Oracle® Message Broker

Installation Guide

Release 2.0.1.0 for Sun SPARC Solaris

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Oracle Message Broker Installation Guide, Release 2.0.1.0 for Sun SPARC Solaris

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Preface

The *Oracle Message Broker Installation Guide* provides instructions for installing the Oracle Message Broker. The Oracle Message Broker implements the Java Message Service (JMS) API. This document specifies the components required to install Oracle Message Broker Release 2.0.1.0.

Intended Audience

This guide is intended for anyone who is responsible for installing the Oracle Message Broker on a for Sun SPARC Solaris system. It is assumed that you are familiar with the for Sun SPARC Solaris operating system.

Use the Oracle Universal Installer to install Oracle Message Broker. The Oracle Universal Installer is used to install all Oracle8*i*-related products.

Structure

This guide contains 3 chapters:

Chapter 1	Requirements, describes the Oracle Message Broker hardware and software requirements.
Chapter 2	Installing, describes the installation process for the Oracle Message Broker.
Chapter 3	Post Installation Tasks, describes the tasks to complete after running the Oracle Universal Installer.

Related Documents

Documentation about the Oracle Message Broker and the Java Message Service includes:

- *Oracle Message Broker Administration Guide*, is distributed with the Oracle Message Broker and is available separately from Oracle Corp.
- *Java Message Service* specification, available from Javasoft at the following site:

  `http://www.javasoft.com/products/jms`

- *Oracle 8i Installation Guide*, contains information about the Oracle Universal Installer and how to install an Oracle8*i* Database Server.
- *Oracle Internet Directory Release Notes*, contains information on the Oracle Internet Directory. Also refer to the following site:

  `http://www.oracle.com/database/oid`

- *Oracle Net8 Administrator's Guide*, for information on configuring Net8 listeners.

Conventions

The following conventions are also used in this manual:

Convention	Meaning
. . .	Vertical ellipsis points in an example mean that information not directly related to the example has been omitted.
. . .	Horizontal ellipsis points in statements or commands mean that parts of the statement or command not directly related to the example have been omitted.
boldface text	Boldface type in text indicates a term defined in the text, the glossary, or in both locations.
< >	Angle brackets enclose user-supplied names.
[ ]	Brackets enclose optional clauses from which you can choose one or none.
`courier`	Text to be entered exactly as it appears.

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Requirements

This chapter describes the hardware and software requirements you must meet before installing Oracle Message Broker.

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Hardware Requirements

Table 1-1 lists the minimum hardware requirements for installing the Oracle Message Broker on for Sun SPARC Solaris. Table 1-2 lists the minimum hardware requirements for installing the Oracle Message Broker with the Oracle Internet Directory (OID).

Table 1–1 Sun SPARC Solaris hardware requirements for OMB installation

Hardware Item	Minimum Requirements
CPU	SPARC processor
Memory	128 MB
Disk Space	300 MB to install Oracle Message Broker without related dependencies, such as the Oracle 8*i* Database and the Oracle Internet Directory.
Swap space	256 MB

Table 1–2 Sun SPARC Solaris hardware requirements for OMB with OID installation

Hardware Item	Minimum Requirements
CPU	SPARC processor
Memory	256 MB
Disk Space	1.6 GB to install Oracle Message Broker and related dependencies, including the Oracle8*i* Database and Oracle Internet Directory. If the directory runs on another system, and you only need to install the Oracle Message Broker, the disk space requirement is 300 MB.
Swap space	512 MB

Software Requirements

Table 1-3 lists the minimum software requirements for installing the Oracle Message Broker on for Sun SPARC Solaris.

Table 1–3 Sun SPARC Solaris Software Requirements

Software Item	Minimum Requirements
Operating System	Solaris 2.6 or Solaris 2.7 with X Windows and Motif or OpenWindows
Operating System Patch	Use the latest kernel patch from Sun Microsystems. Sun provides patch information at: `http://sunsolve.sun.com` At least kernel jumbo patch revision #105181-15 is required.
Software Database Server when installing Oracle Internet Directory or Oracle AQ	Enterprise Edition, Release 8.1.7 with character set UTF8.
Oracle Internet Directory	2.1.1
Java Development Kit	1.1.8_10 or 1.2.2
Java Naming and Directory Interface (JNDI)	1.2.1
LDAP Service Provider	1.2.1

Java Runtime Environment (JRE)

The JRE shipped with Oracle Message Broker is used by Oracle Java applications and is the only one supported to run with these applications. Customers should not modify this JRE, unless it is done through a patch provided by Oracle Support Services.

The inventory can contain multiple versions of the JRE, each of which can be used by one or more products or releases. The Installer creates the `oraInventory` directory the first time it is run to keep an inventory of products that it installs on your system as well as other installation information. The location of `oraInventory` is defined in `/var/opt/oracle/oraInst.loc`.

Products in an ORACLE_HOME access the JRE through a symbolic link in `$ORACLE_HOME/JRE` to the actual location of a JRE within the inventory. Customers should not modify the symbolic link unless it is done through a patch provided by Oracle Support Services.

To determine which operating system patches are installed, enter the following command:

```
$ showrev -p
```

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Installing

This chapter describes installing Oracle Message Broker using the Oracle Universal Installer. Some Oracle Message Broker installations use Oracle Internet Directory to store configuration information; these installations need Oracle Internet Directory installed either locally, or on a remote system. If you install both Oracle Message Broker and Oracle Internet Directory on the same system, the order of installation is not important. See Chapter 3 for information on installing Oracle Internet Directory.

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Pre-Installation Tasks

You need to perform the following tasks before you install Oracle Message Broker:

1. If an Oracle Message Broker running on one system uses an Oracle8*i* on another system, the NLS_LANG environment variable should be set to the same value on each machine, or to compatible values.
2. Before you start the Oracle Universal Installer, set the $ORACLE_HOME environment variable to the directory where you want to install Oracle Message Broker.
3. Make sure that your userid is in the group *dba*, in /etc/group.
4. The path must include a valid `ld` command. On some Unix systems, the following directory includes an `ld` command:

   ```
   /usr/ccs/bin
   ```

5. The SRCHOME environment variable must *not* be defined.
6. If you are running the Installer on a system where Oracle Internet Directory is installed and running, then the Oracle Internet Directory processes and the Oracle 8*i* Database Server need to be shutdown before installing Oracle Message Broker. Refer to the section "Oracle Advanced Queuing Configuration (Optional)" on page 3-11 for information on shutting down these components.

Installation Restrictions

1. NLS_LANG Limitation. If an Oracle Message Broker running on a system uses the Oracle8*i* Database Server on a different system to support Oracle AQ, the NLS_LANG environment variable should have the same value on both systems. In the case where the values of NLS_LANG are different on the different systems, they should be set to compatible values.
2. Selecting the value of the Oracle Home environment variable. If you are installing for JDK 1.2, and you are installing into an ORACLE_HOME that had a previous release of the Oracle Message Broker installed that used JDK 1.1.8, the installer does not deinstall the pre-existing JDK 1.1.8 release of the ORB. The workaround for this problem is to install Oracle Message Broker in a different $ORACLE_HOME.

Migrating Directory Data between Releases

Migrating to Release 2.0.1.0

If you are installing Oracle Message Broker and you are migrating from Release 2.0.0.0 to Release 2.0.1.0, running the command `InitDir` with the same options used when installing Release 2.0.0.0 updates the LDAP schema, as required for Release 2.0.1.0. See "Directory Configuration" on page 3-4 for more information on `InitDir`.

Migrating Between Releases 1.0 to 2.0

If you are installing Oracle Message Broker and you need to migrate existing LDAP Directory entries created for an older version of Oracle Message Broker, you can use the *Migrate10To20* utility. Refer to the *Oracle Message Broker Administration Guide* for information on using `Migrate10To20.`

Running the Universal Installer

To start the Oracle Message Broker installation, run the Oracle Universal Installer:

1. The Oracle Universal Installer is available on the CD sent with the release package. Go to the mount point directory:

   ```
   % cd /cdrom/oracle_msgbroker/Install/solaris
   ```

2. At the command line prompt, enter:

   ```
   ./runInstaller
   ```

   The Oracle Universal Installer Welcome screen appears.

Interactive Installation Process

The Oracle Universal Installer guides you through the installation process. Each screen is clearly labeled. Therefore, this section describes the screens only briefly.

To navigate through the installer, select Next to move to the next screen. Select Previous to go back to a previous screen. Select Help to get additional information about each specific screen.

This section covers the following aspects of the installation process:

- Initial Screens
- Custom Installation
- Complete Installation

Initial Screens

The initial screens provide information to the Oracle Universal Installer about the Oracle products you plan to install, the location where you are installing products, and about your system.

> **Note:** If you have previously run the Oracle Universal Installer for this product, or for another Oracle product, some of the initial screens may not appear. After the Oracle Universal Installer runs, it saves certain information about the system. The Oracle Universal Installer uses this information for new product installations.

Welcome Screen

From this screen you can view currently installed products, and you can choose to deinstall installed products. Click Next, and continue with the installation.

File Locations

The fields in this screen are already filled in with default values by the Installer.

The first field contains the full path of the source file of the product you are installing. Do not modify this field.

The second field is for the full path of your Oracle Home.

Click Next.

Inventory Location Screen

If this is the first installation using the Oracle Installer on your machine, the Inventory Location Screen prompts you to specify a base directory to contain subdirectories for your Oracle products and product components. You can specify this directory by typing its path in the text box, or search the system directory by clicking Browse. You must have write permission for the directory you specify.

Once you have specified the base directory, click Next. The UNIX Group Name screen appears next.

UNIX Group Name

In this screen you can specify a UNIX group name for those who will have permission to update Oracle software on the system. If you want only root to have permission, leave the field blank.

Note: The first time you run the Oracle Universal Installer, at this point you will be prompted to run the following script:
`/tmp/Orainstall/orainstRoot.sh`

You must have root privileges to run this script. Open another window and run the script. The script creates pointers to the components as they are installed in the system, so that they can be identified later in the installation procedure. It produces the /var/opt/oracle/oraInst.loc file, which provides a pointer to the oraInventory directory.

If for any reason you remove the oraInventory directory, you must remove the /var/opt/oracle/oraInst.loc file also. Similarly, if you remove the /var/opt/oracle/oraInst.loc file, you must remove the oraInventory directory. After you have run the script press Retry on the Installer screen to continue.

Available Products

The fields in this screen allow you to select from the available products.

Select one of the two possible Oracle Message Broker product versions, Oracle Message Broker for JDK Release 1.2, or Oracle Message Broker for JDK Release 1.1.8.

Click Next.

Installation Types

In this screen you choose the type of the installation you want for Oracle Message Broker. The choices are:

- Complete (default)

  This installs Oracle Message Broker and all required components to run the Message Broker.

- Custom

  This option allows you to custom select components when installing the Oracle Message Broker. After completing the Custom Installation options, you must continue to navigate through the Complete Installation screens to successfully finish the Oracle Message Broker installation.

Select the installation type and click Next.

The screens for each of these installation types are described in the Custom Installation and Complete Installation sections.

Custom Installation

Available Product Components

This screen shows the set of components that you can select as part of the Oracle Message Broker installation, and the Install Status of each (New Install or Not Installed). Component options include:

Samples	Select this option to include installation of the Oracle Message Broker samples.
Documentation	Select this option to include installation of documentation for the Oracle Message Broker.
Installer	Installs or upgrades the Oracle Universal Installer, used to install Oracle products.

Component Locations

This screen shows the components that you can install, and provides selection of alternate locations for installing each component. For example:

Oracle Universal Installer	Select this component to view its current destination location. Click the Change Location button to access the Choose Directory dialog box and select a new location from the directory tree there.

After entering the options for the custom installation, click Next to continue navigating through the Complete Installation screens to finish the Oracle Message Broker installation.

Complete Installation

Suffix Information

This screen shows fields for the Lightweight Directory Access Protocol (LDAP) base naming context and suffix information that the Oracle Message Broker uses for directory entries. The following table describes the Suffix Information fields.

Field	Description
Directory Suffix	The full directory suffix. If you supply a directory suffix, make sure that it includes all the information for the LDAP Directory that the Oracle Message Broker is using. The directory suffix is appended as part of the initial context that the Oracle Message Broker uses when connecting to the LDAP Directory. This field is optional.
Country Code	The country code used in the directory base naming context. The value supplied for the country code is used in the initial context, with a “c=” added. This field is optional.
Organization	The organization used in the directory base naming context. The value supplied for the organization is used in the initial context, with a "o=" added. This field is optional.
Organizational Unit Name	The organizational unit used in the directory base naming context. The value supplied for the organizational unit is used in the initial context, with a "ou=" added.This field is optional.

Enter your choices for Suffix information and click Next.

The values you supply in this dialog depend on the directory installation and its DIT organization. Oracle Message Broker administrative components should be created below the initial context specified in the Suffix Information dialog.

For example, using a directory that was installed with an initial context of "o=us.oracle.com", you could supply the following values on the Suffix Information dialog:

```
Directory Suffix:  o=us.oracle.com
Country Code:
Organization:
Organizational Unit: sales
```

These values would create Oracle Message Broker scripts with the following initial context:

```
ou=sales,o=us.oracle.com
```

The following example uses a directory that is installed with the initial context, "ou=sales,o=oracle,c=us". For this initial context, you could supply the following values in the Suffix Information Dialog:

```
Directory Suffix:
Country Code: us
Organization: oracle
Organizational Unit: sales
```

These values would create Oracle Message Broker scripts with the following initial context:

```
ou=sales,o=oracle,c=us
```

Note: The values that you enter in the Directory Suffix information dialog depend on the organization of the LDAP Directory. The organization of the LDAP Directory is determined when it is installed.

LDAP Information

This screen shows the LDAP port and LDAP server that you want to select for the directory server. For example,

LDAP Port	389
LDAP Server	system1

Enter the choices for your LDAP server and click Next. The LDAP server does not have to be running, or reside on the system where you are installing Oracle Message Broker.

Summary

This screen shows the choices you have made, the space requirements, the products that are already installed on the system, and the products that will be installed if you press the Install button.

If you want to change any of the global settings, use the Previous button to go back and make changes, then use the Next button to return to this screen.

If you want to see what other Oracle products are installed in your Oracle Home, press the Installed Products button. If some of the components that this installation will install are already on your system, the Oracle Universal Installer will detect them and will not install replacements.

When you are satisfied with the choices you have made, press the Install button to start the installation process.

Configuration Tools

Verify the list of configuration tools and click Next.

> **Note:** Depending on the system inventory, the Installer does not present this screen if the system has an existing Oracle 8*i* Database Server installed, or if other Oracle products are installed on the system.

The Configuration Tools screen lists the configuration tools for all installed components.

Scroll down the list to review configuration status of each tool. The status changes as each component is configured.

The installer performs the following functions in this screen:

- Executes a configuration tool for each component selected previously in the Available Product Component screen.
- Displays all the configuration settings in the display window below as it executes a configuration tool for each component.
- Enables you to view configuration settings after all configuration tools are executed. Click on each component to review all the changes made.
- Allows you to view data for failed executions in the display window. You can either fix the error and click **Retry** to execute the configuration tool again, or ignore the error and click **Next** to proceed to the next screen.
- **Retry**: To re-execute the configuration script if the configuration of a component fails.
- **Stop**: To quit the configuration process.

Net8 Configuration Tool

> **Note:** Depending on the system inventory, the Installer does not present this screen if the system has an existing Oracle 8*i* Database Server installed, or if other Oracle products are installed on the system.

The installer automatically launches the Net8 Configuration Assistant. After configuration, return to the installer.The Net8 Configuration Assistant is a graphical user interface (GUI) tool that enables you to configure your Oracle client/server network environment.

Net8 Configuration Assistant is either:

- automatically started from within the installer for all installation types
- manually started as a stand-alone tool

  To manually launch Net8 Configuration Assistant, enter the following command:

  ```
  ./$ORACLE_HOME/bin/netca
  ```

The Net8 Configuration Assistant will automatically create a profile that is consistent with any selections made during installation. The installer will

automatically run the Net8 Configuration Assistant to set up a net service in the Local Naming file found in the **$ORACLE_HOME/network/admin** directory of your client installation.

Follow directions on the Net8 Configuration Assistant to configure Net8.

After installation is complete, more detailed configuration can be accomplished using the Net8 Configuration Assistant with the following command:

```
./$ORACLE_HOME/bin/netasst
```

Configuring a complete Oracle network is beyond the scope of this manual and is covered in detail in the *Net8 Administrator's Guide*.

End of Installation

This screen shows a button to view the release information, and buttons to continue installing, or to exit.

Click Exit if you are done with the installation or Next Install if you want to install additional Oracle products.

Deinstallation Procedure

Before deinstalling Oracle Message Broker, be sure that there are no active Oracle Message Broker processes. If there are active Oracle Message Broker processes, stop them using the `MsgBroker` command.

Start the Oracle Universal Installer as described in "Running the Universal Installer" on page 2-3.

Welcome Screen

From this screen you can view currently installed products, and you can choose to deinstall installed products. Click the Deinstall Products button on the Welcome screen. The Inventory window appears, listing all installed products.

In the Inventory window, select the Oracle Message Broker then click the Remove Button.

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Post Installation Tasks

This chapter describes tasks that you need to complete following the Oracle Message Broker installation. Some of these tasks are optional, since different installations can use different drivers.

Contents

Update Path for the JRE

Assure that the proper version of the JRE is installed on your system, and that your PATH is set appropriately. If you have several versions of the JRE on your system, make sure that first one found in your path is the version that corresponds to the version installed with the Oracle Message Broker (see Table 1-3 for details on the supported JRE versions).

The Oracle Message Broker Installer installs the JRE in the directory, $OMB_HOME/jdk for Solaris, and it sets the path in the ombenv environment scripts in the directory $OMB_HOME/bin to use the supplied JRE.

Directory Installation and Configuration

Oracle Message Broker requires an LDAP Directory to handle administrative functions. Oracle Message Broker supports two LDAP Directory products:

- Oracle Internet Directory (OID) Release 2.0.6
- Netscape Directory Server (running on a Windows NT system) Refer to the *Oracle Message Broker Installation Guide for Windows NT* for information on installing the Netscape Directory Server.

The LDAP Directory needs to be installed on a system available to Oracle Message Broker and configured for use with Oracle Message Broker. This section covers directory installation and configuration.

You can install the LDAP Directory on the same system as Oracle Message Broker, or on a separate system.

Oracle Internet Directory Installation and Configuration

Oracle Internet Directory is available from Oracle. Refer to the following web page for information on Oracle Internet Directory,

`http://www.oracle.com/database/oid`

Refer to the following documents for more information on installing Oracle Internet Directory:

- *Oracle8i Installation Guide Release 2.0 (8.1.7)*
- *Oracle Internet Directory Release Notes*

Note1: When you install Oracle Internet Directory, do not use any upper case letters in the ORACLE_HOME path. Using upper case letters can cause the installer to fail.

Note 2: Install Oracle Internet Directory before Oracle Message Broker if you are using the same $ORACLE_HOME for both Oracle Internet Directory and Oracle Message Broker.

Supplying the Directory Bind DN

All of the Oracle Message Broker commands that access the LDAP Directory, including those used during the installation process require that a bind DN and a password be supplied.

For Oracle Internet Directory, the default bind DN is: "cn=orcladmin" and the default password is: "welcome". The bind DN, "cn=orcladmin" is the default super user bind DN, and therefore has super user privileges.

It is recommended that users create user and group entries in the directory and use the bind DN and password corresponding to those non-super users entries. Setting up user and group entries requires knowledge of LDAP and the LDAP server specific tools such as `oidadmin`.

Only the `LDAPSchema` command and possibly the `InitDir` command, depending on the directory setup, require super user privileges (see "Directory Configuration" on page 3-4 for details on these commands). For details on the types of users that one might need to create when working with Oracle Message Broker, see the section, "Security Roles" in the Security Chapter in the *Oracle Message Broker Administration Guide*.

Using Oracle Message Broker commands, there are three ways to supply the bind DN and the password:

1. At the prompt, when running a command, such as `InitDir`.
2. Using the command-line options: -D and -w.
3. By directly setting JNDI properties. If you set JNDI properties, then to use the values you set when running an Oracle Message Broker command, either use the command-line option -noauth or supply no values in the supplied authentication prompt, and press the continue button.

The JNDI Java properties for setting security options are:

```
java.naming.security.principal
java.naming.security.credentials
java.naming.security.authentication=simple
```

Directory Configuration

After the LDAP Directory and Oracle Message Broker are both installed, you need to perform several configuration tasks on the directory. The following tasks use tools installed with Oracle Message Broker. These tools modify the directory and require an active directory server. The directory modifications support the Oracle Message Broker administrative functions.

Note: For the OID directory, these steps require an active Net8 listener. For more information on Net8 listeners, refer to the *Oracle Net8 Administrator's Guide*.

After the LDAP Directory and Oracle Message Broker are both installed, perform the following steps:

1. Start the LDAP Directory.

   This step covers starting the directory *after* the Oracle 8*i* Database Server is up and running. For information on starting Oracle 8*i*, see "Restart the Database Server and the Listeners" on page 3-14.

   a. Use the OID command `oidmon` to start the OID monitor. See the *Oracle Internet Directory Administrator's Guide* for information on `oidmon`. For example,

      ```
      % oidmon connect=connect_string start
      ```

      where: *connect_string* specifies the Net8 connect descriptor for connecting to the Database Server.

   b. Use the OID command `oidctl` to start the OID instance. See the *Oracle Internet Directory Administrator's Guide* for information on `oidctl`. For example,

      ```
      % oidctl connect=connect_string server=oidldapd instance=1 start
      ```

      where: *connect_string* specifies the Net8 connect descriptor for connecting to the Database Server.

2. Assure that the proper version of the JDK is installed on your system. If you have several versions of the JDK on your system, make sure that first one found in your path is the version that the Oracle Message Broker requires (see Table 1-3 for details on the required JDK version).

3. Perform the following steps to modify the directory schema to support the Oracle Message Broker:

   a. Set the environment for your system:

      On UNIX with the Bourne or Korn shell:

      ```
      $ . $ORACLE_HOME/omb/2.0/bin/ombenv.sh
      ```

      or with the C-Shell environment:

      ```
      % source $ORACLE_HOME/omb/2.0/bin/ombenv.csh
      ```

      The Oracle Message Broker installation creates the startup scripts ombenv.sh and ombenv.csh.

   b. Update the directory schema using the LDAPSchema command. This command is found in $ORACLE_HOME/omb/2.0/bin. Use LDAPSchema as follows:

      ```
      % LDAPSchema [options]
      ```

      where Table 3–1 shows the available *options*.

      For example, to modify the LDAP schema for the LDAP Directory running on the host named system1, and the default port number, 389, use the command:

      ```
      % LDAPSchema -h system1
      ```

      If LDAPSchema prints the following message, you need to run catalog.sh, as described in step 4, on page 3-9:

      ```
      ### ATTENTION: The attribute "orcloasentrytype" is not searchable.
      Please run "catalog.sh" on OiD to make this attribute searchable
      ```

Table 3–1 LDAPSchema Command Line Options

Option	Description
–D *auth_dn*	The *auth_dn* supplies the DN to use for user name authentication.
–errorlevel *level*	Set the error reporting level. The parameter *level* is set to an integer value in the range 1-4: 1 – print error message for the top exception 2 – print error messages for all linked exceptions 3 – print stack trace for the top exception 4 – print stack trace for all linked exceptions The default value for errorlevel is 2.
–h *host-name*	The *host-name* is the host where the directory is installed. Default value: localhost
–noauth	Specifies that LDAP authentication is not required on the LDAP server.
–p *port*	The *port* is the port used to access the directory on the specified host. Default value: 389
–P *wallet_password*	Specifies the wallet password. This is ignored if the value of –U is 0 or 1.
–ldapv2	Use this option when the LDAP Directory only supports LDAP version 2. Default value: `LDAPSchema` defaults to support for LDAP version 3.
-U *value*	Specifies if SSL is used, and the authentication level. Valid *values* are: 0, 1, 2, and 3. `0` – no SSL. This is the default if –U is not specified. `1` – SSL with no authentication. `2` – SSL with server-side authentication. `3` – SSL with server-side and client-side authentication.
–version	Provides version information. Use –fullVersion for detailed version information.
–w *auth_passwd*	Supplies a password, *auth_passwd*, for authentication on the LDAP server.
–W *wallet_path*	Specifies the path to an exported wallet file. This is ignored if the value of –U is 0 or 1.

Note 1: If the security options –D, –noauth, or –w are not used, `LDAPSchema` prompts for an authentication DN and a password.

Note 2: If the LDAP Directory has authentication enabled, then to use the LDAPSchema command, you need to enter the directory administrator's entry DN and password.

Note 3: The LDAPSchema command creates an LDAP Directory entry, cn=OracleSchemaVersion at the root. This entry contains the attribute, orclProductVersion, defining the version number of the Oracle Message Broker LDAP schema. LDAPSchema updates the LDAP schema only if the entry cn=OracleSchemaVersion does not exist, or, if the value for orclProductVersion is lower than the current version for the LDAPSchema command.

Note 4: Options that do not list a default value have no default value.

c. Modify the directory for the Oracle Message Broker suffix with the `InitDir` command. This command is found in $ORACLE_HOME/omb/2.0/bin. Use `InitDir` as follows:

```
% InitDir [options]
```

where Table 3–2 shows the available *options*.

For example, to initialize the LDAP Directory running on the host named system1, and the default port number, 389, use the command:

```
% InitDir -h system1 -c us -o oracle -ou sales
```

This assumes that the directory is being initialized for Oracle Message Broker from the root specified with the -c, -o, and -ou options.

Table 3–2 InitDir Command Line Options

Option	Description
–b *base_dn*	Create all entries under the specified *base_dn*. The DN specified for the *base_dn* must exist in the directory.
–c *country*	Specifies the *country* to use for the root naming context
–D *auth_dn*	The *auth_dn* supplies the DN to use for user name authentication.
–errorlevel *level*	Set the error reporting level. The parameter *level* is set to an integer value in the range 1-4: 1 – print error message for the top exception 2 – print error messages for all linked exceptions 3 – print stack trace for the top exception 4 – print stack trace for all linked exceptions The default value for errorlevel is 2.
–h *host-name*	The *host-name* is the host where the directory is installed. Default value: localhost
–noauth	Specifies that LDAP authentication is not required on the LDAP server.
–o *org*	Specifies the *organization* to use for the root naming context.
–ou *org-unit*	Specifies the *organizational unit* to use for the root naming context.
–p *port*	The *port* is the port used to access the directory on the specified host. Default value: 389
–P *wallet_password*	Specifies the wallet password. This is ignored if the value of –U is 0 or 1.
-U *value*	Specifies if SSL is used, and the authentication level. Valid *values* are: 0, 1, 2, and 3. `0` – no SSL. This is the default if –U is not specified. `1` – SSL with no authentication. `2` – SSL with server-side authentication. `3` – SSL with server-side and client-side authentication.
–ldapv2	Use this option when the LDAP Directory only supports LDAP version 2. The default, without this option is support for LDAP version 3.
–version	Provides version information. Use –fullVersion for detailed version information.
–w *auth_passwd*	Supplies a password, *auth_passwd*, for authentication on the LDAP server.
–W *wallet_path*	Specifies the path to an exported wallet file. This is ignored if the value of –U is 0 or 1.

Note 1: The values you select for the –c, –o, and –ou options to `InitDir` should match the LDAP base naming context information that you supplied on the Suffix Information screen while running the Oracle Message Broker installer.

Note 2: If the security options –D, –noauth, or –w are not used, `InitDir` prompts for an authentication DN and a password.

Note 3: If the LDAP Directory has authentication enabled, then you need to enter the directory administrator's entry DN and password to use the `InitDir` command.

Note 4: Options that do not list a default value have no default value.

4. Make the Oracle Internet Directory attributes searchable.

Note: Only perform this step when the `LDAPschema` command described in step 2 prints the following message:

```
ATTENTION: The attribute "orcloasentrytype" is not
searchable. Please run "catalog.sh" on OiD to make
this attribute searchable.
```

`LDAPSchema` prints this message when there is data in the directory which uses the attribute 'orcloasentrytype' and 'orcloasentrytype' was not cataloged. In this case, `LDAPSchema` cannot catalog the attribute and catalog.sh must be run manually.

On the system where Oracle Internet Directory is installed and running, issue the commands:

```
% cd $ORACLE_HOME/ldap/bin
% catalog.sh -connect connect_string -add -attr orcloasentrytype
```

where:

connect_string Specifies the Net8 connect descriptor for connecting to the Database Server.

Enter the password when the `catalog.sh` command prompts you. The default password is ods, which is the default OID Database Server password. If you change the password using `oidpasswd` before running `catalog.sh`, use the new password, rather than the default password.

Directory Configuration Notes

It is possible that the Oracle Internet Directory may need to be restarted after running catalog.sh (see step 4 for information on running catlog.sh). It is also possible for step 4 to not fully complete its actions. If step 4 does not fully complete its actions, directory operations, including use of `AdminUtil` or `ombadmin` may report the following error message:

```
DSA unwilling to perform: operation not supported
```

The following steps provide a workaround for this problem:

1. Run the following commands:

   ```
   catalog.sh -connect connect-string -delete -attr orcloasentrytype
   catalog.sh -connect connect-string -add -attr orcloasentrytype
   ```

   where: *connect-string* specifies the Net8 connect descriptor for connecting to the Database Server.

2. Shutdown the `oidldapd` instance(s) using `oidctl`.
3. Shutdown `oidmon`.

   ```
   oidmon connect=connect-string stop
   ```

4. Shutdown the Database Server.
5. Start the Database Server.
6. Start `oidmon` using the command:

   ```
   oidmon connect=connect-string start
   ```

7. Start the `oidldapd` instance(s) using `oidctl`.

Oracle Advanced Queuing Configuration (Optional)

This section covers the configuration steps for using the Oracle 8*i* Advanced Queuing feature with the Oracle Message Broker. Perform the steps in this section if you are using Oracle Message Broker and the Oracle AQ Driver.

Note: If you are *not* using the Oracle Message Broker's Oracle AQ Driver, skip this section.

Prior to configuring the Oracle 8*i* Database Server for the Oracle Message Broker AQ Driver, you need to purchase and install the Oracle 8*i* Database Server. Refer to the following site for information on obtaining the Oracle 8*i* Database Server,

`www.oracle.com/products`

For information on installing Oracle 8*i* Database Server, refer to the documentation supplied with the product.

Stop Oracle Internet Directory

If you are running Oracle AQ using the same Oracle 8*i* Database Server as Oracle Internet Directory, then you need to shutdown both Oracle Internet Directory and the Oracle 8*i* Database Server. This section covers shutting down Oracle Internet Directory.

1. Use the OID command `oidctl` to stop the OID instance. See the *Oracle Internet Directory Administrator's Guide* for information on `oidctl`. For example,

   ```
   % oidctl connect=connect_string server=oidldapd instance=1 stop
   ```

   where: *connect_string* specifies the Net8 connect descriptor for connecting to the Database Server.

2. Use the OID command `oidmon` to stop the OID monitor. See the *Oracle Internet Directory Administrator's Guide* for information on oidmon. For example,

   ```
   % oidmon connect=connect_string stop
   ```

   where: *connect_string* specifies the Net8 connect descriptor for connecting to the Database Server.

Stop the Database Server and the Listeners

On the system running the Oracle8*i* Database Server, perform the following steps:

1. Stop the Net8 Listeners. To stop Net8 Listeners, use the listener control program:

   ```
   lsnrctl
   lsnrctl> stop
   lsnrctl> quit
   ```

   See the *Net8 Administrator's Guide* for more information on stopping listeners.

2. Stop the database. To stop the Oracle8*i* Database Server, navigate to the Oracle8*i* Database Server home directory and then Start SQL*Plus at the command prompt by typing:

   ```
   % sqlplus
   ```

3. Log on as INTERNAL.

4. At the SQL*Plus prompt, type:

   ```
   SQL> SHUTDOWN [MODE]
   ```

   where, *MODE* is one of the following:

Normal	The Database Server waits for all currently connected users to disconnect and disallows any new connections before shutting down. This is the default mode.
Immediate	The Database Server terminates and rolls back active transactions, disconnects clients, and shuts down.

Configure Database Parameters

The Oracle8*i* Database Server needs to be configured to support the resource requirements for Oracle Message Broker. Active Oracle Message Brokers consume transactions, sessions, cursors, and processes. Other applications may also use the Database Server and have their own resource needs.

Table 3–3 shows equations that determine the Database Server requirements for Oracle Message Broker. These requirements are in addition to the requirements for

any other applications that will use the Database Server. Table 3–3 outlines the parameters needed to support Oracle Message Broker.

Keep the following points in mind when configuring an Oracle8*i* Database Server:

- The DBMS must be restarted when init*SID*.ora is edited
- It is better to be too generous than too conservative when setting limits. The errors that occur when some of these limits are exceeded can be confusing.
- The OS kernel may need to be configured to support some of these parameters and the OS may need to be rebooted. Consult the platform specific Oracle8*i* install guide for details.

Table 3–3 Oracle8i Database Server Parameters Required for Oracle Message Broker

Parameter	Description
AQ_TM_PROCESSES = *num_aq*	The value of *num_aq* must be ≥ 1.
LICENSE_MAX_ SESSIONS = *num_license*	The value of *num_license* must be greater than the following: *num_license* > *num_processes* See PROCESSES below for information on the value of *num_processes*.
OPEN_CURSORS = *num_open*	The *num_open* must be, at a minimum: *num_open* = Max((2**maxConsumers*), *numQueues*) * 1.2 Where: *maxConsumers* is the maximum number of consumers. A consumer is a QueueReceiver or a TopicSubscriber within a JMS session. *numQueues* is the number of AQ queues configured for the Oracle Message Broker. This equation should determine the maximum number of cursors used by any Oracle Message Broker managed Database Server connection. If other uses require more cursors, then OPEN_CURSORS should be set to the value required.

Table 3–3 (Cont.) Oracle8i Database Server Parameters Required for Oracle Message Broker

Parameter	Description
PROCESSES= *num_processes*	The *num_processes* must be, at a minimum: *num_processes* = *(maxPrivate* + *maxShared* + *aq_tm_processes*) * 1.2 *maxPrivate* is the sum of the maxPrivateSessions attribute values for all Oracle Message Broker that concurrently use the Database Server. maxShared is the sum of the maxSharedSessions attribute values for all Oracle Message Brokers that concurrently use the Database Server. *aq_tm_processes* is the value of AQ_TM_PROCESSES from the init.ora file. See chapter 4, "Managing Oracle Processes," in the *Oracle 8i Administrator's Guide* for more information on managing processes. This assumes use of dedicated Database Servers. If other applications use the same Database Server, their resource needs also must be included.
SESSIONS = *num_sessions*	The value of *num_sessions* should be, *num_sessions* ≥ *num_processes*.
TRANSACTIONS = *num_trans*	The num_trans must be, at a minimum: *num_trans* = (2 * *maxPrivate* + *maxShared*) * 1.2 *maxPrivate* is the sum of the maxPrivateSessions attribute values for all Oracle Message Broker that concurrently use the Database Server. maxShared is the sum of the maxSharedSessions attribute values for all Oracle Message Broker that concurrently use the Database Server.

Restart the Database Server and the Listeners

On the system running the Oracle8*i* Database Server supporting AQ, perform the following steps:

1. Restart the database. To start an Oracle8*i* Database Server, navigate to the Oracle8*i* Database Server home directory.
2. Start SQL*Plus at the command prompt by typing:

   ```
   % sqlplus
   ```

3. Log on as INTERNAL.

4. At the SQL*Plus prompt, type:

```
SQL> STARTUP
```

5. At the SQL*Plus prompt, type:

```
SQL> EXIT
```

6. Restart the Net8 Listeners. To stop Net8 Listeners. At the command program type:

```
lsnrctl
lsnrctl> start
lsnrctl> quit
```

See the *Net8 Administrator's Guide* for more information on starting listeners.

Start Oracle Internet Directory

If you are running Oracle AQ using the same Oracle 8*i* Database Server as Oracle Internet Directory, then you need to startup both the OID and the Oracle 8*i* Database Server. This section covers starting OID *after* the Database Server is up and running.

1. Use the OID command `oidmon` to start the OID monitor. See the *Oracle Internet Directory Administrator's Guide* for information on oidmon. For example,

```
% oidmon connect=connect_string start
```

where:

connect_string Specifies the Net8 connect descriptor for connecting to the Database Server.

2. Use the OID command `oidctl` to start the OID instance. See the *Oracle Internet Directory Administrator's Guide* for information on `oidctl`. For example,

```
% oidctl connect=connect_string server=oidldapd instance=1 start
```

where:

connect_string Specifies the Net8 connect descriptor for connecting to the Database Server.

Initialize AQ

After installing the Oracle Message Broker and installing the Oracle 8*i* Database Server, perform the following steps. The Oracle 8*i* Database Server needs to be running to use these scripts. These scripts initialize AQ for use with Oracle Message Broker and provide support to allow the AQ Driver to work with AQ queues and topics.

1. Navigate to the directory containing Oracle Message Broker AQ administration scripts:

   ```
   % cd $OMB_HOME/admin/plsql
   ```

2. Run the three AQ setup scripts:

   ```
   % sqlplus system/system_password[@service_name] @step1
   % sqlplus system/system_password[@service_name] @step2
   % sqlplus aq/aq[@service_name] @step3
   ```

   where:

system_password	The password for the system administrative user.
service_name	The database service name.

   Note1: The step1.sql script sets the default AQ administrative password to "aq".

   If you change the default password in step1.sql, note the changed value.The administrative sample script SetupAQ requires that you supply the password values for AQ.

   After installation, the AQ password can be changed using the Database Server Enterprise Manager, or using the Database Server ALTER USER SQL command.

Note 2: One or more of the following errors messages are expected while running the script step3.sql. You can ignore these error messages.

```
ORA-00942: table or view does not exist
ORA-04043: xx does not exist
ORA-04043: object xx does not exist
```

Running the pl/sql script step1.sql is only required if this is the first time that Oracle Message Broker pl/sql support is installed. It creates the user aq with the password aq.

Running the pl/sql script step2 is required. This script does the following:

- It grants privileges to user aq
- Creates the role ombadmin
- Grants privileges to role ombadmin
- Creates role ombuser
- Grants privileges to role ombuser

Running the pl/sql script step3 is required. This script does the following:

- Installs package ombaq in the aq schema
- Installs package ombaqadm in the aq schema
- Grants execute on ombaq to ombuser, ombadmin
- Grants execute on ombaqadm to ombadmin

Removing AQ Queue Tables

The Oracle Message Broker also provides a script to remove the tables and users that are created for AQ. If you need to remove these tables, use the following command to remove the AQ Driver support from the Database Server:

```
% sqlplus system/system_password[@service_name] @uninstall
```

where:

system_password	The password for the system administrative user.
service_name	The database service name.

Note: The step1.sql script sets the default AQ administrative password to "aq".

If you change the default password assigned in step1.sql, note the changed value.The administrative sample script SetupAQ requires that you supply the password values for AQ.

After installation, the AQ password can be changed using the Database Server Enterprise Manager, or using the Database Server ALTER USER SQL command.

One or more of the following types of errors are expected while running this script:

```
ORA-00942: table or view does not exist
ORA-04043: xx does not exist
```

This uninstall script does the following:

- Drops the ombadmin and ombuser roles
- Drops the aq user (using the cascade option)
- Removes all of the queues and queue tables that exist in the AQ schema

---

Note: The unistall script performs these functions only if no queue tables outside of the schema ‘aq’ use the Oracle Message Broker object types. If queue tables outside of the schema ‘aq’ use the Oracle Message Broker object types, executing the uninstall script lists those queue tables, prints an error message, and quits.

MQSeries Installation Tasks (Optional)

This version of the Oracle Message Broker only supports IBM MQSeries V5.1. For details on installing MQSeries, refer to the MQSeries documentation available from IBM and supplied with the MQSeries product.

TIBCO Installation Tasks (Optional)

To use the Oracle Message Broker with the TIBCO Driver you need to install and start up TIB/Rendezvous Release 5.x or TIB/Rendezvous Pro Release 5.x (when using the JDK 1.2 version of Oracle Message Broker, TIB/Rendezvous Pro Release 5.x is required). For information on TIB/Rendezvous installation and administration, refer to the *TIB/Rendezvous Administrator's Guide*. For more information on TIB/Rendezvous, see the following web site,

http://www.rv.tibco.com/

Asynchronous Component Invocation Installation Tasks (Optional)

If you are using the Oracle Message Broker Asynchronous Component Invocation (ACI), you need to load Oracle Message Broker's client classes in the Oracle Database Server, and grant permissions to the schema in which the EJB executes using the following two commands (replace SCOTT/TIGER with your schema and password):

```
# grant permissions to SCOTT
sqlplus sys/sys_password @$OMB_HOME/admin/plsql/setupaci.sql SCOTT
# Loading OMB client classes
loadjava -r -g SYS -u SCOTT/TIGER ${OMB_HOME}/classes/ombclt.jar
```

or on Windows NT systems:

```
sqlplus sys/sys_password @%OMB_HOME%\admin\plsql\setupaci.sql SCOTT
loadjava -r -g SYS -u SCOTT/TIGER %OMB_HOME%\classes\ombclt.jar
```

where:

sys_password is the administrative user sys's password.

Note: Run these commands only once for each schema, prior to deploying EJBs in the schema.

Migrating Directory Data Between Versions

The Oracle Message Broker provides the utility `Migrate10to20` to migrate directory data between versions. Refer to the *Oracle Message Broker Administration Guide* for information on using `Migrate10To20`.

Creating an OMB Instance and Using Oracle Message Broker

At this point, the installation for the Oracle Message Broker, the LDAP Directory, and the required providers is complete. The next step is to configure the Oracle Message Broker and to start using the Oracle Message Broker. Refer to Chapter 2, “QuickStart”, in the *Oracle Message Broker Administration Guide* for information on creating an OMB Instance, working with the administrative utilities and the sample administrative scripts, and starting the Oracle Message Broker.

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