



Sun Java™ System

# Message Queue 3 Installation Guide

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2005Q4

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U.S.A.

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# Preface

This book explains how to install Sun Java™ System Message Queue 3 2005Q4 (3.6 SP3), Platform Edition (formerly Sun™ ONE Message Queue).

This preface contains the following sections:

- “Who Should Use This Book” on page 9
- “Before You Read This Book” on page 10
- “How This Book Is Organized” on page 11
- “Conventions Used In This Book” on page 11
- “Related Documentation” on page 15
- “Related Third-Party Web Site References” on page 18
- “Sun Welcomes Your Comments” on page 18

## Who Should Use This Book

The audience for this guide is Sun Java System Message Queue developers and administrators. This book has some fundamental information that users should be able to use installing either Enterprise Edition or Platform Edition. For reference information such as installed images, Enterprise Edition users should refer to this book.

# Before You Read This Book

You should read the *Message Queue Release Notes* for hardware and software requirements for your platform, and for information on supported third-party software components. The *Message Queue Release Notes* also describe new features and enhancements, known issues and limitations, and other information related to this release of Message Queue.

# How This Book Is Organized

All users should read the introduction and then the appropriate platform-specific chapter. [Table 1](#) briefly describes the contents of each chapter:

**Table 1** Book Contents

Chapter	Description
<a href="#">Chapter 1, "Introduction"</a>	Explains the Message Queue editions, the Message Queue software modules, and the installed directory structure, as well as compatibility issues for those upgrading from a previous Message Queue release.
<a href="#">Chapter 2, "Solaris Installation"</a>	Explains the hardware and software requirements, defaults, and installation procedure for Solaris, as well as how to uninstall the product on this platform.
<a href="#">Chapter 3, "Linux Installation"</a>	Explains the hardware and software requirements, defaults, and installation procedure for Linux, as well as how to uninstall the product on this platform.

## Conventions Used In This Book

This section provides information about the conventions used in this document.

### Text Conventions

**Table 2** Document Conventions

Format	Description
<i>italics</i>	Italicized text represents a placeholder. Substitute an appropriate clause or value where you see italic text. Italicized text is also used to designate a document title, for emphasis, or for a word or phrase being introduced.
monospace	Monospace text represents example code, commands that you enter on the command line, directory, file, or path names, error message text, class names, method names (including all elements in the signature), package names, reserved words, and URLs.
[ ]	Square brackets to indicate optional values in a command line syntax statement.

**Table 2** Document Conventions (*Continued*)

Format	Description
ALL CAPS	Text in all capitals represents file system types (GIF, TXT, HTML and so forth), environment variables (IMQ_HOME), or acronyms (JDK, JSP).
Key+Key	Simultaneous keystrokes are joined with a plus sign: Ctrl+A means press both keys simultaneously.
Key-Key	Consecutive keystrokes are joined with a hyphen: Esc-S means press the Esc key, release it, then press the S key.

## Directory Variable Conventions

Message Queue makes use of three directory variables; how they are set varies from platform to platform. [Table 3](#) describes these variables and summarizes how they are used on the Solaris, Windows, and Linux platforms.

**Table 3** Message Queue Directory Variables

Variable	Description
<code>IMQ_HOME</code>	<p>This is generally used in Message Queue documentation to refer to the Message Queue base directory (root installation directory):</p> <ul style="list-style-type: none"> <li>On Solaris and Linux, there is no root Message Queue installation directory. Therefore, <code>IMQ_HOME</code> is not used in Message Queue documentation to refer to file locations on Solaris and Linux.</li> <li>On Windows, the root Message Queue installation directory is set by the Message Queue installer (by default, as <code>C:\Sun\MessageQueue</code>).</li> <li>On Windows, for Sun Java System Application Server, the root Message Queue installation directory is <code>/imq</code> under the Application Server base directory.</li> </ul>

**Table 3** Message Queue Directory Variables (*Continued*)

Variable	Description
<b>IMQ_VARHOME</b>	<p>This is the <code>/var</code> directory in which Message Queue temporary or dynamically-created configuration and data files are stored. It can be set as an environment variable to point to any directory.</p> <ul style="list-style-type: none"> <li>• On Solaris, <code>IMQ_VARHOME</code> defaults to the <code>/var/imq</code> directory.</li> <li>• On Solaris, for Sun Java System Application Server, Evaluation Edition, <code>IMQ_VARHOME</code> defaults to the <code>IMQ_HOME/var</code> directory.</li> <li>• On Linux, <code>IMQ_VARHOME</code> defaults to the <code>/var/opt/sun/mq</code> directory</li> <li>• On Windows <code>IMQ_VARHOME</code> defaults to the <code>IMQ_HOME\var</code> directory.</li> <li>• On Windows, for Sun Java System Application Server, <code>IMQ_VARHOME</code> defaults to the <code>IMQ_HOME\var</code> directory.</li> </ul>
<b>IMQ_JAVAHOME</b>	<p>This is an environment variable that points to the location of the Java runtime (JRE) required by Message Queue executables:</p> <ul style="list-style-type: none"> <li>• On Solaris, <code>IMQ_JAVAHOME</code> looks for the java runtime in the following order, but a user can optionally set the value to wherever the required JRE resides. <ul style="list-style-type: none"> <li>Solaris 8 or 9: <pre>/usr/jdk/entsys-j2se /usr/jdk/jdk1.5.* /usr/jdk/j2sdk1.5.* /usr/j2se</pre> </li> <li>Solaris 10: <pre>/usr/jdk/entsys-j2se /usr/java /usr/j2se</pre> </li> </ul> </li> <li>• On Linux, Message Queue first looks for the java runtime in the following order, but a user can optionally set the value of <code>IMQ_JAVAHOME</code> to wherever the required JRE resides. <pre>/usr/jdk/entsys-j2se /usr/java/jre1.5.* /usr/java/jdk1.5.* /usr/java/jre1.4.2* /usr/java/j2sdk1.4.2*</pre> </li> <li>• On Windows, <code>IMQ_JAVAHOME</code> will be set to point to an existing Java runtime in <code>C:\Program Files\Java</code> if a supported version is found. If a supported version is not found, then one will be installed.</li> </ul>

**In this guide, `IMQ_HOME`, `IMQ_VARHOME`, and `IMQ_JAVAHOME` are shown *without* platform-specific environment variable notation or syntax (for example, `$IMQ_HOME` on UNIX). Path names generally use UNIX directory separator notation (`/`).**

# Related Documentation

In addition to this guide, Message Queue provides additional documentation resources.

## The Message Queue Documentation Set

The documents that comprise the Message Queue documentation set are listed in [Table 4](#) in the order in which you would normally use them.

**Table 4** Message Queue Documentation Set

Document	Audience	Description
<i>Message Queue Installation Guide</i>	Developers and administrators	Explains how to install Message Queue software on Solaris and Linux platforms.
<i>Message Queue Release Notes</i>	Developers and administrators	Includes descriptions of new features, limitations, and known bugs, as well as technical notes.
<i>Message Queue Technical Overview</i>	Developers and administrators	Describes Message Queue concepts, features, and components.
<i>Message Queue Developer's Guide for Java Clients</i>	Developers	Provides a quick-start tutorial and programming information for developers of Java client programs using the Message Queue implementation of the JMS or SOAP/JAXM APIs.
<i>Message Queue Administration Guide</i>	Administrators, also recommended for developers	Provides background and information needed to perform administration tasks using Message Queue administration tools.
<i>Message Queue Developer's Guide for C Clients</i>	Developers	Provides programming and reference documentation for developers of C client programs using the Message Queue C implementation of the JMS API. (C-API).

## Online Help

Message Queue 3 2005Q4 includes command-line utilities for performing Message Queue message service administration tasks. To access the online help for these utilities, see the *Message Queue Administration Guide*.

Message Queue 3 2005Q4 also includes a graphical user interface (GUI) administration tool, the Administration Console (`imqadmin`). Context sensitive online help is included in the Administration Console.

## JavaDoc

JMS and Message Queue API documentation in JavaDoc format is provided at the following location:

Platform	Location
Solaris	<code>/usr/share/javadoc/imq/index.html</code>
Linux	<code>/opt/sun/mq/javadoc/index.html/</code>
Windows	<code>IMQ_HOME/javadoc/index.html</code>

This documentation can be viewed in any HTML browser such as Netscape or Internet Explorer. It includes standard JMS API documentation as well as Message Queue-specific APIs for Message Queue administered objects (see Chapter 3 of the *Message Queue Developer's Guide for Java Clients*), which are of value to developers of messaging applications.



## Example Client Applications

Message Queue provides a number of example client applications to assist developers.

### Example Java Client Applications

Example Java client applications are located in the following directories, depending on platform. See the `README` file located in these directories and in each of their subdirectories.

Platform	Location
Solaris	<code>/usr/demo/imq/</code>
Linux	<code>/opt/sun/mq/examples/</code>
Windows	<code>IMQ_HOME\demo\</code>

### Example C Client Applications

Example C client applications are located in the following directories, depending on platform. See the `README` file located in these directories.

Platform	Location
Solaris	<code>/opt/SUNWimq/demo/C/</code>
Linux	<code>/opt/sun/mq/examples/C/</code>
Windows	<code>IMQ_HOME\demo\C\</code>

## The Java Message Service (JMS) Specification

The JMS specification can be found at the following location:

<http://java.sun.com/products/jms/docs.html>

The specification includes sample client code.

## Related Third-Party Web Site References

Third-party URLs are referenced in this document and provide additional, related information.

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# Introduction

This chapter provides an overall introduction to installing the Sun Java™ System Message Queue 3 2005Q4 (3.6 SP3) product. The topics covered are the following:

- [Product Editions](#)
- [Supported Platforms and Products](#)
- [Message Queue Software Modules](#)
- [Installing from Web](#)
- [Migration Issues](#)
- [Where To Go Next](#)

## Product Editions

The Sun Java System Message Queue product is available in two editions: Platform and Enterprise—each containing different features and corresponding to a different licensed capacity, as described below. (To upgrade Message Queue from one edition to another, see [“Migration Issues” on page 22.](#))

## Platform Edition

This edition can be downloaded free from the Sun web site and is also bundled with the Sun Java System Application Server product. The Platform Edition places no limit on the number of JMS client connections supported by each Message Queue message server. It comes with two licenses, as described below:

- **a basic license.** This license provides basic JMS support (it is a fully compliant JMS provider), but does *not* include such enterprise features as load balancing (multi-broker message service), HTTP/HTTPS connections, scalable connection capability, queue delivery to more than three consumers, and C client support. The license has an unlimited duration, and can therefore be used in less demanding production environments.
- **a 90-day trial enterprise license.** This license includes all enterprise features (such as support for multi-broker message services, HTTP/HTTPS connections, secure connection services, scalable connection capability, queue delivery to more than three consumers, and C- client support) *not* included in the basic license. However, the license has a limited 90-day duration enforced by the software, making it suitable for evaluating the enterprise features available in the Enterprise Edition of the product (see [“Enterprise Edition”](#)).

---

**NOTE** The 90-day trial license can be enabled by starting the Message Queue message service—a Message Queue broker instance—with the `-license` command line option (see the *Message Queue Administration Guide*) and passing “try” as the license to use:

```
imqbrokerd -license try
```

You must use this option each time you start the broker instance, otherwise it defaults back to the basic Platform Edition license.

The trial license usage period starts the first time you run the broker, regardless of which edition you start using. For example, if you enable the trial license sixty days after the first time you run the broker, you would only have thirty days left on the 90-day trial license. If you need additional time, you can do one of the following:

- Reinstall the product to establish a new starting date for your trial license.
  - Send mail to [imq-feedback@sun.com](mailto:imq-feedback@sun.com) to extend your trial license.
-

## Enterprise Edition

This edition is only bundled with Sun Java™ Enterprise System. This edition is for deploying and running messaging applications in a production environment. It includes support for multi-broker message services, HTTP/HTTPS connections, secure connection services, scalable connection capability, client connection failover, queue delivery to more than three consumers, and C client support. You can also use the Enterprise Edition for developing, debugging, and load testing messaging applications and components. The Enterprise Edition has an unlimited duration license that places no limit on the number of brokers in a multi-broker message service. Licenses are purchased based on the number of CPUs.

## Supported Platforms and Products

Message Queue 3 2005Q4 is supported on Solaris and Linux operating systems and platforms. It also depends upon other technologies, as indicated in the *Message Queue Release Notes*. Other versions or vendor implementations can also be used but they are untested by Sun Microsystems and therefore not supported.

## Message Queue Software Modules

[Table 1-1](#) identifies the full set of software modules included with the Message Queue product.

**Table 1-1** Message Queue Software Modules

Module	Contents
Broker	The server-side software used to route and deliver messages. This module requires the Java runtime module.
Administration tools	The command-line utilities and GUI tools used to administer a Message Queue messaging system. This module requires the client runtime and Java runtime modules.
Java client runtime	Jar files needed to write and compile Java clients using the Message Queue Java API.
C client runtime	Libraries and header files needed to write and compile C clients using the Message Queue C API.
Documentation	API documentation needed by Java client application developers in JavaDoc format.

**Table 1-1** Message Queue Software Modules (*Continued*)

Module	Contents
Example applications	Example client applications.
JDK runtime	JDK Runtime Environment (Windows only).
License	The software needed to enable the licensed capacity of a Message Queue messaging system.

## Installing from Web

You can download Message Queue 3 2005Q4 from the product web site:

[http://www.sun.com/software/message\\_queue/](http://www.sun.com/software/message_queue/)

For detailed instructions, see the platform-specific instructions in subsequent chapters. The installed directory structure is described for each platform in the chapter describing that platform.

---

**NOTE** If you want to upgrade to Message Queue 3 2005Q4 (3.6 SP3), Enterprise Edition, you must purchase Message Queue 3 2005Q4, Enterprise Edition and use the Sun Java™ Enterprise System installer to upgrade your version of Message Queue. Refer to the Sun Java Enterprise System Installation Guide for more information.

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## Migration Issues

This section covers issues you need to be aware of when migrating to Message Queue 3 2005Q4 from 3.6, 3.5, and 3.0.x versions. These issues fall into two general categories: platform issues and compatibility issues.

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**NOTE** Migration of Message Queue versions prior to 3.0.1 are not supported.

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## Platform Issues

This section describes issues specific to the Solaris and Linux platforms.

### Solaris

On the Solaris platform, you can install Message Queue 3 2005Q4 (3.6 SP3) on top of Message Queue 3.0.x, 3.5, and 3.6 versions, and your previous instance data (configuration properties, flat-file persistent store, log files, flat-file user repository, and/or access control properties file) will be used by Message Queue 3 2005Q4 (see [“Compatibility Issues” on page 24](#)).

If you depended on jar files being in their 3.0.x locations, please note that these have been moved to the `/usr/share/lib` directory. This applies to the following .jar files: `jms.jar`, `imq.jar`, `imqxm.jar`, `activation.jar`, `saaj-api.jar`, `saaj-impl.jar`, `mail.jar`, `commons-logging.jar`, `jaxm-api.jar`, `fscontext.jar`.

- In Message Queue 3.0, these files were in the `/usr/share/lib/imq` directory
- In Message Queue 3.0.1, these files were in the `/usr/share/lib` directory, with sym links in the `/usr/share/lib/imq` directory

In Message Queue 3 2005Q4 there are no symbolic links files.

### Linux

On the Linux platform, you should uninstall any prior Message Queue versions before installing Message Queue 3 2005Q4, and *not* try to install Message Queue 3 2005Q4 on top of them. This is due to the fact that the installed directory structure has been changed for Message Queue 3 2005Q1 and later versions, and this complicates the migration of instance data (configuration properties, flat-file persistent store, log files, flat-file user repository, and/or access control properties file) from Message Queue 3.0.x and 3.5 to Message Queue 3 2005Q4. The utility `mqmigrate` is provided to ease the migration of this data (see [“Finding and Removing Earlier Message Queue Versions” on page 49](#)).

Users need to uninstall the 3.0.x, 3.5, or 2005Q1 (3.6) Red Hat Package Manager (RPM) packages and then to install the 3 2005Q4 RPM packages using `mqinstall`.

#### *Script Compatibility*

Scripts that use hard-coded paths to the Linux installations of Message Queue 3.5 or earlier versions of Message Queue will need to be changed to the new location of Message Queue. If you need symbolic links that point the old locations to the new locations, you must install the `sun-mq-compat` RPM package. This package may not be supported in future releases.

## Compatibility Issues

Message Queue 3 2005Q4 (3.6 SP3) is primarily a bug fix release update from Message Queue 3 2005Q1 (3.6) and is fully compatible with Message Queue 3 2005Q1 (3.6).

Message Queue 3 2005Q4 is generally compatible with Message Queue 3.0.x and 3.5. However, changes have been made in broker properties, administered objects, persistence schema, file locations, and administration tools that can impact a migration from Message Queue 3.0.x and 3.5 versions to Message Queue 3 2005Q4.

The Message Queue 3 2005Q4 install operation does not remove or over-write the Message Queue 3.0.x or 3.5 `IMQ_VARHOME` directory. This directory contains configuration and security-related files (see [Table 1-2 on page 26](#)). Most of this data is compatible with Message Queue 3 2005Q4, and can be preserved using the instructions in the following sections.

The issues that you might need to address when migrating from Message Queue 3.0.x and 3.5 to Message Queue 3 2005Q4 include the following:

- [Broker Compatibility](#)
- [Administered Object Compatibility](#)
- [Administration Tool Compatibility](#)
- [Client Compatibility](#)

### Broker Compatibility

A Message Queue 3 2005Q4 broker will inter-operate with a Message Queue 3.0.x or 3.5 broker, however changes have been made in broker properties and the persistent store schema. Some Message Queue 3.0.x data is compatible with Message Queue 3 2005Q4, as shown in [Table 1-2 on page 26](#), and can be used after migrating to Message Queue 3 2005Q4.

Message Queue 3.5 data is generally compatible with Message Queue 3 2005Q4, and can be used after migrating to Message Queue 3 2005Q4.

When migrating from Message Queue 3.0.x or 3.5 to Message Queue 3 2005Q4, you should consider the following:

- You can use Message Queue 3.0.x or 3.5 `config.properties` files, or you can copy them to another location and consult the property settings they contain when you configure Message Queue 3 2005Q4 brokers.



- Any persistent Message Queue 3.0.x or 3.5 data—messages, destinations, durable subscriptions—is automatically converted to Message Queue 3 2005Q4 data when starting up a Message Queue 3 2005Q4 broker for the first time. For example, any existing Message Queue 3.0.x or 3.5 destinations will be converted to Message Queue 3 2005Q4 destinations, preserving existing attributes and using default values of new attributes.

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**NOTE** The following information applies to Message Queue 3.0.x migration only. For Message Queue 3.5, the conversion is minor, transparent and compatible.

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The automatic migration of persistent data leaves the Message Queue 3.0.x data intact. You can delete this data by using the following option when starting up the Message Queue 3 2005Q4 broker for the first time:

```
imqbrokerd -upgrade-store-nobackup
```

If you do *not* use this option, you should delete the old persistent store manually:

- For a built-in (flat file) data store, delete the old persistent store, located at  
`.../instances/instanceName/filestore/`
- For a plugged-in (JDBC-compliant) data store, delete the old tables using the following command:

```
imqdbmgr delete oldtbl
```

---

**NOTE** When you migrate persistent data from Message Queue 3.0.x to Message Queue 3 2005Q4, the migrated data can no longer be used by a Message Queue 3.0.x broker. If this is a concern, save the old persistent data to a secure location instead of deleting it as directed above.

---

- Note: Applies to Message Queue 3.0.x only. You can continue to use the Message Queue 3.0.x user repository and access control properties files after installing Message Queue 3 2005Q4, however these files have been made instance-specific and are now placed in the `.../instances/instanceName/etc` directories. The Message Queue 3 2005Q4 installer does not overwrite the Message Queue 3.0.x files. When you first start up a Message Queue 3 2005Q4 broker, copies of the Message Queue 3.0.x files are placed in the appropriate

Message Queue 3 2005Q4 location (see the *Message Queue Administration Guide*, Appendix A). If Message Queue 3.0.x user repository and access control properties files are not found at the old location, new files will be created in the `.../instances/instanceName/etc` directory.

- If you mix Message Queue 3.0.x or 3.5 brokers and Message Queue 3 2005Q4 brokers in a cluster, the master broker must be a Message Queue 3.0.x or 3.5 broker (whichever is older), and the cluster will run as a Message Queue 3.0.x or 3.5 cluster.

**Table 1-2** Compatibility of Message Queue 3 2005Q4 with Message Queue 3.0.x Data

Message Queue 3.0.x Data Category	Location of Message Queue 3.0.x Data	Compatibility with Message Queue 3 2005Q4
Broker properties	<code>IMQ_VARHOME/instances/<i>instanceName</i>/props/config.properties</code>	New properties have been added, and some property names have changed. Old property names are still recognized.
Persistent store: messages, destinations, durable subscriptions	<code>IMQ_VARHOME/instances/<i>instanceName</i>/filestore/</code> or JDBC-accessible data store	Converted to Message Queue 3 2005Q4 format when Message Queue 3 2005Q4 broker is started for the first time.  The persistent store is at <code>IMQ_VARHOME/<i>instanceName</i>/fs350</code>
Security: flat-file user repositories	<code>/etc/imq/passwd</code> (Solaris) <code>IMQ_HOME/etc/passwd</code> (other platforms)	Compatible. File automatically copied to following location at first broker startup: <code>.../instances/<i>instanceName</i>/etc/passwd</code>
Security: access control file	<code>/etc/imq/accesscontrol.properties</code> (Solaris) <code>IMQ_HOME/etc/accesscontrol.properties</code> (other platforms)	Compatible. File automatically copied to following location at first broker startup: <code>.../instances/<i>instanceName</i>/etc/accesscontrol.properties</code>

## Administered Object Compatibility

Message Queue 3 2005Q4 administered objects have been enhanced with new attributes and some Message Queue 3.0.x and 3.5 attributes have been renamed. Therefore, when migrating from Message Queue 3.0.x or 3.5 to Message Queue 3 2005Q4, you should consider the following:

- You can use the same object store and administered objects that you created in Message Queue 3.0.x or 3.5; however, it is best to upgrade your administered objects after installing Message Queue 3 2005Q4. The Administration Console (`imqadmin`) and the ObjectManager command line utility (`imqobjmgr`), when performing an update operation, will convert Message Queue 3.0.x and 3.5 administered objects into Message Queue 3 2005Q4 administered objects.
- The Message Queue 3 2005Q4 client runtime will look up and instantiate Message Queue 3.0.x and 3.5 administered objects and convert them for use by Message Queue 3 2005Q4 clients. However, this will *not* convert Message Queue 3.0.x and 3.5 administered objects residing in the object store from which the lookup was made.
- Existing Message Queue 3.0 and 3.5 clients (applications and/or components)—that is, clients that directly instantiate administered objects—are compatible with Message Queue 3 2005Q4. However, if they are to use the *new* administered object attributes (see Chapter 2 of the *Message Queue Developer's Guide for Java Clients* and Chapter 16 of the *Message Queue Administration Guide* for information on administered object attributes), they will need to be rewritten. (Re-compiling Message Queue 3.0.x and 3.5 clients with Message Queue 3 2005Q4 will show which Message Queue 3.0.x and 3.5 attributes have been renamed in Message Queue 3 2005Q4. The old names will still work.)
- Scripts that start Java clients and which set administered object attribute values using command line options are compatible with Message Queue 3 2005Q4. However, if they are to use the *new* administered object attributes (see Chapter 2 of the *Message Queue Developer's Guide for Java Clients* and Chapter 16 of the *Message Queue Administration Guide* for information on administered object attributes), they will need to be rewritten.

## Administration Tool Compatibility

Because of the addition of new commands and new administrative capabilities, the Message Queue 3 2005Q4 administration tools (the Administration Console and command line utilities) only work with Message Queue 3 2005Q4 brokers. However, all Message Queue 3.0.x and 3.5 commands and command options remain supported.

## Client Compatibility

When upgrading from Message Queue 3.0.x or 3.5 to Message Queue 3 2005Q4, you should consider the following, regarding Java clients:

- A Message Queue 3 2005Q4 broker will support a Message Queue 3.0.x or 3.5 client (but without additional Message Queue 3 2005Q4 capabilities).

- A Message Queue 3 2005Q4 Java client can connect to a Message Queue 3.0.x or 3.5 broker (but without additional Message Queue 3 2005Q4 capabilities).
- Java clients built on JDK 1.3 or 1.4 can inter-operate with a broker running JRE 1.4. However, clients that use a secure (SSL-based) connection to a broker will require additional JSSE and JNDI libraries if they are not built on JDK 1.4 (which includes these libraries). These libraries are provided on each platform as follows:
  - on Solaris, in the `SUNWiqsup` package, which is not installed by default
  - on Linux, in the `sun-mq-sup` RPM package, which is not installed by default.
- C client programs cannot connect to a Message Queue 3.0.x broker; they are supported only by Message Queue 3.5, 3.5 SPx, 3 2005Q1 (3.6), or 3 2005Q4 (3.6 SP3) brokers running with a trial or enterprise license.

## Where To Go Next

When you are ready to install Message Queue on a specific platform, see the appropriate chapter for your platform (Solaris or Linux). Each chapter contains hardware and software requirements, installation procedures, and other relevant instructions, such as how to upgrade editions and how to proceed after installation.

# Solaris Installation

This chapter explains the following topics as they apply to a Solaris installation of Message Queue 3 2005Q4 (3.6 SP3), Platform Edition:

- [Hardware and Software Requirements](#)
- [Installing Message Queue on Solaris](#)
- [Configuring Message Queue for Automatic Startup](#)
- [Configuring the Java Runtime for Message Queue](#)
- [Where To Go Next](#)
- [Uninstalling Message Queue on Solaris](#)

## Hardware and Software Requirements

At a minimum, your Solaris™ system (SPARC™ or x86) should satisfy the requirements indicated in the following table.

**Table 2-1** Hardware and Software Requirements for Solaris

Component	Requirements
Operating system	Solaris 8, Solaris 9, Solaris 10 (SPARC platforms) Solaris 9, Solaris 10 (x86 platform) <b>Note:</b> To ensure proper operation of Message Queue, you should install all required Solaris Patches for Java 2 Platform, Standard Edition 5.0. For the latest information about the patches and to download the recommended and required patches, see: <a href="http://java.sun.com/j2se/1.5.0/download.jsp">http://java.sun.com/j2se/1.5.0/download.jsp</a>

**Table 2-1** Hardware and Software Requirements for Solaris (*Continued*)

Component	Requirements
CPU	Sun UltraSPARC™ Intel Pentium 2 (or compatible)
RAM	256 Mbytes
Disk space	The compressed installation file is approximately 33 Mbytes on the SPARC platform and 22 Mbytes on the x86 platform.  The temporary working directory used for extracting the installation files requires an additional 33 Mbytes on the SPARC platform and 22 Mbytes on the x86 platform.  The installed product requires approximately 33 Mbytes of hard drive space on the SPARC platform and 22 Mbytes on the x86 platform. Message Queue, however, may need more space if the broker stores persistent messages locally.
Java 2 Platform, Standard Edition (J2SE)	See the <i>Message Queue Release Notes</i> for the supported versions of the Java Runtime Environment (JRE) and Java Software Development Kit (JDK) that are supported on Solaris.  The Message Queue software distribution includes the required JRE version at the time of release.

## Installing Message Queue on Solaris

The Sun Java System Message Queue product can be downloaded from the Sun Java System website. For hardware and software requirements for component products that can be used with Message Queue, see the *Message Queue Release Notes*.

### Finding Earlier Message Queue Versions

Because Message Queue is installed with other products (such as Solaris 9, Solaris 10, Sun Java System Application Server, and possibly others), you should check whether Message Queue has already been installed on your system. To do so, enter the following command:

```
pkginfo | grep SUNWiq
```

If Message Queue packages are already installed, you can check the version by entering:

```
pkgparam -v SUNWiqu SUNW_PRODVERS
```

The product version is the value of `SUNW_PRODVERS`. [Table 2-2](#) shows the `SUNW_PRODVERS` value returned for each release.

**Table 2-2** Value of `SUNW_PRODVERS` Returned for Message Queue

Message Queue Release	<code>SUNW_PRODVERS</code> Value of the <code>SUNWiqu</code> Package
3.0.1	3.0.1
3.0.1 SP1	3.0.1 SP1
3.0.1 SP 2	3.0.1 SP2
3.5	3.5
3.5 SP1	3.5 SP1
3.5 SP2	3.5 SP2
3 2005Q1 (3.6)	3.6.0.0
3 2005Q1 (3.6 SP1)	3.6.0.1
3 2005Q4 (3.6 SP2)	3.6.0.2
3 2005Q4 (3.6 SP3)	3.6.0.3

To check the Message Queue edition installed on your system, enter the following command:

```
pkginfo | grep SUNWiquen
```

If the following output appears, you have Enterprise Edition installed on your system:

```
application SUNWiquen      Sun Java(tm) System Message Queue Enterprise
Edition Broker
```

If the `SUNWiquen` package is not listed, you have Platform Edition installed.

If you find that a previous installation already exists on your system, see [“Upgrading from Previous Versions”](#) for information on upgrading to Message Queue 3 2005Q4.

## Upgrading from Previous Versions

To upgrade from Message Queue 3.0.x, 3.5, and 3.6 Platform Edition versions, you need not uninstall those versions—they will be over-written.

---

**NOTE** If you want to upgrade to Message Queue 3 2005Q4 (3.6 SP3), Enterprise Edition, you must purchase Message Queue 3 2005Q4, Enterprise Edition and use the Sun Java™ Enterprise System installer to upgrade your version of Message Queue. Refer to the *Sun Java Enterprise System Installation Guide* for more information.

---

## Installed Directory Structure

The install image below reflects a full (all packages) Solaris installation. This image might vary if you perform a partial installation.

---

**NOTE** File locations for Message Queue bundled with Sun Java System Application Server may differ from locations specified in [Table 2-3](#).

---

**Table 2-3** Installed Directory Structure: Solaris

Solaris	Contents
COPYRIGHT (not installed)	Copyright text file
LICENSE (not installed)	License text file
LICENSEREADME/THIRDPARTY- LICENSEREADME (not installed)	License for third party software distributed by Message Queue: DOM4J, Apache Commons Logging
README (not installed)	README text file
/usr/bin/	Contains the executables for the broker ( <code>imqbrokerd</code> ) and the following Message Queue administration tools: <ul style="list-style-type: none"> <li>• Administration Console (<code>imqadmin</code>)</li> <li>• Command (<code>imqcmd</code>)</li> <li>• Object Manager (<code>imqobjmgr</code>)</li> <li>• User Manager (<code>imqusermgr</code>)</li> <li>• Database Manager (<code>imqdbmgr</code>)</li> <li>• Key Tool (<code>imqkeytool</code>)</li> </ul>

---



**Table 2-3** Installed Directory Structure: Solaris (*Continued*)

<b>Solaris</b>	<b>Contents</b>
/usr/share/lib/	Contains files that support the Message Queue Java client runtime: /*.jar jar files used to build and run Java JMS client applications /*.rar rar files used for Message Queue resource adapter
/usr/share/lib/imq/	Contains files used to support Message Queue tools and processes: /ext location for placing files needed for plug-in persistence capability /*.war war files used for HTTP servlet deployment /*.jar jar files used by the Message Queue system /props subdirectory contains the broker's default configuration files /help subdirectory contains Message Queue help files /images
/etc/imq/	Contains license files, instance template files, and rc script configuration files that can be used for automatic startup
/var/imq/	Working storage directory for Message Queue. /instances subdirectory which will contain configuration files, log files, access control files, flat-file user repository, and file-based persistent data stores for each broker instance
/usr/share/ javadoc/imq/	Contains the Message Queue and JMS API documentation distributed as Javadoc (HTML)
/usr/demo/imq/	Source code for and instructions on how to run Java client example applications:
/opt/SUNWimq/ include/	Header files needed to support Message Queue C clients (when using the Enterprise Edition try license)
/opt/SUNWimq/ lib/	Libraries needed to support Message Queue C clients (when using the Enterprise Edition try license) <sup>1</sup>
/opt/SUNWimq/ demo/C/	Examples for writing C clients (when using the Enterprise Edition try license)

1. See the *Message Queue Release Notes* for the versions of NSPR and NSS needed to support the C-API.

## Installing Message Queue

The following instructions explain how to download and install the Message Queue product on Solaris from the Sun Java System website.

### ► To Install Message Queue on Solaris

1. Read the product license. Installation and use of the product is subject to acceptance of the license agreement.
2. Download the Message Queue product distribution file from the website into an empty, temporary working directory, *temp\_directory*.

The zipped distribution file name depends on the Message Queue hardware platform:

**Table 2-4** Message Queue 3 2005Q4 Solaris Distribution Files

Edition	SPARC	X86
Platform	mq3_6-plt-solsparc.zip	mq3_6-plt-soli386.zip

3. Change directories:

```
cd temp_directory
```

4. Unzip the distribution file.

```
unzip mq3_6-plt-platform.zip
```

where *platform* is solsparc or soli386, depending on the platform.

The `unzip` command creates a `mq3_6-plt` directory which contains the distribution files: `LICENSE`, `README`, `LICENSEREADME/THIRDPARTYLICENSEREADME`, and `COPYRIGHT` files; `install` and `uninstall` scripts; and a `pkgs` directory that contains the Message Queue packages, as well as shared Solaris packages that have been updated for use with Solaris 8 (SunOS5.8) and Solaris 9 (SunOS5.9).

[Table 2-5](#) describes the Message Queue packages, and [Table 2-6 on page 37](#) provides a guide to the packages you need for different use scenarios. In addition, if any of these files already exist on your system, you need to check whether the patch revision number is greater than that provided by Message Queue. If it is, you should do a custom install.

**Table 2-5** Packages in Solaris Bundle

#	Package	Description	Note
1	SUNWiqcdv	C header files and demo files	Required for developing C client programs.
2	SUNWiqcrt	C client shared libraries	Required for running C client programs.
3	SUNWiqdoc	Message Queue Java client API javadoc and example applications	Needed only for Java client development.
4	SUNWiqfs	Message Queue JNDI File System Service Provider	Required only for client development and administration tools that use the JNDI File System Service Provider. The JNDI Service Provider is not supported for deployment.
5	SUNWiqjx	Message Queue Java API for XML Messaging (JAXM): API and runtime	Required to support Java clients using SOAP/JAXM API.
6	SUNWiq1pl	Message Queue license file for Platform Edition message server	Depends on Message Queue edition.
7	SUNWiqr	Message Queue message server root package	Needed for Message Queue executables.
8	SUNWiqsup	JNDI and JSSE jar files	Includes the JNDI and JSSE jar files needed for client development and deployment with JDK 1.3.  This package is not installed by default.
9	SUNWiqu	Message Queue message server and administration tools	
10	SUNWiquc	Message Queue Java API for JMS messaging and Java client runtime.	Required to support Java clients using JMS API.
11	SUNWiqum	Message Queue JMS/SOAP Message Transformer: API and runtime	Required to perform conversions between SOAP messages and JMS messages.
12	SUNWjaf <sup>1</sup>	JavaBeans Activation Framework: API and runtime	Required to support Java clients using SOAP/JAXM API.  This package is not installed by default.

**Table 2-5** Packages in Solaris Bundle *(Continued)*

#	Package	Description	Note
13	SUNWjaxp <sup>1</sup>	Java API for XML processing	Required to support Java clients using SOAP/JAXM API.  This package is not installed by default.
14	SUNWjhrt <sup>1</sup>	JavaHelp: API and runtime	Required if installing on Solaris 8. (Solaris 9 and above already have this package installed.) Will only install if a JVM 1.4 or greater has first been installed.  This package is not installed by default.
15	SUNWjhdev	JavaHelp Development Utilities	Required to upgrade the current JavaHelp runtime package (SUNWjhrt)  This package is not installed by default.
16	SUNWjhdoc	JavaHelp Documentation	Required to upgrade the current JavaHelp runtime package (SUNWjhrt)  This package is not installed by default.
17	SUNWjhdem	JavaHelp Demos	Required to upgrade the current JavaHelp runtime package (SUNWjhrt)  This package is not installed by default.
18	SUNWjmail <sup>1</sup>	JavaMail: API and runtime	Required to support Java clients using SOAP/JAXM API.  This package is not installed by default.
19	SUNWpr <sup>1</sup>	Netscape Portable Runtime (NSPR) libraries	Needed to support C clients.  This package is not installed by default.
20	SUNWprx <sup>1</sup>	Netscape Portable Runtime (NSPR) libraries	Needed to support C clients. (64-bit) (SPARC only)  This package is not installed by default.

**Table 2-5** Packages in Solaris Bundle (*Continued*)

#	Package	Description	Note
21	SUNWt1s <sup>1</sup>	Network Security Services (NSS) libraries.	Needed to support C clients. This package is not installed by default.
22	SUNWt1sx <sup>1</sup>	Network Security Services (NSS) libraries.	Needed to support C clients. (64-bit SPARC only) This package is not installed by default.
23	SUNWt1su <sup>1</sup>	Network Security Services Utilities Programs	Needed to support SSL for C clients. This package is not installed by default.
24	SUNWt1sux <sup>1</sup>	Network Security Services Utilities Programs	Needed to support SSL for C clients. (64-bit SPARC only) This package is not installed by default.
25	SUNWxsrt <sup>1</sup>	SOAP with Attachments API for Java: API and runtime	Required to support Java clients using SOAP/JAXM API. This package is not installed by default.

1. This package is shared by a number of Sun Java System products. This package is not installed by default. You must manually install any shared packages after installing Message Queue packages.

**Table 2-6** provides a guide to the packages you need for different use scenarios:

**Table 2-6** Packages Required for Various Scenarios

Scenario	Packages Needed	Notes
Message Queue message server and administration tools	SUNWiqr SUNWiqu SUNWiq1p1 SUNWiquc SUNWjhrt SUNWiqfs (optional)	Required for a Message Queue message server to run on a host.

**Table 2-6** Packages Required for Various Scenarios (*Continued*)

Scenario	Packages Needed	Notes
Developing and/or deploying Java clients using the JMS API	SUNWiquc SUNWiqdoc (optional) SUNWiqsup	Can be installed on a system without a Message Queue message server.  <i>Note:</i> The SUNWiqsup package is provided for development and deployment of clients using JDK 1.3. This package is not installed by default.
Developing and/or deploying Java clients using the SOAP/JAXM API	SUNWjaf SUNWjmail SUNWiqjx SUNWxsrt SUNWjaxp SUNWiqdoc (optional)	Can be installed on a system without a Message Queue message server.  <i>Note:</i> SOAP clients require JDK1.4.
Developing and/or deploying Java clients using the JMS/SOAP Message Transformer	SUNWiqum Plus all packages needed to support Java clients using both the JMS and SOAP/JAXM API	Can be installed on a system without a Message Queue message server.  The Message Queue Message Transformer API depends on both the JMS and SOAP APIs.
Developing and/or deploying C clients	SUNWiqcrt SUNWiqcdv SUNWpr SUNWprx SUNWtls SUNWtlsex SUNWtlisu SUNWtlisux (for SSL)	The SUNWprx, SUNWtlsex, and SUNWtlisux packages are 64-bit packages for use with the Solaris SPARC platform.  Solaris x86 does not support 64-bit packages.  The SUNWtlisu and SUNWtlisux packages are used to create and manage NSS certificate database files by a C client when using SSL.

5. Change to the directory containing the Message Queue distribution files.

```
cd mq3_6-plt
```

6. Become root:

```
su root
```

When prompted, type your root password.

7. Run the mqinstall script. This script will overwrite all of the Message-Queue-specific packages listed in [Table 2-5 on page 35](#).

```
./mqinstall
```

The script lists the distribution packages, if any, that are already installed, and then lists the packages about to be installed.

Please note that the install script will not install any shared packages (packages which do not begin with `SUNwiq` and which might already be installed on your system). You must install shared packages manually, as described in [Step 9](#).

8. Enter `y` (yes) if you want to install all the packages. If you want to install the packages manually, enter `n` (no).

If you run the `mqinstall` script, it creates a log file in the following directory:

```
/var/sadm/install/logs/
```

9. Check your system for patches to any of the non-Message-Queue-specific packages listed in [Table 2-5 on page 35](#) (packages which do not begin with `SUNwiq` and which might already be installed on your system). Enter the following command to check for patches:

```
% pkgparam -v <pkgnam> PATCHLIST
```

For example, to check which patches have been applied to `SUNWpr` (NSPR), use the following command:

```
% pkgparam -v SUNWpr PATCHLIST
```

The output showing the patch list may look like this:

```
PATCHLIST='114049-11 117724-05'
```

If patches are shown to packages listed in [Table 2-5 on page 35](#), you might not want to install those particular Message Queue packages.

10. If you want to install a subset of the packages listed in [Table 2-5 on page 35](#), you want to install shared packages, or you do not want to over-write later versions of packages, do the following:
  - a. Change to the `pkgs` directory
 

```
cd pkgs
```

- b. run the `pkgadd` command to install the packages you want:

```
pkgadd -d ./ -a admin.conf
```

The `pkgadd` utility lists the names of all packages in the directory available for installation (see [Table 2-5](#)). When prompted, indicate the packages you want to install. (The `-a admin.conf` option permits an over-write of any packages that are already installed on your system.)

The `pkgadd` utility installs the packages you specified, possibly asking for additional information, and eventually returns to the original prompt, displaying the list of packages available for installation.

- c. Type `q` to quit.

11. Exit the root shell.

12. Back up the zip distribution file from your temporary working directory.

This is your logical media. It will be needed to uninstall or reinstall Message Queue. Treat this file as you would any other installation media and place a copy in a safe location.

---

**NOTE** The instance data for any pre-existing broker instance (including the default broker instance, named `imqbroker`) is owned by the user that created that instance. Therefore, once installation is complete, be sure to run any Message Queue broker instance as the owner with privileges to the `/var/imq/instances/instanceName` directory. You become the owner by logging in as that user.

---

## Checking Your Installation

To check that the expected version of Message Queue is running on your system, navigate to the Message Queue directory and enter the command:

```
imqbrokerd -version
```

The output to this command specifies the version of the JDK and Message Queue that are installed on your system.



# Configuring Message Queue for Automatic Startup

If you want to set the broker (the Message Queue message server) for automatic startup, you need to become root and edit the following configuration file:

```
/etc/imq/imqbrokerd.conf
```

The startup properties you can set in this configuration file are shown in [Table 2-7](#):

**Table 2-7** Broker Startup Configuration Properties

Property Name	Description
AUTOSTART	Specifies (YES/NO) if the broker is automatically started at boot time. Default: NO
ARGS	Specifies command line options and arguments to pass to the broker startup command. See the <i>Message Queue Administration Guide</i> for a listing and description of <code>imqbrokerd</code> command line options. (For example <code>-name instanceName</code> )
RESTART	Specifies (YES/NO) if the broker is automatically re-started if it abnormally exits. Default: YES

To check that startup changes are correct (without booting the system), you can, as root, explicitly run the Message Queue initialization script in “debug” mode:

```
env DEBUG=1 /etc/init.d/imq start
```

## Configuring the Java Runtime for Message Queue

At startup time, a broker (the Message Queue message server) checks to make sure it has access to the required Java runtime version (JDK/JRE 1.5). There are a number of ways you can configure or set the JRE used by the broker. These are shown in the following list, in order of precedence:

1. Pass in the JDK or JRE using either the `imqbrokerd -javahome` or `-jrehome` command line options, respectively (if both are passed in, the last one on the command line will take precedence).
2. Set the JDK or JRE in the `IMQ_JAVAHOME` environment variable.

**3. Let the broker use the installed JDK.**

The broker tries to locate the JDK in the following order.

**On Solaris 8 or 9:**

- /usr/jdk/entsys-j2se
- /usr/jdk/jdk1.5.\*
- /usr/jdk/j2sdk1.5.\*
- /usr/j2se

**On Solaris 10:**

- /usr/jdk/entsys-j2se
- /usr/java
- /usr/j2se

To figure out why a broker is picking up a specific JDK/JRE, you can start the broker with the following command:

```
imqbrokerd -verbose
```

# Where To Go Next

Read the `README` and *Message Queue Release Notes* files.

- The `README` includes information on where to find documentation, news and updates, and how to send feedback.
- The *Message Queue Release Notes* contain information on code and documentation changes, open bugs, and important technical notes. This document is available on the Sun Java System website.

For an overview of Message Queue concepts, see the *Message Queue Technical Overview*

For a brief introduction to writing and compiling a client application, see the *Message Queue Developer's Guide for Java Clients* or the *Message Queue Developer's Guide for C Clients*.

For details on configuring brokers and managing a Message Queue messaging system, see the *Message Queue Administration Guide*.

For class and member information used when writing a client application, browse the API documentation in the `/usr/share/javadoc/imq` directory.

To uninstall the product, see the following section.

# Uninstalling Message Queue on Solaris

The following instructions explain how to uninstall Message Queue.

► **To Remove Message Queue on Solaris**

1. Stop any running client applications.
2. Stop any running brokers. You will be prompted for user name (admin user) and password.

```
imqcmd shutdown bkr [-b hostName:port]
```

3. If you want to delete dynamic data, the Message Queue flat-file user repository, and the Message Queue access control file associated with each broker instance, remove this data using the following command.

```
imqbrokerd -name instanceName -remove instance
```

4. Find the zipped distribution file used to install Message Queue (see [Step 12 on page 40](#)) and place it in a temporary directory, *temp\_directory*.
5. Change directories to *temp\_directory*:

```
cd temp_directory
```

6. Unzip the distribution file.

```
unzip mq3_6-plt-platform.zip
```

where *platform* is *solsparc* or *soli386*, depending on the platform.

7. Change to the directory containing the Message Queue packages.

```
cd mq3_6-plt
```

8. Become root:

```
su root
```

When prompted, type your root password.

9. Run the uninstall script.

```
./mquninstall
```

The installation script lists Message Queue packages that are not shared, if any, that are currently installed. (It does not list shared Message Queue packages installed with Message Queue, and which might be in use by other programs.)

10. If you want to uninstall *all* the listed packages, enter *y* (yes), and skip to [Step 15](#). Otherwise, continue with [Step 11](#).

11. If you do not want to uninstall all of the Message Queue packages, then enter **n** (no), and use the `pkgrm` command, as described in [Step 12](#), to uninstall the specific packages you want to remove.
12. Remove the Message Queue packages, using the following command:  

```
pkgrm packageName
```

where *packageName* is any of the Message Queue packages. To remove multiple packages, separate the package names by a space.  
Because other products might be using Message Queue packages, be careful about removing them. The `pkgrm` command will warn you of any dependencies on a package before removing it.
13. When prompted, confirm your removal request by typing **y**.
14. Type **q** to quit.
15. Exit the root shell.



# Linux Installation

This chapter explains the following topics as they apply to a Linux installation of Message Queue 3 2005Q4 (3.6 SP3), Platform Edition:

- [Hardware and Software Requirements](#)
- [Installing Message Queue on Linux](#)
- [Configuring the Java Runtime for Message Queue](#)
- [Locating Message Queue RPM Information](#)
- [Where To Go Next](#)
- [Uninstalling Message Queue on Linux](#)

## Hardware and Software Requirements

At a minimum, your Linux system should satisfy the minimum requirements indicated in the following table.

**Table 3-1** Hardware and Software Requirements for Linux

Component	Requirements
Operating system	Red Hat Advanced Server 2.1 Update 2 Red Hat Advanced Server 3.0 Update 4
CPU	Intel Pentium 2 (or compatible)
RAM	256 Mbytes

**Table 3-1** Hardware and Software Requirements for Linux (*Continued*)

Component	Requirements
Disk space	<p>The zip file containing the product is approximately 17 Mbytes.</p> <p>The installed product requires approximately 17 Mbytes of hard drive space. Message Queue, however, may need more space if the broker stores persistent messages locally.</p>
Java 2 Platform, Standard Edition (J2SE)	<p>See the <i>Message Queue Release Notes</i> for the supported versions of the Java Runtime Environment (JRE) and Java Software Development Kit (JDK) that are supported on Linux.</p> <p>The Message Queue software distribution includes the required JRE version at the time of release.</p>

## Installing Message Queue on Linux

The Sun Java System Message Queue product can be downloaded from the Sun Java System website. For hardware and software requirements for component products that can be used with Message Queue, see the *Message Queue Release Notes*.

---

**NOTE** If you are migrating from any prior Message Queue versions, you are required to first uninstall that version as described in the following section.

If you want to upgrade to Message Queue 3 2005Q4 (3.6 SP3), Enterprise Edition, you must purchase Message Queue 3 2005Q4, Enterprise Edition and use the Sun Java™ Enterprise System installer to upgrade your version of Message Queue. Refer to the Sun Java Enterprise System Installation Guide for more information.

---



## Finding and Removing Earlier Message Queue Versions

Because Message Queue is installed with other products (Sun Java System Application Server, and possibly others), you should check whether Message Queue has already been installed on your system, and uninstall it before installing Message Queue 3 2005Q4.

If a 3.0.x or 3.5x version of Message Queue is already on your system, you need to decide if you want to preserve any security-related data (flat-file user repository, access control file, or passfile). If, so, you will need to use the `mqmigrate` utility, as explained in subsequent paragraphs, before uninstalling the earlier version of Message Queue. If you do not want to preserve your old data files, you do not have to run the `mqmigrate` utility.

Depending on the version, Message Queue might have been installed using tar files or the Red Hat Package Manager (RPM). To check for installed versions, therefore, you need to check for both. It is recommended that you check first for RPM installations and then for tar file installations.

### Migrating Files from Non-Default Locations

The `mqmigrate` utility provides options that allow you to migrate data that has been installed in a non-default location (only applies to Message Queue 3.0.x data).

The `mqmigrate` utility uses the following syntax:

```
mqmigrate [-basedir baseDir]
```

**Table 3-2** shows the data locations for Message Queue installations (with the 3.0.x non-default location in parenthesis). The `mqmigrate` utility assumes these locations. If Message Queue 3.0.x has been installed in a non-default location, you must use the `-basedir` option described in **Table 3-3** to point the utility to this destination.

**Table 3-2** Message Queue Default Data Locations

Message Queue 3.0.1 Data Locations	Message Queue 3.5 Data Locations	Message Queue 3 2005Q1 (3.6) Data Locations	Message Queue 3 2005Q4 (3.6 SP3) Data Locations
[/opt]/imq/var	/var/opt/imq	/var/opt/sun/mq	/var/opt/sun/mq
[/opt]/imq/etc	/etc/opt/imq	/etc/opt/sun/mq	/etc/opt/sun/mq

**Table 3-3** describes the `mqmigrate` utility `-basedir` option.

**Table 3-3** mqmigrate Utility `-basedir` Option

mqmigrate Option	Description
<code>-basedir</code>	<p>Specifies the non-default directory where the Message Queue 3.0.x files were installed.</p> <p>For example, if the old data was untarred in the <code>/export</code> directory, you should migrate the old data using the following option:</p> <pre><code>-basedir /export</code></pre> <p>The <code>mqmigrate</code> utility assumes a base source directory for Message Queue 3.0.x of <code>/opt</code>.</p>

➤ **To migrate data to a planned Message Queue 3 2005Q4 installation**

1. Accept the license agreement on the Message Queue product download site.
2. Download the Message Queue product distribution file from the website into an empty, temporary download directory, *temp\_directory*.

The download file is: `mq3_6-plt-linx86.zip`

3. Change to the *temp\_directory* and uncompress the distribution file.

```
unzip mq3_6-plt-linx86.zip
```

The `unzip` command creates a `mq3_6-plt` directory which contains the distribution files: `LICENSE`, `README`, `THIRDPARTYLICENSEREADME`, and `COPYRIGHT` files; `mqinstall` utility; `mquninstall` utility; `mqmigrate` utility; and an `rpms` directory.

4. Change to the `mq3_6-plt` directory.

```
cd mq3_6-plt
```

5. Login as Root.

```
su root
```

6. Migrate broker instance data using the following command:

```
./mqmigrate [-basedir baseDir]
```

---

**NOTE** The `-basedir` option is only required if Message Queue 3.0.x is installed in a non-default installation directory. For more information on this option, see [Table 3-3 on page 50](#).

---

### Command Examples for mqmigrate Utility

The following command will migrate data from a Message Queue 3.0.x instance in the directory /export to Message Queue 3 2005Q4 locations in a planned Message Queue 3 2005Q4 installation:

```
./mqmigrate -basedir /export
```

The following command will migrate data from a Message Queue 3.5 instance to Message Queue 3 2005Q4 locations in a planned Message Queue 3 2005Q4 installation:

```
./mqmigrate
```

### Finding and Removing Installed Message Queue RPMs (Versions 3.0.1 SP1 - 3 2005Q1 (3.6))

#### ► To Find and Remove Earlier RPM-Installed Versions of Message Queue

1. Enter the following command.

- For Message Queue versions prior to 3.6:

```
rpm -qa | grep mq
```

- For Message Queue 3.6:

```
rpm -qi sun-mq | grep SUNW_PRODVERS
```

If found, the version numbers of any RPMs are imbedded in the RPM name. If none are found, proceed to [“Finding and Removing a Message Queue Tar-Based Installation.”](#)

[Table 3-4](#) shows the version number that corresponds with RPM names for each Message Queue release.

**Table 3-4** Message Queue RPM Version Names

Message Queue Release	RPM Value
3.0.1	imq-3.0.1-01 imq-ent-3.0.1-01 imq- <i>&lt;lc&gt;</i> -3.0.1-01
3.0.1 SP1	imq-3.0.1-02 imq-ent-3.0.1-02 imq- <i>&lt;lc&gt;</i> -3.0.1-02
3.0.1 SP2	imq-3.0.1-03 imq-ent-3.0.1-03 imq- <i>&lt;lc&gt;</i> -3.0.1-03

**Table 3-4** Message Queue RPM Version Names (*Continued*)

Message Queue Release	RPM Value
3.5	imq-3_5-01 imq-ent-3_5-01 imq- <i>&lt;lc&gt;</i> -3_5-01
3.5 SP1	imq-3_5-02 imq-ent-3_5-02 imq- <i>&lt;lc&gt;</i> -3_5-02
3.5 SP2	imq-3_5-03 imq-ent-3_5-03 imq- <i>&lt;lc&gt;</i> -3_5-03
3 2005Q1 (3.6)	SUNW_PRODVERS=3.6.0.0
3 2005Q1 (3.6 SP1)	SUNW_PRODVERS=3.6.0.1
3 2005Q4 (3.6 SP2)	SUNW_PRODVERS=3.6.0.2
3 2005Q4 (3.6 SP3)	SUNW_PRODVERS=3.6.0.3

2. If you find Message Queue RPMs of a version earlier than Message Queue 3 2005Q4, remove them as follows:
  - a. If you wish to preserve existing broker instance data, run the `mqmigrate` utility (in the Message Queue 3 2005Q4 distribution) as described on [page 49](#).

The `mqmigrate` utility moves existing broker instance data (broker configuration files and persistent data) and security-related files, to new Message Queue 3 2005Q4 locations.

---

**NOTE** It is not necessary to run the `mqmigrate` utility if you are migrating from Message Queue 3 2005Q1 (3.6) to Message Queue 3 2005Q4 (3.6 SP3).

---

- b. Remove the existing Message Queue installed software. Issue the following command(s) in the following order:

```
rpm -e imq-ent      (for Enterprise Editions only)
rpm -e imq          (for both editions)
```

To remove the Enterprise Edition, run both commands.

## Finding and Removing a Message Queue Tar-Based Installation

### ► To Find and Remove Earlier Tar-Based Installed Message Queue

1. See if the default Message Queue installation directory (`/opt/imq/bin`) exists on your system.

If found, proceed to [Step 2](#).

If not found, Message Queue might have been installed in a non-default location. If you cannot remember the installation directory, search for the Message Queue `mqbrokerd` executable and note its root install directory. Proceed to [Step 2](#).

If there is no previous Message Queue installation, proceed to install Message Queue by following the directions in [“Installing Message Queue on Linux” on page 55](#).

2. If you find an earlier Message Queue installation in the default location (`/opt/imq/bin`), remove it as follows:
  - a. If you wish to preserve existing broker instance data, run the `mqmigrate` utility (in the Message Queue 3 2005Q4 distribution) as described on [page 49](#).
 

The `mqmigrate` utility moves existing broker instance data (broker configuration files and persistent data) and security-related files, to new Message Queue 3 2005Q4 locations.
  - b. Remove the `/opt/imq/` directory and all its contents.

```
rm -rf /opt/imq
```

## Installed Directory Structure

The install image below reflects a full (all RPMs) Linux installation. This image might vary if you perform a partial installation.

---

**NOTE** File locations for Message Queue bundled with Sun Java System Application Server, may differ from locations specified in [Table 3-5](#).

---

**Table 3-5** Installed Directory Structure: Linux

Linux	Contents
COPYRIGHT (not installed)	Copyright text file
LICENSE (not installed)	License text file
LICENSEREADME/THIRDPARTY- LICENSEREADME (not installed)	License for third party software distributed by Message Queue: DOM4J, Apache Commons Logging
README (not installed)	README text file
/opt/sun/mq/bin/	Contains the executables for the broker ( <code>mqbrokerd</code> ) and the following Message Queue administration tools: <ul style="list-style-type: none"> <li>• Administration Console (<code>mqadmin</code>)</li> <li>• Command (<code>mqcmd</code>)</li> <li>• Object Manager (<code>mqobjmgr</code>)</li> <li>• User Manager (<code>mqusermgr</code>)</li> <li>• Database Manager (<code>mqdbmgr</code>)</li> <li>• Key Tool (<code>mqkeytool</code>)</li> </ul>
/opt/sun/mq/share/lib/	Contains files that support the Message Queue Java client runtime: <ul style="list-style-type: none"> <li>/*.jar jar files used to build and run Java JMS client applications</li> <li>/*.war war files used for HTTP servlet deployment</li> <li>/*.rar rar files used for Message Queue resource adapter</li> </ul>
/opt/sun/mq/include/	Header files needed to support Message Queue C clients.
/opt/sun/mq/examples/	Source code for and instructions on how to run Java client example applications.
/opt/sun/mq/javadoc/	Contains the Message Queue and JMS API documentation distributed as Javadoc (HTML)
/opt/sun/mq/share/ lib/ext/	Location for placing files needed for plug-in persistence capability

---

**Table 3-5** Installed Directory Structure: Linux (*Continued*)

Linux	Contents
/opt/sun/mq/private/ share/lib	Contains private files used to support Message Queue tools and processes:  /props subdirectory contains the broker's default configuration files  /help subdirectory contains Message Queue help files  /images
/etc/opt/sun/mq/	Contains license files, instance template files, and rc script configuration files that can be used for automatic startup
/var/opt/sun/mq/	Working storage directory for Message Queue.  /instances subdirectory which will contain configuration files, log files, access control files, flat-file user repository, and file-based persistent data stores for each broker instance  /lic Contains the 90 day Enterprise Edition try license.

## Installing Message Queue on Linux

The following instructions explain how to download and install the Message Queue product on Linux from the Sun Java System website.

### ► To Install Message Queue on Linux

1. Accept the license agreement on the Message Queue product download site.
2. Download the Message Queue product distribution file from the website into an empty, temporary download directory, *temp\_directory*.

The download file is: mq3\_6-plt-linx86.zip

3. Change to the *temp\_directory* and uncompress the distribution file.

```
unzip mq3_6-plt-linx86.zip
```

The `unzip` command creates a `mq3_6-plt` directory, which contains the **distribution files**: `LICENSE`, `README`, `THIRDPARTYLICENSEREADME`, and `COPYRIGHT` files; `mqinstall` utility; `mquninstall` utility; `mqmigrate` utility; and an `rpms` directory.

[Table 3-6](#) describes the Message Queue RPM packages in the `rpms` directory. If any of these files already exist on your system, you need to check whether the version number is greater than that provided by Message Queue. If it is, you should do a custom install.

**Table 3-6** RPM Packages in Linux Bundle

RPM	Description	Notes
sun-mq-config	/etc files	
sun-mq-var	/var files	
sun-mq	/opt files for the Platform Edition	Depends on sun-javahelp, sun-mq-jmsclient, sun-mq-config, and sun-mq-var
sun-mq-jaxm	Message Queue Java API for XML Messaging (JAXM): API	Depends on sun-saa j
sun-mq-jmsclient	JMS: API and runtime	No dependencies
sun-mq-xmlclient	XML Client	Depends on sun-jmsclient and sun-saa j
sun-mq-capi	C-API	Depends on sun-nspr, sun-nss
sun-mq-compat	Symlinks to 3.5 locations.	Depends on sun-mq. Not installed by default. Use if your existing client applications contain scripts that depend upon former file locations (such as jar files).
sun-mq-sup	Needed to support client development and deployment on JDK 1.3	Depends on sun-mq This RPM is not installed by default.
sun-mq-[locale]	L10N files	No dependencies
sun-javahelp <sup>1</sup>	JavaHelp: API and runtime	Supports JavaHelp viewer for Admin Console help. This RPM is not installed by default.
sun-nss <sup>1</sup>	Network Security Services (NSS) libraries.	Needed to support C language clients. This RPM is not installed by default.
sun-nspr <sup>1</sup>	Netscape Portable Runtime (NSPR) libraries	Needed to support C clients. This RPM is not installed by default.



**Table 3-6** RPM Packages in Linux Bundle (*Continued*)

RPM	Description	Notes
sun-saa <sup>1</sup>	SOAP with Attachments API for Java: API and runtime	Required to support Java clients using SOAP/JAXM API.  This RPM is not installed by default.
sun-jaxp <sup>1</sup>	Message Queue Java API for XML Processing (JAXP): API and runtime	Required to support Java clients using SOAP/JAXM API.  This RPM is not installed by default.
sun-javamail <sup>1</sup>	JavaMail: API and runtime	Required to support Java clients using SOAP/JAXM API.  This RPM is not installed by default.
sun-jaf <sup>1</sup>	JavaBeans Activation Framework: API and runtime	Required to support Java clients using SOAP/JAXM API.  This RPM is not installed by default.

1. This RPM package is shared by a number of Sun Java System products. This RPM package is not installed by default. You must manually install any shared RPM packages after installing Message Queue RPM packages.

4. Change to the directory containing the Message Queue distribution files.

```
cd mq3_6-plt
```

5. Log in as root or change to superuser.

For example, type the following at a command prompt:

```
su root
```

When prompted, type your root password.

6. If you intend to install all of the Message-Queue-specific RPM packages (packages which start with `sun-mq`) listed in [Table 3-6 on page 56](#), you will need to run the `mqinstall` script.

Please note that the install script will overwrite all Message-Queue-specific RPM packages, and will not install any shared RPM packages. You must install shared RPM packages manually, as described in [Step 7](#).

- a. Run the `mqinstall` script.

```
./mqinstall
```

The script lists the distribution RPM packages including their version numbers, if any, that are already installed, and then lists the RPM packages about to be installed.

---

**NOTE** If any of the Message Queue RPM packages listed are already installed and its version is newer, then you will probably not want to install the corresponding Message Queue RPM packages. In that case, enter `n` (no) and continue with [Step 7](#).

---

The `mqinstall` script does not install the `sun-mq-compat` and `sun-mq-sup`, RPM packages by default. For example, if your existing client applications contain scripts that depend upon former file locations (such as jar files), you will need to install the `sun-mq-compat` RPM package. If you are doing client development using JDK 1.3, you will need to install the `sun-mq-sup` RPM package. To install either or both of these RPM packages, see [Step 7](#).

- b. Enter `y` (yes) if you want to install all the Message-Queue-specific RPM packages. Otherwise, enter `n` (no) and continue with [Step 7](#).

If you run the script, it creates a log file in the following directory:

```
/var/sadam/install/logs
```

The `/opt/sun/mq` directory and its contents are created, and files are placed in other locations as well (see [“Migration Issues” on page 22](#)).

7. If you want to install a subset of the RPM packages listed in [Table 3-6 on page 56](#), you want to install shared RPM packages, or you do not want to over-write later versions of RPM packages, do the following:

- a. Change to the `rpms` directory

```
cd rpms
```

- b. Run the rpm install command to install the RPM packages:

```
rpm -ivh --nodeps rpm_to_install.rpm rpm2_to_install.rpm rpm3_to_install.rpm
```

8. Back up the `imq3_6-plt-linx86.zip` file from your temporary working directory.

This is your logical media. Treat this file as you would any other installation media. Place a copy in a safe location in case you encounter a situation (such as a system failure) that requires reinstallation of the product.

9. Clean up all remaining files in your temporary working directory.

---

**NOTE** The instance data for any pre-existing broker instance is owned by the user that created that instance. Therefore, once installation is complete, be sure to run any Message Queue broker instance (using the `-name instanceName` option) as the owner with privileges to the `/var/sun/mq/instances/instanceName` directory. This applies to the default broker instance (named `imqbroker`), as well.

---

## Configuring the Java Runtime for Message Queue

At startup time, a broker (the Message Queue message server) checks to make sure it has access to the required Java runtime version (JDK/JRE 1.5). There are a number of ways you can configure or set the JRE used by the broker. These are shown in the following list, in order of precedence:

1. Pass in the JDK or JRE using either the `imqbrokerd -javahome` or `-jrehome` command line options, respectively (if both are passed in, the last one on the command line will take precedence).
2. Set the JDK or JRE in the `IMQ_JAVAHOME` environment variable.
3. Let the broker use the installed JDK/JRE. The broker will pick up the latest version JDK/JRE installed on the system (greater than 1.4 and less than 2.0).

The broker attempts to locate the JDK/JRE in the following order:

- o `/usr/jdk/entsys-j2se`
- o `/usr/java/jre1.5.*`
- o `/usr/java/jdk1.5.*`

- /usr/java/jre1.4.2\*
- /usr/java/j2sdk1.4.2\*

**To find out why a broker is picking up a specific JDK/JRE, you can start the broker with the following command:**

```
imqbrokerd -verbose
```

# Locating Message Queue RPM Information

You can query the RPM database to determine the installed version of RPMs, as well as the installed edition of Message Queue.

## ► To query the description tag from an installed RPM

1. Use the following command:

```
rpm -q --queryformat '%{DESCRIPTION}\n' sun-mq
```

This output shows a version 3 2005Q4 (3.6 SP3) sun-mq RPM:

```
SUNW_PRODVERS=3.6.0.0
```

## ► To query the installed Message Queue edition

1. Use the following commands:

- o for the Enterprise Edition

```
rpm -qa sun-mq-ent
```

This output shows version information for the Enterprise Edition RPM.

```
sun-mq-ent-3.6-n
```

- o for the Platform Edition

```
rpm -qa sun-mq
```

This output shows version information for the Platform Edition RPMs, but does not list the sun-mq-ent (Enterprise Edition) RPM.

```
sun-mq-3.6-n
```

```
sun-mq-var-3.6-n
```

```
sun-mq-config-3.6-n
```

```
sun-mq-jaxm-3.6-n
```

```
...
```

## Where To Go Next

Read the `README` and *Message Queue Release Notes* files.

- The `README` includes information on where to find documentation, news and updates, and how to send feedback.
- The *Message Queue Release Notes* contain information on code and documentation changes, open bugs, and important technical notes. This document is available on the Sun Java System website.

For an overview of Sun Java System Message Queue concepts, see the *Message Queue Technical Overview*.

For a brief introduction to writing and compiling a client application, see the *Message Queue Developer's Guide for Java Clients* or the *Message Queue Developer's Guide for C Clients*.

For details on configuring brokers and managing a Message Queue messaging system, see the *Message Queue Administration Guide*.

For class and member information used when writing a client application, browse the API documentation in the `/opt/sun/mq/javadoc` directory.

To uninstall the product, see the following section.

# Uninstalling Message Queue on Linux

The following instructions explain how to uninstall Message Queue on Linux.

## ► To Remove Message Queue on Linux

1. Stop any running client applications.
2. Stop any running brokers. (You will be prompted for the admin user name and password.

```
imqcmd shutdown bkr [-b hostName:port]
```

3. Unless you want to retain dynamic data, the Message Queue flat file user repository, and the Message Queue access control file associated with each broker instance, remove this data using the following command.

```
imqbrokerd -name instanceName -remove instance
```

4. Get the uninstall script by following [Step 5](#) through [Step 7](#). If you already have the uninstall script you can proceed to [Step 8](#).
5. Find the zipped distribution file used to install Message Queue (see [Step 2 on page 55](#)) and place it in a temporary directory, *temp\_directory*.
6. Change directories to *temp\_directory*.

```
cd temp_directory
```

7. Unzip the distribution file.

```
unzip mq3_6-plt-linx86.zip
```

8. Change to the directory containing the Message Queue packages.

```
cd mq3_6-plt
```

9. Become root:

```
su root
```

When prompted, type your root password.

10. Run the uninstall script.

```
./mquninstall
```

The installation script lists the Message Queue RPM packages that are not shared, if any, that are currently installed. (It does not list shared Message Queue RPM packages installed with Message Queue, and which might be in use by other programs.)

11. If you want to uninstall *all* the listed RPM packages, enter **y** (yes) and skip to [Step 14](#). Otherwise, continue with [Step 12](#).
12. If you do not want to uninstall all of the Message Queue RPM packages, then enter **n** (no), and use the `rpm -e` command, as described in [Step 13](#), to uninstall the specific RPM packages you want to remove.
13. Remove the Message Queue RPM packages manually using the following command:

```
rpm -e packageName
```

where *packageName* is any of the Message Queue RPM packages. To remove multiple RPM packages, separate the package names by a space.

Because other products might be using Message Queue RPM packages, be careful about removing them.

14. Exit the shell.