systems for your log data (`/var/mqm/log`) and error files (`/var/mqm/errors`). If possible, place these directories on different physical disks from the queue manager data (`/var/mqm/qmgrs`) and from each other.

If you create separate file systems, the `/var/mqm/errors` directory can be NFS mounted. However, if you choose to NFS-mount `/var/mqm/errors`, the error logs might be lost if the network fails.

If you are creating separate file systems, allow a minimum of 30 MB of storage for `/var/mqm`, 100 MB of storage for `/var/mqm/log`, and 4 MB of storage for `/var/mqm/errors`. The 100 MB minimum allowance of storage for `/var/mqm/log` is the absolute minimum required for a single queue manager and is not a recommended value. The size of a file system should be scaled according to the number of queue managers that you intend to use, the number of pages per log file, and the number of log files per queue manager.

If you want to use individual queues that hold more than 2 GB of data, you must enable `/var/mqm` to use large files.

The size of the log file depends on the log settings that you use. The minimum sizes above are for circular logging using the default settings. For further information about log sizes, see Calculating the size of the log 3.

2.1.4. Implications of a 64-bit queue manager

When using the 64-bit queue manager, the use of the LIBPATH and LD_LIBRARY_PATH environment variable is not advised. Setting these environment variables might result in you not being able to run any WebSphere® MQ commands. By default, the installation will operate as in previous versions of WebSphere MQ, with symbolic links being created from `/usr/lib`, `/usr/bin` and `/usr/include` to the appropriate files within the WebSphere MQ tree structure. In the case of `/usr/lib` the symbolic links will be to the 32-bit WebSphere MQ libraries provided for customer 32-bit applications.

Note: No symbolic links are required for the 64-bit WebSphere MQ libraries required by WebSphere MQ commands.

All WebSphere MQ commands are 64-bit and have a built in path to the WebSphere MQ 64-bit libraries,

however, this can be overridden by the use of LIBPATH and thus can cause WebSphere MQ commands to fail to run. The recommended way of using WebSphere MQ commands and your applications is as follows:

- Unset LIBPATH and LD_LIBRARY_PATH and build your applications with a built in path to the appropriate WebSphere MQ libraries, this is detailed in the appropriate WebSphere MQ book for your type of WebSphere MQ application.
- If you need to set LIBPATH or LD_LIBRARY_PATH, consider not including `/usr/lib` in the path you specify in the variable. If you need to include `/usr/lib` in your LIBPATH or LD_LIBRARY_PATH then in order to avoid errors running 64-bit WebSphere MQ applications or WebSphere MQ commands, consider removing the symbolic links from `/usr/lib` to the 32-bit WebSphere MQ libraries using the **dltmqlnk** command. The symbolic links can be restored with the **crtmqlnk** command. You also need to build your applications with a built in path to the appropriate WebSphere MQ libraries.
  Note that both the **dltmqlnk** command and the **crtmqlnk** command are scripts, and take no parameters.
- If you cannot use either of the first two options, run your applications in a different environment to the one which issues any WebSphere MQ commands.
  Note: WebSphere MQ libraries are in the following locations: `/usr/mqm/lib` (32-bit libraries) and `/usr/mqm/lib64` (64-bit libraries).

Parent topic: Preparing for installation

2.2. Server installation procedure

This section tells you how to install the WebSphere® MQ for AIX® server. If you want to install the WebSphere MQ client see Installing a WebSphere MQ client.

Before you start the installation procedure, make sure you have prepared your system as described in Preparing for installation.

The installation method allows you to select which components you would like to install, for a list of the components and their corresponding filesets see WebSphere MQ Components.

To install on a local machine, see Installation Method

To install on a remote machine, see Remote Installation

Installation Method

Silent installation
Silently install WebSphere MQ Server from the command line using the AIX **installp** command.

Remote Installation
To install WebSphere MQ for AIX, Version 7.0 on a remote machine, you can use standard WebSphere MQ techniques.

WebSphere MQ Components
This lists all of the installable MQ components and other IBM products that comprise Websphere MQ.

Displaying messages in your national language
This describes how to display messages from a different national language message catalog.

Parent topic: Installing a WebSphere MQ server

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2.2.1. Installation Method

About this task

WebSphere® MQ is supplied as a set of file sets that are installed using AIX's standard installation tools. The procedure uses the system management interface tool (SMIT), but you can choose to use **installp**, **geninstall** or the Web-based System Manager. You can select which components you want to install. The components and file sets are listed in WebSphere MQ Components; you must install at least the Runtime, Java, the JRE, and Server components.

Procedure

1. Log in as root, or switch to the superuser using the **su** command.
2. Insert the WebSphere MQ Server CD-ROM into the CD-ROM drive.
3. Enter the following command to mount the CD-ROM:
   `mount /cdrom`
4. Select the required **smit** window using the following sequence:

   ```
   Software Installation and Maintenance
           Install and Update Software
                   Install and Update from ALL Available Software
   ```

   Alternatively you can use a fast path command (`smitty install_latest`), however the fast path command does not give you the opportunity to install the language file sets.
5. Click **List** to display the input device or directory for the software, select the location that contains the installation images.
6. Use the **SOFTWARE to install** field to obtain a list of available file sets, and select the file sets you want to install. Ensure that you include the appropriate message catalog if you require messages in a language different from the language specified by the locale selected on your machine. Enter **ALL** to install all applicable file set updates to your installation.
7. Change **Preview new LICENSE agreements?** to **yes** and press Enter to view the license agreements.
8. Change **ACCEPT new license agreements?** to **yes** and press Enter to accept the license agreements.
9. Change **Preview new LICENSE agreements?** to **no** and press Enter to install WebSphere MQ.

Parent topic: Server installation procedure

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2.2.2. Silent installation

Silently install WebSphere MQ Server from the command line using the AIX **installp** command.

Procedure

1. Log in as root, or switch to the superuser using the **su** command.
2. Insert the WebSphere® MQ Server CD-ROM into the CD-ROM drive.
3. Enter the following command to mount the CD-ROM:
   `mount /cdrom`
4. Either install the whole product, or selected file sets:
   - `installp -axgXYd. all`
   - `installp -acgXYd. list of file sets`

   File sets are listed in WebSphere MQ Components

Parent topic: Server installation procedure

Related information
installp command

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2.2.3. Remote Installation

To install WebSphere® MQ for AIX®, Version 7.0 on a remote machine, you can use standard WebSphere MQ techniques.

About this task

To do this, log on to both systems as root. Put the WebSphere MQ for AIX, Version 7.0 Server CD-ROM in the CD-ROM drive of the machine from which you are going to take the copy. Follow this procedure for each target machine on which you want to install the product:

Procedure

1. Create a CD-ROM file system on the local machine, and mount the CD-ROM file system on the local machine (`mount /cdrom`).
2. Using **smit**, export this file system using NFS to the target machine.
3. Log on to the remote machine and use NFS to mount the CD-ROM file system that you created (`mount` *`local_machine`*`:/cdrom`).
4. Use **smit** to install WebSphere MQ for AIX, Version 7.0 from the target directory that you specified as specified in Installation Method.

Parent topic: Server installation procedure

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2.2.4. WebSphere MQ Components

This lists all of the installable MQ components and other IBM® products that comprise Websphere MQ.

When you install WebSphere® MQ for AIX®, you can choose which components to install.

Table 1. WebSphere MQ components and filesets

Component	Description	Fileset	Server	Client
Runtime	Mandatory component. Needed for application development and provides support for external applications.	mqm.base.runtime	X	X
SDK	Required for compiling applications.	mqm.base.sdk	X	X
Server	The server feature allows you to run queue managers on your computer and connect to other computers over a network. Provides messaging and queuing services to applications, and support for WebSphere MQ client connections.	mqm.server.rte	X	
Client	The WebSphere MQ client is a small subset of WebSphere MQ, without a queue manager. Provides remote access to WebSphere MQ. Must be connected to a server. To install a client on the same machine as a server, use the Server CD-ROM; otherwise use the Clients CD-ROM.	mqm.client.rte	X	X
Sample programs	Sample application programs. Needed if you want to check your WebSphere MQ installation using the verification procedures.	mqm.base.samples	X	X
Java messaging	The files needed for messaging using Java (includes Java Messaging Service).	mqm.java.rte	X	X
SSL support	Support for SSL key management	mqm.keyman.rte	X	X
U.S. English Message catalogs	A message catalog in U.S. English is installed automatically.	mqm.msg.en_US	X	X
Brazilian Portuguese Message catalogs	Brazilian Portuguese message catalogs	mqm.msg.pt_BR	X	X
Czech Message catalogs	Czech Message catalogs	mqm.msg.cs_CZ	X	X
French Message catalogs	French message catalogs	• mqm.msg.fr_FR	X	X
German Message catalogs	German message catalogs	• mqm.msg.de_DE	X	X
Hungarian Message catalogs	Hungarian Message catalogs	mqm.msg.hu_HU	X	X

Italian Message catalogs	Italian message catalogs	• mqm.msg.it_IT	X	X
Japanese Message catalogs	Japanese message catalogs	• mqm.msg.ja_JP • mqm.msg.Ja_JP	X	X
Korean Message catalogs	Korean message catalogs	mqm.msg.ko_KR	X	X
Polish Message catalogs	Polish Message catalogs	mqm.msg.pl_PL	X	X
Russian Message catalogs	Russian Message catalogs	mqm.msg.ru_RU	X	X
Spanish Message catalogs	Spanish message catalogs	• mqm.msg.es_ES	X	X
Simplified Chinese Message catalogs	Simplified Chinese message catalogs	• mqm.msg.zh_CN • mqm.msg.Zh.CN	X	X
Traditional Chinese Message catalogs	Traditional Chinese message catalogs	• mqm.msg.zh_TW • mqm.msg.Zh_TW	X	X
Man pages	UNIX man pages, in U.S. English, for the following: • Control commands • Message Queue Interface (MQI) commands • MQSC commands	mqm.man.en_US.data	X	X
Extended Transactional Client	WebSphere MQ component that allows a client application, within the same unit of work: • To put messages to, and get messages from, queues that are owned by the queue manager to which it is connected. • To update the resources of a resource manager other than a WebSphere MQ queue manager.	mqm.txclient.rte	X	
IBM Java JRE (32-bit)	»IBM 32-bit Runtime Environment for AIX, Java 2 Technology Edition, Version 5. «	mqm.jre.rte	X	

Table 2. Other products supplied with WebSphere MQ

Component	Description	Fileset	Server	Client
IBM Global Security Kit V7	Certificate and SSL Base Runtime - 32 bit	gskta.rte	X	X
IBM Global Security Kit V7	Certificate and SSL Base Runtime - 64 bit.	gsksa.rte	X	X

Parent topic: Server installation procedure

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2.2.5. Displaying messages in your national language

This describes how to display messages from a different national language message catalog.

About this task

Messages in the language specified by the locale selected on your machine at install time are installed by default.

WebSphere® MQ Version 7.0 requires a base AIX® operating system at level 5.3 or higher and, from this level of operating system, the locales supporting IBM-850 code pages are no longer supported.

Message catalogs for languages other than US English are installed as `/usr/lib/nls/msg/localename /amq.cat` .

The filesets containing message catalogs for IBM-850:

```
mqm.msg.De_DE                   (German)
mqm.msg.Es_ES                   (Spanish)
mqm.msg.Fr_FR                   (French)
mqm.msg.It_IT                   (Italian)
```

are no longer included.

If you have any of these filesets installed you must remove them manually before you install WebSphere MQ Version 7.0.

To find out which language is currently in use, use the **locale** command.

If you require messages in a different language, perform the following steps:

Procedure

1. Install the appropriate message catalog (see WebSphere MQ Components).

2. To select messages in a different language, ensure the **LANG** environment variable is set to the identifier for the language you want to install:

Identifier	Language
cs_CZ	Czech
de_DE	German
es_ES	Spanish
fr_FR	French
hu_HU	Hungarian
it_IT	Italian
ja_JP	Japanese
ko_KR	Korean
pl_PL	Polish
pt_BR	Brazilian Portuguese
ru_RU	Russian
zh_CN	Simplified Chinese
zh_TW	Traditional Chinese

Parent topic: Server installation procedure

This build: January 26, 2011 11:32:36

This topic's URL:
aq10310_

2.3. Verifying the server installation

This is an overview of various methods for verifying a WebSphere® MQ installation.

The group of topics within this section describes how to verify that the WebSphere MQ for AIX® server has been correctly installed and configured. You can verify a WebSphere MQ server installation at different levels:

- To verify a local (stand-alone) installation that has no communication links with other WebSphere MQ installations, do the following:
  - To verify the installation using a single queue manager with a single queue, see: Verifying a local installation.
  - To verify the installation using the Postcard application, see: Using the Postcard application to verify a local installation.
- To verify a server-to-server installation that includes communication links to other WebSphere MQ installations, do the following:
  - To verify the installation using two queue managers, two queues and both a sender channel and a receiver channel, see: Verifying a server-to-server installation.
  - To verify the installation using the Postcard application, see: Verifying the installation using the Postcard application.

To verify a client/server installation that includes communication links between a server and a WebSphere MQ client, see Verifying the client installation.

Verifying a local installation

Verifying a server-to-server installation

Verifying the installation using the Postcard application

You can set up and use the Postcard application to verify a local installation or a server-to-server

installation.

Parent topic: Installing a WebSphere MQ server

This build: January 26, 2011 11:32:39

This topic's URL:
aq10370_

2.3.1. Verifying a local installation

Before you begin

About this task

To verify a local installation using a simple configuration of one queue manager and one queue, complete the following steps. Once you have completed the steps below, you must test the installation as described in: Testing the installation

Note: WebSphere® MQ object definitions are case-sensitive. Any text entered as an MQSC command in lowercase is converted automatically to uppercase unless you enclose it in single quotation marks. Make sure that you type the examples exactly as shown.

Procedure

1. Log in as a user in the `mqm` group
2. Create a default queue manager called `venus.queue.manager` by entering the following command:

   ```
   crtmqm -q venus.queue.manager
   ```

   You will see messages telling you that the queue manager has been created, and that the default WebSphere MQ objects have been created.
3. To start the queue manager, type:

   ```
   strmqm
   ```

   A message tells you when the queue manager has started.
4. Enable MQSC commands by typing:

   ```
   runmqsc
   ```

   A message tells you that an MQSC session has started. MQSC has no command prompt.
5. Define a local queue called `ORANGE.QUEUE` by entering the following command:

   ```
   define qlocal (orange.queue)
   ```

   A message tells you when the queue has been created.
6. Stop MQSC by typing:

   ```
   end
   ```

   You will see some messages, followed by the command prompt.

What to do next

You have now defined:

- A default queue manager called `venus.queue.manager`
- A queue called `ORANGE.QUEUE`

Now proceed to Testing the installation to verify your installation.

Testing the installation

Parent topic: Verifying the server installation

This build: January 26, 2011 11:32:39

This topic's URL:
aq10390_

2.3.1.1. Testing the installation

Before you begin
Before completing this task you must have created a queue manager called `venus.queue.manager` and a local queue called `ORANGE.QUEUE`. For instructions on how to do this see Verifying a local installation.

About this task
To test the queue manager and queue, use the **amqsput** sample program to put a message on the queue, and the **amqsget** sample program to get the message back from the queue:

Procedure
1. Log on as a user in group `mqm`, if you are not already.
2. Change into the `/usr/mqm/samp/bin` directory, which contains the sample programs.
3. Put a message on the queue using the following command:
   ```
   ./amqsput ORANGE.QUEUE
   ```
   The following messages are displayed:
   ```
   Sample AMQSPUT0 start
   target queue is ORANGE.QUEUE
   ```
4. Type some message text, on one or more lines, followed by a blank line. The following message is displayed:
   ```
   Sample AMQSPUT0 end
   ```
   Your message is now on the queue and the command prompt is displayed again.
5. To get the message from the queue, use the following command:
   ```
   ./amqsget ORANGE.QUEUE
   ```
   The sample program starts, and your message is displayed. After a pause, the sample ends and the command prompt is displayed again.

What to do next
You have now successfully verified your local installation.

Parent topic: Verifying a local installation

This build: January 26, 2011 11:32:40

Notices | Trademarks | Downloads | Library | Support | Feedback

This topic's URL:
aq10400_

2.3.2. Verifying a server-to-server installation

To verify a server-to-server installation using two servers, one as a sender and one as a receiver, complete the following tasks.

- Setting up the sender server
- Setting up the receiver server
- Testing communication between the servers

To verify a server-to-server installation you need to check the communications link between the two machines. Before you can do this, you must ensure that the communications protocol has been installed and configured on both systems. WebSphere® MQ for AIX® supports both TCP and SNA. The tasks in this section explain how to verify your installation and use TCP in the examples; if you are using an alternative

protocol, refer to the WebSphere MQ Intercommunication manual.

The verification procedure assumes that both systems are UNIX machines; if this is not the case, some of the commands are different (for details, refer to the documentation for that system).

Note: WebSphere MQ object definitions are case-sensitive. Any text entered as an MQSC command in lowercase is converted automatically to uppercase unless you enclose it in single quotation marks. Make sure that you type the examples exactly as shown.

Parent topic: Verifying the server installation

This build: January 26, 2011 11:32:40

This topic's URL:
aq10410_

2.3.2.1. Setting up the sender server

About this task

In order to verify a server-to-server installation you must first set up a sender server. From a shell window, follow these steps to set up the sender server.

Procedure

1. Log in as a user in the `mqm` group.
2. Create a default queue manager called `saturn.queue.manager` with the following command:

   ```
   crtmqm -q saturn.queue.manager
   ```

   Messages tell you that the queue manager has been created, and that the default WebSphere® MQ objects have been created.
3. To start the queue manager, type:

   ```
   strmqm
   ```

   A message tells you when the queue manager has started.
4. Start MQSC commands by typing:

   ```
   runmqsc
   ```

   A message tells you that an MQSC session has started. MQSC had no command prompt.
5. Define a local queue called `TRANSMIT1.QUEUE` (to be used as a transmission queue) by entering the following command:

   ```
   define qlocal (transmit1.queue) usage (xmitq)
   ```

   A message tells you when the queue has been created.
6. Define a local definition of the remote queue with the following command:

   ```
   define qremote (local.def.of.remote.queue) rname (orange.queue)
   rqmname ('venus.queue.manager') xmitq (transmit1.queue)
   ```

   The name specified by the **rname** parameter must be the same as the name of the queue to which you are sending the message (`ORANGE.QUEUE` on the receiver workstation).
7. Define a sender channel with the following command:

   ```
   define channel (first.channel) chltype (sdr)
   conname ('con-name(port)') xmitq (transmit1.queue) trptype (tcp)
   ```

   The value *con-name* is the TCP address of the receiver workstation. The value *port* is the port number. If you do not specify a port number, the default port number of `1414` is used.

8. End MQSC by typing:

   ```
   end
   ```

   Some messages are displayed, followed by the shell prompt.

Results

You have now defined the following objects:

- A default queue manager called `saturn.queue.manager`
- A transmission queue called `TRANSMIT1.QUEUE`
- A local definition of a remote queue called `LOCAL.DEF.OF.REMOTE.QUEUE`
- A sender channel called `FIRST.CHANNEL`

What to do next

Now to set up the receiver server so that you can verify your server-to-server installation, see Setting up the receiver server.

Parent topic: Verifying a server-to-server installation

2.3.2.2. Setting up the receiver server

About this task

After you have completed the task, Setting up the sender server, follow these steps to set up the receiver server:

Procedure

1. Log in as a user in the `mqm` group.
2. Create a default queue manager called `venus.queue.manager` by entering the following command:

   ```
   crtmqm -q venus.queue.manager
   ```

   Messages tell you that the queue manager has been created, and that the default WebSphere® MQ objects have been created.
3. To start the queue manager, type:

   ```
   strmqm
   ```

   A message tells you when the queue manager has started.
4. Enable MQSC commands by typing:

   ```
   runmqsc
   ```

   A message tells you that an MQSC session has started. MQSC has no command prompt.
5. Define a local queue called `ORANGE.QUEUE` by entering the following command:

   ```
   define qlocal (orange.queue)
   ```

   A message tells you when the queue has been created.
6. Define a listener by entering the following command:
   Note: If you do not specify the port that the listener should listen on, the default of `1414` is used. If you specified a port other than 1414 in step 7 of Setting up the sender server, you must include the port parameter in the command, as shown below.

   ```
   define listener (listener1) trptype (tcp) control (qmgr) port (port_number)
   ```

   Where

   port_number

   is the name of the port the listener should run on. This must be the same as the number used when defining your sender channel.

7. Start the listener by entering the following command:

   ```
   start listener (listener1)
   ```

   Note: It is not recommended to start the listener in the background from any shell that automatically lowers the priority of background processes.

8. Define a receiver channel with the following command:

   ```
   define channel (first.channel) chltype (rcvr) trptype (tcp)
   ```

   A message tells you when the channel has been created.

9. End MQSC by typing:

   ```
   end
   ```

   Some messages are displayed, followed by the shellprompt.

Results

You have now defined the following objects:

- A default queue manager called `venus.queue.manager`
- A queue called `ORANGE.QUEUE`
- A listener called `LISTENER1`
- A receiver channel called `FIRST.CHANNEL`

What to do next

Now to test communications between your sender and receiver workstations, see Testing communication between the servers.

Parent topic: Verifying a server-to-server installation

2.3.2.3. Testing communication between the servers

About this task

After completing, Setting up the sender server, and Setting up the receiver server, use this topic to test communications between sender and receiver workstations using sample programs. Use the **amqsput** sample program to put a message from the sender server to a queue at the receiver server, and the **amqsget** sample program on the receiver server to get the message from the queue:

Procedure

1. Log in to both servers as a user in the `mqm` group.
2. If the queue managers on the two servers have stopped, restart them now by typing the following on both servers:

   ```
   strmqm
   ```

3. Enable MQSC commands by typing:

   ```
   runmqsc
   ```

   A message tells you that an MQSC session has started. MQSC has no command prompt.

4. On the **sender** server, start the sender channel using the MQSC **START CHANNEL** command and specify the channel name:

   ```
   START CHANNEL(FIRST.CHANNEL)
   ```

   The receiver channel on the receiver server starts automatically when the sender channel starts.

5. Stop MQSC by typing:

   ```
   end
   ```

   You will see some messages, followed by the command prompt.

6. On the **sender** server, change into the `/usr/mqm/samp/bin` directory, which contains the sample programs.
7. To put a message on the local definition of the remote queue (which in turn specifies the name of the remote queue), use the following command:

   ```
   ./amqsput LOCAL.DEF.OF.REMOTE.QUEUE
   ```

   You will see the following messages:

   ```
   Sample amqsput0 start
   target queue is LOCAL.DEF.OF.REMOTE.QUEUE
   ```

8. Type some message text on one or more lines, followed by a blank line. You will see the following message:

   ```
   Sample amqsput0 end
   ```

   Your message is now on the queue and the command prompt is displayed again.
9. On the **receiver** server, change into the `/usr/mqm/samp/bin` directory, which contains the sample programs.
10. To get the message from the queue at the receiver, enter the following command:

    ```
    ./amqsget ORANGE.QUEUE
    ```

    The sample program starts, and your message is displayed. After a pause, the sample ends and the command prompt is displayed again.

Results

You have now successfully verified the server-to-server installation.

Parent topic: Verifying a server-to-server installation

2.3.3. Verifying the installation using the Postcard application

You can set up and use the Postcard application to verify a local installation or a server-to-server installation.

Use the Postcard application to verify that WebSphere® MQ is successfully installed, and that the associated communication links are working properly.

You can use the Postcard application to verify a local installation or a server-to-server installation, as follows:

- To use the Postcard application to verify a *local* installation (which does not have any communication links with other WebSphere MQ installations), see Using the Postcard application to verify a local installation.
- To use the Postcard application to verify communication between your server and another server that is running WebSphere MQ and using TCP/IP, see Using the Postcard application to verify a server-to-server installation.

Using the Postcard application to verify a local installation
Sending messages successfully between two Postcard applications verifies a local installation.

Using the Postcard application to verify a server-to-server installation
Sending messages successfully between two Postcard applications verifies a server-to-server installation.

Using the Postcard application to verify a local installation using further steps
Sending messages successfully between two Postcard applications verifies a local installation with these further optional steps.

Parent topic: Verifying the server installation

This build: January 26, 2011 11:32:41

This topic's URL:
aq10450_

2.3.3.1. Using the Postcard application to verify a local installation

Sending messages successfully between two Postcard applications verifies a local installation.

About this task

To verify that the local installation is working, you can run two instances of the Postcard application on the same server and send messages between the applications. Successful sending and receiving of messages verifies that WebSphere® MQ is installed and working correctly on the server.

Note:

1. The Postcard application has a graphical interface. To view this interface, your system requires the ability to view a graphical display.
2. Before you can run the Postcard application, you must ensure that you are a member of the WebSphere MQ administrators group (mqm).

To run two instances of the Postcard application, do the following:

Procedure

1. Log on as a user in group mqm.
2. Change the directory to `/usr/mqm/java/bin`
3. Run the postcard shell script.

   ```
   ./postcard
   ```

   If there are no queue managers on your server, you are invited to run the Default Configuration wizard to create a queue manager to use with the Postcard application after signing on to the Postcard application.
4. At the Postcard - Sign On window, type in a nickname to use to send messages within the Postcard application (for example, `User1`).
5. Select the queue manager to use as the mailbox:
   - If the only queue manager on your server is the default queue manager that you created by running the Default Configuration wizard, this queue manager is used automatically as your mailbox for postcards.
   - If you have created one or more of your own queue managers, but you have not run the Default Configuration wizard, select the appropriate queue manager from the list displayed.
   - If you do not have any queue managers, you will be prompted to either launch the Default Configuration or close the Postcard application. Launching the Default Configuration will create a default queue manager.
   - If you have run the Default Configuration wizard and you want to use the default queue manager, but there is more than one queue manager on your server, select the **Advanced** checkbox, then select **Use Default Configuration as mailbox**.
   - If you have run the Default Configuration wizard and also created one or more of your own queue managers, and you do not want to use the default queue manager, select the **Advanced** checkbox, select **Choose queue manager as mailbox**, then select the appropriate queue manager from the list displayed.

   When your selection is complete, click **OK** to display your first Postcard window.
6. Run the Postcard shell script again in a different shell window. This opens a second instance of the Postcard application.
7. The Postcard - Sign On panel is displayed again. Type in a second nickname to use to send messages within this second Postcard application (for example, `User2`).
8. Repeat the selection of the queue manager that you want to use as the mailbox (as described in step

5). The queue manager you select for this second Postcard must either be the same queue manager, be in the same cluster as the queue manager for the first Postcard, or communication links must have been set up between them. You now have two Postcards, one with the nickname User1 and one with the nickname User2.

9. In the first Postcard, User1, enter the nickname `User2` for the second Postcard application in the **To:** field and the queue manager it is using in the **On:** field.
10. Type a message in the **Message:** field and click **Send**.
11. The **Postcards sent and received** area of the Postcard shows details of the message. In the sending Postcard, the message is displayed as *sent*. In the receiving Postcard, the message is displayed as *received*.
12. In the receiving Postcard, User2, double-click the message in the **Postcards sent and received** area to view it. When this message arrives, this verifies that WebSphere MQ is correctly installed.

Example

What to do next

Depending on your situation, you might want to do the following:

- Install WebSphere MQ on other servers. Follow the same installation procedure that you used for the first server. Ensure that you use the Join Default Cluster window in the Default Configuration wizard to add the other servers to your first server's cluster.
- Install the WebSphere MQ client on other servers. See the Installing a WebSphere MQ client.
- Continue with further administration tasks. See the WebSphere MQ System Administration Guide.

Parent topic: Verifying the installation using the Postcard application

2.3.3.2. Using the Postcard application to verify a server-to-server installation

Sending messages successfully between two Postcard applications verifies a server-to-server installation.

Before you begin

To verify that a server-to-server installation is working on two servers, the sender of the message and the receiver, you can use an instance of the Postcard application on the sender server, and an instance of the Postcard application on the receiver server, and send messages between the two Postcard applications. Successful sending and receiving of messages verifies that WebSphere® MQ is successfully installed, and that communication between the two servers is working correctly. Both servers must use TCP/IP.

To use the Postcard application for this type of verification one of the following must be true:

- Both queue managers must be in the same cluster; this is the simplest method. To ensure that both queue managers are in the same cluster, you can run the Postcard application before creating any local queue managers on each server. The Postcard application detects that there are no local queue managers defined for that server, and displays the Default Configuration wizard so that you can create the default queue managers and link them to the default cluster.

  You can use the Postcard application with existing queue managers, if both queue managers belong to the same cluster. If you have already completed the Default Configuration wizard but did not put the two queue managers into the same cluster, you can create your own new queue managers on both servers, create a cluster, and ensure that the queue managers that you create on each server belong to the same cluster.
- Alternatively, if the queue managers are not in the same cluster, you can configure channels to communicate between the two servers. For instructions on how to set up the channels, see Setting

up the sender server, and Setting up the receiver server. Once you have set up communication, you can use the Postcard application starting at step 5.

Note:

1. The Postcard application has a graphical interface. To view this interface, your systems require the ability to view a graphical display.
2. Before you can run the Postcard application on each server, you must ensure that you are a member of the WebSphere MQ administrators group (mqm) on each server.

Parent topic: Verifying the installation using the Postcard application

On the sender server

Procedure

1. Log on as a user in group mqm.
2. Change directory to `/usr/mqm/java/bin`
3. Run the postcard shell script.

   ```
   ./postcard
   ```

   If there are no queue managers on your server, you are invited to run the Default Configuration wizard to create a queue manager to use with the Postcard application after signing on to the Postcard application.
   You can use the Postcard application with existing queue managers, if both queue managers belong to the same cluster. If your existing queue manager does not belong to the appropriate cluster, refer to the introduction of this topic for information on how to proceed.
4. Work through the Default Configuration wizard. When you get to the option to join the queue manager to the default cluster, tick the checkbox. On the next screen, select **yes, make it the repository for the cluster**. When you have completed the wizard, you are taken back to the Postcard - Sign On window.
5. At the Postcard - Sign On window, type a nickname to use to send messages within the Postcard application (for example, `User1`).
6. Select the queue manager to use as the mailbox:
   - If the only queue manager on your server is the default queue manager that you created by running the Default Configuration wizard, this queue manager is used automatically as your mailbox for postcards.
   - If you have created one or more of your own queue managers, but you have not run the Default Configuration wizard, select the appropriate queue manager from the list displayed.
   - If you do not have any queue managers, you will be prompted to either launch the Default Configuration or close the Postcard application. Launching the Default Configuration will create a default queue manager.
   - If you have run the Default Configuration wizard, and you want to use the default queue manager, but there is more than one queue manager on your server, select the **Advanced** checkbox, then select **Use Default Configuration as mailbox**.
   - If you have run the Default Configuration wizard, and also created one or more of your own queue managers, and you do not want to use the default queue manager, select the **Advanced** checkbox, select **Choose queue manager as mailbox**, then select the appropriate queue manager from the list displayed.

   When your selection is complete, click **OK** to display your second postcard window.

On the receiver server

Procedure

1. Log on as a user in group mqm.
2. Change directory to `/usr/mqm/java/bin`
3. Run the postcard shell script.

   ```
   ./postcard
   ```

If there are no queue managers on your server, you are invited to run the Default Configuration wizard to create a queue manager to use with the Postcard application after signing on to the Postcard application.
You can use the Postcard application with existing queue managers, if both queue managers belong to the same cluster. If your existing queue manager does not belong to the appropriate cluster refer to the introduction of this topic for information on how to proceed.

4. Work through the Default Configuration wizard:
   a. When you get the option to join the queue manager to the default cluster, tick the checkbox.
   b. In the next window click **No another computer has already joined the cluster as a repository**. Click Next.
   c. When requested, enter the location of the repository, by typing the name of the sender server. Click Next.
   d. Complete the Default Configuration wizard. Once you have completed the wizard you are taken back to the Postcard - Sign On window.
5. At the Postcard - Sign On window, type a nickname to use to send messages within the Postcard application (for example, `User2`).
6. Select the queue manager to use as the mailbox:
   - If the only queue manager on your server is the default queue manager that you created by running the Default Configuration wizard, this queue manager is used automatically as your mailbox for postcards.
   - If you have created one or more of your own queue managers, but you have not run the Default Configuration wizard, select the appropriate queue manager from the list displayed.
   - If you do not have any queue managers, you will be prompted to either launch the Default Configuration or close the Postcard application. Launching the Default Configuration will create a default queue manager.
   - If you have run the Default Configuration wizard and you want to use the default queue manager, but there is more than one queue manager on your server, select the **Advanced** checkbox, then select **Use Default Configuration as mailbox**.
   - If you have run the Default Configuration wizard and also created one or more of your own queue managers, and you do not want to use the default queue manager, select the **Advanced** checkbox, select **Choose queue manager as mailbox**, then select the appropriate queue manager from the list displayed.

   When your selection is complete, click **OK** to display your first Postcard window.
7. In one of the Postcards, enter the nickname for the other Postcard application in the **To:** field, and the queue manager that it is using in the **On:** field.
8. Type a message in the **Message:** field and click **Send**.
9. The **Postcards sent and received** area of the postcard shows details of the message. In the sending Postcard, the message is displayed as *sent*. In the receiving Postcard, the message is displayed as *received*.
10. In the sent and received area of the Postcard, details of the new message are displayed. The message is displayed as *received*. Double-click the message in the **Postcards sent and received** area to view it. When this message arrives, this verifies that WebSphere MQ is correctly installed.

Results

When all installation and verification is complete, you are ready to start using WebSphere MQ (see the WebSphere MQ System Administration Guide).

2.3.3.3. Using the Postcard application to verify a local installation using further steps

Sending messages successfully between two Postcard applications verifies a local installation with these further optional steps.

About this task

Depending on your situation, you might want to do the following:

- Install WebSphere® MQ on other servers. Follow the same installation procedure that you used for the first server. Ensure that you use the Join Default Cluster window in the Default Configuration wizard to add the other servers to your first server's cluster.
- Install the WebSphere MQ client on other servers. See the Installing a WebSphere MQ client.
- Continue with further administration tasks. See the WebSphere MQ System Administration Guide.

Parent topic: Verifying the installation using the Postcard application

This build: January 26, 2011 11:32:41

This topic's URL:
aq10451_

3. Installing a WebSphere MQ client

Follow these steps to install a WebSphere® MQ client.

This section describes how to install a WebSphere MQ Version 7.0 client. The information covers topics such as preparing for installation and verifying your installation, as well as installation itself. If you already have an installation of WebSphere MQ, and are migrating to WebSphere MQ Version 7.0 see Migrating to WebSphere MQ for AIX Version 7.0 before installing WebSphere MQ Version 7.0.

WebSphere MQ for AIX® can be installed as a server or a client.

A WebSphere MQ client is a component that allows an application running on one system to communicate with a queue manager running on another system. The output from the call is sent back to the client, which passes it back to the application.

A WebSphere MQ server is an installation of one or more queue managers that provide queueing services to one or more clients. All the WebSphere MQ objects, for example queues, exist only on the queue manager machine (the WebSphere MQ server machine), and not the client. A WebSphere MQ server can also support local WebSphere MQ applications. To install a WebSphere MQ server see, Installing a WebSphere MQ server.

It is possible to have both a server and a client installation on the same machine, for instructions on how to do this see, Installing a client on the same machine as a server.

See the WebSphere MQ System Administration Guide for an introduction to WebSphere MQ concepts and objects.

For information on the components that can be included in the server and client installations see, WebSphere MQ Components.

The group of topics within this section take you through the process of installing a WebSphere MQ client, complete all of these tasks in sequence.

- Checking hardware and software requirements
- Installing WebSphere MQ
- Verifying the client installation

Preparing to install

Installing WebSphere MQ

Verifying the client installation

Parent topic: Welcome to WebSphere MQ for AIX

This build: January 26, 2011 11:32:43

This topic's URL:
aq10510_

3.1. Preparing to install

Before you install WebSphere® MQ, complete the following tasks.

- Checking hardware and software requirements
- Setting up the user ID and group ID
- Creating WebSphere MQ file systems

Additionally, if you require messages in a language other than U.S. English see, Displaying messages in your national language.

Checking hardware and software requirements
Before you install WebSphere MQ for AIX, check that your system meets the hardware and operating system software requirements set for this product and the particular components you intend to install.

Setting up the user ID and group ID

Creating WebSphere MQ file systems

Parent topic: Installing a WebSphere MQ client

This build: January 26, 2011 11:32:43

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This topic's URL:
aq10520_

3.1.1. Checking hardware and software requirements

Before you install WebSphere MQ for AIX, check that your system meets the hardware and operating system software requirements set for this product and the particular components you intend to install.

Hardware and software requirements are set out at WebSphere MQ system requirements on AIX on the IBM Web site.

WebSphere MQ does not support host names that contain spaces. If you install WebSphere MQ on a computer with a host name that contains spaces, you are unable to create any queue managers.

Prerequisite software for optional components and platform-specific system settings are detailed in the following sections:

Java Messaging and SOAP transport
If you want to use Java Messaging and SOAP (Simple Object Access Protocol) Support with WebSphere® MQ, you need a Java Runtime Environment Version 5 or later.

For a list of supported JDKs, see the WebSphere MQ system requirements page at http://www.ibm.com/software/integration/wmq/requirements/.

For further information about using Java with Websphere MQ, see WebSphere MQ Using Java.

For further information about SOAP with WebSphere MQ, see WebSphere MQ Using Web Services .

If you use a JDK that is not in the list of supported JDKs you should be aware that:

- The JDK might not be FIPS level 140-2 compliant and by using it with WebSphere MQ, WebSphere MQ for AIX®, Version 7.0 will not comply with FIPS 140-2 standards.
- SOAP is not supported.

- The WebSphere MQ Web service deployment utility, amqwdeployWMQService, requires IBM Java 2 SDK.

You can check the version installed using the following command:

```
java -version
```

Secure Sockets Layer (SSL)

If you want to use the SSL support, you need IBM® Global Security Kit V7. This is supplied with WebSphere MQ as one of the components available for installation.

You must also have installed version 7.0.4.11 (or later) of the C++ runtime to use the SSL support.

File descriptors

When running a multi-threaded process such as the agent process, you might reach the soft limit for file descriptors. This gives you the WebSphere MQ reason code `MQRC_UNEXPECTED_ERROR (2195)` and, if there are enough file descriptors, a WebSphere MQ FFST™ file.

To avoid this problem, you can increase the process limit for the number of file descriptors. To do this, alter the `nofiles` attribute in `/etc/security/limits` to 10,000 for the `mqm` user id or in the default stanza. For information about the `mqm` user id see, Setting up the user ID and group ID.

System Resource Limits

Set the system resource limit for data segment and stack segment to unlimited using the following commands in a command prompt:

```
ulimit -d unlimited
ulimit -s unlimited
```

Parent topic: Preparing to install

3.1.2. Setting up the user ID and group ID

WebSphere® MQ requires a user ID of the name `mqm`, with a primary group of `mqm`. The `mqm` user ID owns the directories and files that contain the resources associated with the product. Create the user ID and group IDs as described in the following topics.

- Creating the user ID and group
- Adding existing user IDs to the group

Creating the user ID and group

Adding existing user IDs to the group

Parent topic: Preparing to install

3.1.2.1. Creating the user ID and group

Create the required user ID and group ID ***before*** you install WebSphere® MQ. Both user ID and group ID must be set to `mqm`. For stand-alone machines, you can create the new user ID and group IDs locally; for

machines administered in a network information services (NIS) domain, an administrator must create the IDs on the NIS master server machine.

You can use the System Management Interface Tool (**smit**), for which you require root authority.

1. To create the mqm group, display the required window using this sequence:

```
Security & Users
  Groups
    Add a Group
```

   Set the group name field to mqm.

2. To create the new user, mqm, display the required window using this sequence:

```
Security & Users
  Users
    Add a User
```

   Set the user name field to mqm.

3. To add a password to the new user ID, display the required window using this sequence:

```
Security & Users
   Passwords
    Change a User's Password
```

   Set the password as required.

It is also suggested that you set the mqm user's home directory to /var/mqm.

Parent topic: Setting up the user ID and group ID

3.1.2.2. Adding existing user IDs to the group

If you want to run administration commands, for example **crtmqm** (create queue manager) or **strmqm** (start queue manager), your user ID must be a member of the mqm group.

Users do not need mqm group authority to run applications that use the queue manager; it is needed only for the administration commands.

You can use **smit** to add an existing user ID to the mqm group. Display the required menu using this sequence:

```
Security & Users
  Users
    Change / Show Characteristics of a User
```

Enter the name of the user in the **User Name** field and press Enter. Add mqm to the **Group SET** field, which is a comma-separated list of the groups to which the user belongs. Users need not have their primary group set to mqm. Provided that mqm is in their set of groups, they can use the administration commands.

Parent topic: Setting up the user ID and group ID

3.1.3. Creating WebSphere MQ file systems

The installation directory for the WebSphere® MQ product code is /usr/mqm. Working data is stored in /var/mqm. You cannot change these locations. The GSKit must also be installed into its default location.

The topics contained in this section describe how to prepare your file system for installing WebSphere MQ.

Perform these tasks before installation.

Creating a file system for the product code
This topic describes how to prepare the /usr/mqm file system into which the WebSphere MQ code will be installed and what to do should you not have enough storage space available in the file system.

Creating a file system for the working data

Parent topic: Preparing to install

This build: January 26, 2011 11:32:43

This topic's URL:
aq10560_

3.1.3.1. Creating a file system for the product code

This topic describes how to prepare the /usr/mqm file system into which the WebSphere® MQ code will be installed and what to do should you not have enough storage space available in the file system.

About this task

The WebSphere MQ product code is installed in /usr/mqm. If you cannot install the product code in the /usr/mqm file system because the file system is too small to contain the product, you can do one of the following:

1. Create a new file system and mount it as /usr/mqm. If you choose this option, the new file system must be created and mounted before installing the product code.
2. Create a new directory anywhere on your machine, and create a symbolic link from /usr/mqm to this new directory. For example:
   ```
   mkdir /bigdisk/mqm
   ln -s /bigdisk/mqm /usr/mqm
   ```
   If you choose this option, the new directory must be created, and the link created, before installing the product code.
3. Allow the install program to expand the file system.

The file system into which the code is installed can be a remote network device, for example, NFS. However, you must define the mount options defined on that device to allow **setuid** programs, including those which are **setuid** root, to run.

What to do next

Parent topic: Creating WebSphere MQ file systems

This build: January 26, 2011 11:32:43

This topic's URL:
aq10570_

3.1.3.2. Creating a file system for the working data

About this task

Before you install WebSphere® MQ for AIX®, create and mount a file system called /var/mqm. For a client installation, the file system can be mounted on a remote network device, for example NFS.

To determine the size of the /var/mqm file system for a client installation, consider:

- The size of the error log files written to the /var/mqm/errors directory

- The amount of trace that is written to the `/var/mqm/trace` directory

If you are performing both a client and a server installation, the requirements of the server installation take precedence over the requirements of the client installation. For details about the requirements of the server installation, see Creating a file system for the working data.

Allow 130 MB as a minimum for a WebSphere MQ server and 15 MB as a minimum for a WebSphere MQ client. These values are the absolute minimum values for a single queue manager and are not recommended values. The size of a file system should be scaled depending on the number of queue managers that you intend to use, the number of pages per log file, and the number of log files per queue manager.

A new sample WebSphere MQ client configuration file is created in the `var/mqm` directory, by the C client package, during installation, but only if this file does not already exist. This file contains the `ClientExitPath` stanza. An example mqclient.ini file is shown in WebSphere MQ client configuration file .

Note that if you are using a common configuration file for multiple clients, either in the WebSphere MQ installation directory or in another location using the MQCLNTCF environment variable, you should grant read access to all user identifiers under which the WebSphere MQ client applications run. If, for any reason, the file cannot be read, the failure is traced and the search logic continues as if the file had not existed.

Parent topic: Creating WebSphere MQ file systems

3.2. Installing WebSphere MQ

This collection of topics tells you how to install the WebSphere® MQ for AIX® client. If you want to install the WebSphere MQ server see Installing a WebSphere MQ server.

Before you start the installation procedure, make sure you have prepared your system as described in Preparing to install.

There are two types of WebSphere MQ clients:

Client with SSL

This is the standard WebSphere MQ client with additional code to allow you to use SSL support. You can install the client with SSL from either the client or the server CD.

Extended Transactional Client

This is additional code to allow a client application within the same unit of work to:

- To put messages to, and get messages from, queues that are owned by the queue manager to which it is connected.
- To update the resources of a resource manager other than a WebSphere MQ queue manager.

You can only install this from the server CD.

For more information about SSL, see the WebSphere MQ Security book.

To install a WebSphere MQ server, see Installation Method.

If you want to install the client on the same machine as a WebSphere MQ server, see Installing a client on the same machine as a server.

Client Installation Procedure

WebSphere MQ Components
This lists all of the installable MQ components and other IBM® products that comprise Websphere MQ.

Displaying messages in your national language
This describes how to display messages from a different national language message catalog.

Parent topic: Installing a WebSphere MQ client

This build: January 26, 2011 11:32:44

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aq10640_

3.2.1. Client Installation Procedure

About this task

This installation procedure uses the System Management Interface Tool (**smit**), enabling you to select which components you want to install. The components and filesets are listed in WebSphere MQ Components. You must install at least the Runtime, and Client components.

Procedure

1. Log in as root.
2. Insert the WebSphere® MQ Client CD-ROM into the CD-ROM drive.
3. Enter the following command to mount the CD-ROM:
   ```
   mount /cdrom
   ```
4. Select the required **smit** window using the following sequence:
   ```
   Software Installation and Maintenance
           Install and Update Software
                   Install and Update from ALL Available Software
   ```
   Alternatively you can use a fastpath command (`smitty install_latest`).
5. Click **List** to display the input device or directory for the software, select the location that contains the installation images.
6. Use the **SOFTWARE to install** field to obtain a list of available filesets, and select the filesets you want to install. Ensure that you include the appropriate message catalog if you require messages in a language different than that specified by the locale specified on your machine. Enter **ALL** to install all applicable fileset updates to your installation.
7. If you have a previous version of the product on your machine, change the **Automatically install requisite software** to **No** and overwrite same or newer versions to **Yes**.
8. Change **ACCEPT new license agreements?** to **yes** and press Enter to accept the license agreements.
9. Change **Preview new LICENSE agreements?** to **no** and press Enter to install WebSphere MQ.

Parent topic: Installing WebSphere MQ

This build: January 26, 2011 11:32:44

This topic's URL:
aq10650_

3.2.2. WebSphere MQ Components

This lists all of the installable MQ components and other IBM® products that comprise Websphere MQ.

When you install WebSphere® MQ for AIX®, you can choose which components to install.

Table 1. WebSphere MQ components and filesets

Component	Description	Fileset	Server	Client
Runtime	Mandatory component. Needed for application development and provides support for external applications.	mqm.base.runtime	X	X
SDK	Required for compiling applications.	mqm.base.sdk	X	X
Client	The WebSphere MQ client is a small subset of WebSphere MQ, without a queue manager. Provides remote access to WebSphere MQ. Must be connected to a server. To install a client on the same machine as a server, use the Server CD-ROM; otherwise use the Clients CD-ROM.	mqm.client.rte	X	X
Sample programs	Sample application programs. Needed if you want to check your WebSphere MQ installation using the verification procedures.	mqm.base.samples	X	X
Java messaging	The files needed for messaging using Java (includes Java Messaging Service).	mqm.java.rte	X	X
SSL support	Support for SSL key management	mqm.keyman.rte	X	X
U.S. English Message catalogs	A message catalog in U.S. English is installed automatically.	mqm.msg.en_US	X	X
Brazilian Portuguese Message catalogs	Brazilian Portuguese message catalogs	mqm.msg.pt_BR	X	X
Czech Message catalogs	Czech Message catalogs	mqm.msg.cs_CZ	X	X
French Message catalogs	French message catalogs	• mqm.msg.fr_FR	X	X
German Message catalogs	German message catalogs	• mqm.msg.de_DE	X	X
Hungarian Message catalogs	Hungarian Message catalogs	mqm.msg.hu_HU	X	X
Italian Message catalogs	Italian message catalogs	• mqm.msg.it_IT	X	X
Japanese Message catalogs	Japanese message catalogs	• mqm.msg.ja_JP • mqm.msg.Ja_JP	X	X
Korean Message catalogs	Korean message catalogs	mqm.msg.ko_KR	X	X

Polish Message catalogs	Polish Message catalogs	mqm.msg.pl_PL	X	X
Russian Message catalogs	Russian Message catalogs	mqm.msg.ru_RU	X	X
Spanish Message catalogs	Spanish message catalogs	• mqm.msg.es_ES	X	X
Simplified Chinese Message catalogs	Simplified Chinese message catalogs	• mqm.msg.zh_CN • mqm.msg.Zh.CN	X	X
Traditional Chinese Message catalogs	Traditional Chinese message catalogs	• mqm.msg.zh_TW • mqm.msg.Zh_TW	X	X
Man pages	UNIX man pages, in U.S. English, for the following: • Control commands • Message Queue Interface (MQI) commands • MQSC commands	mqm.man.en_US.data	X	X

Table 2. Other products supplied with WebSphere MQ

Component	Description	Fileset	Server	Client
IBM Global Security Kit V7	Certificate and SSL Base Runtime - 32 bit	gskta.rte	X	X
IBM Global Security Kit V7	Certificate and SSL Base Runtime - 64 bit.	gsksa.rte	X	X

Parent topic: Installing WebSphere MQ

3.2.3. Displaying messages in your national language

This describes how to display messages from a different national language message catalog.

About this task

Messages in the language specified by the locale selected on your machine at install time are installed by default.

WebSphere® MQ Version 7.0 requires a base AIX® operating system at level 5.3 or higher and, from this level of operating system, the locales supporting IBM-850 code pages are no longer supported.

Message catalogs for languages other than US English are installed as `/usr/lib/nls/msg/localename /amq.cat`.

The filesets containing message catalogs for IBM-850:

```
mqm.msg.De_DE                    (German)
```

```
mqm.msg.Es_ES                   (Spanish)
mqm.msg.Fr_FR                   (French)
mqm.msg.It_IT                   (Italian)
```

are no longer included.

If you have any of these filesets installed you must remove them manually before you install WebSphere MQ Version 7.0.

To find out which language are currently in use, use the **locale** command.

If you require messages in a different language, perform the following steps:

Procedure

1. Install the appropriate message catalog (see WebSphere MQ Components).
2. To select messages in a different language, use the following command with the identifier for the language you want to install:

   ```
   export LANG=message identifier
   ```

   The message identifiers for the message catalogs are as follows:
   - cs_CZ (Czech)
   - de_DE (German)
   - es_ES (Spanish)
   - fr_FR (French)
   - hu_HU (Hungarian)
   - it_IT (Italian)
   - ja_JP (Japanese)
   - ko_KR (Korean)
   - pl_PL (Polish)
   - pt_BR (Brazilian Portuguese)
   - ru_RU (Russian)
   - zh_CN (Simplified Chinese)
   - zh_TW (Traditional Chinese)

Parent topic: Installing WebSphere MQ

3.3. Verifying the client installation

The group of topics within this section describes how to verify that the WebSphere® MQ for AIX® client has been correctly installed and configured.

To verify your WebSphere MQ client installation, you need a WebSphere MQ server with communication links with your client workstation. You can then complete the following tasks in order:

- Setting up the server workstation
- Setting up the client workstation
- Testing communication between workstations

The verification procedure assumes that:

- TCP/IP is configured and initialized on both the server and the client machines. If you are using SNA, refer to the WebSphere MQ Intercommunication manual.
- The WebSphere MQ server is installed on a Linux or UNIX machine; if this is not the case, some of the commands will be different (for details, refer to the WebSphere MQ Clients book).

Note: WebSphere MQ object definitions are case-sensitive. Any text entered as an MQSC command in lowercase is converted automatically to uppercase unless you enclose it in single quotation marks. Make sure that you type the examples exactly as shown.

Parent topic: Installing a WebSphere MQ client

3.3.1. Setting up the server workstation

Before you begin

About this task

In order to verify your installation you must first perform this task. From a shell window, use these steps to install a queue manager and a queue on the server:

Note: WebSphere® MQ object definitions are case-sensitive. Any text entered as an MQSC command in lowercase is converted automatically to uppercase unless you enclose it in single quotation marks. Make sure that you type the examples exactly as shown.

Procedure

1. Create a default queue manager called `saturn.queue.manager` by entering the following command:

   ```
   crtmqm -q saturn.queue.manager
   ```

   You will see messages telling you that the queue manager has been created, and that the default WebSphere MQ objects have been created.
2. To start the queue manager, type:

   ```
   strmqm
   ```

   A message tells you when the queue manager has started.
3. Enable MQSC commands by typing:

   ```
   runmqsc
   ```

   A message tells you that an MQSC session has started. MQSC has no command prompt.
4. Define a local queue called `QUEUE1` by entering the following command:

   ```
   define qlocal (queue1)
   ```

   A message tells you when the queue has been created.
5. Define a server-connection channel by entering the following command on one line:

   ```
   define channel (channel1) chltype (svrconn) trptype (tcp) mcauser ('mqm')
   ```

   Note: Once you have set the **mcauser** attribute to `mqm`, you MUST set the attribute back to its default value after you have verified the installation to prevent any security vulnerabilities, as described in: Testing communication between workstations.
   A message tells you when the channel has been created.

6. Define a listener by entering the following command:
   Note: If you do not specify the port that the listener should listen on, by omitting the port parameter from the command below, the default of `1414` is used. If you want to specify a port other than 1414, you must include the port parameter in the command, as shown.

   ```
   define listener (listener1) trptype (tcp) control (qmgr) port (port_number)
   ```

   Where

   port_number

   is the name of the port the listener should run on. The port number must be the same as the number used when defining your client-connection channel in Setting up the client workstation.
7. Start the listener by entering the following command:

   ```
   start listener (listener1)
   ```

8. Stop MQSC by typing:

   ```
   end
   ```

   You will see some messages, followed by the command prompt.

Results

You have now defined the following objects on the server:

- A default queue manager called `saturn.queue.manager`
- A local queue called `QUEUE1`
- A listener called `LISTENR1`
- A server-connection channel called `CHANNEL1`

What to do next

To continue with the verification process, see Setting up the client workstation.

Parent topic: Verifying the client installation

This topic's URL:
aq10670_

3.3.2. Setting up the client workstation

Before you begin

Before you complete this task you must have completed, Setting up the server workstation.

About this task

When a WebSphere® MQ application is run on the WebSphere MQ client, the following information is required:

- The name of the MQI channel that connects the client to the server
- The communications protocol
- The address of the server

You provide this information by defining a client-connection channel with the name used for the server-connection channel defined on the server. This example uses the `MQSERVER` environment variable to define the client-connection channel.

Procedure

1. Before starting, use the **ping** command to check that your TCP/IP software is correctly configured, and that your WebSphere MQ client and server TCP/IP sessions have been initialized. From the client, enter:

   ```
   ping server-hostname
   ```

   or

```
ping n.n.n.n
```

where

server-hostname

Is the host name of the server

n.n.n.n

Is the network address of the server

2. Press `Ctrl-C` to stop the **ping** command.
3. To create a client-connection channel, set the `MQSERVER` environment variable as follows:

```
export MQSERVER='CHANNEL1/TCP/server-hostname(port)'
```

where

CHANNEL1

Is the name of the server-connection channel already defined on the server

TCP

Is the communications protocol.

server-address

Is the TCP/IP host name of the server.

port

The port number is optional and is the same port number that the server is listening on, you specified this in step 6 of Setting up the server workstation. If you do not give a port number, WebSphere MQ uses:

- The one specified in the `qm.ini` file.
- If no value is specified in the `qm.ini` file, WebSphere MQ uses the port number identified in the TCP/IP services file for the service name WebSphere MQ. If this entry in the services file does not exist, a default value of `1414` is used.

The client-connection channel and server listener program must use the same port number.

What to do next

To continue with the verification process, see Testing communication between workstations.

Parent topic: Verifying the client installation

3.3.3. Testing communication between workstations

Before you begin

Before you complete this task you must have completed, Setting up the client workstation.

About this task

On the WebSphere® MQ client workstation, use the **amqsputc** sample program to put a message on the queue at the server workstation. Use the **amqsgetc** sample program to get the message from the queue back to the client:

Procedure

1. Change into the `/usr/mqm/samp/bin` directory, which contains the sample programs.
2. Put a message on the queue at the server using the following command:

```
./amqsputc QUEUE1 saturn.queue.manager
```

amqsputc displays the following messages:

```
Sample amqsput0 start
target queue is QUEUE1
```

3. Type some message text on one or more lines, followed by a blank line. You see the following message:

   ```
   Sample amqsput0 end
   ```

   Your message is now on the queue and the command prompt is displayed again.
4. To get the message from the queue located on the server, enter the following command:

   ```
   ./amqsgetc QUEUE1 saturn.queue.manager
   ```

   The sample program starts and your message is displayed. After a pause, the sample ends and the command prompt is displayed again.

Results

You have now successfully verified the client installation.

What to do next

You must now set the **mcauser** attribute back to its default value.

1. Start MQSC commands by entering the following command:

   ```
   runmqsc
   ```

   A message tells you that an MQSC session has started. MQSC has no command prompt.
2. In the MQSC window, set the **mcauser** attribute to its default value by entering the following command:

   ```
   alter channel(channel1) chltype (svrconn) mcauser(' ')
   ```
3. Stop MQSC by typing:

   ```
   end
   ```

   You see some messages, followed by the command prompt.

You have now set the **mcauser** attribute back to its default value.

Parent topic: Verifying the client installation

4. Installing a client on the same machine as a server

To install a WebSphere® MQ for AIX® client on a server machine, use the WebSphere MQ Server CD-ROM. Choose the Client component on the Server CD-ROM to install the client code on the server machine, and use the installation procedure described in Server installation procedure.

If you install a WebSphere MQ client on the same machine as a WebSphere MQ server, the client is not connected to the server automatically. Configure the communication channel (an MQI channel) between the client and the server, as described in Verifying the client installation.

Parent topic: Welcome to WebSphere MQ for AIX

5. Applying maintenance

How to maintain WebSphere® MQ for AIX®

Parent topic: Welcome to WebSphere MQ for AIX

This build: January 26, 2011 11:32:47

This topic's URL:
aq10710_

5.1. Applying maintenance

How to apply maintenance updates by stopping WebSphere MQ and using SMIT.

About this task

Use the System Management Interface Tool (**smit**) to install maintenance.

The same process applies to WebSphere® MQ client installations. Refer to the *WebSphere MQ Clients* book for more information about client installation.

To install maintenance updates:

Procedure

1. Stop all WebSphere MQ applications on the machine and the applications accessing remote machines. Any applications on the machine that are linked with the WebSphere MQ shared libraries must also be stopped before applying WebSphere MQ maintenance.The topic, Applying maintenance to a running queue manager, describes how to apply maintenance to a multi-instance queue manager while keeping the queue manager running on a different server.
2. End all WebSphere MQ activity:
   a. Log in as a user in `group mqm`.
   b. Use the **endmqm** command to stop all running queue managers.
   c. Stop any listeners associated with the queue managers, using the command:
      ```
      endmqlsr -m QMgrName
      ```
   d. To check that you have stopped all of them, enter the following:
      ```
      ps -ef | grep mq
      ```
      Check that there are no processes listed that are running command lines beginnings `amq` or `runmq`. Ignore any that start with `amqi`.
3. Log in as root
4. Display the appropriate **smit** panel using this sequence:
   ```
   Software Installation and Maintenance
    Install and Update Software
      Install and Update From ALL Available Software
   ```
   Alternatively, use a fast path command (**smit[ty] install_update**).
5. Click **List** to display the input device or directory for the software, select the location that contains the installation images.
6. Complete the **SOFTWARE to install** field. Enter **ALL** to install all applicable fileset updates to your

installation.

7. If you think that at a later time you might want to reject the maintenance updates and return to the backup level, you must ensure that:
   a. The **COMMIT software updates** value is set to **no**.
   b. The **SAVE replaced files** value is set to **yes**.

   By setting these values, you ensure that the updates are applied, and the old filesets are saved, not overwritten.
8. Press enter to display a confirmation message before starting the update. While the command runs, it displays progress messages ending with an **installp Summary** table, confirming which components of WebSphere MQ for AIX® have been updated. If the command does not complete successfully, a full error log is saved in the file **smit.log** in root's home directory.

Parent topic: Applying maintenance

This topic's URL:
aq10720_

5.2. Restoring the previous maintenance level

How to restore a previous maintenance level by stopping WebSphere MQ and using SMIT.

About this task

You can back out maintenance updates and restore your system to the previous maintenance/install level, for any component of WebSphere® MQ for AIX® that is in the **APPLIED** state.

To back out a maintenance update:

Procedure

1. Stop all WebSphere MQ applications on the machine and the applications accessing remote machines.
2. End all WebSphere MQ activity:
   a. Log in as a user in `group mqm`.
   b. Use the **endmqm** command to stop all running queue managers.
   c. Stop any listeners associated with the queue managers, using the command:
      ```
      endmqlsr -m QMgrName
      ```
   d. To check that you have stopped all of them, enter the following:
      ```
      ps -ef | grep mq
      ```
      Check that there are no processes listed that are running command lines beginnings `amq` or `runmq`. Ignore any that start with `amqi`.
3. Log in as root.
4. Display the appropriate **smit** panel using this sequence:
   ```
   Software Installation and Maintenance
     Software Maintenance and Utilities
       Reject Applied Software Updates (Use Previous Version)
   ```
   Alternatively, use a fastpath command (**smitty install_reject**).
5. Complete the SOFTWARE name field. Enter **mqm*** to restore all applicable fileset updates to your installation.
   Note: Although there is an option to restore only selected fileset updates for WebSphere MQ for AIX, this still results in all applicable fileset updates for the maintenance update being restored.
6. Use the displayed default values for all other fields to reject the current maintenance level and reinstate the previous maintenance or install level.
7. Press Enter to display a confirmation message, before starting the reject process. While the command runs, it displays progress messages terminating with an **Install Summary** table, confirming which

components of WebSphere MQ for AIX have been rejected.

Parent topic: Applying maintenance

5.3. Applying maintenance to a running queue manager

Use multi-instance queue managers to reduce the outage caused by applying maintenance updates. Follow these steps to apply maintenance to a multi-instance queue manager.

Before you begin

Maintenance is applied to the WebSphere® MQ installation on a server and not to individual queue managers. You need to stop all the queue managers, and any WebSphere MQ service, on a server before you apply maintenance.

If you want a queue manager to keep running while maintenance is applied, you need to configure it as a *multi-instance* queue manager, and have a standby instance running on another server. If a queue manager is an existing single instance queue manager, you need to convert it to a multi-instance queue manager. See the topic, Multi-instance queue managers for pre-requisites and guidance how to create a multi-instance queue manager.

You can create a multi-instance queue manager from v7.0.1 onwards. If you are running multi-instance queue managers, you then can apply a maintenance update to a *running* queue manager by switching the active instance to a different server.

Typically active and standby installations are maintained at the same maintenance level. Consult the maintenance instructions for each upgrade. Check if it is possible to run the active and standby instances at different maintenance levels. Check if fail over from higher to lower, or only lower to higher maintenance level is possible.

The instructions for applying a maintenance update might require you to stop a multi-instance queue manager completely.

If you have a primary server for running active queue manager instances, and a secondary server that runs standby instances, you have a choice of updating the primary or secondary server first. If you update the secondary server first, you need to switch back to the primary server once both servers have been updated.

If you have active and standby instances on several servers, you need to plan in what order you update the servers to minimize the disruption caused by ending the active instances on each server you update.

About this task

Combine the steps in this task with the maintenance update procedure for applying maintenance to a WebSphere MQ server installation.

Procedure

1. Where the maintenance update procedure instructs you to use the **endmqm** command to stop all running queue managers, do the following instead:
   a. If the queue manager is running as standby, end the standby with the **endmqm** `-x` *`QMgrName`* command.
   b. If the queue manager is running as the active instance, end the instance and transfer control to the standby instance with the **endmqm** *`-shutdown_option`* `-s` *`QMgrName`* command. If there is no standby instance running, the command fails, and you need to start a standby instance on a different server.
   c. If a queue manager is running as a single instance queue manager, you have no alternative but to stop the queue manager before applying the maintenance update.

   When you complete this step, no queue manager instances are left running on the server you intend to

update.

2. Continue with the maintenance update procedure, following the step to issue the **endmqm** command, and apply maintenance to the WebSphere MQ server.
3. When you have completed the maintenance update, restart all the queue managers on the WebSphere MQ server, permitting standby instances, using the **strmqm** `-x` *`QmgrName`* command.
4. Repeat the procedure on the standby server, to update its maintenance level.
5. If necessary, switch the active instances back to the primary servers, using the **endmqm** *`-shutdown_option`* `-s` *`QMgrName`* command, and the restart the instances using the **strmqm** `-x` *`QmgrName`* command.

Parent topic: Applying maintenance

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6. Installing and uninstalling GSKit Version 8 on AIX

You might want to use GSKit Version 8 instead of or in addition to GSKit Version 7. This collection of topics gives you instructions for installing and uninstalling GSKit Version 8.

The subcomponent that provides support for SSL and TLS on Windows, UNIX, and Linux systems is called GSKit. If you select SSL and TLS support when you install WebSphere® MQ V7.0.1, GSKit Version 7 is installed and run by default. Versions of WebSphere MQ V7.0.1 from Fix Pack 7.0.1.4 and later also contain an alternative, separate copy of GSKit, at Version 8. You can install and run this version instead of, or in addition to, GSKit Version 7.

Installing GSKit Version 8 on AIX
Compressed versions of the GSKit V8 packages are supplied. Uncompress and install them.

Uninstalling GSKit Version 8 on AIX
If you no longer need the functions provided by GSKit Version 8, and are not using it to provide the SSL or TLS infrastructure for products other than WebSphere MQ, you can uninstall it.

Parent topic: Welcome to WebSphere MQ for AIX

Related information
Alternative SSL and TLS support for Windows, UNIX, and Linux systems

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aq20040_

6.1. Installing GSKit Version 8 on AIX®

Compressed versions of the GSKit V8 packages are supplied. Uncompress and install them.

About this task
Compressed versions (`.tar` files) of the GSKit Version 8 runtime packages are placed in the directory into which you expand your WebSphere MQ fix pack. Files providing both 32-bit and 64-bit support are provided. Uncompress and install all these files.

Procedure

1. Log in as root.
2. Change to the directory into which you expanded the Fix Pack.
3. Uncompress the .tar files by using the following commands:

```
zcat gskcrypt32-8.0.14.3.aix.ppc.tar.Z | tar -xf -
zcat gskssl32-8.0.14.3.aix.ppc.tar.Z | tar -xf -
zcat gskcrypt64-8.0.14.3.aix.ppc.tar.Z | tar -xf -
zcat gskssl64-8.0.14.3.aix.ppc.tar.Z | tar -xf -
```

   The string *8.0.14.3* represents the version number of GSKit being installed and can vary as new modifications of GSKit are released.

4. Install GSKit v8 by using the following commands:

```
inutoc /tmp/MQ/gsk8
installp -acgqw -d /tmp/MQ/gsk8 GSKit8.gskcrypt32.ppc.rte \
GSKit8.gskssl32.ppc.rte \
GSKit8.gskcrypt64.ppc.rte \
GSKit8.gskssl64.ppc.rte
```

   /tmp/MQ represents the directory into which you expanded the fix pack.

Parent topic: Installing and uninstalling GSKit Version 8 on AIX

This topic's URL:
aq20050_

6.2. Uninstalling GSKit Version 8 on AIX®

If you no longer need the functions provided by GSKit Version 8, and are not using it to provide the SSL or TLS infrastructure for products other than WebSphere® MQ, you can uninstall it.

Procedure

Uninstall GSKit v8 by using the following command:

```
installp -u -g -V2 gskcrypt32.ppc.rte gskssl32.ppc.rte gskcrypt64.ppc.rte gskssl64.ppc.rte
```

Parent topic: Installing and uninstalling GSKit Version 8 on AIX

This topic's URL:
aq20060_

7. Uninstalling WebSphere MQ

About this task

This topic describes how to uninstall WebSphere® MQ for AIX® using the System Management Interface Tool (smit).

Procedure

1. Stop all WebSphere MQ applications on the machine and the applications accessing remote machines.
2. Log in as a user in `group mqm`.
3. Use the **endmqm** command to stop any running queue managers.
4. Stop any listeners associated with the queue managers, using the command:

```
endmqlsr -m QMgrName
```

5. Log in a root.
6. To display the appropriate panel, use the following sequence:

```
Software Installation and Maintenance
  Software Maintenance and Utilities
    Remove Installed Software
```

Alternatively, use a fastpath command (smitty install_remove).

7. Press F4 to list the software in the **SOFTWARE name** field.
8. Select the filesets to uninstall from the list (those beginning with mqm), and pressEnter. There is an option at this stage to do a preview.
9. Press **Enter** on the **Remove Installed Software** panel, it will ask whether you are sure, press **Enter**.

What to do next

Note: If the product was successfully uninstalled, you can delete the files and directories contained in `/usr/mqm`. If for any reason the product was not properly uninstalled, files might still exist in the package.

Unless you are planning to reinstall, after uninstalling WebSphere MQ, delete the /var/mqm directory tree.

Parent topic: Welcome to WebSphere MQ for AIX

8. WebSphere MQ Documentation

Where to find information describing WebSphere MQ.

See the main information center page.

Parent topic: Welcome to WebSphere MQ for AIX