Oracle® Enterprise Manager

Configuration Guide

Release 2.2

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Oracle® Enterprise Manager Configuration Guide, Release 2.2

Part No. A85247-01

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Oracle Enterprise Manager Configuration Guide, Release 2.2

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Preface

This chapter describes the purpose and organization of this guide. The Preface contains the following information:

- Purpose of this Guide
- Audience
- How this Guide is Organized
- Documentation Set
- Related Publications
- Conventions Used in this Guide

Purpose of this Guide

This guide explains how to configure Oracle® Enterprise Manager Release 2.2.

Oracle Enterprise Manager is a system management tool which provides an integrated solution for managing your heterogeneous environment. The product combines a graphical console, agents, common services, and tools to provide an integrated, comprehensive systems management platform for managing Oracle products.

For program updates and important notes on using Oracle Enterprise Manager, refer to the *Oracle Enterprise Manager Readme.*

After you have completed the configuration procedures, refer to the Oracle Enterprise Manager online help or the *Oracle Enterprise Manager Administrator's Guide* for information on how to use Oracle Enterprise Manager.

Audience

This guide is written for DBAs and system administrators who wish to configure Oracle Enterprise Manager. You should already be familiar with Oracle and the administrative tasks you wish to perform.

For general information about the Oracle8*i* and how it works, refer to the *Oracle8i Concepts Guide*. For information about database administration procedures, refer to the Oracle8*i* documentation set. The Oracle8*i* documentation set contains specific and thorough descriptions of the database administration tasks you can perform with Oracle Enterprise Manager tools. In addition, the Oracle8*i* documentation set provides recommendations on how to administer your database optimally.

You should also be familiar with the operation of your specific Microsoft Windows or Unix system. Refer to the documentation for your Windows or Unix system, if necessary.

How this Guide is Organized

This guide is comprised of the following chapters:

Chapter	Description
Chapter 1, "Introducing Oracle Enterprise Manager"	This chapter provides an overview of Oracle Enterprise Manager configuration.
Chapter 2, "Creating a Release 2.2 Repository"	This chapter describes how to create a new repository using Enterprise Manager Configuration Assistant.
Chapter 3, "Controlling the Management Server"	This chapter describes how to start, stop, and check the status of the Oracle Management Server.
Chapter 4, "Adding Additional Management Servers"	This chapter describes how to add an additional Management Server to manage an already existing repository.
Chapter 5, "Starting and Stopping the Intelligent Agent"	This chapter describes how to start the Oracle Intelligent Agent.
Chapter 6, "Setting Up the Console"	This chapter describes how to configure and start Oracle Enterprise Manager Release 2.2.
Chapter 7, "Migrating a Release 1.x Repository to a Release 2.2 Repository"	This chapter describes methods for migrating the user's private Release 1.x repositories into a specific user in a new Release 2.2 repository. For information about upgrading a Release 2.0 or 2.1 repository to a Release 2.2 repository, refer to "Upgrade a Release 2.0 or 2.1 Repository to a Release 2.2 Repository" on page B-1.
Chapter 8, "Setting Up DBA Studio"	This chapter describes how to set up DBA Studio.
Appendix A, "Directory Structure"	This appendix describes the directory structure of Oracle Enterprise Manager Release 2.2.

Chapter	Description
Appendix B, "Configuration Assistant Operations"	This appendix describes how to upgrade a repository, how to drop a repository, and how to redirect the local Management Server to use a different repository or to respond to changes in the repository user's password.
Appendix C, "Upgrading the Intelligent Agent and Data Gatherer"	This appendix describes the process for upgrading the Intelligent Agent and Data Gatherer.
Appendix D, "Troubleshooting"	This appendix describes possible issues for troubleshooting.
Appendix E, "Repository Sizing"	This appendix contains recommendations for repository sizing.
Appendix F, "Configuring the Webserver and Directory Mapping"	This appendix contains information about configuring your webserver and directory mapping if you did not install the Oracle HTTP Server that is packaged with Enterprise Manager by default.
Appendix G, "Keyboard Shortcuts"	This appendix provides a list of general Windows keyboard shortcuts.

Documentation Set

The Oracle Enterprise Manager Release 2.2 documentation includes the following:

- The *Oracle Enterprise Manager Readme* Release 2.2 provides important notes on updates to the software and other late-breaking news, as well as any differences between the product's behavior and how it is documented.
- The *Oracle Enterprise Manager Configuration Guide* Release 2.2 provides information about configuring the Oracle Enterprise Manager system.
- The *Oracle Enterprise Manager Concepts Guide* Release 2.2 provides an overview of the Enterprise Manager system.
- The *Oracle Enterprise Manager Administrator's Guide* Release 2.2 describes the components and features of the Oracle Enterprise Manager system.
- The *Oracle Intelligent Agent Users Guide* describes how to administer the Oracle Intelligent Agent.
- The *Oracle Enterprise Manager Messages Manual* Release 2.2 contains probable causes and recommended actions for Oracle Enterprise Manager errors.

In addition to the Oracle Enterprise Manager documentation set, extensive on-line help is provided for components in Oracle Enterprise Manager.

To download free release notes or installation documentation, please visit the Oracle Documentation Center at http://docs.oracle.com/

Printed documentation is available for sale in the Oracle Store at http://oraclestore.oracle.com/

Related Publications

The *Oracle Enterprise Manager Configuration Guide* refers to important information in the related publications. The related books referred to in this guide are listed below:

- For general information about the Oracle8*i* and how it works, refer to *Getting to Know Oracle8i* and *Oracle8i Concepts*.
- For information about administering the Oracle8*i*, refer to the *Oracle8i Administrator's Guide*.
- For the procedures for migrating a previous version of Oracle, refer to *Oracle8i Migration*.
- For information on Oracle's SQL commands and functions, refer to the *Oracle8i SQL Reference*.
- For information about utilities bundled with the Oracle8*i*, refer to the *Oracle8i SQL Reference*.
- For information about Oracle messages and codes, refer to *Oracle8i Error Messages*.
- For information about the Oracle networking system, refer to your network-specific documentation.
- For information on Oracle Parallel Server, refer to the *Oracle8i Parallel Server Setup and Configuration Guide*, which provides essential information for preparing Oracle8*i* for use with Oracle Parallel Server and Oracle Enterprise Manager. The "Introducing Oracle Parallel Server" chapter provides a conceptual and component overview of Oracle Parallel Server. This information will help you prepare and plan your Oracle Parallel Server installation and configuration in an Oracle8*i* environment.

Conventions Used in this Guide

The following sections explain the conventions used in this guide.

Examples

This guide contains code examples. Note that the text of examples appears in a different font than the text of the guide. This is an example of a SELECT statement:

```
SELECT * FROM emp
```

Examples in this guide follow these case conventions:

- Keywords, such as CREATE and NUMBER, appear in uppercase. Keywords have special meanings. When you specify them, they can be in uppercase or lowercase, but they must be used exactly as they appear in the code example.
- Names of database objects and their parts, such as `emp` and `empno`, appear in lowercase. However, in the text of this guide, names of database objects and their parts appear in uppercase.
- Parameters act as place holders in examples. They appear in lowercase. Parameters are usually names of schema objects, Oracle datatypes, or expressions. When there is parameter in a syntax diagram, you should substitute an object or expression of the appropriate type. Note that parameter names appear in italics in the text of this guide.

Command Syntax

- *Italics* is used for variables, such as *`application_name.`* Substitute an appropriate value.
- | denotes alternative choices
- {*`param1`* | *`param2`* | ... } signifies that one of the parameters in {} must be used. Do not type the brackets.
- [ ] identifies optional parameters. Do not type the brackets.

1

Introducing Oracle Enterprise Manager

Oracle Enterprise Manager is a system management tool which provides an integrated solution for centrally managing your heterogeneous environment. Oracle Enterprise Manager combines management applications such as the Console, Oracle Management Servers, Oracle Intelligent Agents, common services, and tools to provide an integrated, comprehensive systems management platform for managing Oracle products.

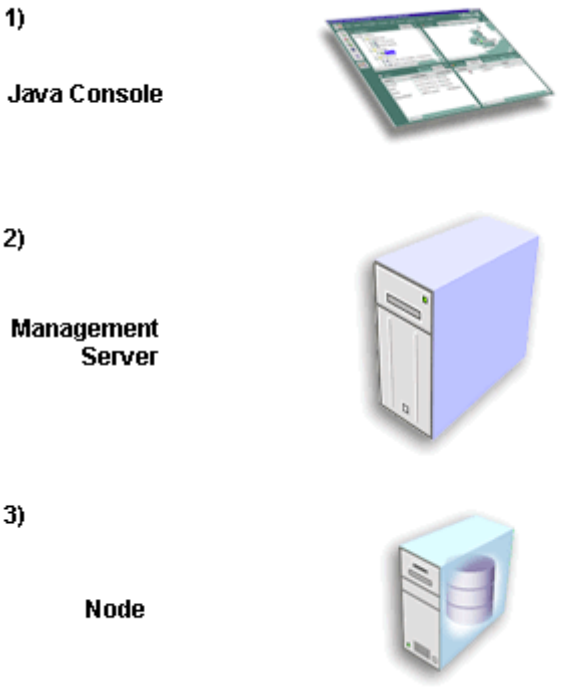
This introduction discusses the topics listed below:

- Oracle Enterprise Manager's Architecture
- Basic Terminology
- Oracle Enterprise Manager System and Hardware Requirements
- Oracle Enterprise Manager Release 2.2 Certification
- Overview of Oracle Enterprise Manager Configuration

Oracle Enterprise Manager's Architecture

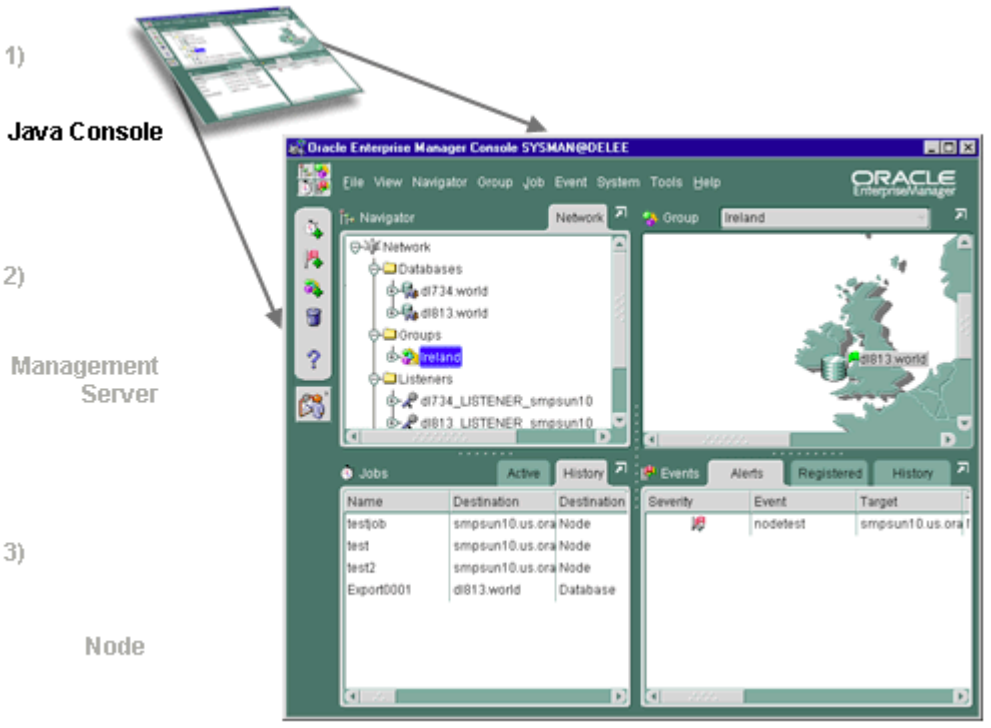
Oracle Enterprise Manager is based on a highly scalable three-tier model.

Figure 1–1 Three-Tier Architecture



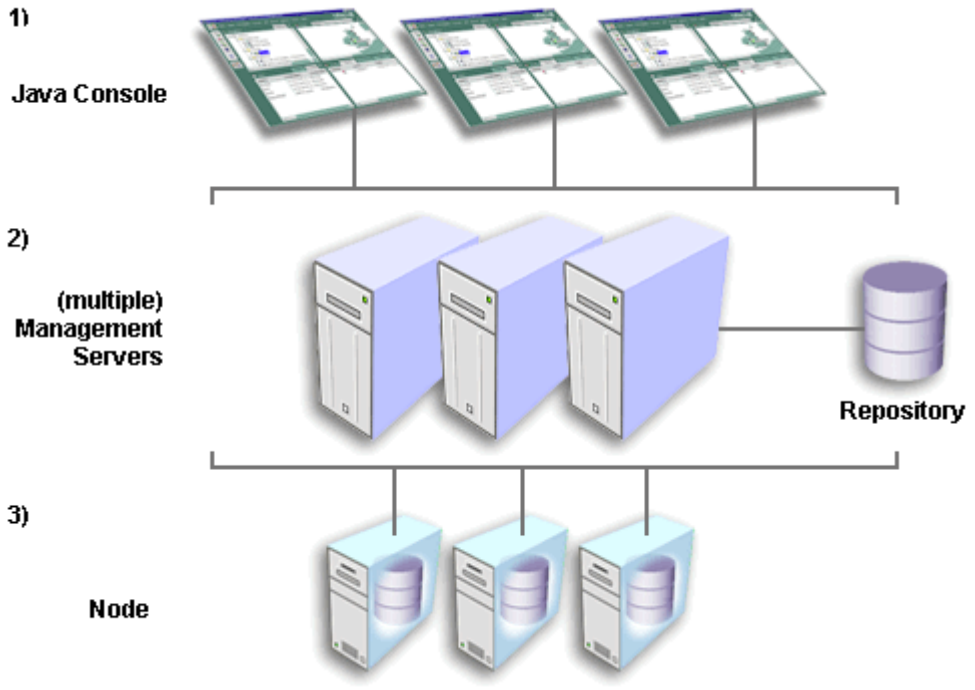
The first tier, the client, consists of a Java-based Console and integrated applications.

Figure 1–2 First Tier



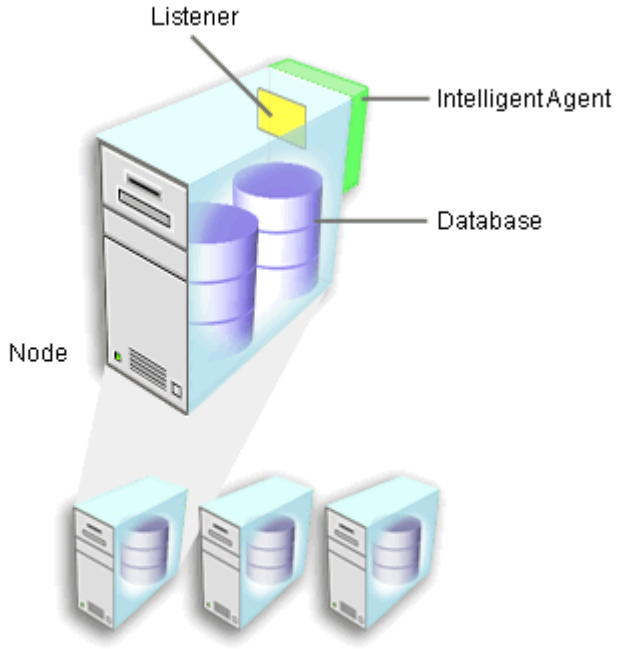
The second tier is the Management Server or designated group of Management Servers which manages the flow of information between the clients and targets.

Figure 1–3 Second Tier



The third tier is comprised of targets, such as databases, nodes, or other managed services. An Intelligent Agent resides on each target node and monitors the services in the target for registered events (potential problem occurrences) and executes jobs sent by the Console via the Oracle Management Server(s). Only one Intelligent Agent can run on a single machine, regardless of the number of services on that machine.

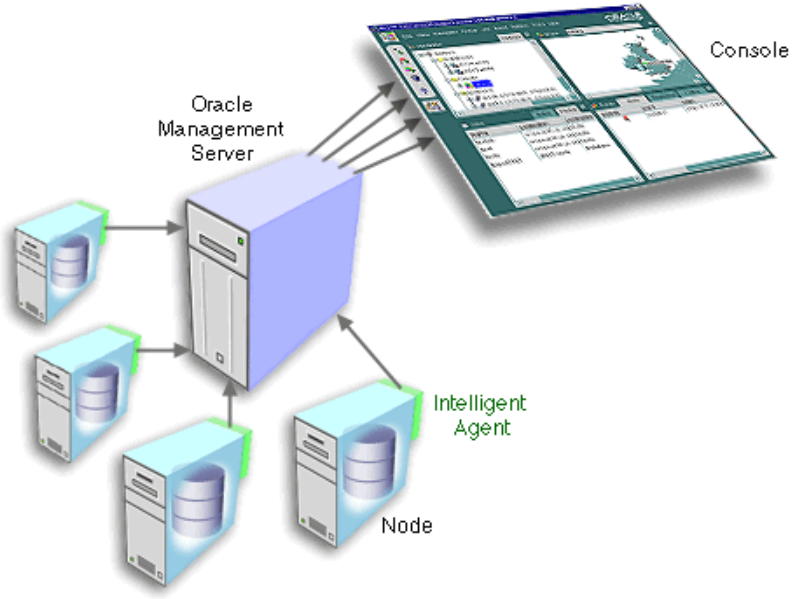
Figure 1–4 Third Tier



Oracle Enterprise Manager's three main components are listed below:

Component	Function
Console	The Console gives you a central point of control for the Oracle environment through an intuitive graphical user interface (GUI) that provides powerful and robust system management.
Management Server	The Oracle Management Server authenticates the Oracle Enterprise Manager administrator, processes management functions, and provides a centralized data store of administrative information. The administrative information includes jobs, events, groups, and preferred credentials. Administrators who share responsibility for a managed target (for example, a database) can share administrative information for that target.
Intelligent Agent	The Intelligent Agent is a process that runs on managed nodes in the network. It functions as the executor of jobs and events sent by the Console via the Management Servers.

Figure 1–5 Oracle Enterprise Manager's Components



Basic Terminology

What is a repository?

A repository is a set of tables in a database containing the internal state information of Enterprise Manager for the managed environment and information about the management packs. It is used as a back-end store by the Oracle Management Servers, providing distributed control between clients and managed nodes.

What is a repository user?

An Enterprise Manager repository is owned by a database user. During repository creation a repository's user name is entered that will be used to create this database user.

The name of the repository user will also be the name of this repository, and this name will be used throughout the network to identify all the objects in this repository. The name of the repository must be a unique schema name across the entire managed network.

If the repository user name and encrypted password are saved during repository creation, the Management Server uses them to login to the repository; if they are not saved, the Management Server prompts the user for a user name and password before it starts up.

What is an administrative user?

An Oracle Enterprise Manager administrative user is an account that provides users permission to perform administrative tasks and access administrative information. An administrative account is usually created for each person on an administrative team. Preferences, such as preferred credentials, login password, and email and paging notification schedules, must be set for each administrator. Generally each person has a single administrative user account through which he administers several to many targets.

Administrative user accounts are created by the super administrator. Oracle Enterprise Manager is installed with a default super administrator account which can be used for the initial login. The super administrator account is `sysman` and the initial password is `oem_temp`. The password must be changed after the initial login. The super administrator account is similar to `root` on UNIX or `Administrator` on Windows NT and is a user which cannot be deleted or renamed.

Note: Administrator user accounts are specific to Oracle Enterprise Manager and are different than Oracle database users.

What is a Console?

The Console, a graphical interface for administrators and the central launching point for all applications (including the integrated applications), is a Java-based application that can be run as either a "thin" or "fat" client. Thin clients use a web browser to connect to a server where Console files are installed, whereas fat clients require Console files to be installed locally.

However you run the Console, it relies on the Oracle Management Server and the Oracle Intelligent Agent to perform system management tasks.

What is an Oracle Management Server?

The Management Server is the core of the Enterprise Manager framework. It provides administrative user accounts, processes management functions such as jobs and events, and manages the flow of information between the tiers.

As the number of nodes and managed services in your network increases or if the current Management Server is overloaded, you can add more Oracle Management Servers to the middle tier to share and balance the workload. These additional Management Servers provide fault-tolerance in the case where one Management Server becomes unavailable. All Management Servers administering the same set of managed nodes share a single Repository, which stores all system data, application data, and the state of managed nodes throughout the environment.

What is the Oracle Intelligent Agent?

An Oracle Intelligent Agent is a process on a managed server, which monitors registered events and runs scheduled jobs against all discovered services on that server. Only one Intelligent Agent is required per node regardless of the number of services present on that machine. Intelligent Agents function independently of the database or services they support, as well as being independent of the Management Server and Console clients.

What is service discovery?

There are two types of discovery:

- Automatic discovery performed by the Intelligent Agent to record the list of all services that it can manage
- Service discovery performed by the Console to obtain the list of services from the Intelligent Agent so that the Console Navigator can display the services

Without the Intelligent Agent discovery, there is no Console discovery. Both discoveries must be successful and must happen in the correct order for the services to appear in the Console Navigator.

When you use the Discovery Wizard in the Console, the Management Server contacts the Intelligent Agent installed on that node to discover the Oracle services installed on the node.

When the Intelligent Agent starts, it performs its service discovery by scanning the system for Oracle services to manage. The Intelligent Agent records the service discovery. When the Console requests a discovery of the node, the Intelligent Agent transmits the service discovery information it has detected to the Management Server.

The Management Server then places the new information in the repository, and updates the Console Navigator, displaying a view of all nodes and their respective services.

Service discovery allows administrators to run jobs and monitor for events on those nodes and allows the information to be centrally managed by the Consoles.

What is a Managed Node?

A managed node is any machine that is being monitored by an Intelligent Agent that has been discovered by the Console.

What is a Managed Service/Managed Target?

Every service running on a managed node is a managed service or target. Multiple services (targets) can exist on a single machine (node).

What are preferred credentials?

This section contains information about:

- preferred credential saved through the Oracle Enterprise Manager Console
- local preferred credentials saved through DBA Studio

Preferred Credentials Saved Through the Oracle Enterprise Manager Console

Each administrator can set up specific usernames, passwords, and roles (NORMAL, SYSOPER, or SYSDBA) for nodes, listeners, databases, and other services that you administer in the network.

After you set up preferred credentials, you are no longer prompted for credentials when connecting to the managed targets.

The Preferred credentials you set up through the Console also allow you to use the job and event system for targets where credentials are required. All login credentials set up through the Console are encrypted in the repository.

Local Preferred Credentials Saved Through DBA Studio

DBA Studio stores a list of databases that are displayed in the DBA Studio navigator tree. If preferred credentials are specified for any of these databases, the username, encrypted password, and role are added to a local file.

Saving or editing preferred credentials is an option which enables you to store login information, such as username, password, and role (NORMAL, SYSOPER, or SYSDBA). Passwords are always stored in encrypted format. This login information is used when a connection is established for the database instead of having to type a username and password each time.

Oracle Enterprise Manager System and Hardware Requirements

You can run Oracle Enterprise Manager components in any configuration depending on your management environment. For example, you can run each tier on separate machines or run all three tiers on one machine.

> **Note:** Examples of requirements for Windows-based machines are listed below.

Running Enterprise Manager components on separate machines requires the following:

Client-Only

Machine running only the Console and DBA Management Pack:

- Pentium 266 MHz or SPARC 20
- 128 MB RAM
- 190 MB available hard disk space (on NTFS). FAT can consume as much as four times as much disk space as NTFS.

Client-Server

Running the entire Enterprise Manager bundle (Console, DBA Management Pack, Oracle Management Server and database repository) from a single machine requires the following:

- Pentium II 400 MHz or SPARC Ultra 1
- 256 MB RAM
- 190 MB available hard disk space (on NTFS). FAT can consume as much as four times as much disk space as NTFS. 190 MB includes 6-26 MB for configuring the Repository. Refer to Appendix E, "Repository Sizing" for information on how much you can expect your repository to grow.

Running the Enterprise Manager Console from a web browser requires 128 MB RAM.

Downloading Enterprise Manager from the webserver requires 50 MB of disk space.

Note: The requirements outlined above assume that a database for the Enterprise Manager Repository already exists. If a database has not already been installed, you must install one. For recommended system and hardware requirements for an Oracle database, refer to the installation guide provided with that database release.

The default Enterprise Manager package (using a single Oracle Management Server in your environment) is tuned to best support an environment with the following characteristics:

- Up to 64 managed nodes
- Up to 256 managed database instances or other managed targets (up to 10 managed targets on any one node)
- Up to 15 Consoles actively being used at one time

If the available Management Servers are CPU-bound (the CPU usage is exhausted), adding additional Management Servers is an alterative to increasing the capacity of the nodes that run the Management Servers.

To improve performance when the number of Consoles, jobs or events increases, Oracle recommends increasing resource capacity on the Repository database machine.

Oracle Enterprise Manager Release 2.2 Certification

Oracle Enterprise Manager Release 2.2 is certified on the following operating systems:

- Windows 95
- Windows 98
- Windows NT, SP4 and higher
- Windows 2000
- Solaris 2.6
- Solaris 2.7

The Management Server is not certified on Windows 95 or Windows 98.

Browser-based Oracle Enterprise Manager is only supported on the following operating systems: Windows 95, Windows 98, Windows NT, and Windows 2000.

Overview of Oracle Enterprise Manager Configuration

The tables below outline the steps needed for various Enterprise Manager configurations:

- Configuring Oracle Enterprise Manager Quickly (Quick Start)
- Configuring Oracle Enterprise Manager for a Large Enterprise
- Upgrading Your Oracle Enterprise Manager Framework and Management Packs
- Migrating Your Repository

Details of the steps involved can be found in the indicated sections.

Configuring Oracle Enterprise Manager Quickly (Quick Start)

The following configuration may be used for most small to medium-sized environments. Small to medium-sized environments are environments which administer fewer than 64 managed nodes.

In this configuration, the middle-tier and client-tier Oracle Enterprise Manager components are on the same node.

Note: The information below is for new installations. For guidelines to upgrading your Oracle Enterprise Manager framework and Management Packs from previous 2.x releases to Release 2.2, refer to "Upgrading Your Oracle Enterprise Manager Framework and Management Packs" on page 1-19.

Table 1–1 Quick Start—Target Node Tier Configuration

Procedure	Refer to
1. Make sure you have installed an Intelligent Agent on the node to be managed. If not, install a version of the Intelligent Agent which is the same or higher than the highest version of the database present on the machine. If the Intelligent Agent version is the same as the database version, you can install them in the same ORACLE_HOME, otherwise the Intelligent Agent will have to be installed in a separate ORACLE_HOME.	Refer to the installation guide provided with the database release.
2. Start the Intelligent Agent, and check that all services are recorded in the services.ora file which is located in the ORACLE_HOME/network/agent directory.	Refer to the *Oracle Intelligent Agent User's Guide* for details if you encounter any problems.

Table 1–2 Quick Start—Middle Tier and Client Tier Configuration

Procedure	Refer to
1. Use an existing database for the Oracle Management Server repository or install and use a new Oracle database.	Refer to the installation guide provided with the database release.
2. Install the Management Server, and the Oracle Enterprise Manager client software in a new ORACLE_HOME. If you are installing from the database CD, choose the install type: Oracle8i Management and Integration->Oracle Management Server. If you are installing from the separately licensable packs CD, choose the install type: Oracle Enterprise Manager Packs and Management Infrastructure.	Refer to the installation guide provided with the database release or the installation guide provided with the separately licensable packs.
3. At the end of installation, create a repository in your database. Depending on which installation type you have chosen, the Oracle Enterprise Configuration Assistant may be run automatically.	Refer to "Creating a Release 2.2 Repository" on page 2-1 to create a repository using the Oracle Enterprise Configuration Assistant.
4. Make sure the Management Server is running. Note: The repository database must be started and open and the listener must be started before starting the Management Server. Otherwise, an error occurs.	Refer to "Controlling the Management Server" on page 3-1.

Table 1–2 Quick Start—Middle Tier and Client Tier Configuration(Cont.)

Procedure	Refer to
5. Launch the Console (client), and at the login, point to the Management Server on the same node.	Refer to "Starting the Enterprise Manager Console" on page 6-3.

Configuring Oracle Enterprise Manager for a Large Enterprise

The following configuration is best for large environments with many managed databases and services. Large environments are environments which administer more than 64 managed nodes.

Note: The information below is for new installations. For guidelines to upgrading your Oracle Enterprise Manager framework and Management Packs from previous 2.x releases to Release 2.2, refer to "Upgrading Your Oracle Enterprise Manager Framework and Management Packs" on page 1-19.

Table 1–3 Large Enterprises—Target Node Tier Configuration—Machine A

Procedure	Refer to
1. Make sure you have installed an Intelligent Agent on the node to be managed. If not, install a version of the Intelligent Agent which is the same or higher than the highest version of the database present on the machine. If the Intelligent Agent version is the same as the database version, you can install them in the same ORACLE_HOME, otherwise the Intelligent Agent will have to be installed in a separate ORACLE_HOME.	Refer to the installation guide provided with the database release.
2. Start the Intelligent Agent, and check that all services are recorded in the services.ora file which is located in the ORACLE_HOME/network/agent directory.	Refer to the *Oracle Intelligent Agent User's Guide* for details if you encounter any problems.

Table 1–4 Large Enterprises—Middle Tier (Repository) Configuration—Machine B

Procedure	Refer to
Use an existing database for the Oracle Management Server repository or install and use a new Oracle database.	Refer to the installation guide provided with the database release.
▪ If you are using an existing database, run the Oracle Enterprise Configuration Assistant to create a repository. ▪ If you are installing a new database, at the end of installation, create a repository in your database. Depending on which installation type you have chosen, the Oracle Enterprise Configuration Assistant may be run automatically.	Refer to "Creating a Release 2.2 Repository" on page 2-1 to create a repository using the Oracle Enterprise Configuration Assistant.

Table 1–5 Large Enterprises—Middle Tier (Management Server) Configuration—Machine C

Procedure	Refer to
1. Install the Management Server in a new ORACLE_HOME. If you are installing from the database CD, choose the install type: Oracle8i Management and Integration->Oracle Management Server. If you are installing from the separately licensable packs CD, choose the install type: Oracle Enterprise Manager Packs and Management Infrastructure--> Custom-->Oracle Management Server.	Refer to the installation guide provided with the database release or the installation guide provided with the separately licensable packs.
2. Run the Oracle Enterprise Configuration Assistant to set up the Management Server to manage an already existing repository.	Refer to "Edit Configuration Parameters" on page B-9.
3. Make sure the Management Server is running. Note: The repository database must be started and open and the listener must be started before starting the Management Server. Otherwise, an error occurs.	Refer to "Controlling the Management Server" on page 3-1.

Table 1–6 Large Enterprises—Client Tier Configuration—Machine D

Procedure	Refer to
Install the Oracle Enterprise Manager client software in a new ORACLE_HOME. If you are installing from the database CD, choose the install type: Oracle8i Client->Administrator. If you are installing from the separately licensable packs CD, choose the install type: Oracle Enterprise Manager Packs and Management Infrastructure.	Refer to the installation guide provided with the database release or the installation guide provided with the separately licensable packs.
Launch the Console (client), and at the login, point to the Management Server.	Refer to "Starting the Enterprise Manager Console" on page 6-3.

Note: If you want to have multiple clients working concurrently, install the client software on multiple clients.

Table 1–7 Large Enterprises—Middle Tier (Additional Management Servers) Configuration—Machine E, F...

Procedure	Refer to
1. If the current Management Server is overloaded, install additional Management Servers on different machines. If you are installing from the database CD, choose the install type: Oracle8i Management and Integration->Oracle Management Server. If you are installing from the separately licensable packs CD, choose the install type: Oracle Enterprise Manager Packs and Management Infrastructure--> Custom-->Oracle Management Server.	Refer to the installation guide provided with the database release or the installation guide provided with the separately licensable packs.
2. Run the Oracle Enterprise Configuration Assistant on each of the machines to set up the Management Server to manage an already existing repository.	Refer to "Adding Additional Management Servers" on page 4-1.

Table 1–7 Large Enterprises—Middle Tier (Additional Management Servers) Configuration—Machine E, F...(Cont.)

Procedure	Refer to
3. Make sure the Management Server is running. Note: The repository database must be started and open and the listener must be started before starting the Management Server. Otherwise, an error occurs.	Refer to "Controlling the Management Server" on page 3-1.

Upgrading Your Oracle Enterprise Manager Framework and Management Packs

The upgrade of the Oracle Enterprise Manager framework (Console, Management Server, repository, and Intelligent Agent) and Management Packs from previous 2.x releases to Release 2.2 must be performed in the order documented below.

Important: The Enterprise Manager Console, DBA Management Pack, separately licensable Packs, Management Server and repository must all be of the same release. For example, you cannot use a Release 2.1 Management Server and repository with a Release 2.2 Console nor can you use a Release 2.2 Management Server and repository with a Release 2.1 Pack.

If the existing Management Server and repository are of a previous version, then you can migrate or upgrade them to the most recent version. In the case of migrating or upgrading a Management Server and repository to Release 2.2, ensure that all Enterprise Manager products you intend to use with the repository are of Release 2.2. For instance, do not upgrade the Management Server and repository to Release 2.2 if you are still using Diagnostics Pack Release 2.1 or Change Management Pack Release 2.1.

Table 1–8 Upgrading Your Framework and Management Packs

Procedure	Reference
1. Upgrade all components such as the Oracle Enterprise Manager Console, the Management Server, DBA Studio, and any other separately licensable packs you have installed.	Refer to the installation guide provided with the database release and the installation guide provided with the separately licensable packs.
2. Upgrade your repository from Release 2.x to Release 2.2. You should not schedule any repository upgrades until all Oracle Enterprise Manager components other than the Intelligent Agent have been upgraded to Oracle Enterprise Manager Release 2.2.	Refer to "Upgrade a Release 2.0 or 2.1 Repository to a Release 2.2 Repository" on page B-1
3. Upgrade the Intelligent Agent to Release 8.1.7 for each managed node. Note: If the 8.1.7 Intelligent Agent is installed in a new home, you must copy the .Q files over to the new home. Note: The Intelligent Agent and Agent Data Gatherer must be the last components to be upgraded because once the Intelligent Agent is upgraded to Release 8.1.7, the pre-2.2 components such as the Management Server will consider the Intelligent Agent invalid.	Refer to "Upgrading the Intelligent Agent and Data Gatherer" on page C-1.
4. Upgrade the Agent Data Gatherer to Release 8.1.7 for each node that you have configured for collections.	Refer to "Upgrading the Intelligent Agent and Data Gatherer" on page C-1.

Migrating Your Repository

An Oracle Enterprise Manager Release 1.x repository schema is not the same as an Oracle Enterprise Manager "shared" Release 2.2 repository schema. In Enterprise Manager Release 1.x, each administrator had a separate repository schema which contained the current view of the network and user-specific information. In Enterprise Manager Release 2.2, administrators have accounts within a single shared repository schema, and all individual preferences are stored in the administrator's account.

Each Release 1.x repository must be separately migrated to a new Release 2.2 repository.

The procedures below highlight the basic steps for migrating a repository.

Table 1–9 Create New Release 2.2 Repository

Procedure		Refer to
1.	Use an existing database for the new Oracle Management Server Release 2.2 repository or install and use a new Oracle database.	Refer to the installation guide provided with the database release.
2.	Install the Management Server, Enterprise Manager Migration Assistant, and the Oracle Enterprise Manager client software in a new ORACLE_HOME. If you are installing from the database CD, choose the install type: Oracle8i Management and Integration->Oracle Management Server. If you are installing from the separately licensable packs CD, choose the install type: Oracle Enterprise Manager Packs and Management Infrastructure.	Refer to the installation guide provided with the database release or the installation guide provided with the separately licensable packs.
3.	At the end of installation, create a new Release 2.2 repository in your database. Depending on which installation type you have chosen, the Oracle Enterprise Configuration Assistant may be run automatically.	Refer to "Creating a Release 2.2 Repository" on page 2-1 to create a repository using the Oracle Enterprise Configuration Assistant.
4.	Make sure the Release 2.2 Management Server is running. Note: The Release 2.2 repository database must be started and open and the listener must be started before starting the Management Server. Otherwise, an error occurs.	Refer to "Controlling the Management Server" on page 3-1.
5.	Launch the Release 2.2 Console (client), and at the login, point to the Management Server on the same node.	Refer to "Starting the Enterprise Manager Console" on page 6-3.

Table 1–10 Prepare for Migration

Procedure	Refer to
1. Create administrator accounts.	Refer to"Creating Administrator Accounts" on page 6-6.
2. Refresh All Services in the Release 1.x Console.	Refer to the Release 1.x Oracle Enterprise Manager Administrator's Guide.
3. Shut Down the Release 1.x Console.	Refer to the Release 1.x Oracle Enterprise Manager Administrator's Guide.
4. Shut Down the Release 2.2 Management Server	Refer to "Controlling the Management Server" on page 3-1.
5. Back Up the Existing Release 1.x Repository.	For detailed information about the Export utility, refer to *Oracle8i Release 2 (8.1.6) Utilities*.

Table 1–11 Migrate Release 1.x Repository to Release 2.2 Repository

Procedure	Refer to
Run the Release 2.2 Oracle Enterprise Manager Migration Assistant to migrate data you are using in your V1.x environment from one or multiple private repositories into a specific user in your new Release 2.2 repository.	Refer to "Migrating a Release 1.x Repository to a Release 2.2 Repository" on page 7-1.

2

Creating a Release 2.2 Repository

In Oracle Enterprise Manager, a repository contains state information for the managed environment and information about the management packs. The repository is used as a back-end store by the Oracle Management Servers, providing distributed control between clients and managed nodes.

In Release 2.0, the Enterprise Manager Configuration Assistant only created the repository for the base Oracle Enterprise Manager product. Additional parts of the repository were only created when they were required.

In Release 2.1 and later, it now creates the repository for all Oracle Enterprise Manager products. No additional components need to be added to the repository later. The Oracle Enterprise Manager repository is treated by the Enterprise Manager Configuration Assistant as a single entity. Regardless of whether you have additional products installed, creating a repository will create all parts of a repository.

Note: For information on the recommended init.ora settings for the repository database, refer to "Recommended init.ora Settings for the Repository Database" on page 2-19.

You can change the settings before or after repository creation.

The Enterprise Manager Configuration Assistant provides a database administrator with repository creation, removal, upgrade, and configuration parameter maintenance. A repository is a schema, and several repositories can exist in one database since each repository is a different schema.

If you are using a Release 2.0 or 2.1 repository and want to upgrade your repository to Release 2.2, refer to "Upgrade a Release 2.0 or 2.1 Repository to a Release 2.2

Repository" on page B-1. Existing pre-2.2 repositories are not upgraded automatically during installation.

> **Note:** You should not schedule any repository upgrades until all Oracle Enterprise Manager components other than the Intelligent Agent have been upgraded to Oracle Enterprise Manager Release 2.2. For guidelines to upgrading your Oracle Enterprise Manager framework and Management Packs from previous 2.x releases to Release 2.2, refer to "Upgrading Your Oracle Enterprise Manager Framework and Management Packs" on page 1-19.

If you are using a previous Enterprise Manager Release 1.x and want to migrate your 1.x repository or repositories directly to a Release 2.2 repository, you will need to perform additional steps using the Enterprise Manager Migration Assistant after creating your Release 2.2 repository. Refer to Chapter 7, "Migrating a Release 1.x Repository to a Release 2.2 Repository" for information about migrating one or more Release 1.x repositories into the shared Release 2.2 repository schema.

Important: The Enterprise Manager Console, DBA Management Pack, separately licensable Packs, Management Server and repository must all be of the same release. For example, you cannot use a Release 2.1 Management Server and repository with a Release 2.2 Console nor can you use a Release 2.2 Management Server and repository with a Release 2.1 Pack. Any Enterprise Manager Release 2.2 product must use a Release 2.2 Management Server and repository, where product refers to any of the following:

- Oracle Enterprise Manager Console
- Oracle DBA Management Pack (in Management Server mode)
- Oracle Tuning Pack
- Oracle Diagnostics Pack
- Oracle Change Management Pack
- Oracle Management Pack for Oracle Applications
- Oracle Management Pack for SAP R/3
- Oracle Standard Management Pack

If the existing Management Server and repository are of a previous version, then you can migrate or upgrade them to the most recent version. In the case of migrating or upgrading a Management Server and repository to Release 2.2, ensure that all Enterprise Manager products you intend to use with the repository are of Release 2.2. For instance, do not upgrade the Management Server and repository to Release 2.2 if you are still using Diagnostics Pack Release 2.1 or Change Management Pack Release 2.1. If you upgrade your Management Server and repository to Release 2.2 before obtaining the Release 2.2 Pack software you intend to use, you will not be able to use the older Pack product(s).

Creating a New Release 2.2 Repository

The Oracle Enterprise Manager Release 2.2 repository is not the same as a Release 1.x repository. In Enterprise Manager Release 1.x, each administrator has his own repository schema, which contains a current view of the network and user-specific information. In Enterprise Manager Release 2.2, administrators have individual accounts and preferences within a single "shared" repository schema. Because all administrative data is stored in a central repository, administrators can share job definitions and obtain status on all machines in the network, including those monitored by other database administrators.

The Enterprise Manager Configuration Assistant will launch automatically during the post install configuration phase if you are performing one of the following installation scenarios:

- Oracle8i Enterprise Edition 8.1.7.0.0-> Custom
- Oracle8i Management and Integration 8.1.7.0.0-> Oracle Management Server
- Oracle8i Management and Integration 8.1.7.0.0-> Custom

The Enterprise Manager Configuration Assistant will not launch automatically if you are performing an Oracle8i Enterprise Edition-> Typical installation. In this type of installation, you must manually launch the Enterprise Manager Configuration Assistant in order to create, delete, edit, or update your repository.

Whenever you start the Enterprise Manager Configuration Assistant to create a new 2.2 repository (whether during a post install configuration or from the standalone mode), it will perform the following tasks for you:

- creates a new database user who will own the Enterprise Manager and management packs repository
- assigns proper privileges and roles to the new database user
- creates a new tablespace for the Enterprise Manager and management packs repository or uses an existing tablespace if available
- sets up default and temporary tablespaces for the user
- loads information, which is required when running Oracle Enterprise Manager, into the repository
- creates and/or updates the local Management Server's configuration file: `ORACLE_HOME\sysman\config\omsconfig.properties`

- enters the necessary information into the client registry so that any Console which runs on the system has the Management Server already in its list of those to which it can connect
- check if an Oracle Management Service already exists (Windows NT and Windows 2000 only). If one does not already exist, it will create the Oracle Management Server service. If one does exist, it will not create another.
- starts your Management Server service and sets the service to Manual (Windows NT and Windows 2000 only)

Starting the Enterprise Manager Configuration Assistant

> **Note:** A database must be installed and running before you can create the Oracle Enterprise Manager repository schema.

To start the Enterprise Manager Configuration Assistant, perform the following steps:

- On Windows NT and Windows 2000:

  You can start the Enterprise Manager Configuration Assistant from the Windows Start Menu->Programs->Oracle-<Oracle_Home_Name>-> Enterprise Manager->Configuration Assistant.

  You can also start the Enterprise Manager Configuration Assistant from the command line using the command:

  ```
  emca
  ```

- On UNIX:

  You can start the Enterprise Manager Configuration Assistant from the command line using the command:

  ```
  emca
  ```

> **Note:** You must be logged in as the owner of the `omsconfig.properties` file (have permission on the file) to execute the `emca` command.

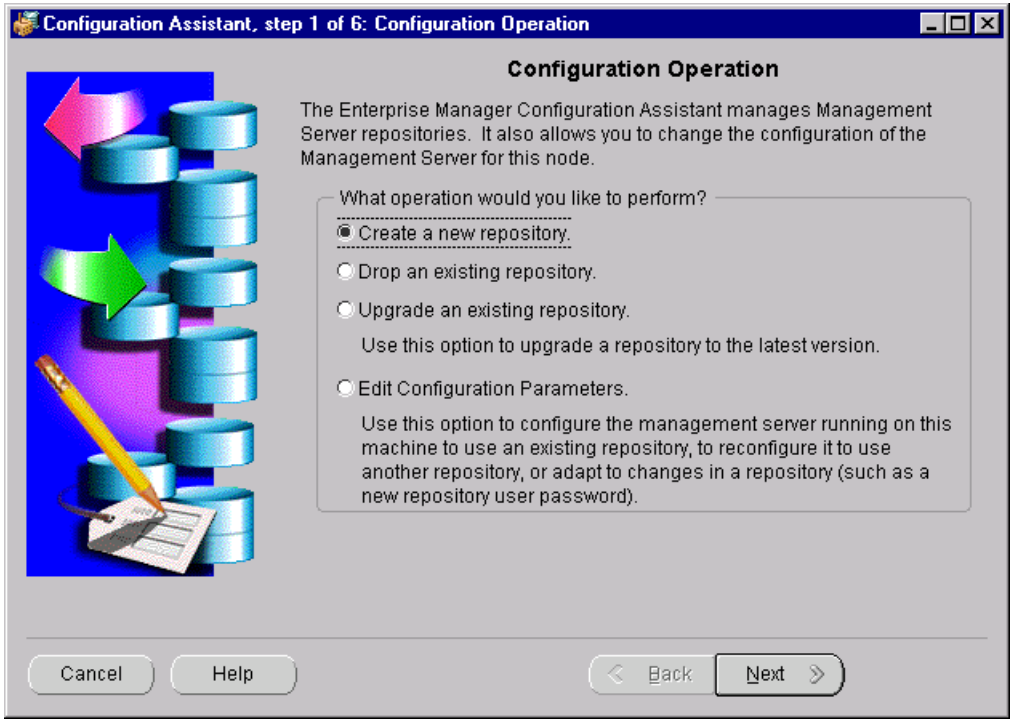
Step 1 "Configuration Operation"

When you start the Enterprise Manager Configuration Assistant as a standalone application, the “Configuration Operation” page appears.

When the Configuration Assistant is launched from an installation session and you have selected to create a new repository from the install dialog, the Configuration Operation screen will not appear. The screen will be "Select Database for Repository." In this case, proceed to Step 2 of 5 on page 2-8.

Select “Create a new repository” from the list of repository operations and press Next. The "Select Database for Repository" page appears.

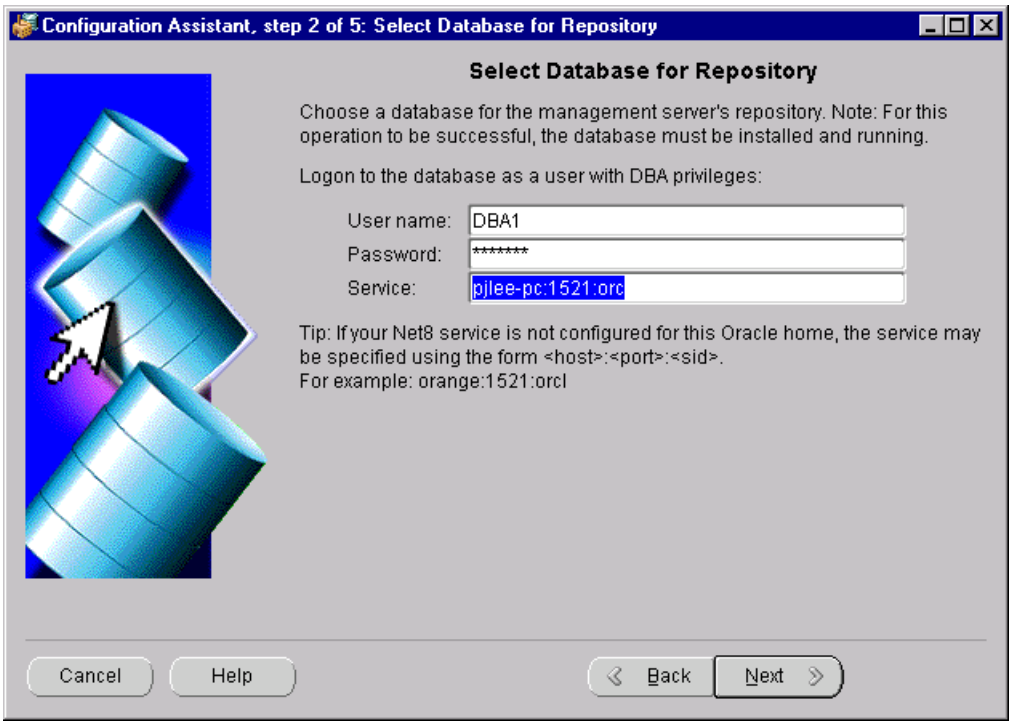
Figure 2–1 Configuration Operation



Step 2 "Select Database for Repository"

Log in to the database where you want to create the repository.

Figure 2–2 Select Database for Repository



When configuring your repository, choose a database that meets the following criteria:

- the database is always available.
- the database will not be shut down by other administrators.
- the database does not compete for resources on the machine where it is running.

User name and Password: You must connect to the database as a user with DBA privileges. The Enterprise Manager Configuration Assistant asks for a DBA account in case a new user needs to be created in the database to contain the repository and to allow the Configuration Assistant to make queries about the database / repository.

This is an individual database user account, not an Oracle Enterprise Manager administrator account.

For example, `system/manager`.

Service: The service may be specified using the form:

`<host>:<port>:<sid>`

where

`host` is the machine name where the database is located

`port` is the database listener port address, usually 1521 or 1526

`SID` is the database system identifier

An example:

`my_em_machine:1521:em22`

which connects to the `em22` database using port 1521 on the `my_em_machine` machine.

> **Note:** Specifying the service as `<host>:<port>:<sid>` is the preferred method, but you may also use Net8 names if your Net8 client is properly configured.

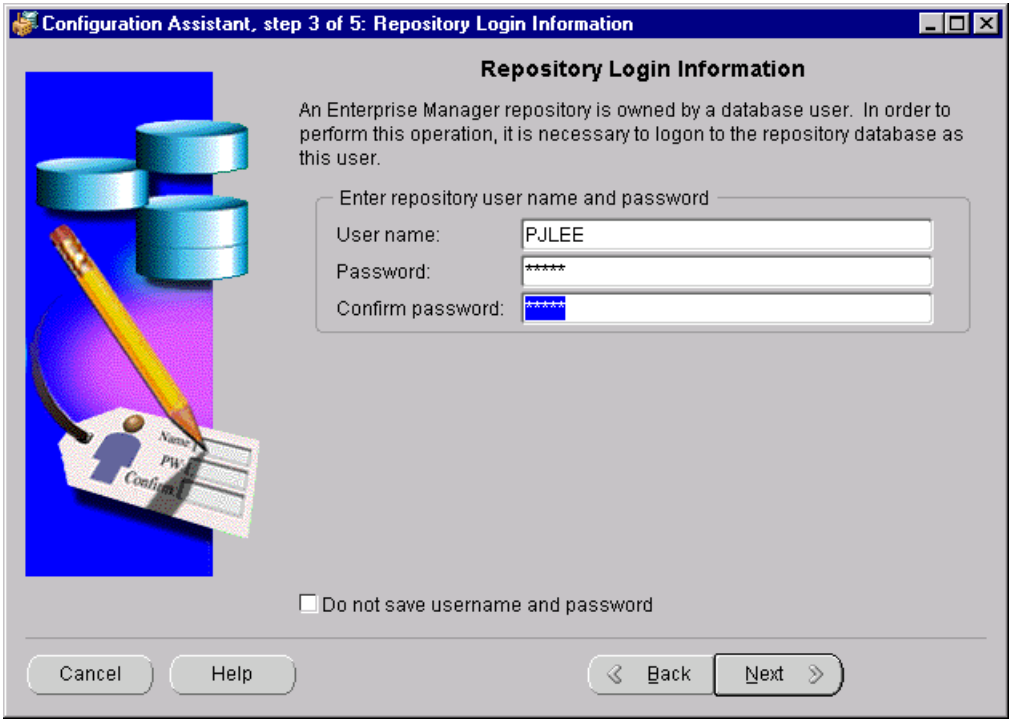
Press Next to continue.

Refer to "Troubleshooting the Enterprise Manager Configuration Assistant" on page D-19 for information about error messages.

Step 3 "Repository Login Information"

An Enterprise Manager repository is owned by a database user. During repository creation, a database user (repository schema user) who owns the repository will be created by the Enterprise Manager Configuration Assistant with the username and password you enter on this page.

Figure 2–3 Repository Login Information



User name: Enter the repository's user name that will be used to create a database user that will own the repository. The repository's user name must be unique across the network. The TCP/IP hostname of the machine is assumed to be unique; therefore it is used by default. If you choose another name, you must ensure that it is unique.

The Intelligent Agent identifies each Management Server by its repository name. If two repositories existed with the same name in different databases, the Intelligent Agent would have difficulty contacting the Management Server.

Password: Enter the password for that user.

Confirm: Verify the password by typing it again.

You can choose whether to save the user name and encrypted password in the `omsconfig.properties` file, which is read by the Management Server on startup. If these repository credentials are stored in the file, the Management Server uses them to login to the repository.

On Windows NT and Windows 2000, if they are not saved, you can enter them in the Control Panel's Startup Parameters field when you start the Management Server. If you do not enter the repository credentials in the Startup Parameters field, you will be prompted for them in a dialog.

On UNIX, if they are not saved, the Management Server will prompt you for a user name and password before it starts up.

If you do not want to store the user name and encrypted password in the `omsconfig.properties` file, check the "Do not save username and password" checkbox. The option of not storing your repository credentials is referred to as the secure Management Server mode.

The repository account information will be used to perform the maintenance operations in the repository schema like create, upgrade, or drop.

The roles and privileges required by the repository schema user are listed below:

- Roles: CONNECT
- Privileges: CREATE TRIGGER, CREATE PROCEDURE, EXECUTE ANY PROCEDURE, and SELECT ANY TABLE

To avoid potential security issues and unnecessary access to objects outside of Oracle Enterprise Manager, do not grant more privileges to your repository schema user than is absolutely necessary.

Step 4 "Select Repository User Tablespaces"

The Select Repository User Tablespaces page does not appear:

- If the repository user already exists and contains a complete and up-to-date Enterprise Manager repository

  or

- If the Enterprise Manager Configuration Assistant is run from an installation session and:
  - If the OEM_REPOSITORY tablespace already exists, and:
  - If the OEM_REPOSITORY tablespace has the appropriate size attributes

---

Note: Do not install the Oracle Enterprise Manager repository into the SYSTEM (especially the SYSTEM tablespace of your production database), ROLLBACK, or TEMPORARY tablespaces.

The tablespace parameter settings used for the SYSTEM tablespace are not appropriate for Oracle Enterprise Manager use. You should only use the SYSTEM tablespace for "system" entities. Tools, users, and management products such as Oracle Enterprise Manager should be placed in other tablespaces.

ROLLBACK tablespaces are used for creating rollback segments. Rollback segments are used by Oracle user processes to store rollback information.

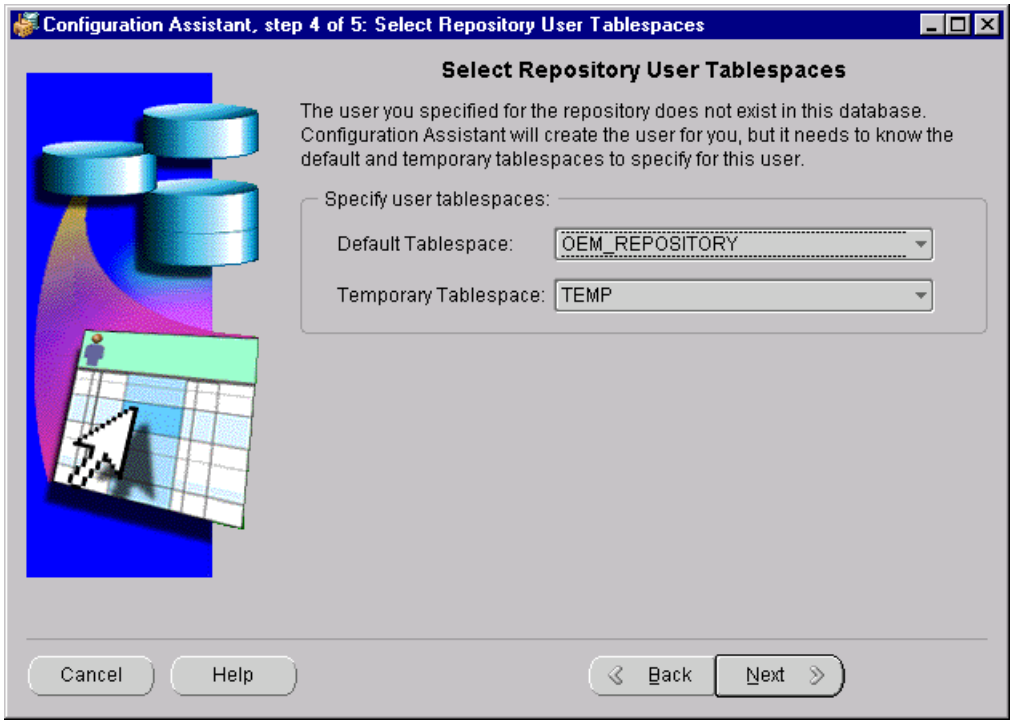
TEMPORARY tablespaces, which are assigned as TEMPORARY tablespaces for users, are used by Oracle user processes as a "scratch pad." Both of these tablespaces fluctuate in tablespace usage when the database is up and running. The TEMPORARY tablespace can be used as the user's temporary tablespace.

The Configuration Assistant does not allow you to use the SYSTEM tablespace either as a temporary tablespace or as a default tablespace.

For more details, refer to the *Oracle8i Concepts Guide*.

In standalone mode, if the OEM_REPOSITORY tablespace already exists and you have enter the name of a different repository user than the one managing the repository in the "Repository Login Information" page, an error message appears, saying, "Do you wish to change it to manage the repository owned by user '<user>' on service '<service>'?" If you click the "Yes" or the "No" button, the following screen appears.

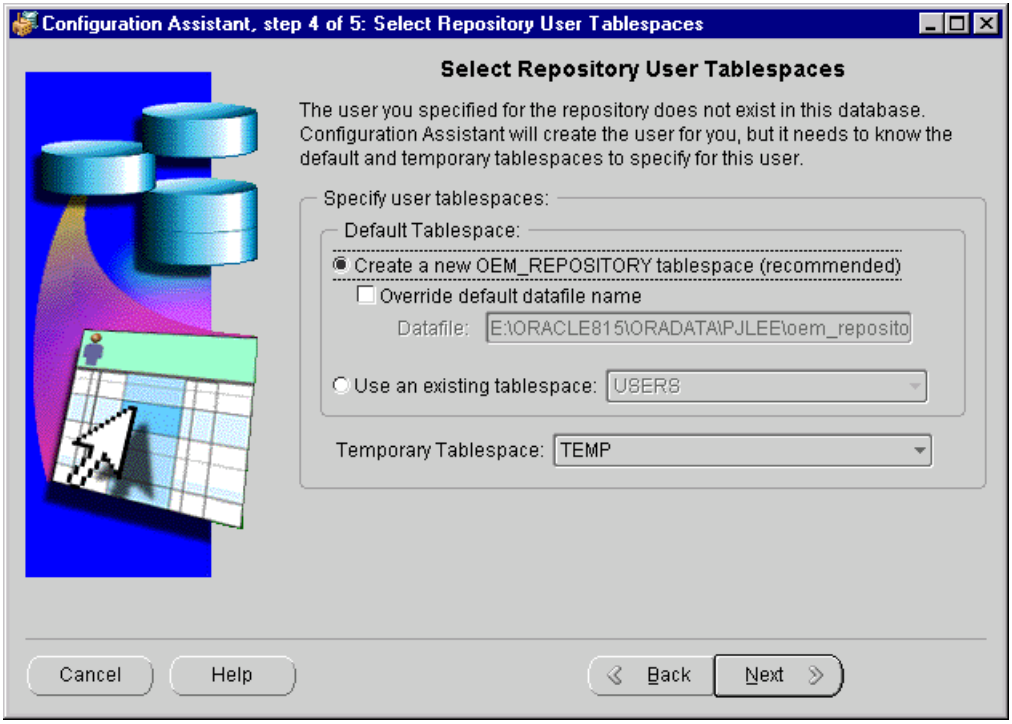
Figure 2–4 Select Repository User Tablespaces if OEM_REPOSITORY Exists



Select the default and temporary tablespaces for the Enterprise Manager repository to use.

If the OEM_REPOSITORY tablespace does not exist, the following screen appears:

Figure 2–5 Select Repository User Tablespaces if OEM_REPOSITORY Does Not Exist



Default Tablespace:

- Create a new OEM_REPOSITORY tablespace (recommended).

  Select this option if you want to create the OEM_REPOSITORY tablespace, which has specific characteristics for the Enterprise Manager repository, and use it as the repository user's default tablespace.

- Override default datafile name.

  Select the checkbox if you want to change the default name of the datafile for the OEM_REPOSITORY tablespace. This is not normally recommended.

- Use an existing tablespace

  Select an existing tablespace from the pull-down list.

Temporary Tablespace

Select a temporary tablespace from the pull-down list.

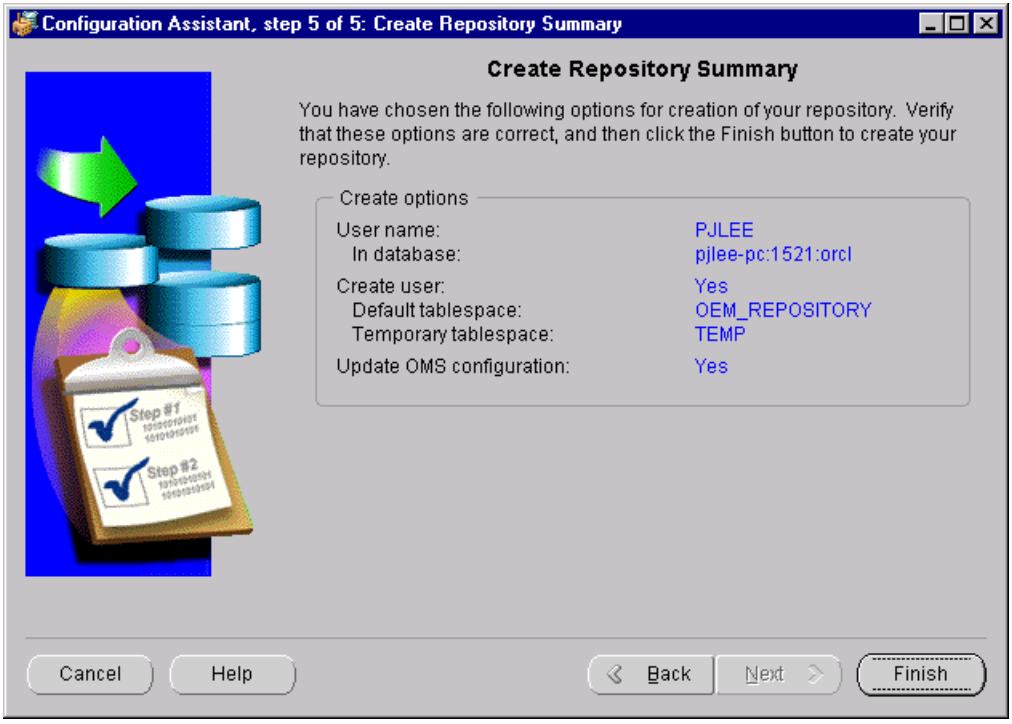
Click Next to continue.

If the Enterprise Manager Configuration Assistant detects that the default tablespace for the repository contains the required amount of free space, the “Create Repository Summary” page appears. Otherwise, errors will appear.

Step 5 "Create Repository Summary"

The “Create Repository Summary” page appears, showing a summary of the processing to be performed. Verify that all of the information supplied during the create repository wizard operation is accurate.

Figure 2–6 Create Repository Summary



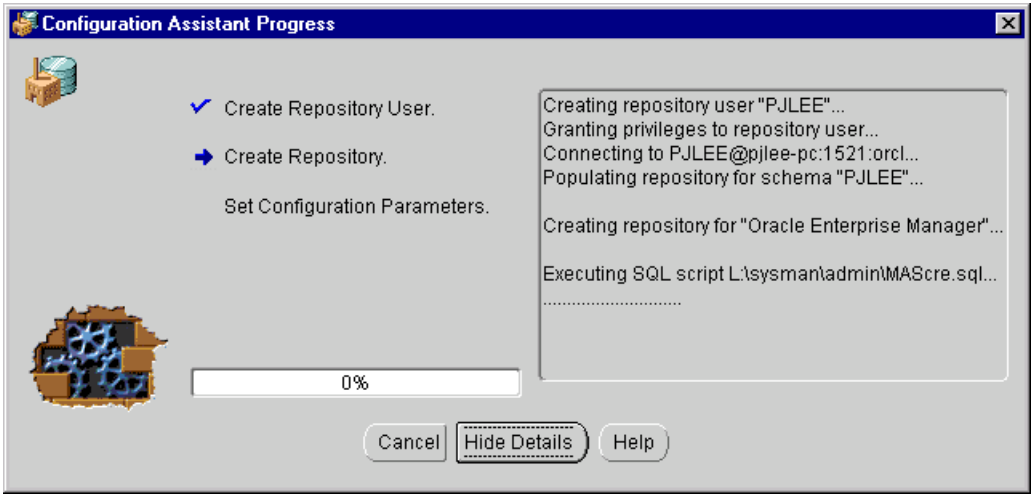
Click Finish to initiate repository creation or click Back to return to previous pages to make modifications.

When you click the Finish button, the Configuration Assistant Progress window appears, showing the processing performed and the processing steps that comprise the operation being performed.

Step 6 "Configuration Assistant Progress Window"

If you want to view detailed information about what is happening during the processing, including any errors that might occur, click the "Show Details" button to expand the dialog to show a text area. You can hide the detailed information by clicking the "Hide Details" button.

Figure 2–7 Configuration Assistant Progress



The Cancel button changes to a Close button when processing is completed, whether it is successful or not.

When all of the steps have been completed without error, the "Processing completed." message appears.

You can cancel the requested operation before it completes by clicking the Cancel button.

> **Note:** If you cancel the repository creation while it is in progress, the state of the repository is in doubt. In these circumstances, you should drop the repository using the Enterprise Manager Configuration Assistant.

You must click the Close button to exit the Configuration Assistant.

If the repository creation fails, drop the repository, turn on tracing for the Management Server by adding the appropriate tracing properties to the `omsconfig.properties` file, and perform the repository creation procedure again. For information on Management Server tracing and logging, refer to "Tracing and Logging for the Management Server" on page D-5.

For information on dropping the repository, refer to "Drop an Existing Repository" on page B-6.

Recommended init.ora Settings for the Repository Database

You can change the settings before or after repository creation.

The following are recommended init.ora settings for the repository database. They are recommended particularly if you are using the Oracle Enterprise Manager Events system.

- `sessions = 200`
- `open_cursors = 200`
- `db_block_buffers = 23040`
- `log_buffer = 524288`
- `sort_area_size = 262144`
- `sort_area_retailed_size = 262144`
- `shared_pool_reserved_size = 0`
- `db_block_lru_latches = 2`

After editing the init.ora file with these settings, you must stop and restart the database in order for the changes to take effect.

Tuning for specific sites may be necessary, and using Oracle Expert included as part of the separately licensable Oracle Tuning Pack for these cases is recommended.

3

Controlling the Management Server

The Management Server provides distributed control between clients and managed nodes. A central engine for notification, it processes all system management tasks and administers the distribution of these tasks across the enterprise.

Specific topics discussed in this chapter are listed below:

- Starting the Management Server
- Checking the status of the Management Server
- Stopping the Management Server
- Tuning the Management Server

Starting the Management Server

The repository database must be started and open and the listener must be started before starting the Management Server.

To start the Management Server, perform the following steps.

Note: Oracle Enterprise Manager does not support stopping or starting a remote Management Server from the local machine.

Starting the Management Server On Windows NT or Windows 2000

To start the Management Server on Windows NT or Windows 2000, follow the instructions below.

1. From the Start menu->Settings->Control Panel, double-click the Services icon.
2. If you have chosen not to store your repository credentials during repository creation (referred to as the secure Management Server mode), you can enter the repository's user name that was used to create the database user and the password for that user in the Control Panel's Startup Parameters field when you start the Management Server. The Startup Parameters field is under the list of services. The database user and password must be in the format of <username>/<password>.

   If you supply invalid or incomplete repository credentials in the Control Panel's Startup Parameters field, the Management Server will not start, and an error message will appear.

   If you are in secure mode and do not enter the repository credentials in the Startup Parameters field, you will be prompted for them later in a dialog.

   For information on troubleshooting the Management Server if it does not start, refer to "Management Server Does Not Start" on page D-12.
3. Select the Oracle<Oracle_Home_Name>ManagementServer service.
4. Click the Startup push-button to access the Service Startup dialog box.

Note: Step 4 only needs to be performed once, not every time you start up the service.

---

a. In the Startup Type section, specify how the Management Server service is started up by choosing Automatic or Manual. Manual allows the Management Server to be started by a user. Automatic allows the Management Server to start automatically whenever the user starts the system. Disabled does not allow the Management Server to start at all. By default, the Configuration Assistant sets the service to Manual.

b. In the Log On As section, check for the following settings:

* Ensure that the System Account option, which is the supported way to run the Management Server, is selected. The Management Server will not run if you use a local account.

* Ensure that the "Allow Service to Interact with Desktop" box is selected; otherwise, the Management Server will not run.

5. Click the Start push-button to start the Management Server.

Note: Your Management Server service is started automatically and set to Manual on Windows NT or Windows 2000 during repository creation if you had launched the Enterprise Manager Configuration Assistant from an installation session and if you had chosen to save your repository credentials.

If you have chosen not to save your repository credentials, you can enter them in the Control Panel's Startup Parameters field when you start the Management Server. If you do not enter the repository credentials in the Startup Parameters field, you will be prompted for them in a dialog.

Starting the Management Server On UNIX

To start the Management Server on UNIX, at the command line, enter

```
% oemctrl start oms
```

When you are prompted, enter the repository's user name that was used to create the database user and the password for that user if you have chosen not to save your repository credentials during repository configuration. For a complete definition of a repository owner, refer to "Step 3 "Repository Login Information"" on page 2-10.

Note: If the ORACLE_HOME environment variable is not set to the Oracle home in which the Management Server is running, the Management Server will not start correctly because it will try to find its class files in the default Oracle home instead of the correct Oracle home. For information on setting the Oracle environment, refer to "Management Server May Not Run Correctly from a Non-Default Oracle Home" on page D-11.

Checking the Status of the Management Server

To quickly check whether the Management Server is up or down, at any operating system prompt, enter:

```
% oemctrl ping oms
```

To check the status of the Management Server, at any operating system prompt, enter:

```
% oemctrl status oms
```

You will be prompted to enter the username and password of an Oracle Enterprise super administrator. For a complete definition of an Oracle Enterprise Manager super administrator, refer to "What is an administrative user?" on page 1-7.

You will also need to provide the hostname for the machine running the Management Server if you are checking the status of a remote Management Server.

The following information is provided when you check the status of the Management Server:

- overall status of the Management Server
- length of time the Management Server has been running
- statistics regarding the performance of the Management Server

An example of the output is shown below:

```
OEMCTRL for Windows NT: Version 2.2.0.0.0
Copyright (c) 1998, 2000, Oracle Corporation.  All rights reserved.
Oracle Server Version null
Loaded njssl8 shared object

Loading njssl8 dll

In OracleSSLSocketImpl Static portion


The Oracle Management Server on host [pjlee-pc2.us.oracle.com] is functioning
properly.

  The server has been up for 0 09:08:37.734

  Target database session count: 1 (session sharing is off)
  Operations queued for processing: 0
```

```
Number of OMS systems in domain: 1 (pjlee-pc2)
Number of administrators logged in: 1
Repository session pool depth: 15
Repository session count: 7 in-use and 3 available, pool efficiency: 100%
```

For information about the parameters, refer to the section below.

- Target database session count

  The target database session count indicates the number of target databases in the session.

- Operations queued for processing

  The operations queued for processing indicates the number of activities waiting for processing.

- Number of OMS systems in domain

  The number of OMS systems in domain indicates the number of Management Servers running in the enterprise.

- Number of administrators logged in

  The number of administrators logged in indicates the number of Enterprise Manager administrators logged into the system.

- Repository session pool depth

  The session pool depth indicates the number of sessions the Oracle Management Server is using. The overall status of the system is dependent upon the number of users and the activity on a system.

  By default, the Console consumes up to a maximum of 3 sessions. With a count of 3, you can generally perform an operation (submit jobs/events) without having to wait for sessions to release them.

  The number of sessions available that can be used by the Console to connect to the Management Servers is 15. Since each Console connection requires 3 sessions, the session pool depth of 15 will allow 5 Console connections, each of which consumes 3 sessions. If the number of Console connections decreases, the session pool depth limit will remain at 15. If the number of Console connections increases, the session pool depth limit increases internally.

To determine the optimal value for the number of overhead sessions, use the formula documented below.

As the number of concurrent users increases, the number of sessions available should increase. The formula to use to calculate the number of sessions is

1.1 x **3** x **number users actively performing operations**

1.1 is a factor to use in order to calculate additional breathing space so that it is not an absolute number of 3

3 is the overhead number you would want.

number users actively performing operations is the number of concurrent users.

For example: for 1 user, the formula comes to: **1.1** x **3** x **1** = **3.3** or **3** sessions are enough.

For 4 users, the formula comes to **1.1** x **3** x **4** = **13.2**. 13 is how many overhead sessions you would want if the users are all constantly registering events or jobs. If not, the overhead of 3 is sufficient.

- Repository session count

  The number of repository sessions.

Stopping the Management Server

> **Note:** Stopping a Management Server that is not local to your machine (i.e., a remote Management Server) is not supported.

To stop the Management Server, perform the following steps:

On Windows NT or Windows 2000:

1. From the Start menu->Settings->Control Panel, double-click the Services icon.
2. Select the Oracle<Oracle_Home_Name>ManagementServer service.
3. Click the Stop push-button to stop the Management Server.

You will be prompted to enter the username and password of an Oracle Enterprise super administrator. For a complete definition of an Oracle Enterprise Manager super administrator, refer to "What is an administrative user?" on page 1-7.

On UNIX:

At the command line, enter

```
% oemctrl stop oms
```

You will be prompted to enter the username and password of an Oracle Enterprise super administrator. For a complete definition of an Oracle Enterprise Manager super administrator, refer to "What is an administrative user?" on page 1-7.

Tuning the Management Server

There may be special circumstances which require specific tuning of the Management Server to improve performance such as when the enterprise is managing a large number of nodes. Tuning can be perform by setting the following Management Server configuration parameters:

- `oms.vdp.ping_interval`
- `oms.vdg.max_out_conns`
- `oms.vdg.max_in_conns`
- `oms.repository.connect_timeout`
- `oms.repository.connect_numTries`

After editing the omsconfig.properties file, you must stop and restart the Management Server in order for the changes to take effect.

Setting the Ping Interval

The Management Server is designed to ping all targets on a pre-defined interval to monitor the state of all managed targets.

To manage the interval between pings, you can use the following property in the omsconfig.properties file to set the ping interval:

```
oms.vdp.ping_interval=<integer; time in minutes; default 2>
```

Note that the interval set determines the interval (time in number of minutes) at which the Management Server tests for node up / down, regardless of the polling frequency that you have set in the event which contains a node up / down test.

The default for the time is 2. For Management Servers managing a large number of nodes (more than 64 nodes), you can adjust this parameter to provide the Management Server enough time to ping all the nodes.

Setting the Maximum Connections Out

The Management Server is designed to maintain a certain number of outgoing connections toward different Intelligent Agents simultaneously.

To manage the number of simultaneous outgoing connections, you can use the following property in the omsconfig.properties file:

```
oms.vdg.max_out_conns =<integer; default 64>
```

The default is 64. Oracle recommends that this value to be greater or equal to the number of nodes managed by the Management Server in order to avoid performance degradation. If the maximum number of managed nodes is less than 64, Oracle recommends keeping the default value. If the maximum number of managed nodes is more than 64, set the value to the number of nodes.

Setting the Maximum Connections In

The Management Server is designed to maintain a certain number of incoming connections simultaneously.

To manage the number of simultaneous incoming connections, you can use the following property in the omsconfig.properties file:

```
oms.vdg.max_in_conns=<integer; default 32>
```

To prevent performance degradation, it is recommended that you set this value to be half the value of the `oms.vdg.max_out_conns`.

Setting the Management Server Retry Interval

The Management Server is designed to retry at a pre-defined intervals.

To specify the interval between retries, use the following properties in the `omsconfig.properties` file to set the retry interval:

```
oms.repository.connect_timeout=<time in seconds>
oms.repository.connect_numTries=<integer>
```

`oms.repository.connect_timeout` is the maximum time (in seconds) the Management Server will wait for the repository database to start up.

`oms.repository.connect_numTries` is the maximum number of tries the Management Server will make to connect to the repository before starting up the Management Server services.

The retry interval is calculated as the value of `oms.repository.connect_timeout` divided by the value of `oms.repository.connect_numTries`.

By default, the properties are set as follows:

```
oms.repository.connect_timeout=120
oms.repository.connect_numTries=12
```

The Management Server will try to establish a repository connection at startup at 10 second intervals for a total of 12 times.

4

Adding Additional Management Servers

In an environment with multiple Oracle Management Servers, a set of Management Servers share the same repository.

This chapter describes how to set up or add a Management Server to manage an already existing repository and explains why multiple Management Servers may be needed.

Note: If you do not need to set up or add a management server to manage an already existing repository, skip this chapter.

As the number of nodes and managed services in your network increases or if the current Management Server is overloaded, you can add more Oracle Management Servers to the middle tier to share and balance the workload.

Multiple Oracle Management Servers provide fault tolerance for each other. If an Oracle Management Server fails, the other Management Servers continue to operate. The clients that registered with the failed Management Server can immediately log in again, registering with any of the other Management Servers using or sharing the same repository, and work continues with the remaining available Oracle Management Servers. Any clients that had been configured to register with a different Oracle Management Server than the one that failed are unaffected.

If the available Management Servers are CPU-bound (the CPU usage is exhausted), adding additional Management Servers is an alterative to increasing the capacity of the nodes that run the Management Servers.

Note: All Management Servers connecting to the same repository must reside in the same DNS Domain.

Installing an Additional Management Server

If you want to run an Oracle Management Server on a specific machine, you must first install the Oracle Management Server software on that machine.

Refer to the installation guide provided with the database release for detailed instructions.

Setting Up an Additional Management Server

When you add a new management server, you must run the Enterprise Manager Configuration Assistant to update the configuration file for that node.

For information about starting the Enterprise Manager Configuration Assistant, refer to "Starting the Enterprise Manager Configuration Assistant" on page 2-6.

Step 1 "Configuration Operation"

When you start the Enterprise Manager Configuration Assistant, the "Configuration Operation" page appears.

Select "Edit the Configuration Parameters" from the list of configuration operations and press Next to Continue. The "Configuration Parameters" page appears.

Step 2 "Configuration Parameters"

Change the parameters you want.

User Name
Enter the user name of the existing repository which you wish this machine's Management Server to use.

Password
Enter the password for the above user name. The information will be used on the next Management Server start up.

If you change the password, you must also change the Confirm field so that it matches the password you changed.

Service
Enter the service where the repository resides.

This information will be used when this machine's Management Server next starts up. If any of the information is invalid, then the Management Server will not start successfully.

Do not save username and password
You can choose whether to save the user name and encrypted password in the `omsconfig.properties` file, which is read by the Management Server on startup. If the user name and encrypted password are stored in the file, the Management Server uses them to login to the repository.

On Windows NT or Windows 2000, if they are not saved, you can enter them in the Control Panel's Startup Parameters field when you start the Management Server. If you do not enter the repository credentials in the Startup Parameters field, you will be prompted for them in a dialog.

On UNIX, if they are not saved, the Management Server will prompt you for a user name and password before it starts up.

If you do not want to save the user name and password, check the "Do not save username and password" checkbox. The option of not storing your repository credentials is referred to as the secure Management Server mode.

Note: In order to progress to the next page, you must change at least one of the parameters in this page. If the Next button is pressed without changing anything, an error message appears: "There were no changes to the configuration parameters. Make changes or cancel." In this case, the Enterprise Manager Configuration Assistant does not allow navigation to the next page.

Step 3 "Modify Configuration Parameters"

The "Modify Configuration Parameters" page provides a summary of all the information supplied during the modify configuration parameters wizard operation. Click Finish to initiate the change or click Back to return to previous pages to change your information.

5

Starting and Stopping the Intelligent Agent

Oracle Intelligent Agents are processes running on remote nodes in the network. Oracle Enterprise Manager works with Intelligent Agents across the network, to discover the services running on the nodes where the Intelligent Agent resides, monitor events, run jobs, and collect runtime data for real-time performance monitoring and historical analysis. Any platform running an Intelligent Agent can be incorporated into the Oracle Enterprise Manager framework, as long as TCP/IP communication between the Oracle Enterprise Manager middle tier and the Intelligent Agents is possible.

Refer to the *Oracle Intelligent Agent User's Guide* for detailed information about troubleshooting any Intelligent Agent problems.

Intelligent Agents local to the Management Server will be discovered automatically when the Management Server is started as long as the Intelligent Agent local to the Management Server has been started. In order to discover distributed services, the Intelligent Agents on the nodes where those services reside must be started.

This chapter discusses the following topics:

- Starting and Stopping the Oracle Intelligent Agent on Windows NT or Windows 2000
- Starting and Stopping the Oracle Intelligent Agent on UNIX

Please check the Intelligent Agent compatibility matrix in the *Oracle Enterprise Manager Readme* before installing or using Enterprise Manager. `emreadme.txt` or `emreadme.html` is located in the `ORACLE_OEM_HOME\RelNotes\EM` directory. For example, `C:\Oracle\Ora81\RelNotes\EM`.

Starting and Stopping the Oracle Intelligent Agent on Windows NT or Windows 2000

This section contains information on controlling the Intelligent Agent through the Windows NT or Windows 2000 Control Panel and the command prompt.

Note: Oracle Enterprise Manager and the Intelligent Agent use Net8 to communicate with the databases. Verify that Net8 can connect to every SID in question before attempting to use the Intelligent Agent.

Starting the Intelligent Agent on Windows NT or Windows 2000

To start the Intelligent Agent on Windows NT or Windows 2000, perform the following steps:

1. From the Start menu->Settings->Control Panel, double-click the Services icon.
2. Select the Oracle<Oracle_Home_Name>Agent service.
3. Click the Start push-button to start the Intelligent Agent.

The Intelligent Agent Startup Type is set to Automatic, which allows the Intelligent Agent to start automatically whenever you start the system. If you want the Intelligent Agent to be started by a user, set the Startup Type for Manual.

1. From the Start menu->Settings->Control Panel, double-click the Services icon.
2. Select the Oracle<Oracle_Home_Name>Agent service.
3. Click the Startup push-button. A Service Startup dialog box appears.
4. Choose Manual under the Startup Type.
5. Click OK on the Service Startup dialog box.

Stopping the Intelligent Agent on Windows NT or Windows 2000

To stop the Intelligent Agent on Windows NT or Windows 2000, perform the following steps:

1. From the Start menu->Settings->Control Panel, double-click the Services icon.
2. Select the Oracle<Oracle_Home_Name>Agent service.
3. Click the Stop push-button to stop the Intelligent Agent.

Verify Intelligent Agent is Running on Windows NT or Windows 2000

To verify that the Intelligent Agent is running, look for its status in the control panel services or type `net start` at a command prompt.
Oracle<Oracle_Home_Name>Agent should appear in the list of services.

You may also view the NT Task Manager for the `dbsnmp.exe` process information.

Starting, Stopping, and Verifying the Status from the Command Prompt

To start or stop the Intelligent Agent from the command prompt, enter the appropriate command. From the command prompt, you can also verify that the service is running.

If you want to...	Enter the following command
Start the Intelligent Agent from the prompt	net start Oracle<Oracle_Home_Name>Agent
Stop the Intelligent Agent from the prompt	net stop Oracle<Oracle_Home_Name>Agent
Verify status of the Intelligent Agent from the prompt	net start

Note: Do not use the `lsnrctl` command to start the Intelligent Agent for Windows NT or Windows 2000. It is not supported. Use the `net` command for Windows NT or Windows 2000 instead.

Starting and Stopping the Oracle Intelligent Agent on UNIX

On UNIX, Oracle Enterprise Manager uses the `lsnrctl` to start and stop the Intelligent Agent. The relevant `lsnrctl` commands to control the UNIX Intelligent Agent are listed in the table below.

If you want to...	Enter the command...
Start the Intelligent Agent on UNIX platforms	lsnrctl dbsnmp_start
Stop the Intelligent Agent on the UNIX platform	lsnrctl dbsnmp_stop
Verify status of the Intelligent Agent	lsnrctl dbsnmp_status

You can also type `ps -ef | grep dbsnmp` at the command prompt to verify the status of the Intelligent Agent.

Note: You must be the owner of the Intelligent Agent software to succesfully stop and start the Intelligent Agent or you may run into permission problems when writing the internal Intelligent Agent information.

6

Setting Up the Console

The Oracle Enterprise Manager Console is a graphical interface for administrators. From the Console, you can perform the following tasks:

- Centrally administer, diagnose, and tune multiple databases
- Manage Oracle products and services other than databases
- Effectively monitor and respond to the health of your Oracle family of products and third-party services 24 hours a day
- Schedule jobs on multiple nodes at varying time intervals
- Monitor networked services for events
- Customize your display by organizing databases and other services into logical administrative groups

This chapter discusses the topics listed below:

- Starting the Enterprise Manager Console
- Discovering Services
- Creating Administrator Accounts
- Running Oracle Enterprise Manager from a Web Browser
- Setting Up the Event System
- Setting Up the Job System
- Configuring and Starting the Paging Service
- Setting Up Email and Paging Notification
- Configuring the Console If Using a Dialup Line to Connect to the Management Server
- Configuring a Remote Database for Backup or SYSDBA Administration
- Setting the Format of Dates

Starting the Enterprise Manager Console

The Console gives you a central point of control for the Oracle environment through an intuitive graphical user interface (GUI) that provides powerful and robust system management.

After you have created a repository and started your Management Server and Intelligent Agent, you are ready to start the Enterprise Manager Console.

To start the Enterprise Manager Console, perform the following steps.

1. Start the Enterprise Manager Console.

   - On Windows platforms:

     From the Start menu -> Oracle-<Oracle_Home_Name> -> Enterprise Manager, select Console.

     You can also start the Console by entering

     ```
     oemapp console
     ```

     at the command line.

   - On UNIX:

     At the command line, enter

     ```
     oemapp console
     ```

     The command string is case-sensitive and must be entered with lowercase characters.

   Note: You can also start Enterprise Manager from a web browser. Refer to "Running Oracle Enterprise Manager from a Web Browser" on page 6-8 for information on installing the Enterprise Manager web site and setting up your web browser to run Enterprise Manager.

   The Oracle Enterprise Manager Login screen appears, prompting you for your administrator name and password.

2. If you are logging in to Oracle Enterprise Manager for the first time, type in the default credentials (administrator name and password).

   Administrator = `sysman`

Password = `oem_temp`

These credentials are for the default Super Administrator account. The first time you start Enterprise Manager, you must login as the Super Administrator. After other administrator accounts have been created using the Super Administrator account, you can login as a different administrator.

3. Select the name of the node where the Management Server is running from the pull-down list. The Management Server on the node you select must be one which is configured with the repository you want to access.

Note: You must have the Management Server installed and configured before performing this step.

If the name of the node where the Management Server is running does not appear in the pull-down list, follow these instructions below:

a. Click the Management Servers button, which is located to the right of the Management Server field. The Management Servers dialog appears.

b. Click the Add button. The Add Management Server dialog appears.

c. Type in the name of the node where the Management Server is running and click OK.

d. Select the name of the node where the Management Server is running from the pull-down list.

Note: Oracle Enterprise Manager may resolve the node name and use the "canonical name" of the machine. That name will be used in the dialog screens from now on. For example, orange-pc may be changed to orange-pc.us.oracle.com.

---

4. After the initial login, a security login dialog appears where you can change the default Super Administrator password. You should change the password immediately.

Note: Passwords must have no more than 8 characters.

If you are starting the Console for the first time, the Discovery Wizard appears to facilitate the process of identifying network services and populating the Console Navigator tree.

Discovering Services

Oracle Enterprise Manager provides a service Discovery Wizard for identifying network services and populating the Console Navigator tree. These services, such as databases and listeners, can then be administered with Enterprise Manager components.

During start up of the Console, any manageable services on the machine where the Management Server is running are automatically discovered if the Intelligent Agent is installed and running on that Management Server machine. The Console Navigator then displays all the discovered services on the Management Server machine.

To discover additional nodes:

1. Select the Discover Nodes item from the Console's Navigator menu.
2. When the Discovery Wizard appears, read the introduction text and press Next to continue.
3. When the Specify Nodes page appears, enter the name of the node or the IP address in the text window. You can also discover services on multiple nodes at one time by entering each node or IP address you want to discover separated by a space, comma, tab, or new line within the text window. Then click Next to continue.
4. A Progress page appears, showing you the status of the node discovery. A checkmark indicates that the node was discovered successfully. An X indicates that the discovery has failed. If an error occurs, the error text explaining the reason for the error appears, giving you insight on how to continue. After the discovery process has completed, press the Finish button.
5. A Discovery Results dialog appears, telling you which nodes have or have not been automatically discovered. Press the OK button to dismiss the dialog.

If nodes have failed automatic discovery, you can press the Next button on the Progress page. On the Errors page, you will have the option to retry, skip, or perform a manual discovery on the failed nodes.

If no Intelligent Agent is running for some nodes which failed to be discovered, you can still add the node to the navigator, and add databases to that node using manual discovery. Only databases will be added. During manual discovery, you will be prompted for the following information:

- database name
- SID
- TCP/IP port to use for the communication

When you manually add a node, no jobs can be scheduled and no events can be registered against this node. Information about this node can be gathered using a Data Gatherer on another node.

Note: Manually discovered nodes must be dropped from the Navigator tree before they can be automatically discovered.

If a node cannot be discovered, check if the node is down or if the node does not have an Intelligent Agent running. You can also check if you are using the TCP/IP network protocol. Refer to the *Oracle Enterprise Manager Administrator's Guide* for information on discovering services.

Note: If you discover two or more services with the exact same name, regardless of the service type, only one of the discovered services will appear in the navigator.

Creating Administrator Accounts

Enterprise Manager Release 2.2 is a multi-administrator system: every person who is administering systems using Enterprise Manager has his or her own administrator account which he or she uses to log into the Console.

The installation of Enterprise Manager creates a single Super Administrator named `sysman`. The Super Administrator `sysman` can create administrators using the Manage Administrators item in the System menu. In addition to an administrator

name and password, each account can be tagged as a "Super Administrator" account or an account to which the administrator has access to only jobs and/or events. Differences between the two types of accounts are as follows:

- **Super Administrators** automatically have full privileges for all objects in the system. Most Super Administrators also have a separate account for daily operations but use their Super Administrator account for special operations only available to Super Administrators, such as starting and stopping the Management Server, creating new Enterprise Manager Administrators, configuring paging servers, or checking other administrator's schedules. Using the `sysman` account for daily administration work is not recommended. The Super Administrator account is similar to `root` on UNIX or `Administrator` on Windows NT or Windows 2000 and is a user which cannot be deleted or renamed. It is a user that can perform any task. It should therefore be used only for setting up the environment. After the necessary DBA accounts are created, `sysman` should not be used anymore.
- **Regular Administrators** can have full access to all other Console operations but they will only view or be able to modify those jobs, events, or groups to which they have access.

Typically, all administrators share a single Enterprise Manager, Release 2.2 repository, which allows administrators to share information. Although you can set up multiple repositories, administrators using different repositories will not have access to each other's information; there is no sharing of data between repositories. Administrative data stored in the repository is filtered based on administrator permissions.

Preferred Credentials must be set up for each administrator account. When an administrator connects through the Navigator or stand-alone application, the preferred credentials used are those defined explicitly for that administrator.

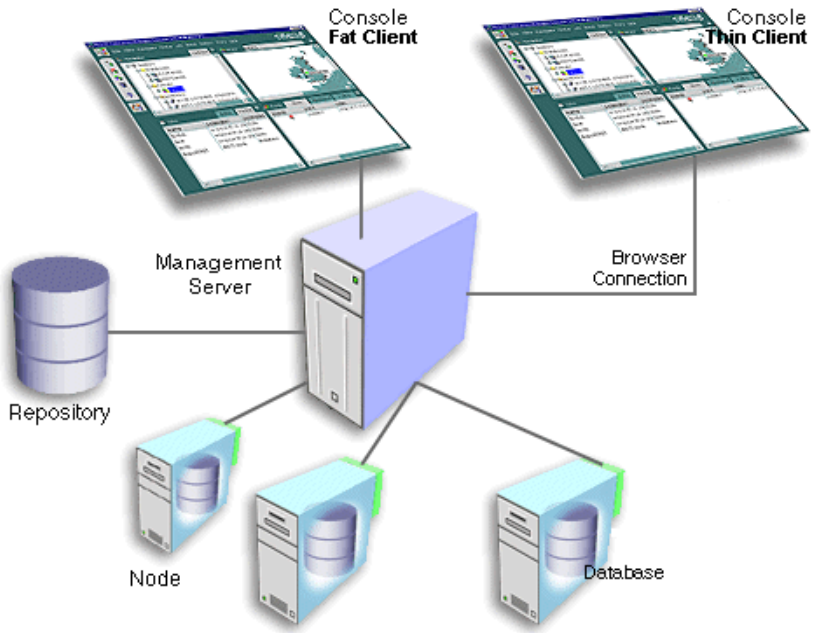
Refer to the *Oracle Enterprise Manager Administrator's Guide* for information on how Enterprise Manager administrators are created, edited, and deleted with the Manage Administrators item in the Console System menu.

Running Oracle Enterprise Manager from a Web Browser

With Oracle Enterprise Manager Release 2.2, an administrator is not limited to managing services from a particular machine. Instead, the administrator has a choice to run Oracle Enterprise Manager as a "fat" or "thin" client.

Note: Browser-based Oracle Enterprise Manager is only supported on the following operating systems: Windows 2000, Windows NT, Windows 95, and Windows 98

Figure 6–1 Types of Clients



A "fat" client uses Oracle Enterprise Manager files which are installed locally. A "thin" client uses a web browser to connect to a webserver where Oracle Enterprise Manager files are installed. Functionality available from both types of clients is identical. That is, administrators are able to perform the same administrative tasks from either a "fat" client or a "thin" client. However, not all components in the

Oracle Enterprise Manager product family support being run in a web browser. Refer to the table below for details.

Products	Runs in a Browser	Does Not Run in a Browser
Oracle Enterprise Manager Console	X	
Oracle DBA Management Pack	X	
Oracle Advanced Events available with the Oracle Diagnostics Pack or the Oracle Management Pack for Oracle Applications	X	
Oracle Tuning Pack		X
Oracle Diagnostics Pack		X
Oracle Change Management Pack		X
Oracle Management Pack for Oracle Applications		X
Oracle Management Pack for SAP R/3		X
Oracle Standard Management Pack		X
Oracle Parallel Server Manager (integrated application)	X	

Note: Oracle Parallel Server Manager is the only integrated application which supports being run from a web browser.

In order to run Oracle Enterprise Manager from a web browser, you must perform the following installation and configuration steps.

Step 1 Client Install

Install the web browser.

Supported web browsers are listed below:

- Netscape Navigator® 4.7 and higher on Windows 2000, Windows NT, Windows 95, and Windows 98
- Microsoft® Internet Explorer 5.0 and higher on Windows 2000, Windows NT, Windows 95, and Windows 98

Note: Using Microsoft® Internet Explorer when it is run from a Microsoft® Active Desktop is not supported.

Step 2 Server-Side Install

1. Check in your Oracle Enterprise Manager home on the node on which you plan to run the webserver for a directory or folder called `oem_webstage`.

   If the directory is in the Oracle Enterprise Manager home, you have already installed the Enterprise Manager Web Site. If it is not, you will need to perform one of the following installations:

   - Oracle8*i* Enterprise Edition 8.1.7.0.0-> Custom
   - Oracle8*i* Management and Integration 8.1.7.0.0-> Oracle Management Server
   - Oracle8*i* Management and Integration 8.1.7.0.0-> Custom

   Refer to the installation guide provided with the database release.

   The files for the Oracle Enterprise Manager Console, DBA Management Pack, some integrated applications, Quick Tours, documentation, and readmes are installed with the Oracle Enterprise Manager Web Site.

2. If you have installed the Oracle HTTP Server that is packaged with Enterprise Manager by default, start it by performing the following steps:

   On Windows NT or Windows 2000:

   To start the Oracle HTTP Server:

   a. From the Start menu->Settings->Control Panel, double-click the Services icon.

   b. Select the OracleHTTPServer_<Oracle_Home_Name> service.

   c. Click the Start push-button to start the Oracle HTTP Server.

   On UNIX:

   You can start the Oracle HTTP Server from the command line using the command:

   ```
   $Oracle_Home/Apache/Apache/bin/apachectl start
   ```

   To stop the Oracle HTTP Server, perform the following steps:

On Windows NT or Windows 2000:

To stop the Oracle HTTP Server on Windows NT or Windows 2000, perform the following steps:

a. From the Start menu->Settings->Control Panel, double-click the Services icon.

b. Select the OracleHTTPServer_<Oracle_Home_Name> service.

c. Click the Stop push-button to stop the Oracle HTTP Server.

On UNIX:

You can stop the Oracle HTTP Server from the command line using the command:

```
$Oracle_Home/Apache/Apache/bin/apachectl start
```

3. If you did not install the Oracle HTTP Server that is packaged with Enterprise Manager by default, you must install a supported webserver and configure its directory mappings.

If you want to use another webserver other than the Oracle HTTP Server, the supported webservers are listed below:

- Apache 1.3.9 and higher on Unix
- Internet Information Server (IIS) 4.0 on Windows NT or Windows 2000

For information on configuring the above webservers, refer to Appendix F, "Configuring the Webserver and Directory Mapping".

Step 3 Run the Browser-Based Oracle Enterprise Manager

After performing the above steps, you are ready to run the browser-based Oracle Enterprise Manager.

Note: In order to run Enterprise Manager from a web browser, you must remove any proxies that are configured for use by your web browser. You can do this by either:

- Choosing to connect directly to the network using the web browser's proxy setting, or
- Choosing to manually configure the proxy, but specify not to use the proxy for the webserver that runs the Enterprise Manager web site.

If you should experience problems with the proxies, refer to "Troubleshooting the Web Browser" on page D-17.

---

1. Launch your web browser and enter the following URL regardless of which webserver you have installed.

   ```
   http://<webserver hostname>:<port number>/
   ```

   For example:

   ```
   http://jfox-sun.us.oracle.com:3339/
   ```

   Note: The Oracle HTTP Server port number is 3339.

   The index (EMWebSite.html) page will appear. The index page allows you to launch various products, documentation, and web sites.

2. On this index page, enter the machine name for the Management Server to which you want to connect and click the application icon or name of the application you want to launch.

Figure 6–2 The EMWebSite.html Page

3. If you are entering the URL for the first time, you must install the Oracle JInitiator plug-in Release 1.1.7.30.

   - On Netscape, you are automatically prompted to install the plug-in.

     Note: Once you are prompted to install the plug-in and you exit or cancel before installing it, you will no longer be prompted to install it the next time you launch the browser-based Enterprise Manager. In this situation, to install the plug-in, click the "Download Plug-in" link on the index page to download the java plug-in.

   - On Microsoft Internet Explorer, you can click the "Download Plug-in" link on the index page to install the plug-in.

4. Follow the instructions on the plug-in page to install the plug-in. Installing the plug-in may take several minutes depending on your machine and network environment.

5. After installing the java plug-in, launch your web browser and enter the following URL:

```
http://<webserver hostname>:<port number>/
```

The index (EMWebSite.html) page will appear. The index page allows you to launch various products, documentation, and web sites.

6. On this index page, enter the machine name for the Management Server to which you want to connect and click the application icon or name of the application you want to launch.
7. Then a dialog will appear, which explains the following:
   - You will not be able to close the Oracle Enterprise Console 2.2 screen without stopping the Console, DBA Studio, or SQL*Plus Worksheet since the application has been launched from this browser window.
   - You can exit the EMWebSite without exiting the Console, DBA Studio, or SQL*Plus Worksheet.

   Once the java plug-in is installed, the Oracle Enterprise Manager Login dialog will appear.

   Note: Launching the browser-based Oracle Enterprise Manager for the first time may take several minutes, and if you are running a dial up connection, download times will typically be longer and vary based on the line speed. A progress dialog will appear the first time you launch browser-based Oracle Enterprise Manager.

8. If you are logging in to Oracle Enterprise Manager for the first time, type in the default credentials (administrator name and password).

   Administrator = `sysman`

   Password = `oem_temp`

   These credentials are for the default Super Administrator account. The first time you start Enterprise Manager, you must login as this Super Administrator. After other administrator accounts have been created using the Super Administrator account, you can login as a different administrator.

> **Note:** If you are not able to connect to the Management Server specified, you must return to the index (EmWebSite.html) page to enter a different Management Server machine name. You cannot simply enter a new Management Server machine name at the Oracle Enterprise Manager Login screen.

You can return to the index (EMWebSite.html) page to launch documentation, release notes, Quick Tours, and other web sites, and you can exit the index page without closing the Console.

9. Bookmark the URL.

> **Note:** You can access only one URL for running browser-based Enterprise Manager applications. You cannot access browser-based Enterprise Manager applications from multiple URLs from a single machine.

Setting Up the Event System

Beginning with Oracle 8.0.6 databases and higher, the OEM_MONITOR role is created by the Oracle database creation scripts. This role permits access to database functionality within Enterprise Manager running events against a database (tablespace full, buffer cache hit ratio) or browsing through the objects in a database via the Console Navigator tree. These types of functionality require database credentials on which to perform these operations. Rather than granting the powerful DBA role to the database credentials, many administrators prefer to provide only the necessary privileges required to do these operations. Granting the OEM_MONITOR role to the database credentials, ensures that the user has the minimum sufficient privileges required for these operations.

For database users on 7.3.x databases, you need to define the OEM_MONITOR role manually.

Note: You need to create the OEM_MONITOR role using the SYS account.

Here are the steps you need to perform:

1. Create a role called OEM_MONITOR

   ```
   drop role OEM_MONITOR;
   create role OEM_MONTOR:
   ```

2. Grant the "connect" role to OEM_MONITOR

   ```
   grant connect to OEM_MONITOR;
   ```

3. Grant the system privileges "analyze any" and "create table" to OEM_MONITOR

   ```
   grant analyze any to OEM_MONITOR;
   grant create table to OEM_MONITOR;
   ```

4. Create the SELECT_CATALOG_ROLE role as defined in sc_role.sql.
5. Grant the SELECT_CATALOG_ROLE to the OEM_MONITOR role

   ```
   grant select_catalog_role to OEM_MONITOR;
   ```

You are now ready to grant the OEM_MONITOR role to the database user that will be used as “database preferred credentials” in Enterprise Manager. In addition to granting the OEM_MONITOR role to a user, you must also ensure that the QUOTA for the user account is set to UNLIMITED.

The “Continued Row” event test needs to analyze results into a table so it needs both the "analyze any" and "create table" privileges.

Note: The "analyze any" privilege is used by the "index rebuild" event to compute statistics.

Setting Up the Job System

This section includes information about setting up the Console for jobs.

Creating a Windows NT or Windows 2000 User Account for Running Jobs

In order for the Intelligent Agent to execute jobs on a managed node

- a Windows NT or Windows 2000 user account must exist that has the advanced user right, "logon as batch job." The privilege can be assigned to an existing local or domain user, or a new Windows NT or Windows 2000 user.
- the preferred credentials for the node must be set for that user in the Oracle Enterprise Manager Console. Refer to "Setting Up Preferred Credentials for Managed Services" on page 6-20.
- the user must have read / write permissions to `ORACLE_HOME\NETWORK` directory as well as read, write, update, and delete permissions to the `TEMP` directory or the `ORACLE_HOME` directory.

Creating a Windows NT or Windows 2000 user account is required to permit many of the components to allow the Intelligent Agent node to submit jobs to the server node.

Note: If you do not set up the "logon as batch job" privilege, you will receive the "Failed to authenticate user" message when you try to run jobs on the node.

You must create a Windows NT or Windows 2000 user account for every managed node. Follow one of the three procedures listed below.

Creating a New Windows NT or Windows 2000 User Account

To create a new Windows NT or Windows 2000 user account on the Windows NT or Windows 2000 machine where the Intelligent Agent is installed and grant the "log in as batch jobs" privilege to this user, perform the procedure below.

1. Select the User Manager from the Administrative Tools via the Windows NT or Windows 2000 Start Menu. Refer to the Windows NT or Windows 2000 documentation for information on the tools.
2. Select New User from the User menu and check for the following:
   - The "User Must Change Password at the Next Logon" option box is not checked
   - "SYSTEM" or "system" cannot be used for the user name.
3. Under the Policies menu of the User Manager Windows NT or Windows 2000 utility, select the User Rights option.
4. Check the "Show Advanced User Rights" box.
5. Select "Logon as a batch job" from the list of privileges.
6. Give the selected user this privilege.

Assigning Privileges to an Existing Windows NT or Windows 2000 User Account

Alternately, to assign privileges to an existing local user account, perform the following steps.

1. Choose the user on the User Manager panel and check for the following:
   - The "User Must Change Password at the Next Logon" option box is not checked
   - "SYSTEM" or "system" is not used for the user name.
2. Under the Policies menu of the User Manager Windows NT or Windows 2000 utility, select the User Rights option.
3. Check the "Show Advanced User Rights" box.
4. Select "Logon as a batch job" from the list of privileges.
5. Add the advanced user right to this user.

6. Click the Add button.
   a. Fill in the "List Names From" field: (choose your domain)
   b. Click Show Users button.
   c. In the listbox, choose the domain user.
   d. Click Add.
   e. Click OK.
7. In the User Rights Policy window, click OK.

Configuring a Windows NT or Windows 2000 Domain User as Your Intelligent Agent User

> **Note:** The Windows NT or Windows 2000 Domain User works only if the machine is a primary domain controller (PDC); otherwise, jobs will fail with VNI-2015 "authentication error." In all non-PDC environments the account must be local to the machine.

Alternately, to configure a domain user as your Intelligent Agent user, perform the following steps.

1. Under the Policies menu of the User Manager Windows NT or Windows 2000 utility, select the User Rights option.
2. Check the "Show Advanced User Rights" box.
3. Select "Logon as a batch job" from the list of privileges.
4. Click the Add button.
   a. Fill in the "List Names From" field: (choose your domain)
   b. Click Show Users button.
   c. In the listbox, choose the domain user.
   d. Click Add.
   e. Click OK.
5. In the User Rights Policy window, click OK.

Note: If you have both a local and a domain user with the same name, the local user takes precedence.

Note: If you have a domain user set up, you must set the domain password to be the same as the local password in order for scheduled jobs to run when they are submitted using the domain user account.

Setting Up Preferred Credentials for Managed Services

In order for the Intelligent Agent to execute jobs or monitor events on a managed node, each administrator must specify valid credentials for the services running on that node. Preferred credentials are set from within the Console for each managed service.

Note: Oracle recommends that all instances of a Parallel server use the same preferred credentials as the Oracle Parallel Server.

To set preferred credentials in the Console, follow the steps outlined below:

1. Select System > Preferences > Preferred Credentials to view the services available for management using the Intelligent Agent.
2. For each managed service that requires authentication, enter the appropriate credentials for the service, such as username, password and role.
3. If some services of a particular type require the same credentials, use the <DEFAULT> credentials selection for that service type to have those credentials used by all services of that type.

   For example, if Administrator_1 has a username and password of admin1/pass1 on all the databases that he manages, he only needs to enter admin1/pass1 as his credentials in the <DEFAULT> database entry. All databases administration tasks will use these <DEFAULT> credentials.

Furthermore, if he has just one database which requires different credentials from admin1/pass1, he can enter different credentials for that database by selecting that specific database.

The Intelligent Agent authenticates the user name and password for all jobs and all events. If you have not set the preferred credentials correctly, jobs and events may fail.

Important: Changes to the Preferred Credentials will not be automatically propagated to previously registered jobs and events. In order to update these jobs and events with the new preferred credentials, you must de-register and subsequently re-register the jobs and events.

For Windows NT or Windows 2000 users, you must set the preferred credentials for the node (where the Windows NT or Windows 2000 Intelligent Agent resides) to be the same as the user that is set up to "Logon as a batch job."

Configuring and Starting the Paging Service

If you want to be notified via paging in Oracle Enterprise Manager, you must explicitly install the Oracle Enterprise Manager Paging Server. This paging service is not installed as part of the base Oracle Enterprise Manager installation; it is installed through a Custom installation type. Refer to the installation guide provided with the database release for more details.

Note: The Paging Server is only available on Windows NT or Windows 2000, but the ability to configure it is available on both Unix and Windows platforms.

Only one paging service installation is required if you wish to utilize paging for notification purposes within Oracle Enterprise Manager.

The paging service supports either numeric or alphanumeric pagers and utilizes the following paging service protocols (for alphanumeric pagers only).

- TAP (Telocator Alphanumeric Protocol)
- GSM (Global System for Mobile Communications)
- FLEXTD

To use alphanumeric paging, you need a phone number to call for the modem at the paging service provider and the pin number for your pager. Contact your paging service provider for the phone number to call. It is the number for the modem for sending pages.

Your paging provider may also have a feature for sending email to your pager. If you have that feature, you can configure an administrator's preferences for notification to use email, and specify your pager as the email receiver. This method will also work with many providers for sending notification to a cell phone.

Configuration of the paging service is not automatic. Follow the steps below to configure paging.

Setting Up Paging

On the machine from which you want to run the paging service, follow these instructions:

1. Install a modem.

Note: You must have a modem installed on the Windows NT or Windows 2000 machine that you are running the paging service.

2. Specify modem settings.
   a. Go to Start > Settings > Control Panel > Modems.
   b. Specify how your calls are dialed by clicking Dialing Properties from the Modems Properties page and then setting the following parameters:
      * From what area code you are dialing
      * From what country you are dialing
      * How you access an outside line. If you are not required to dial a number to access an outside line, leave this field blank.
   c. Set the Maximum Speed parameter by clicking Properties from the Modems Properties page. Oracle recommends setting this parameter to 9600K Baud; however, you should find the baud rate setting optimal for your system.

Note: A baud rate higher than 9600 may result in the loss of data with the paging service carrier. The baud rate of 9600 for your modem is only a recommendation. You must find the baud rate setting which is optimal for your system.

3. Install the Oracle Enterprise Manager Paging Server. Refer to the installation guide provided with the database release for information.
4. Start the Paging Service.
   a. Go to Start > Settings > Control Panel > Services.
   b. Select the Oracle<ORACLE_HOME_NAME>PagingService and click Start.

   You can also start the paging service by typing the following at a command prompt

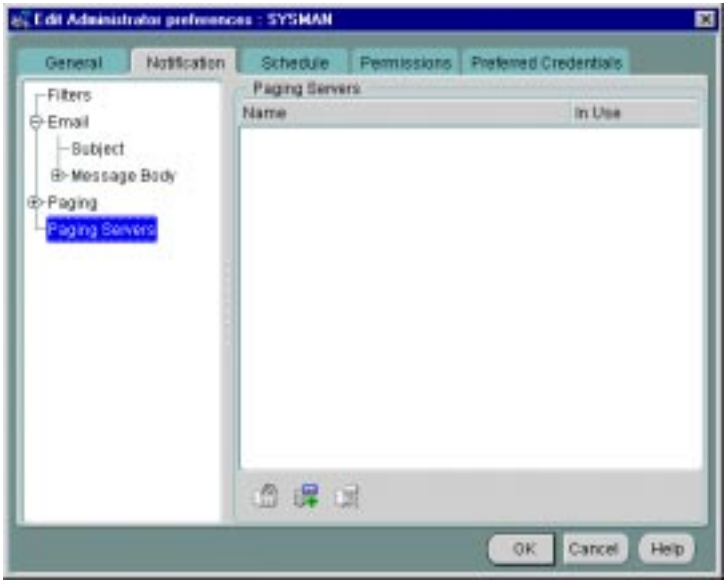
   ```
   oemctrl start paging
   ```

Adding a Paging Server

> **Note:** Only Super Administrators can add a paging server; this functionality is not available to regular administrators.

1. From the Enterprise Manager Console, select Preferences from the System menu. The Edit Administrator preferences property sheet appears. Click the Notification tab to access the Notification page.
2. From the Notification page, highlight Paging Servers from the tree list.

Figure 6–3 Administrator Notification Preferences: Paging Server



3. Right-click Paging Servers to obtain the pop-up menu and choose the Add item or click the Add Server icon on the detail view to the right.
4. When the Add Paging Server dialog appears, enter the name of the machine on which the paging server runs.

Figure 6–4 Add Paging Server Dialog

5. Press the OK button.

If the Console is unable to find the paging server with the given hostname, an error appears, saying "VD-4362: Could not add paging server, as paging server <hostname> could not be reached."

If the paging server is found, a new paging server object is added under the "Paging Server" object in the tree list. The new paging server will have no paging carrier. You must add at least one paging carrier in order for paging to function.

Adding Paging Carrier

Note: Only Super Administrators can add a new paging carrier; the functionality is not available to regular administrators.

1. From the Notification page, highlight Paging Carriers from the tree list.

2. Right-click Paging Carriers to obtain the pop-up menu and choose the Add Carrier item or click the Add Carrier icon on the detail view to the right.

3. When the Add New Paging Carrier dialog appears, fill in the fields.

Figure 6–5 Add Paging Carrier Dialog

Once defined, you can view the paging carriers by expanding the appropriate paging server and carrier objects in the tree list.

- Name

  Paging carrier name. Field accepts alphanumeric characters and underscores.

- Type

  Type of paging carrier. Enterprise Manager supports alphanumeric or numeric.

- Protocol

  TAP, FLEXTD, or GSM. Protocol selection is only available if the carrier type is Alphanumeric.

- Connection Properties

  * Country Code: The country code used to dial the pager if the call is international.

  * Area Code: Area code used the by country in which the pager is located.

  * Number: Local dialing number of the pager.

* Suffix: Permits identification of voice messages from a paging carrier and allows the person being paged to choose from several options when using a touch tone phone. For example, commas can be used as pauses. The Suffix field accepts the following characters: integers, commas, pound sign, and the star (asterisk).

Note: This option is only available if the paging carrier type is set to Numeric.

- Dialing Properties
  * Timeout (in seconds): Maximum dialing time allowed for a successful page.
  * Delay (in seconds): Time delay before dialing.

4. Press the OK button.

Specifying Paging Notification Preferences

While the Super Administrator configured the paging server and its carrier(s), all administrators who want page notifications must specify their own notification preferences by following the steps below:

1. Log on to the Console.
   a. Go to System > Preferences > Notification. Then highlight Paging on the tree list to view Paging Preferences on the detail view to the right.
   b. Select a paging service carrier from the drop down list.
   c. Enter the Pin number for your alphanumeric pager. If you have a numeric pager, leave this field blank.
   d. Test the paging notification by clicking the Test button.
2. Set your notification schedule. If you neglect to do so, you will not receive page notifications.
   a. Within the Console go to System > Preferences > Schedule
   b. Choose when you want to be notified by paging. If you do not select any days/hours to be notified by paging, you will never receive a page.

Refer to the *Oracle Enterprise Manager Administrator's Guide* for instructions on how to set up the notification schedule.

Other Paging Server Operations

Removing a Paging Server

Note: Only Super Administrators can remove a paging server; the functionality is not available to regular administrators.

1. From the Notification page, highlight the paging server object you want to remove from the tree list.
2. Right-click the paging server object to obtain the pop-up menu and choose the Remove item or click the Remove Server icon on the detail view to the right.

   A warning dialog appears, saying "Remove Paging Server <servername>?"
3. Click "yes". The Console will check if anyone is currently using any carrier from the paging server. If not, all paging carriers will be removed, and the paging server will be removed as well. Otherwise an error dialog appears, saying "The paging server cannot be removed because at least one carrier is being used.

Viewing Information on Paging Server

Note: Only Super Administrators can view information on a paging server; the functionality is not available to regular administrators.

From the Notification page, left-click the paging server object.

The detail view to the right will show information about that paging server such as the paging carrier names, the pager types, the protocol, and whether or not they are in use.

Pinging a Paging Server

Note: Only Super Administrators can ping a paging server; the functionality is not available to regular administrators.

To check the status of the paging server, follow the steps below:

1. From the Notification page, highlight the paging server you want to ping.
2. Right-click the paging server object to obtain the pop-up menu and choose the Ping item or click the Ping Server icon on the detail view to the right.

Querying Status of the Paging Service

To check the paging status, right-mouse click the carrier name to access the Ping Paging Service item in the context-sensitive menu.

Stopping the Paging Service

Stop the paging service from the Windows NT or Windows 2000 Services Control Panel.

You can also stop paging service by typing

```
oemctrl stop paging
```

Removing a Paging Carrier

Note: Only Super Administrators can remove a paging carrier; the functionality is not available to regular administrators.

1. From the Notification page, highlight the paging carrier object you want to remove from the tree list.
2. Right-click the paging carrier object to obtain the pop-up menu and choose the Remove item or click the Remove Carrier icon on the detail view to the right.

   A message appears, saying "Remove Paging carrier <carrier name>?"

3. Click "yes." The Console checks if anyone is current using the carrier. If not, it will be removed and the notification tree updated.

Editing a Paging Carrier

> **Note:** Only Super Administrators can edit a paging carrier; the functionality is not available to regular administrators.

1. From the Notification page, select the paging carrier object. The paging carrier information appears in the detail view to the right.
2. Make the changes.
3. Click the OK button.

   The Console will validate all the carrier information, update the notification tree. All administrators who have selected to use this carrier will automatically inherit the new changes.

   If the validation fails, an error dialog appears stating which entry failed to validate and what type of input is expected. When you click the "OK" button in the error dialog, all the paging carrier's entries are set back to their original values.

Viewing Information about a Paging Carrier

From the Notification page, select the paging carrier object. The paging carrier information appears in the detail view to the right.

Testing a Paging Carrier

1. Right-click the paging carrier object and choose the "Test" menu item. A dialog appears, asking for the PIN.
2. Enter the PIN if your pager is an alphanumeric pager and click "OK" to continue. If it is a numeric pager, leave this field blank.

Setting Up Email and Paging Notification

Setting Up the SMTP Gateway

Oracle Enterprise Manager supports sending email notifications using SMTP. To allow administrators to use email for notification, the Super Administrator must specify the SMTP mail gateway that is used for the SMTP email system.

SMTP is a TCP/IP-based mail protocol and requires that TCP/IP services are set up on the Console machine.

From the Enterprise Manager Console, the Super Administrator must select Configure SMTP Gateway from the System menu and supply the following information.

Field	Description
SMTP Mail Gateway:	Enter the name of the machine on which the SMTP mail gateway resides, such as `mailserver.company.com`.
Sender's SMTP Mail Address:	Enter the sender name you want to identify yourself as, such as Enterprise Manager Mail. Note: Some SMTP servers cannot process spaces. If that is the case with your environment, then use quotes, such as "Enterprise Manager Mail". The name specified will then appear as the sender of the email notification.

If the Super Administrator does not specify the above information, when any administrator tries to configure his email notification, an error message will appear.

Setting Up Email and Paging Notifications

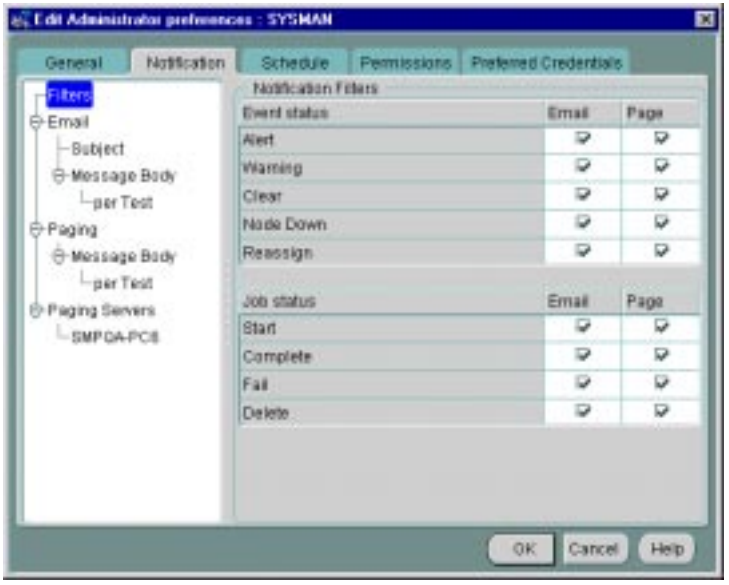
Then, each administrator must define preferences for his or her own email or paging notifications. From the Enterprise Manager Console, select Preferences from the System menu. The Edit Administrator preferences property sheet appears. Click the Notification tab to access the Notification page.

The Notification page allows you to set up paging and email notification methods for the administrator. This page consists of a hierarchical tree list and a detail view area that changes according to the object selected in the navigator. The tree list consists of three to four top-level objects, depending on the type of user that is logged in:

- Filters (Selected by default)
- Email

- Paging
- Paging Servers (available only to Super Administrators)

Figure 6–6 Administrator Notification Preferences



Filters

Notification filters allow each administrator to specify when to send an email notification as opposed to a page notification as a result of a job or event status change.

- **Event Notification Filter**: The Event Notification Filter allows you to filter email/pages sent to an administrator according to the event's level of severity. Filtering is set at the user level by checking or unchecking the Email/Page options on this property sheet page. You can select any combination of the following levels of event severity. For example, you can set filtering so that an administrator is notified via email if there is a warning and notified via the paging system if there is an alert. Selecting all levels of severity provides no filtering.
  - *Alert*
  - *Warning*

- *Clear*
- *Node Down*
- *Reassign*

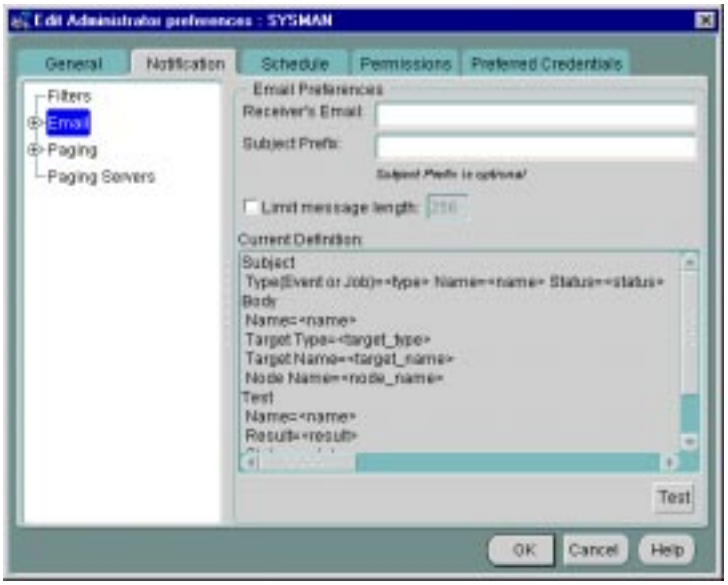
Job Notification Filter The Job Notification Filter allows you to filter email / pages sent to an administrator according to job status. As with the Event Notification Filter, filtering is set at the user level by checking or unchecking the desired option. Selecting all job statuses provides no filtering.

- *Start*
- *Complete*
- *Fail*
- *Delete* (Job removed)

Email

This page allows you to specify notification parameters for email.

Figure 6–7 Administrator Notification Preferences: Email



- **Receiver's Email**: Enter the email address of the administrator to whom the mail is being sent.
- **Subject Prefix**: Enter an optional prefix that is appended to the E-mail subject. That allows administrators to quickly identify messages from Enterprise Manager in their mail.
- **Limit message length**: Allows you to specify the maximum message body length of an E-mail notification. By default, this length is unlimited.
- **Current Definition**: Displays the current settings for format and content of E-mail notifications. To set or change the default parameters, expand the Email object in the tree list. You can select format and content options for the Subject line and Message Body. You can further expand the Message Body object to specify options at the Per Event Test level.
- **Test**: Click the Test button to check the validity of E-mail configuration. A message displays to inform you of the status of the test email.

Email Subject Definition This page allows you to select the content and format of the email subject line. By default, Type, Name, and Status are selected. You use the left/right arrows to move items back and forth between the Available and Selected lists.

Once an item has been selected, you can control the order in which the item appears by selecting it in the list and using the up/down arrows (located to the immediate right of the Selected list) to reposition the item within the list.

Note: The following information also applies to inserting content into the Email/Paging message body.

- **Available**: Lists available content.
- **Selected**: Lists currently selected content and the order in which the content should be displayed.
- **Use Abbreviated Format**: For Type (Job or Event), Status, and Target Type, you can select the Use Abbreviated Format option. The following abbreviations are used by the system:

Target Type

- DB for Database
- L for Listener
- N for Node

Status

- S for Started
- CO for Completed
- F for Failed
- D for Deleted
- W for Warning
- A for Alert
- C for Cleared
- NU for Node Unreachable

- R for Reassign

Timestamp Format

This option is available if Timestamp is chosen from the Selected list. You use the pull-down menu to select one of the pre-defined formats.

Do not include titles

When selected, classification titles such as Status, Service Name, and Timestamp are omitted from the message.

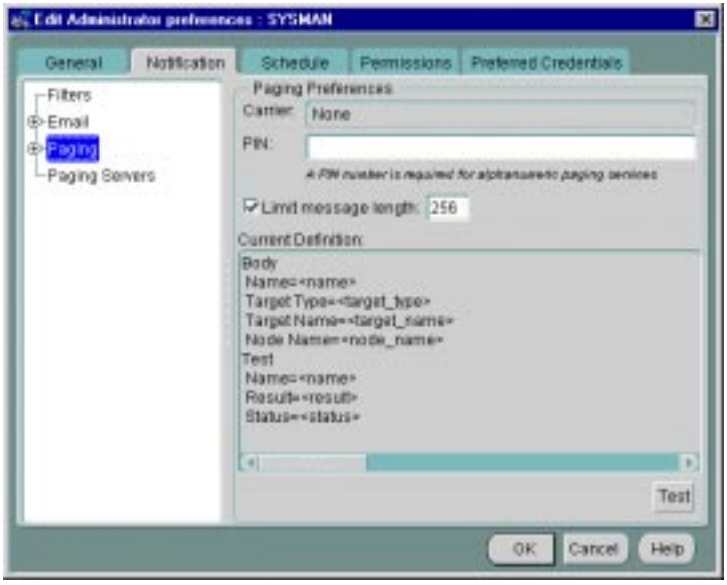
Append job output

When selected job output is appended to the end of the notification. For instances where job output is large, you may want to specify a limit to the message length. If the job output pushes the notification length past the specified limit, then the job output will be truncated, not the message itself.

Paging

This page allows you to specify notification parameters for paging.

Figure 6–8 Administrator Notification Preferences: Paging



- **Carrier**: After a paging server is specified by a Super Administrator and the name of the paging carrier service and the corresponding paging carriers have been configured, select the name of the paging carrier service from the pull-down list.
- **PIN**: Enter the PIN for your paging carrier. This entry is only required for alphanumeric pagers.
- **Limit message length**: Allows you to specify the maximum message length of paging notifications. By default, this length is set to 256 characters.
- **Current Definition**: Displays the current settings for format and content of paging notifications. To set or change these parameters, expand the Paging object in the tree list. You can select format and content options for the Message Body. You can further expand the Message Body object to specify options at the Per Event Test level.

- **Test**: Click the Test button to check the validity of the paging configuration. For alphanumeric pagers, enter the PIN number. For numeric pagers, the message "700" is sent.

  Click on the Send button to send a test page to the specified pager. A message informs you of the status of the test page.

  If the test fails, check the log file. If tracing is enabled for paging, you can also view the paging trace log file in the ORACLE_HOME\sysman\log directory on the machine which has the paging server.

Paging Status Codes for Numeric Pages

Numeric pages need to be interpreted as follows:

For job notifications, you will receive a 3 digit number which indicates the job status.

For event notifications you will receive the status code.

The event status and job status codes are listed as follows:

100 = Job Started

200 = Job Completed

300 = Job Failed

400 = Job Deleted

500 = Event Cleared

600 = Event Warning

700 = Event Alert

800 = Event Node Down

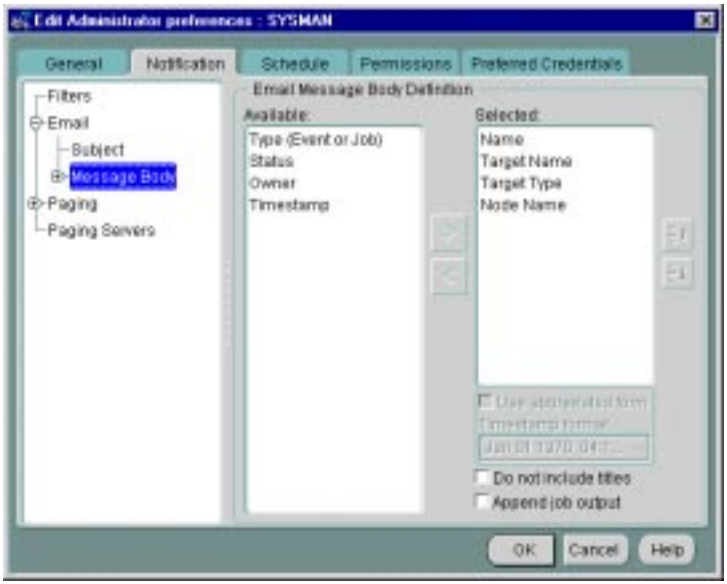
900 = Event Unknown

1000 = Event Assignee Changed

Email/Paging Message Body Definition

This page allows you to select the content and format for the body of the email or page message. By default, Name, and Status are selected. You use the left / right arrows to move items back and forth between the Available and Selected lists.

Figure 6–9 Administrator Notification Preferences: Email/Paging Body



Expanding the Message Body object in the navigator and selecting per Test allows you to use a subset of the following option settings on a per test basis. Refer to "Email Subject Definition" on page 6-35 for more information on manipulating message content.

- **Available**: Lists available content.
- **Selected**: Lists currently selected content.
- **Use Abbreviated Format**: For Type (Job or Event), Status, and Target Type, you can select the Use Abbreviated Format option. The following abbreviations are used by the system:

Target Type

- DB for Database
- L for Listener
- N for Node

Status

- S for Started
- CO for Completed

- F for Failed
- D for Deleted
- W for Warning
- A for Alert
- C for Cleared
- NU for Node Unreachable
- R for Reassign

Timestamp Format

This option is available if Timestamp is chosen from the Selected list. You use the pull-down menu to select one of the pre-defined formats.

Do not include titles

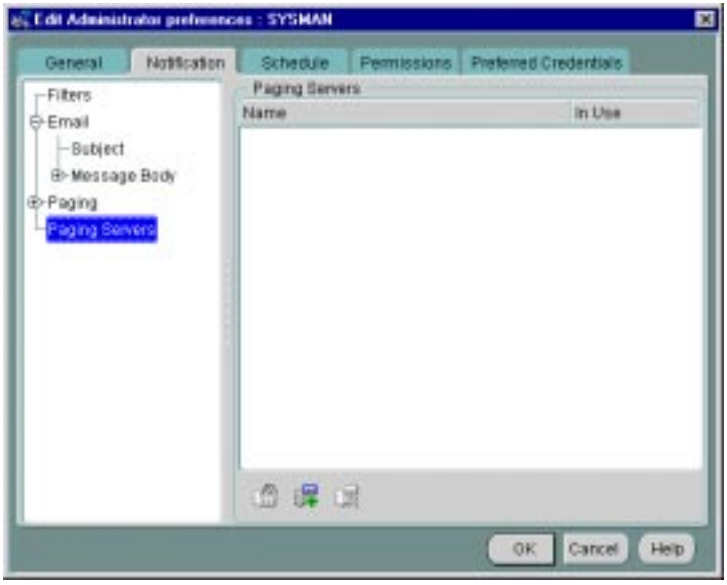
When selected, classification titles such as Status, Service Name, and Timestamp are omitted from the message.

Paging Server

The paging server object is available only to Super Administrators.

This page lists all available paging servers currently recognized by Enterprise Manager. The multi-column list consists of two columns: the name of the paging server and whether the paging server is currently being used.

Figure 6–10 Administrator Notification Preferences: Paging Server



Refer to the "Configuring and Starting the Paging Service" on page 6-22 for more information about the following topics:

- Adding a Paging Server
- Adding Paging Carrier
- Removing a Paging Server
- Viewing Information on Paging Server
- Removing a Paging Carrier
- Editing a Paging Carrier

Except for the Add Paging Server icon, the icons are grayed out unless a specific paging server is selected from the list.

Configuring the Console If Using a Dialup Line to Connect to the Management Server

Note: Dynamic IP addresses attributed by DHCP are not supported on nodes running the Management Server or an Intelligent Agent. DHCP is supported only on Enterprise Manager clients.

When the Console connects over a dialup line, the Console machine obtains a dynamic IP address. This dynamic IP address needs to be sent by the operating system (Windows 2000, Windows NT, Windows 95, Windows 98) to the application (Console).

In order for the operating system to return the correct IP address, the network communication protocol (TCP-IP) needs to be configured to obtain the IP address using the Dynamic Host configuration protocol. This setting is specified as follows:

1. Go to Start menu-> Settings
2. Select Control Panel -> Network
3. Select Protocols
4. Double-click TCP-IP Protocol.

IMPORTANT: You must make note of your previous settings in order to return to those settings when you connect the same machine to the network via ethernet. Copy the Settings specified in IP Address, Subnet Mask and Default Gateway to a file.

5. On the IP Address page, select "Obtain an IP address from a DHCP Server."
6. Click the OK button.
7. Connect to the network via your dial-up line. You will now be successfully able to launch the Console.

Note: If you are not running from a web browser, you may need to restart your system after making the changes.

Configuring a Remote Database for Backup or SYSDBA Administration

Before using one of the backup management wizards or starting up or shutting down a database through Oracle Enterprise Manager, you need to set up your database for remote SYSDBA management.

The following procedure outlines the operations you may need to perform on both the server and client if they have not been performed already through the Database Configuration Assistant.

Additional Information: Refer to the operating system-specific documentation for your Oracle database for the exact name of the password file creation utility for your system.

Server Side (Windows NT or Windows 2000)

1. From the command prompt, run the ORAPWD executable to create a new password file.

   Note: The name of the ORAPWD executable depends on the database version.

   - Oracle 7.3.X: ORAPWD73
   - Oracle 8.0.X: ORAPWD80
   - Oracle 8.1.X: ORAPWD

   For example,

   ```
   $ORACLE_HOME\bin\orapwd file=<fname> password=<password> entries=<users>
   ```

   where

   fname is the name of password file (mandatory),

   password is the password for SYS (mandatory),

   entries is the maximum number of distinct DBAs and OPERs (optional),

   There are no spaces around the equal-to (=) character.

   The `<fname>` will be created in the `Oracle_Home/Database` directory.

2. Edit the `init.ora` file located in the `Oracle_Home/Admin/<SID>/pfile` directory. Add or change the following parameter `remote_login_passwordfile=exclusive` in the `init.ora` file.
3. Shut down your database and then restart it from Control Panel > Services.
4. Grant SYSDBA and/or SYSOPER roles to users who will be performing remote DBA operations.

> **Note:** The grant is necessary even if the user already has this privilege set. The GRANT command will flush the username and the password to the password file if one is defined. After each reset/recreate of the password file, grants for all users with SYSOPER and SYSDBA have to be reset to ensure that the password file has all the necessary usernames stored.

5. Check which users are defined in the password file by using the V$PWFILE_USERS view. The view will show which users are currently present in the password file.

Server Side (UNIX)

1. Login as the owner of the software (for example, Oracle) and set your environment variables. The following is a CSH example.

```
setenv ORACLE_HOME  the_database_home
setenv ORACLE_SID   the_database_sid
```

2. Change to the `dbs` directory in your Oracle home.

```
cd $ORACLE_HOME/dbs
```

3. Edit the *`init.ora`* file. Add or change the following parameter `remote_login_passwordfile=exclusive` in the *`init.ora`* file.
4. Shut down your database and then restart it.
   a. Start SQL*Plus Worksheet.
   b. Log in as a user with the SYSDBA role.
   c. Type

```
shutdown immediate
```

```
startup
```

Shutting down the database is necessary for the database to pick up the changes in the `init.ora` file.

5. Run the ORAPWD executable to create a new password file.

Note: The name of the ORAPWD executable depends on the database version.

- Oracle 7.3.X: ORAPWD73
- Oracle 8.0.X: ORAPWD80
- Oracle 8.1.X: ORAPWD

For example,

```
$ORACLE_HOME/bin/orapwd file=<fname> password=<password> entries=<users>
```

where fname is the name of password file (mandatory),

password is the password for SYS (mandatory),

entries is the maximum number of distinct DBAs and OPERs (optional).

There are no spaces around the equal-to (=) character.

The `<fname>` will be created in the `$Oracle_Home/dbs` directory.

6. Grant SYSDBA and/or SYSOPER roles to users who will be performing remote DBA operations

---

Note: The grant is necessary even if the user already has this privilege set. The GRANT command will flush the username and the password to the password file if one is defined. After each reset/recreate of the password file, grants for all users with SYSOPER and SYSDBA have to be reset to ensure that the password file has all the necessary usernames stored.

---

7. Check which users are defined in the password file by using the V$PWFILE_USERS view. The view will show which users are currently present in the password file.

Setting the Format of Dates

To set up how the order of the date elements are to be displayed in the Oracle Enterprise Manager Console and DBA Studio, you must set the following environment variables:

- NLS_DATE_FORMAT for the month, date, and year

  `mm-dd-yyyy`

- NLS_TIMESTAMP_FORMAT for the date and time

  `mm-dd-yyyy hh:mi pm`

> **Note:** You can only set up the order in which the elements are to be displayed; you cannot set up what is to be displayed.

Windows Platforms

To set the environment variable:

```
set NLS_DATE_FORMAT = mm-dd-yyyy
set NLS_TIMESTAMP_FORMAT = mm-dd-yyyy hh:mi pm
```

UNIX

To set the environment variable:

```
setenv NLS_DATE_FORMAT mm-dd-yyyy
setenv NLS_TIMESTAMP_FORMAT mm-dd-yyyy hh:mi pm
```

7

Migrating a Release 1.x Repository to a Release 2.2 Repository

The Oracle Enterprise Manager Migration Assistant supports migrating data for both Oracle Enterprise Manager and the Oracle Enterprise Manager Management Packs.

This chapter describes methods for migrating multiple Release 1.x repository schemas into an existing single "shared" Release 2.2 repository schema.

> **Note:** Migration requires that you first create a Release 2.2 repository using the Enterprise Manager Configuration Assistant. Migration is performed from a Release 1.x repository into an already existing Release 2.2 repository.

An Oracle Enterprise Manager Release 1.x repository schema is not the same as an Oracle Enterprise Manager "shared" Release 2.2 repository schema. In Enterprise Manager Release 1.x, each administrator had a separate repository schema which contained the current view of the network and user-specific information. In Enterprise Manager Release 2.2, administrators have accounts within a single shared repository schema, and all individual preferences are stored in the administrator's account.

A Release 2.2 repository may not coexist with a Release 1.x repository in the same schema. A Release 2.2 repository and a Release 1.x repository may reside in the same database, but in a different schema.

Note: If you do not have a Release 1 repository, skip this chapter.

The Migration Assistant supports the migration of the following information into an existing Release 2.2 repository:

- discovery information
- preferred credentials
- job information
- event information
- groups

Note: The Migration Assistant only runs on Windows NT, but it can migrate repository data from any Release 1.x repository to Release 2.2 regardless of the source and destination repository database platforms.

Important Notes

Note: Before you start migration, you must back up the database and the Release 1.x repository to ensure that the current Release 1.x Oracle Enterprise Manager environment and Release 2.2 environment can be recovered in the event of an unexpected failure.

Note: If you perform any work with Release 2.2 after you have fully migrated your Release 1.x repository to Release 2.2, you cannot go back to using that repository with Release 1.x. Rolling back to Release 1.x due to problems during repository migration to Release 2.2 is supported only if you perform the complete set of pre-migration steps and you do not begin work in the Release 2.2 environment.

Phases of Migration

The phases for migrating a Release 1.x repository are listed below:

1. Preparing for Repository Migration
   a. Create New Release 2.2 Administrators
   b. Refresh All Services in the Release 1.x Console
   c. Check the Information Currently in the Release 1.x Repository
   d. Back Up the Existing Release 1.x Repository
2. Migrating the Repository Using the Migration Assistant
3. Deleting and Deregistering All Active Jobs and Events from the Release 1.x Console. If you do not delete and deregister active jobs and events from the Release 1.x Console, there could be duplicate jobs running at the Intelligent Agent. Events will fail to register due to "not unique" errors.
4. Confirming a Successful Migration

How the Differences Between Release 1.x and Release 2.2 Impact Migration

The repository migration operation changes the existing Release 1.x repository in several ways.

Refer to Release 1.x Objects Reference on page 7-24 for a comprehensive list of the Release 1.x objects and whether or not they can be migrated to Release 2.2.

Repository

The Oracle Enterprise Manager Migration Assistant migrates Release 1.6.5 repositories to Release 2.2. If the Oracle Enterprise Manager Migration Assistant is run against a release earlier than 1.6.5, that repository is first upgraded to 1.6.5 in place, and then the upgraded repository is migrated to 2.2. Oracle Enterprise Manager Release 1.2 is the earliest version supported for in-place upgrades to version Release 1.6.5. If the target repository version is less than 1.6.5, then after the migration it is no longer functional with Oracle Enterprise Manager Release 1.x. Before beginning the migration of any repository, first back up the schema and/or tablespace.

Preferred Credentials

Username, passwords, and roles are migrated. When migrating multiple Release 1.x repositories to a single Release 2.2 repository with one administrator, the first preferred credentials migrated for a service which existed in more than one Release 1.x repository will be the preferred credentials from the first Release 1.x repository migrated.

Groups

In Release 1.x, jobs and events can be registered against a group appear as a single job or event on the Console. In Release 2.2, when a job or event is registered against a group, a separate job/event object appears in the Console for each service on which the job/event is registered. When migrating a job/event registered against a group in Release 1.x to Release 2.2, a separate job or event object will appear in the Release 2.2 Console for each service within that Group on which the job/event is registered.

Jobs

- Only active jobs that are not "fixit" jobs and active jobs that fall within the Release 2.2 frequency limitations will be automatically submitted to the Oracle Enterprise Manager Job System.
- If a job named NAME was migrated to a target database where a job was already named NAME, it would be renamed to NAME(1) during migration. If there already was a NAME(1), it would be renamed to NAME(2), and so on.

Backup Jobs

If a backup job is running in Release 1.x and you migrate the data, the job appears as a tcl job in Release 2.2. **Note:** Backup jobs in the job library will not be migrated. Backup Manager Jobs differ significantly from Backup Tablespace Jobs in the Oracle Enterprise Manager Console.

Fixit Jobs

Release 1.x fixit jobs are migrated to the Release 2.2 job library, but are not automatically submitted. The Release 2.2 fixit jobs must be resubmitted from the Release 2.2 job library manually after migration. A Release 1.x event associated with a Release 1.x fixit job is separated and placed in the Release 2.2 event library and Release 2.2 job library respectively (not submitted). After migration, you must edit the Release 2.2 event in the Release 2.2 event library and reassociate it with the "V2 manually resubmitted" fixit job.

Events

- Only registered events that are not associated with "fixit" jobs and events that fall within the Release 2.2 frequency limitations will be automatically submitted.
- If an event named NAME was migrated to a target database where an event was already named NAME, it would be renamed to NAME(1) during migration. If there already was a NAME(1), it would be renamed to NAME(2), and so on.
- The Event "Destination Type" must be the same in Release 2.2 to associate a fixit job with an event. For example, if you created a Release 1.x event with a "Service Type" "Database" and you had associated it with a Release 1.x Fixit Job such as a "Broadcast Message" of "Service Type" "Node". The Release 1.x event and Release 1.x fixit job with different "Service Types" can be associated and registered together. In Release 2.2 the "Destination Type" must be the same as the fixit job "Destination Type" to associate and register them together.

  If you migrate an event and a fixit job like the above example, you must perform a "Create Like..." on the Release 1.x fixit job and change the Release 2.2

"Destination Type" of this job to match the "Destination Type" of the Release 2.2 event.

Event Sets

- With the Release 1.x architecture, an "event set" is a collection of individual events which were registered to a discovered service. In the Release 2.2 architecture, an "event" is the collection of individual tests. The Release 2.2 "event" is similar to the Release 1.x "event set." In Release 2.2, the individual Release 1.x "events" are now called "tests." Each "test" still has the same possibilities and settings as the Release 1.x Events, and an Event can be defined in the same way as a Release 1.x Event Set. When migrating Release 1.x Event Sets, each Release 1.x event within the event set is migrated to Release 2.2 as a separate event.
- For Release 2.2 Events, frequency, frequency units, and fix it jobs are assigned at the "Event" (or top) level. These items were assigned at the Release 1.x "Event" (or low) level. If these items are not the same for all Events in a Release 1.x Event Set, each Event in the Release 1.x Event Set will be migrated to a separate Release 2.2 Event. If these items are the same for all Events in a Release 1.x Event Set, the entire Release 1.x Event Set will be migrated to a single Release 2.2 Event.

Frequency

Frequency options for jobs and events in Release 2.2 differ from those in Release 1.x. Jobs or events that have a frequency that is supported in Release 1.x but not supported in Release 2.2 must be submitted or scheduled again in the Release 2.2 environment. For example: Release 2.2 events support polling intervals of 23:59 hours or less. Release 1.x supports polling intervals greater than 23:59 hours.

Performance Manager/Capacity Planner

Any number of Release 1.x Performance Manager / Capacity Planner repositories can be migrated to the Release 2.2 repository, but each must be associated with its own unique Release 2.2 administrator.

Change Management Pack

- CAUTION: If you are migrating a Change Manager Release 1.5.5 repository, the migration process will first upgrade it to Release 1.6.5 before migrating it. This upgrade cannot be reversed, and you will be unable to use Change Manager Release 1.5.5 with this repository. You may therefore want to back up the Release 1.5.5 repository, and restore it after the migration, in order to continue using it with Change Manager Release 1.5.5.
- Each Oracle Change Management Pack Release 1.x repository that you migrate must be migrated to a Release 2.2 repository that contains no change plans or

baselines for any of the administrators. If any change plans or baselines exist for any administrator, you must delete the plans or baselines before starting the Change Management Pack Release 1.x repository migration. If you do not, the Change Management Pack migration fails. In this situation, the `sysman\temp\vobmgr.log` file contains messages that identify which administrators in the Release 2.2 repository have plans or baselines that must be deleted. Use Plan Manager to delete change plans and DB Capture to delete baselines.

Expert

The Oracle Expert Release 1.x repository tables are migrated to a Release 2.2 repository using an Oracle Expert tuning session export/import methodology. All tuning sessions under all databases in the Release 1.x repository are exported into .xdl files (one per database) and then imported into the Release 2.2 repository under the selected Oracle Enterprise Manager user.

Paging Services

- Schedule information for a Release 1.x user will not be migrated to a Release 2.2 Administrator. Each user must define a new paging schedule in the Release 2.2 environment.
- Paging configuration information will not be migrated to Release 2.2. Each user must define new paging confirmation information in the Release 2.2 environment.

Email Services

- Schedule information for a Release 1.x user will not be migrated to a Release 2.2 Administrator. Each user must define a new email schedule in the Release 2.2 environment.
- Email configuration information will not be migrated to Release 2.2. Each user must define new email confirmation information in the Release 2.2 environment.

Manually Discovered Nodes and Manually Added Services

Manually discovered nodes and manually added services will not be migrated.

Preparing for Repository Migration

To prepare for a successful migration, you must complete the following procedures:

- Install Oracle Enterprise Manager Release 2.2. Refer to the installation guide provided with the database release for detailed information.
- Create New Release 2.2 Administrators
- Refresh All Services in the Release 1.x Console
- Shut Down the Release 1.x Console and the Release 2.2 Management Server
- Check the Information Currently in the Release 1.x Repository
- Back Up the Existing Release 1.x Repository

Create New Release 2.2 Administrators

Using the Migration Assistant, you can migrate a single Release 1.x repository to a single Release 2.2 repository or migrate multiple Release 1.x repositories to a single Release 2.2 repository.

For both cases, you must first create the new administrators which will have Release 1.x repository information migrated to their Release 2.2 account.

Each Enterprise Manager administrator is a separate *user* in the repository database account.

Note: If you do not create new Release 2.2 administrators, all objects migrated are migrated to the SYSMAN account. The SYSMAN account is the default super administrator account provided when you install Oracle Enterprise Manager Release 2.2.

To create new administrators, follow the steps below:

1. Start the Management Server.

   Refer to Chapter 3, "Controlling the Management Server" for detailed information on starting the Management Server.

2. Log into the Oracle Enterprise Manager Console Release 2.2 using the SYSMAN account. Refer to Chapter 6, "Setting Up the Console" for detailed information on starting the Enterprise Manager Console.

3. Select Manage Administrators from the Console's System menu. The Manager Administrator Accounts dialog appears.
4. Click the Add button in the Manage Administrator Accounts dialog. The Create Administrator Account dialog appears.
5. Enter a unique username and password for the Enterprise Manager administrator and check the access available to the administrator:

For more information on managing Enterprise Manager Administrators, refer to the the *Oracle Enterprise Manager Administrator's Guide.*

Refresh All Services in the Release 1.x Console

Before migration, you must make sure that all services that need to migrate have been successfully refreshed by the Release 1.x Console.

Any service that has not been successfully refreshed will not migrate.

Shut Down the Release 1.x Console and the Release 2.2 Management Server

Shut down the Release 1.x Console and the Management Server, if running. The remote Intelligent Agents are left running and existing queue files are left intact.

Check the Information Currently in the Release 1.x Repository

To ensure that no information is lost during migration, check the information currently in the Release 1.x repository. Later, you will use this information as a guide to verify whether the information is present after the migration to Release 2.2.

In the V.1x repository, check for the following information:

1. For discovery information, count the number of discovered hosts and services in the Release 1.x environment
2. View the credential information for at least one node
3. For job information, relevant information to note includes the following:
   - number of jobs
   - type of job
   - job state
   - job history information
4. For event information, note relevant information such as the following:
   - number of event groups
   - number of events in each group
   - nodes where each group is registered
   - current state of the event

Back Up the Existing Release 1.x Repository

The Migration Assistant does not support automatic recovery when an unexpected error occurs during the migration. To ensure that the current Release 1.x Oracle Enterprise Manager environment and Release 2.2 environment can be recovered in the event of an unexpected failure, you should backup both the Release 1.x repository and the Release 2.2 repository.

Note: A repository created under the SYS user cannot be exported.

To backup the repository, you may use Enterprise Manager's Export wizard or the EXPORT utility, a base utility shipped with the Oracle database server. For information about using Data Management wizards, refer to the Oracle Enterprise Manager Online Help.

The following example is from an NT environment running an 8.0 server.

```
exp80 user/password@service owner=oemv1schema file=oemv1.dmp
```

where USER is the username for the Oracle Enterprise Manager repository to be migrated and PASSWORD is the password for the user.

In this example, the saved repository is written to `oemv1.dmp`.

A message appears at the end of the export, telling you whether the export completed successfully:

```
Export terminated successfully without warnings.
```

For detailed information about the Export utility, refer to *Oracle8i Release 2 (8.1.6) Utilities*.

Migrating the Repository Using the Migration Assistant

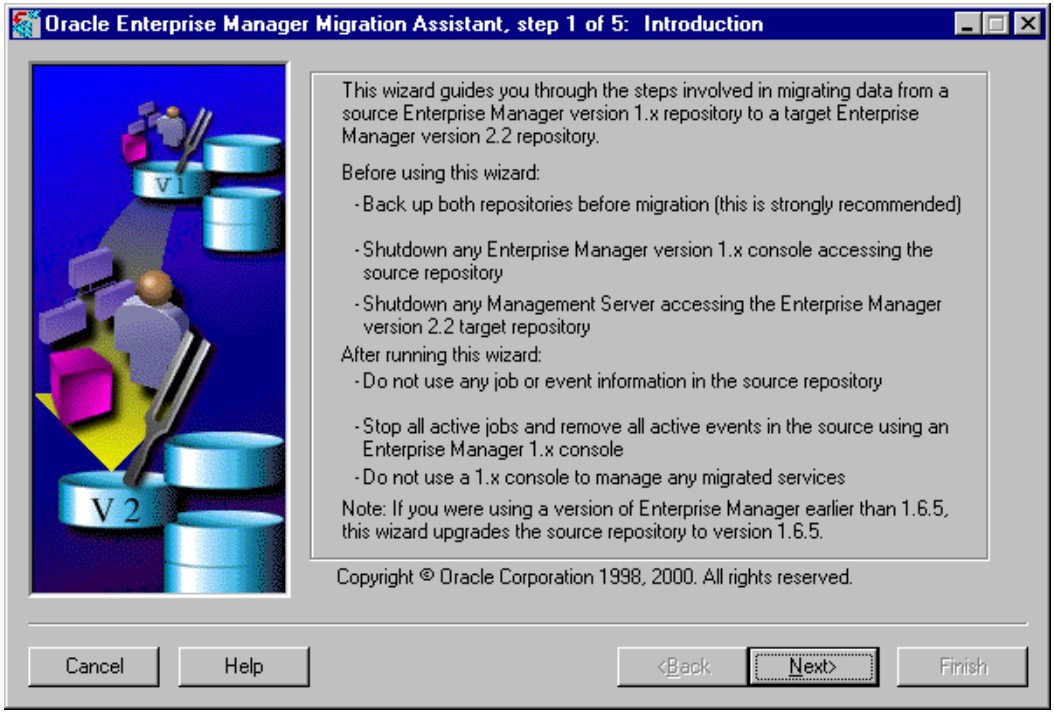
Follow the instructions for each database in the Release 1.x Oracle Enterprise Manager environment you want to migrate.

Start the Enterprise Manager Migration Assistant from the Windows NT Start Menu.

Step 1 "Introduction"

After launching the Migration Assistant, the “Introduction” page appears, providing important information about the purpose of the Migration Assistant and any preconditions that are required for the migration to be successful.

Figure 7–1 Introduction



Read the introduction; then, press Next to continue.

If you have one or more system management packs installed, proceed to Step 2 "Component Selection" on page 7-14.

If you do not have any system management packs installed, proceed to Step 3 "Source Repository Login" on page 7-15.

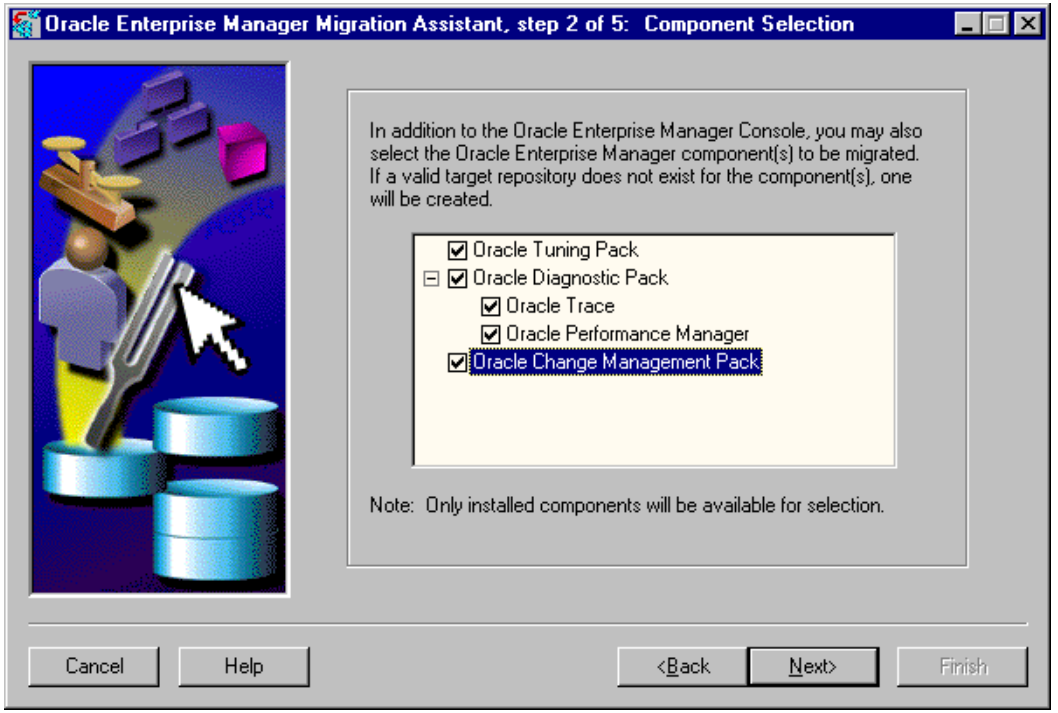
Step 2 "Component Selection"

> **Note:** The Component Selection page only appears if you have one or more system management packs installed.

Choose the repository components that you want to migrate.

Only installed components are available for selection. If a valid target repository does not exist for the component, one will be created.

Figure 7–2 Component Selection

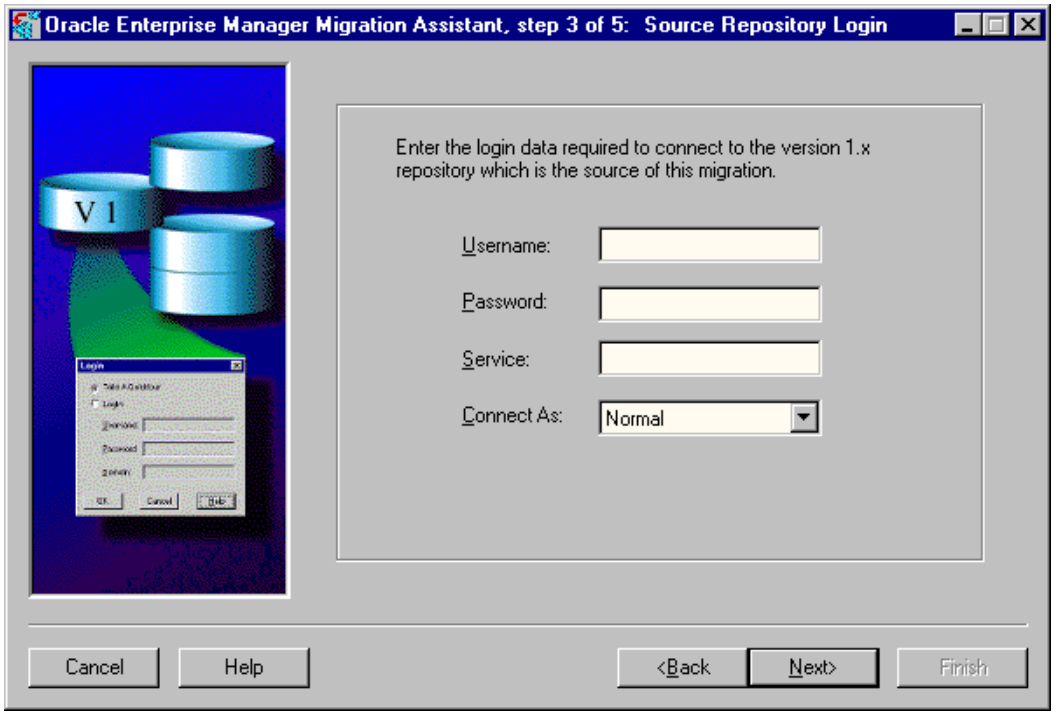


After you have made your selection, press the Next button to continue.

Step 3 "Source Repository Login"

Login to the database where the Release 1.x repository is located.

Figure 7–3 Source Repository Login



Username and Password: You must provide a valid username for the database where the Release 1.x repository is located.

Service: Use the standard SQL*Net V2 or Net8 syntax. The service name is the name of the database as it appears in the `tnsnames.ora` file.

Connect As: Connect as "Normal."

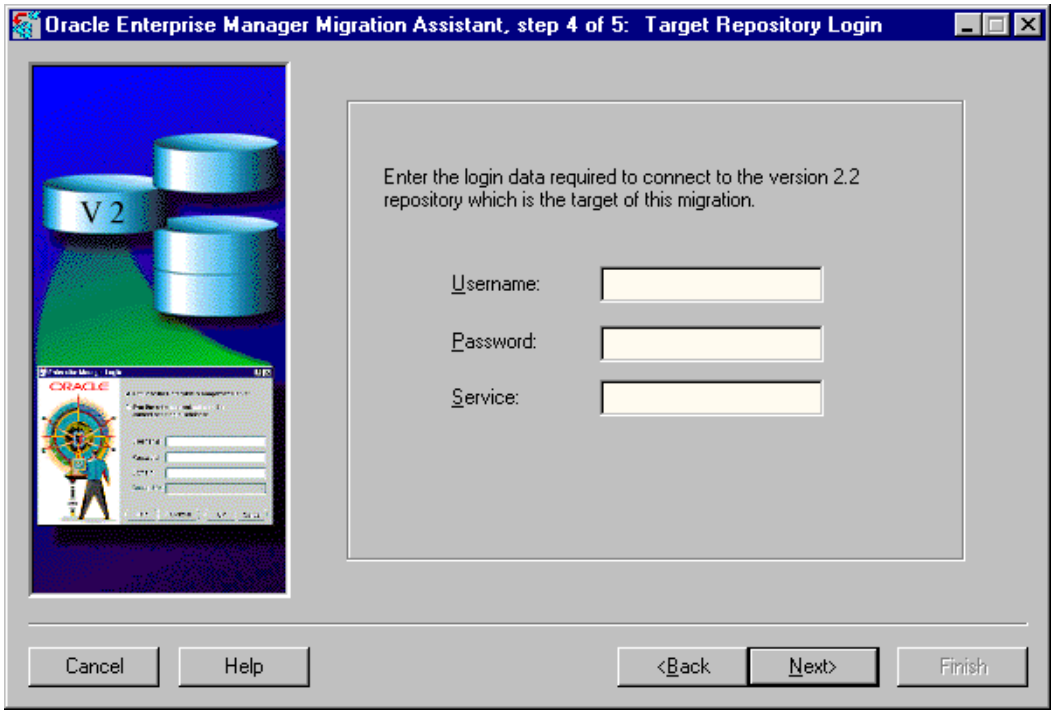
Press Next to continue.

If the information supplied is valid and a valid Release 1.x repository is present, proceed to Step 4 "Target Repository Login" on page 7-16.

Step 4 "Target Repository Login"

Provide the username, the password, and the service name for the new Release 2.2 repository.

Figure 7–4 Target Repository Login



Username and Password: The Oracle Enterprise Manager username must be the same as the username under which the Release 2.2 repository is created. In other words, these are the repository schema owner's credentials. The Oracle Enterprise Manager Release 2.2 repository is an Oracle database schema. The user name and password is not the Oracle Enterprise Manager user logon.

Service: Use the standard SQL*Net V2 or Net8 syntax. The service name is the name of the database as it appears in the `tnsnames.ora` file.

Press Next to continue.

If you have provided a valid repository name, password, and service for a valid Release 2.2 repository, proceed to Step 5 "Administrator Data" on page 7-18. The Oracle Enterprise Manager Migration Assistant also informs you through a dialog if

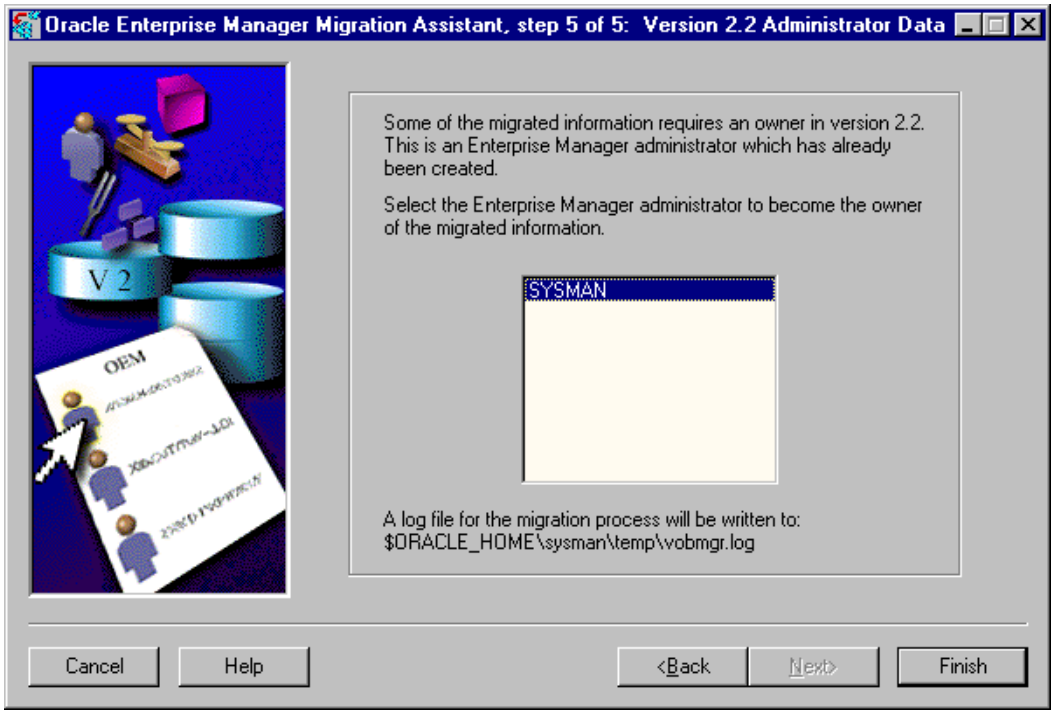
the information to be migrated already exists in the Release 2.2 repository and if the format of the information is different from the format of the Release 1.x information and how this information has been converted.

Step 5 "Administrator Data"

Specify the Release 2.2 administrator where the information will be migrated.

Note: If you have not created additional Release 2.2 administrator accounts, all object migrated will be migrated to the SYSMAN administrator account.

Figure 7–5 Version 2.2 Administrator Data



Click Finish to initiate the migration process or click Back to return to previous pages to change the information.

Work in Progress

A Work in Progress window appears, showing your progress. All information in the Work in Progress window is logged into the `vobmgr.log` file, which is located in the `%oracle_home%\sysman\temp` directory.

Note: If you are migrating a Release 1.x repository with the Change Management Pack installed but have not yet used a Change Management Pack application, the Change Management objects will automatically be created in the new Release 2.2 repository.

Deleting and Deregistering All Active Jobs and Events from the Release 1.x Console

The repository migration from Release 1.x into the Release 2.2 environment must be coordinated. Part of the migration process is to delete and deregister all active Release 1.x jobs and events by hand.

Job and event information defined in the Release 1.x repository is copied to the Release 2.2 repository.

After performing the repository migration, follow the steps outlined below:

1. Start the Release 1.x Console, connecting to the Release 1.x repository that was just migrated.
2. Delete / deregister all active jobs and events manually. If you do not delete and deregister active jobs and events, there could be duplicate jobs running at the Intelligent Agent. Events will fail to register due to "not unique" errors.

Note: If you migrate information and do not start the Release 1.x Console and remove jobs and events before starting the Management Server; then, the initial start will attempt the registration of events and submission of jobs. Jobs will register, but events may fail as the event is already registered with the Intelligent Agent from the Release 1.x Console (Intelligent Agent's restriction on uniqueness of events).

The failure will be presented at the Console. You can de-register the Release 1.x event and attempt the re-registration via Create Like... from the failed event registration on the Release 2.2 Console.

---

3. Shut down the Release 1.x Console(s).
4. Start the Management Server.

Note: You must repeat the same steps to migrate each of the Release 1.x repositories into the single Release 2.2 repository.

Confirming a Successful Migration

After the Migration Assistant has moved the Release 1.x repository information into the specified Release 2.2 administrator, login to the Release 2.2 Console as that administrator and confirm the migration.

You must ensure that all information is present after repository migration by checking that the discovery, preferred credentials, job and event information has migrated successfully.

1. For discovery information, check that the hosts and services are represented after migration via the Console navigator.

   Note: The Migration Assistant does not migrate any manually discovered targets.

2. Credential information for at least one node should be viewed by using the Release 2.2 Console navigator to access the database using the migrated credentials.

   Note: If the Release 2.2 Console is unable to match the migrated service name with the service name stored in the credentials table that the Release 1.x Console used, you must reenter the preferred credentials through the Release 2.2 Console after migration for the affected service.

3. For job information, relevant information to check include the number of jobs, the type of job, and the job state, and relevant job history information. Certain Release 1.x jobs contain tasks which do not migrate into Release 2.2. These need to be taken into account as well. Refer to Release 1.x Objects Reference on page 7-24 for job tasks that do not migrate.
4. For event information, relevant information to note includes the number of events, the number of tests in each event, the nodes where each group is registered, and the current state of the event. Refer to Release 1.x Objects Reference on page 7-24 for event tests that do not migrate.
5. For the number of Performance Manager recordings and user-defined charts which were successfully migrated, check the migration log file, `sysman\temp\vobmgr.log`.

6. For information about the Oracle Expert migration process, check the `sysman\temp\vobmgr.log` file and the more detailed `sysman\temp\xpomigr.log` file.
7. For Change Management you need to count the number of baselines and change plans in PlanMan and Capture in Release 1.x and compare the number to the number migrated in Release 2.2.

Backing out of a Migration

In the event of an unexpected problem during the migration, you may need to restore the Oracle Enterprise Manager environment to its previous state. To restore the Oracle Enterprise Manager environment:

1. Drop the old Release 1.x repository user using DBA Studio's Security Management. Refer to the Oracle Enterprise Manager Online Help for detail information about Security Management.
2. Import the saved Release 1.x repository user using Import wizard or the IMPORT utility, a base utility shipped with the Oracle database server. The user is recreated when you import. For information about using Import wizard, refer to the Oracle Enterprise Manager Online Help. The following example uses the IMPORT utility.

   ```
   imp user/password@service file=oemv1.dmp
   ```

   Importing the schema will "recreate" the Release 1.x repository as it was before migration.

   Note: Jobs and events must be reregistered if they have been deregistered.

   For detailed information about the Import utility, refer to *Oracle8i Utilities.*

Release 1.x Objects Reference

Refer to the sections below for a comprehensive list of the Release 1.x objects and whether or not they can be migrated to Release 2.2.

Release 1.x Objects Which Will Migrate to Release 2.2

The following Release 1.x objects can be migrated to Release 2.2:

Preferred Credentials
Username, passwords, and roles are migrated. When migrating multiple Release 1.x repositories to a single Release 2.2 repository with one administrator, the first preferred credentials migrated for a service which existed in more than one Release 1.x repository will be the preferred credentials from the first Release 1.x repository migrated.

Services
Databases, Nodes and Listeners are migrated if the status of the last discovery / refresh of these services was successful.

Groups: In Release 1.x, jobs and events are registered against groups as a single object. If a job or event is registered to a group in Release 1.x; then, the job or event is migrated to Release 2.2 by creating a separate job or event for each service on which the job or event is registered.

The job or event is not migrated to a group since groups are not migrated as a logical entity. No group will exist on the Release 2.2 side. All of the Release 1.x group members will migrate individually to Release 2.2. The group will need to be recreated in Release 2.2, and the migrated members must be added again.

Jobs

Run DBA Script	Startup Database	Run TCL
Run SQL * Plus	Broadcast Message	Shutdown Listener
Shutdown Database	Run OS Command	Startup Listener

Fixit Jobs

All Schedule Information	Override Preferred Credentials	Job History
Dependent Jobs	Job Library	Active Jobs

Events

Alert	Probe	UpDown (Database)	Buffer Cache
Data Dictionary Cache	Disk I/O	Library Cache	Net I/O
SysStat Table	SysStat Table Delta	Datafile Limit	Lock Limit
Process Limit	Session Limit	User Limit	Archive Full
Chunk Small	Dump Full	Maximum Extents	User Blocks
Continued (chained) Row	UpDown (listener/sqlnet)	UpDown (node)	CPU Paging
CPU Utilization	Disk Full	Swap Full	Archiver Hung
Broken Jobs	Data Block Corruption	Deferred Transactions	Error Transactions
Failed Jobs	Session Terminated	Unscheduled Jobs	Free Buffer
In Memory Sorts	Index Rebuild	Redo Log Allocation	Roll Back Contention
Alert File Large	Fast Segment Growth	Multiple Extents	Snapshot Log Full
Tablespace Full	User Audit	Data Gatherer Alert	Data Gatherer UpDown

Others

Event Set Library	Registrations	Third Party Events
Fixit Jobs Associated with Triggered Events	Frequency	Pack Repositories

Release 1.x Objects Which Need to be Re-created

The following objects need to be re-created:

Jobs

Backup Tablespace from Oracle Enterprise Manager Jobs	Export
Import	Load

Others

SNMP Traps	Paging Services	Email Services
Administrator Lists	manually added services	manually discovered targets

Release 1.x Objects Which No Longer Exist

Release 1.x objects which no longer exist in Release 2.2 are listed below:

Jobs

Deinstall Products	Delete Package
Distribute Package	Install Package

Events

Rdb Database Events	Rdb Services Events
Event History	Outstanding Events

Others

Maps

8

Setting Up DBA Studio

The DBA Management Pack features DBA Studio and SQL*Plus Worksheet.

DBA Studio combines the functionality of multiple database tools and master view detail so that you can access database administration features and manage multiple databases from one tool. DBA Studio consists of:

- Instance Management: Start or shut down a database, edit database initialization parameters, manage resource allocations and users' sessions.
- Schema Management: Create, edit, and examine schema objects.
- Security Management: Administer users, privileges, and profiles.
- Storage Management: Administer tablespaces, datafiles, rollback segments, and redo logs. You can also view controlfile and archive log information.
- Replication Management: Enables an administrator to quickly set up, configure, and manage an Oracle replication environment.
- JServer Management: Enables you to manage the namespace, browse CORBA and EJB components published in the namespace, change permissions on the published components, and execute the main() method in schema-resident Java classes and view the output.
- Cache Management: Enables you to set up, manage, and monitor caches created by Oracle8*i* Cache. Oracle8i Cache increases the capacity of applications, such as Web applications, enterprise resource planning (ERP) applications, and vertical applications, by adding intelligent middle-tier caching. Use Oracle8i Cache to cache frequently used data on the middle-tier node, increasing the number of requests that your environment can process.

In previous releases of Enterprise Manager, there were individual database tools (Instance Manager, Schema Manager, Storage Manager, Security Manager, and Replication Manager). With the exception of Replication Manager and Cache

Manager, should you want to continue using separate independent tools rather than the well-integrated DBA Studio, you must install them through a custom install option.

DBA Studio can be used to perform your database administration tasks and supports versions of Oracle databases back to 7.3.4.

Analyze, Backup Management, Data Management, Dimension Creation, Summary Advisor, Create Table, and Create View wizards are also available.

Note: To use any DBA Studio and DBA Management Pack applications other than SQL*Plus Worksheet as a non-DBA user, you must have been granted the SELECT_CATALOG_ROLE. The SELECT_CATALOG_ROLE is only available for Oracle8 and above databases. For information about creating the SELECT_CATALOG_ROLE, refer to "Giving Non-DBA Users Access to DBA Studio Against a 7.3.4 Database" on page 8-20.

Figure 8–1 DBA Studio

Note: If any two objects are edited at the same time, the last edit committed will overwrite the previously committed changes without warning.

This chapter discusses the topics listed below:

- DBA Studio in Standalone or Oracle Management Server (OMS) Mode
- Setting Up DBA Studio in Standalone Mode
- Setting Up DBA Studio in OMS Mode
- Other DBA Studio Procedures

DBA Studio in Standalone or Oracle Management Server (OMS) Mode

When you start DBA Studio, you can connect either directly to the databases (in standalone mode) or through an Oracle Management Server (in OMS mode).

Direct Connection to Databases

Run DBA Studio in standalone mode if you want to perform basic administrative tasks that do not require the job, event, or group system. If you connect in standalone mode, DBA Studio has access to the databases you have set up in a local record of databases.

Note: A Management Server and repository are not required if you only plan to run DBA Studio connected directly to the databases (in standalone mode).

Connection through the Oracle Management Server

Run DBA Studio in OMS mode if you want to:

- use the Oracle Enterprise Manager framework
- perform basic administrative tasks that require events, jobs, or groups (for example, using the backup and data management wizards)
- access all databases previously discovered from the Console
- run DBA Studio through a web browser

If you connect to an Oracle Management Server, DBA Studio has access to all databases on the discovered nodes. The Oracle Management Server must be running for DBA Studio to connect to it.

Setting Up DBA Studio in Standalone Mode

To run DBA Studio in standalone mode, you do not have to have an Oracle Enterprise Management Server or repository set up.

To set up DBA Studio in standalone mode, you must perform the following tasks:

- start DBA Studio
- select or add which databases you want to manage to the DBA Studio navigator tree

Starting DBA Studio in Standalone Mode

1. Start the DBA Studio.
   - On Windows NT:

     You can start the DBA Studio from the Windows Start Menu->Programs->Oracle-<Oracle_Home_Name>-> Database Administration->DBA Studio.

     You can also start the DBA Studio from the command line using the command:

     ```
     oemapp dbastudio
     ```

   - On UNIX:

     You can start the DBA Studio from the command line using the command:

     ```
     oemapp dbastudio
     ```

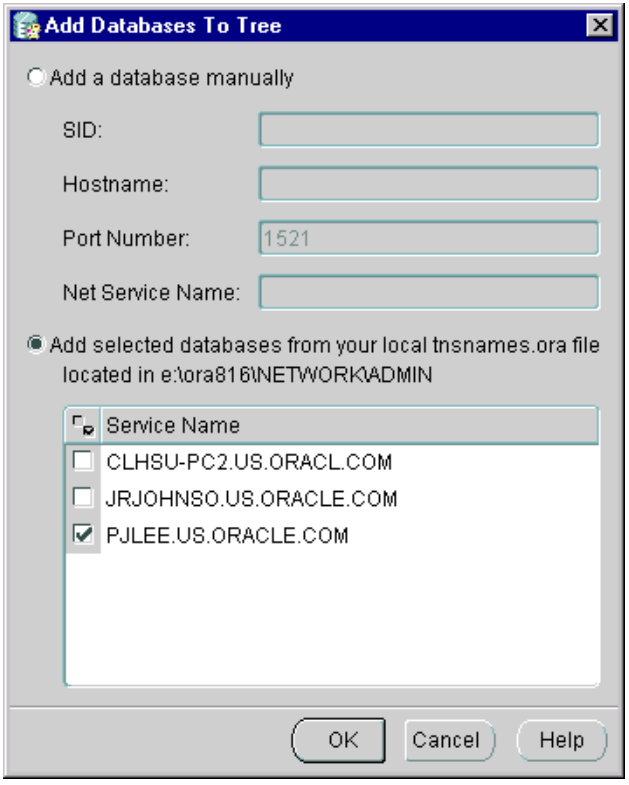
2. When the login dialog appears, choose Connect directly to databases and press OK.

If you are starting DBA Studio for the first time, the left panel of DBA Studio is empty because you have not yet added the databases you want to manage. The Add Database To Tree dialog appears automatically so that you can add them to the navigator tree.

Adding Databases to the Tree in DBA Studio Standalone Mode

The Add Database To Tree dialog appears automatically when you start DBA Studio for the first time; it is also available from the File menu.

Figure 8–2 Add Database to Tree



The Add Database To Tree dialog allows you to manually enter the Net service names or add them from the local tnsnames.ora file.

Add a database manually

You can add databases to the DBA Studio navigator tree by manually filling in the following fields:

- SID: the database system identifier, usually the instance name, such as ORCL
- Hostname: the machine or node name where the database is located

- Port Number: the database listener port address, usually 1521 or 1526
- Net Service Name: A name which uniquely identifies a database when connecting to a machine. It is usually the global database name. For example: ORCL.world.

.

Note: Adding a database manually automatically updates the local tnsnames.ora file located in your `<Oracle_Enterprise_Manager_Home>/network/admin` directory.

Add selected databases from your local tnsnames.ora file

You can populate the DBA Studio navigator tree by reading the database service names from the local tnsnames.ora file located in your Oracle Enterprise Manager home. The Add Database To Tree dialog displays a list of databases identified in you tnsnames.ora file from which you can select or deselect. Click the column header to the left of Service Name to either select or deselect all the databases. If you have deselected all the databases, you can choose specific databases by selecting their checkboxes.

Note: Currently only TCP/IP service names can be added manually for DBA Studio. If the network protocols are required, add them by entering them in the tnsnames.ora file using the Net8 Configuration Assistant. All protocols are supported when you import selected services from your tnsnames.ora file.

Connecting to a Database in DBA Studio Standalone Mode

There are four ways to connect to a database for DBA Studio:

- Click the plus symbol next to the DBA Studio navigator tree container. The preferred credentials are used if the connection information have not been set previously.
- Double-click the database icon in the DBA Studio navigator tree. The preferred credentials are used if the connection information have not been set previously.
- Select the database and then select the Connect item from the File menu.
- Select the database and then select the Connect icon from the toolbar.

If no preferred credentials are set in the Oracle Enterprise Manager Console, the Database Connection Information dialog box appears. If preferred credentials are already set, you will connect to the database using this login information.

In the Database Connect Information dialog, enter the following information to connect to the database.

Username
Your Oracle username for the database to which you are connecting.

For example: system

Password
Your Oracle password for the database to which you are connecting.

For example: manager

Connect As
You can select from a pull-down list whether you want to connect to the database with NORMAL, SYSOPER, or SYSDBA privileges. Select NORMAL to connect to the database as an ordinary user. Select SYSOPER to connect to the database with special operator privileges, such as capabilities to shut down and start up the database. Select SYSDBA to connect to the database as a user with full database privileges such as the capability to grant any privileges to any user.

To use SYSOPER and SYSDBA privileges, a password file or OS group authentication must be created and set up for your database.

Save As Local Preferred Credentials

Saving preferred credentials is an option which enables you to store login information in a local file, such as username, password, and role (NORMAL, SYSOPER, or SYSDBA). Passwords are always stored in encrypted format.

This login information is used when a connection is established for the database instead of having to type a username and password each time.

You can set preferred credentials by selecting the Save As Local Preferred Credentials checkbox or you can use the Edit Local Preferred Credentials dialog available from the File menu.

The checkbox is not selected by default.

Editing Local Preferred Credentials in DBA Studio Standalone Mode

Saving or editing preferred credentials is an option which enables you to store login information, such as username, password, and role (NORMAL, SYSOPER, or SYSDBA). Passwords are always stored in encrypted format.

Note: The passwords are encrypted in the local file so that they cannot be copied to another machine and used by a different user.

This login information is used when a connection is established to the database instead of having to type a username and password each time.

DBA Studio stores a list of databases that are displayed in the DBA Studio navigator tree. If preferred credentials are specified for any of these databases, the username, encrypted password, and role are added to a local file.

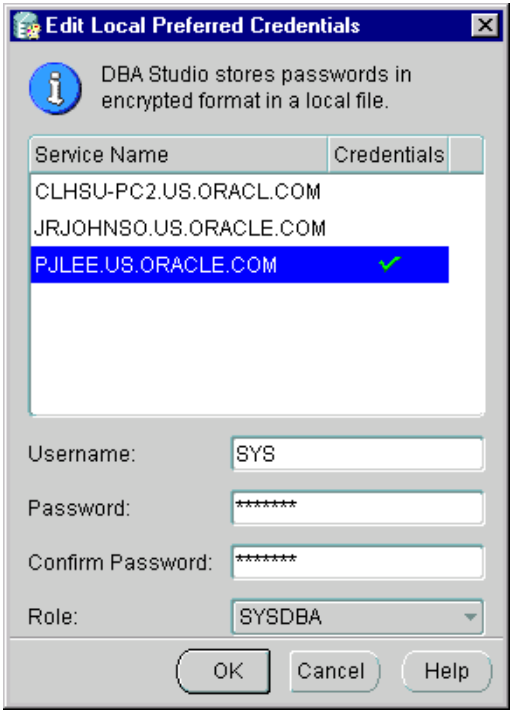
DBA Studio maintains a local record of login credentials separately from the Oracle Management Server.

Note: If you cannot edit the local preferred credentials, check if you are in DBA Studio standalone mode.

To save or edit the local preferred credentials of a service, you can perform the following steps:

1. From the File menu, select the Edit Local Preferred Credentials item. The Edit Local Preferred Credentials dialog displays a list of services.

Figure 8–3 Edit Local Preferred Credentials



2. In the Edit Local Preferred Credentials dialog, select the service name of the database and enter or update the preferences for connection to that database.
   - Username: Enter the username. This field is required if a password has been entered.
   - Password: Enter the password. You can leave this blank if you want to be prompted for a password when you connect to the database.
   - Confirm: Confirm the password.
   - Role: Select the role from the pull-down list. You need to login with the SYSDBA or SYSOPER role to start up or shut down a database.

3. Click the OK button at the bottom of the Edit Local Preferred Credentials dialog to save your updates.

> **Note:** You can save or overwrite the preferred credentials by selecting the "Save As Local Preferred Credentials" checkbox in the Database Connection dialog.

Setting Up DBA Studio in OMS Mode

To run DBA Studio in OMS mode, you must already have the following:

- a repository and a Management Server set up
- Intelligent Agents started on the nodes where your distributed services reside
- your databases started and discovered

Setting Up DBA Studio to Connect to a Management Server

To set up DBA Studio to connect to an Oracle Management Server, follow the instructions below:

1. Ensure that the Oracle Intelligent Agents are started on the nodes you want to manage. Refer to Chapter 5, "Starting and Stopping the Intelligent Agent" for information on starting your Intelligent Agents.
2. Ensure that the Oracle Management Server is started. Refer to Chapter 2, "Creating a Release 2.2 Repository" for detailed information on setting up a repository and Management Server and Chapter 3, "Controlling the Management Server" for detailed information about starting the Management Server.
3. Start the Console. Refer to Chapter 6, "Setting Up the Console" for information on starting the Console.

   Use the Discovery Wizard to discover the nodes where the desired databases reside. Refer to Chapter 6, "Setting Up the Console" for information on discovering nodes. DBA Studio will then have access to these discovered databases.

Note: If you want to add databases to the navigator tree for DBA Studio connected to an Oracle Management Server, you must use the Discovery Wizard from the Oracle Enterprise Manager Console. The navigator tree is populated from the repository and cannot be modified using DBA Studio.

4. Exit the Oracle Enterprise Manager Console.

Starting DBA Studio in OMS Mode

1. Start DBA Studio.
   - On Windows NT:

     You can start DBA Studio from the Windows Start Menu->Programs->Oracle-<Oracle_Home_Name>-> Database Administration->DBA Studio.

     You can also start DBA Studio from the command line using the command:

     ```
     oemapp dbastudio
     ```

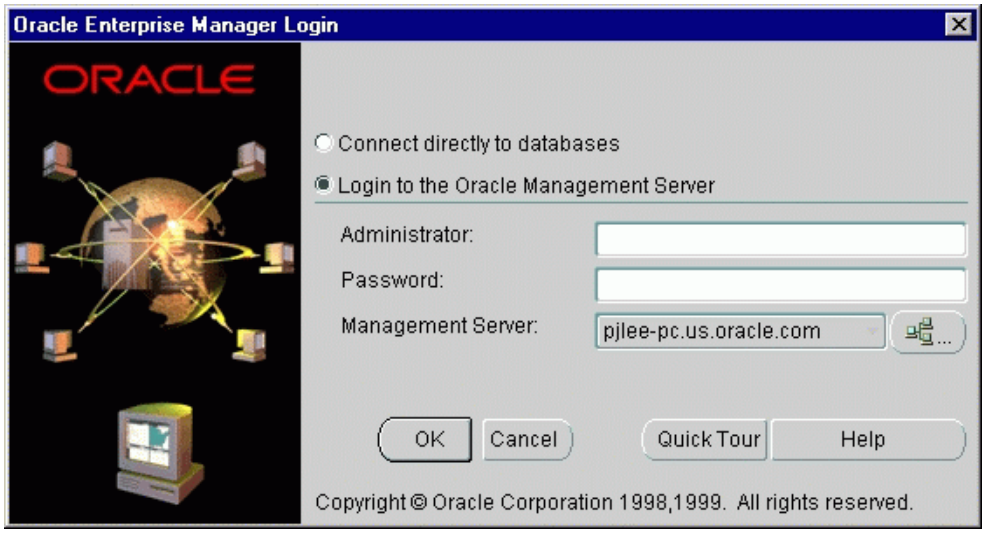
   - On UNIX:

     You can start DBA Studio from the command line using the command:

     ```
     oemapp dbastudio
     ```

2. When the login dialog appears, choose Login to the Oracle Management Server.

Figure 8–4 Oracle Enterprise Manager Login



3. Enter the credentials for the Enterprise Manager user account:

   Administrator: `sysman` or the Enterprise Manager user that the super administrator has created for you

   Password: `oem_temp` or the new password if you have changed it

   Management Server: the name of the node where the Oracle Management Server is running

4. Press the OK button. DBA Studio appears. The navigator tree is populated with the databases discovered through the Oracle Enterprise Manager Console.

Connecting to a Database in DBA Studio OMS Mode

There are four ways to connect to a database for DBA Studio:

- Click the plus symbol next to the DBA Studio navigator tree container. The preferred credentials are used if the connection information have not been set previously.
- Double-click the database icon in the DBA Studio navigator tree. The preferred credentials are used if the connection information have not been set previously.
- Select the database and then select the Connect item from the File menu.
- Select the database and then select the Connect icon from the toolbar.

If no preferred credentials are set in the Oracle Enterprise Manager Console, the Database Connection Information dialog box appears. If preferred credentials are already set, you will connect to the database using this login information.

If the Database Connect Information dialog appears, enter the following information to connect to the database.

Username
Your Oracle username for the database to which you are connecting.

For example: system

Password
Your Oracle password for the database to which you are connecting.

For example: manager

Connect As
You can select from a pull-down list whether you want to connect to the database with NORMAL, SYSOPER, or SYSDBA privileges. Select NORMAL to connect to the database as an ordinary user. Select SYSOPER to connect to the database with special operator privileges, such as capabilities to shut down and start up the database. Select SYSDBA to connect to the database as a user with full database privileges such as the capability to grant any privileges to any user.

To use SYSOPER and SYSDBA privileges, a password file or OS group authentication must be created and set up for your database.

Save As Preferred Credentials

Saving preferred credentials is an option which enables you to store login information in the repository, such as username, password, and role (NORMAL, SYSOPER, or SYSDBA). Passwords are always stored in encrypted format.

This login information is used when a connection is established for the database instead of having to type a username and password each time.

The checkbox is not selected by default.

Other DBA Studio Procedures

This section discusses the topics listed below:

- Accessing the Quick Tour in DBA Studio
- Connecting to the Database As a Different User
- Viewing Which Role You Are Connected As In DBA Studio
- Removing a Database from Tree in DBA Studio Standalone Mode
- Removing a Database from the Navigator in OMS Mode
- Adding Databases to the Navigator Tree For DBA Studio OMS Mode
- Changing from OMS Mode to Standalone Mode
- Changing from Standalone Mode to OMS Mode
- Connecting to JServer
- Giving Non-DBA Users Access to DBA Studio Against a 7.3.4 Database

Accessing the Quick Tour in DBA Studio

To access the Quick Tour in DBA Studio, you must first highlight a database or any of the nodes and click the Quick Tour button in the right-hand window.

Connecting to the Database As a Different User

In DBA Studio you do not have to disconnect in order to reconnect as a different user.

If you are already connected to a database and you want to reconnect as a different user

- Right-click the database icon and select Connect from the context-sensitive menu.
- Select the Connect item from the File menu.
- Click the Connect icon from the toolbar.

When the Database Connect Information dialog appears, enter a different username and press OK.

You will automatically be disconnected and reconnected.

Viewing Which Role You Are Connected As In DBA Studio

When a connection is made to a database, a connection icon is displayed on top of the database icon in the DBA Studio tree.

Next to the database name, you can see the username and role you are connected as if you have connected with the SYSDBA role. For example, sys AS SYSDBA.

Removing a Database from Tree in DBA Studio Standalone Mode

To remove a database from the DBA Studio navigator tree, follow the steps below:

1. Highlight the database you want to remove.
2. From the File menu, choose Remove Database from Tree item.
3. A message appears, saying, "Remove the <name> database from tree. Are you sure?" Click the Yes button.

Note: Removing the database removes the entry from the DBA Studio Navigator tree. It does not remove the entry from the tnsnames.ora file or physically remove the database. If required, you have the option of adding the database to the navigator tree again.

Note: You can only remove databases from the navigator tree if you are connected to DBA Studio in standalone mode.

Removing a Database from the Navigator in OMS Mode

To remove a database from the navigator tree for DBA Studio connected to an Oracle Management Server, you must remove the database from the Oracle Enterprise Manager Console.

1. Start the Oracle Enterprise Manager Console.
2. Highlight the node where the database you want to remove resides.
3. Select the Remove Database item from the Navigator menu.
4. Exit the Oracle Enterprise Manager Console.
5. In DBA Studio, choose the Refresh item from the View menu. The node where the desired databases reside should disappear in the navigator tree.

Adding Databases to the Navigator Tree For DBA Studio OMS Mode

If you want to add databases to the navigator tree for DBA Studio connected to an Oracle Management Server, you must use the Discovery Wizard from the Oracle Enterprise Manager Console.

Note: Do not stop the Oracle Management Server or the Oracle Intelligent Agent.

---

1. Start the Oracle Enterprise Manager Console.
2. Choose the Discover Nodes item from the Navigator menu to launch the Discovery Wizard. For more information about service discovery, refer to the *Oracle Enterprise Manager Administrator's Guide.*
3. Specify the nodes where the desired databases reside and discover them. DBA Studio will have access to these databases.
4. Exit the Oracle Enterprise Manager Console.
5. In DBA Studio, choose the Refresh item from the View menu. The nodes where the desired databases reside should appear in the navigator tree.

Changing from OMS Mode to Standalone Mode

When DBA Studio is connected to an Oracle Management Server, the DBA Studio navigator tree is populated with the discovered databases from the Enterprise Manager Console.

The following steps describe how to copy these databases so they can be used in standalone mode.

The databases displayed in the navigator tree can be added to the tnsnames.ora file and their associated preferred credentials saved to a local file:

1. Use the Update tnsnames.ora File dialog from the File menu to select which services to copy to the local tnsnames.ora file.
2. If you want to save the preferred credentials to a local file, select the "Save Preferred Credentials Locally" checkbox in the Update tnsnames.ora File dialog.

> **Note:** The passwords are encrypted in the local file to prevent the file from being used on other machines.

To make these databases available in standalone mode, you can perform the following steps:

1. Start DBA Studio connected directly to databases.
2. From the File menu, select the Add Database To Tree item.
3. In the Add Databases to Tree dialog, select the Net service names to add from the local tnsnames.ora file.

Changing from Standalone Mode to OMS Mode

If you have been using DBA Studio in standalone mode, the list of databases displayed in the navigator tree is retrieved from a local file.

At some stage in the future, you may decide to administer jobs, events, and groups; run DBA Studio through a web browser; or perform backup and data management tasks. These tasks require you to run DBA Studio connected to an Oracle Management Server.

If you now decide to run DBA Studio connected to an Oracle Management Server, the databases displayed in the navigator tree may be different than those in standalone mode, because the list of databases is retrieved from the repository and not from a local file.

To add the databases that were available from DBA Studio in standalone mode, you will need to discover the services from the Oracle Enterprise Manager Console if the databases are not already available from DBA Studio connected to the Oracle Management Server. For more information about service discovery, refer to the *Oracle Enterprise Manager Administrator's Guide.*

Note: To switch modes from DBA Studio in standalone mode to OMS mode, you need to close and restart DBA Studio.

Connecting to JServer

If your JServer is configured for a port other than 2481, the JServer container will not expand until you have changed the port number in the JServer URL Configuration dialog.

To access the dialog, right click the container and select the "Connect JServer" menu item. Then select the connection button. When the JServer URL Configuration dialog appears, fill in the correct GIOP Port Number.

Giving Non-DBA Users Access to DBA Studio Against a 7.3.4 Database

To use any DBA Studio and DBA Management Pack applications other than SQL*Plus Worksheet as a non-DBA user, you must have been granted the SELECT_CATALOG_ROLE. The SELECT_CATALOG_ROLE is only available for Oracle8 and above databases.

To create the SELECT_CATALOG_ROLE on Oracle databases prior to Oracle8, run the script documented below.

> **Note:** This script will have to be run as SYS in order to grant privileges to the SELECT_CATALOG_ROLE.

To create the script easily, you can cut and paste the script text from the online help.

```
sc_role.sql
CREATE ROLE SELECT_CATALOG_ROLE NOT IDENTIFIED;
grant select on SYS.V_$CONTROLFILE to SELECT_CATALOG_ROLE;
grant select on SYS.V_$LOG to SELECT_CATALOG_ROLE;
grant select on SYS.V_$THREAD to SELECT_CATALOG_ROLE;
grant select on SYS.V_$PROCESS to SELECT_CATALOG_ROLE;
grant select on SYS.V_$BGPROCESS to SELECT_CATALOG_ROLE;
grant select on SYS.V_$SESSION to SELECT_CATALOG_ROLE;
grant select on SYS.V_$LICENSE to SELECT_CATALOG_ROLE;
grant select on SYS.V_$TRANSACTION to SELECT_CATALOG_ROLE;
grant select on SYS.V_$LOCKED_OBJECT to SELECT_CATALOG_ROLE;
grant select on SYS.V_$LATCH to SELECT_CATALOG_ROLE;
grant select on SYS.V_$LATCH_CHILDREN to SELECT_CATALOG_ROLE;
grant select on SYS.V_$LATCH_PARENT to SELECT_CATALOG_ROLE;
grant select on SYS.V_$LATCHNAME to SELECT_CATALOG_ROLE;
grant select on SYS.V_$LATCHHOLDER to SELECT_CATALOG_ROLE;
grant select on SYS.V_$LATCH_MISSES to SELECT_CATALOG_ROLE;
grant select on SYS.V_$RESOURCE to SELECT_CATALOG_ROLE;
grant select on SYS.V_$_LOCK to SELECT_CATALOG_ROLE;
grant select on SYS.V_$LOCK to SELECT_CATALOG_ROLE;
grant select on SYS.V_$SESSTAT to SELECT_CATALOG_ROLE;
grant select on SYS.V_$MYSTAT to SELECT_CATALOG_ROLE;
grant select on SYS.V_$SYSSTAT to SELECT_CATALOG_ROLE;
grant select on SYS.V_$STATNAME to SELECT_CATALOG_ROLE;
grant select on SYS.V_$ACCESS to SELECT_CATALOG_ROLE;
grant select on SYS.V_$OBJECT_DEPENDENCY to SELECT_CATALOG_ROLE;
grant select on SYS.V_$DBFILE to SELECT_CATALOG_ROLE;
grant select on SYS.V_$FILESTAT to SELECT_CATALOG_ROLE;
grant select on SYS.V_$LOGFILE to SELECT_CATALOG_ROLE;
grant select on SYS.V_$ROLLNAME to SELECT_CATALOG_ROLE;
grant select on SYS.V_$ROLLSTAT to SELECT_CATALOG_ROLE;
grant select on SYS.V_$SGA to SELECT_CATALOG_ROLE;
grant select on SYS.V_$PARAMETER to SELECT_CATALOG_ROLE;
grant select on SYS.V_$SYSTEM_PARAMETER to SELECT_CATALOG_ROLE;
```

```
grant select on SYS.V_$ROWCACHE to SELECT_CATALOG_ROLE;
grant select on SYS.V_$ENABLEDPRIVS to SELECT_CATALOG_ROLE;
grant select on SYS.V_$LIBRARYCACHE to SELECT_CATALOG_ROLE;
grant select on SYS.V_$TYPE_SIZE to SELECT_CATALOG_ROLE;
grant select on SYS.V_$ARCHIVE to SELECT_CATALOG_ROLE;
grant select on SYS.V_$CIRCUIT to SELECT_CATALOG_ROLE;
grant select on SYS.V_$DATABASE to SELECT_CATALOG_ROLE;
grant select on SYS.V_$INSTANCE to SELECT_CATALOG_ROLE;
grant select on SYS.V_$DISPATCHER to SELECT_CATALOG_ROLE;
grant select on SYS.V_$LOGHIST to SELECT_CATALOG_ROLE;
grant select on SYS.V_$SQLAREA to SELECT_CATALOG_ROLE;
grant select on SYS.V_$SQLTEXT to SELECT_CATALOG_ROLE;
grant select on SYS.V_$SQLTEXT_WITH_NEWLINES to SELECT_CATALOG_ROLE;
grant select on SYS.V_$SQL to SELECT_CATALOG_ROLE;
grant select on SYS.V_$DB_PIPES to SELECT_CATALOG_ROLE;
grant select on SYS.V_$DB_OBJECT_CACHE to SELECT_CATALOG_ROLE;
grant select on SYS.V_$OPEN_CURSOR to SELECT_CATALOG_ROLE;
grant select on SYS.V_$PQ_SYSSTAT to SELECT_CATALOG_ROLE;
grant select on SYS.V_$PQ_SLAVE to SELECT_CATALOG_ROLE;
grant select on SYS.V_$QUEUE to SELECT_CATALOG_ROLE;
grant select on SYS.V_$MTS to SELECT_CATALOG_ROLE;
grant select on SYS.V_$DBLINK to SELECT_CATALOG_ROLE;
grant select on SYS.V_$PWFILE_USERS to SELECT_CATALOG_ROLE;
grant select on SYS.V_$REQDIST to SELECT_CATALOG_ROLE;
grant select on SYS.V_$SGASTAT to SELECT_CATALOG_ROLE;
grant select on SYS.V_$WAITSTAT to SELECT_CATALOG_ROLE;
grant select on SYS.V_$SHARED_SERVER to SELECT_CATALOG_ROLE;
grant select on SYS.V_$TIMER to SELECT_CATALOG_ROLE;
grant select on SYS.V_$RECOVER_FILE to SELECT_CATALOG_ROLE;
grant select on SYS.V_$LOG_HISTORY to SELECT_CATALOG_ROLE;
grant select on SYS.V_$RECOVERY_LOG to SELECT_CATALOG_ROLE;
grant select on SYS.V_$DATAFILE to SELECT_CATALOG_ROLE;
grant select on SYS.V_$FIXED_TABLE to SELECT_CATALOG_ROLE;
grant select on SYS.V_$FIXED_VIEW_DEFINITION to SELECT_CATALOG_ROLE;
grant select on SYS.V_$INDEXED_FIXED_COLUMN to SELECT_CATALOG_ROLE;
grant select on SYS.V_$SESSION_CURSOR_CACHE to SELECT_CATALOG_ROLE;
grant select on SYS.V_$SESSION_WAIT to SELECT_CATALOG_ROLE;
grant select on SYS.V_$SESSION_EVENT to SELECT_CATALOG_ROLE;
grant select on SYS.V_$SESSION_CONNECT_INFO to SELECT_CATALOG_ROLE;
grant select on SYS.V_$SYSTEM_EVENT to SELECT_CATALOG_ROLE;
grant select on SYS.V_$EVENT_NAME to SELECT_CATALOG_ROLE;
grant select on SYS.V_$EXECUTION to SELECT_CATALOG_ROLE;
grant select on SYS.V_$SYSTEM_CURSOR_CACHE to SELECT_CATALOG_ROLE;
grant select on SYS.V_$SESS_IO to SELECT_CATALOG_ROLE;
grant select on SYS.V_$COMPATIBILITY to SELECT_CATALOG_ROLE;
```

```
grant select on SYS.V_$COMPATSEG to SELECT_CATALOG_ROLE;
grant select on SYS.V_$RECOVERY_STATUS to SELECT_CATALOG_ROLE;
grant select on SYS.V_$RECOVERY_FILE_STATUS to SELECT_CATALOG_ROLE;
grant select on SYS.V_$SHARED_POOL_RESERVED to SELECT_CATALOG_ROLE;
grant select on SYS.V_$SORT_SEGMENT to SELECT_CATALOG_ROLE;
grant select on SYS.V_$SQL_CURSOR to SELECT_CATALOG_ROLE;
grant select on SYS.V_$SQL_BIND_METADATA to SELECT_CATALOG_ROLE;
grant select on SYS.V_$SQL_BIND_DATA to SELECT_CATALOG_ROLE;
grant select on SYS.V_$SQL_SHARED_MEMORY to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_ROLES to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_PROFILES to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_CATALOG to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_CLUSTERS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_CLU_COLUMNS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_COL_COMMENTS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_COL_PRIVS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_DB_LINKS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_EXP_OBJECTS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_EXP_VERSION to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_EXP_FILES to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_INDEXES to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_IND_COLUMNS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_OBJECTS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_ROLLBACK_SEGS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_ROLE_PRIVS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_SYS_PRIVS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_SEQUENCES to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_SYNONYMS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_TABLES to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_TAB_COLUMNS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_TAB_COMMENTS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_TAB_PRIVS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_TS_QUOTAS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_USERS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_VIEWS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_CONSTRAINTS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_CLUSTER_HASH_EXPRESSIONS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_CONS_COLUMNS to SELECT_CATALOG_ROLE;
grant select on SYS.SYSCATALOG_ to SELECT_CATALOG_ROLE;
grant select on SYS.PSS1$ to SELECT_CATALOG_ROLE;
grant select on SYS.PS1$ to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_2PC_PENDING to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_2PC_NEIGHBORS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_UPDATABLE_COLUMNS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_OBJ_AUDIT_OPTS to SELECT_CATALOG_ROLE;
```

```
grant select on SYS.DBA_STMT_AUDIT_OPTS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_PRIV_AUDIT_OPTS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_AUDIT_TRAIL to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_AUDIT_SESSION to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_AUDIT_STATEMENT to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_AUDIT_OBJECT to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_AUDIT_EXISTS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_ERRORS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_SOURCE to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_TRIGGERS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_TRIGGER_COLS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_DEPENDENCIES to SELECT_CATALOG_ROLE;
grant select on SYS.CODE_PIECES to SELECT_CATALOG_ROLE;
grant select on SYS.CODE_SIZE to SELECT_CATALOG_ROLE;
grant select on SYS.PARSED_PIECES to SELECT_CATALOG_ROLE;
grant select on SYS.PARSED_SIZE to SELECT_CATALOG_ROLE;
grant select on SYS.SOURCE_SIZE to SELECT_CATALOG_ROLE;
grant select on SYS.ERROR_SIZE to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_OBJECT_SIZE to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_JOBS_RUNNING to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_JOBS to SELECT_CATALOG_ROLE;
grant select on SYS.ORA_KGLR7_OBJECTS to SELECT_CATALOG_ROLE;
grant select on SYS.SYS_OBJECTS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_SEGMENTS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_EXTENTS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_FREE_SPACE to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_FREE_SPACE_COALESCED_TMP1 to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_FREE_SPACE_COALESCED_TMP2 to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_FREE_SPACE_COALESCED to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_DATA_FILES to SELECT_CATALOG_ROLE;
grant select on SYS.FILEXT$ to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_TABLESPACES to SELECT_CATALOG_ROLE;
grant select on SYS.SM$TS_AVAIL to SELECT_CATALOG_ROLE;
grant select on SYS.SM$TS_USED to SELECT_CATALOG_ROLE;
grant select on SYS.SM$TS_FREE to SELECT_CATALOG_ROLE;
grant select on SYS.SM$AUDIT_CONFIG to SELECT_CATALOG_ROLE;
grant select on SYS.SM$INTEGRITY_CONS to SELECT_CATALOG_ROLE;
grant select on SYS.DEFSCHEDULE to SELECT_CATALOG_ROLE;
grant select on SYS.DEFERROR to SELECT_CATALOG_ROLE;
grant select on SYS.DEFERRCOUNT to SELECT_CATALOG_ROLE;
grant select on SYS.DEFTRAN to SELECT_CATALOG_ROLE;
grant select on SYS.DEFTRANDEST to SELECT_CATALOG_ROLE;
grant select on SYS.DEFDEFAULTDEST to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_SNAPSHOTS to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_SNAPSHOT_LOGS to SELECT_CATALOG_ROLE;
```

```
grant select on SYS.DBA_RCHILD to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_RGROUP to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_REFRESH to SELECT_CATALOG_ROLE;
grant select on SYS.DBA_REFRESH_CHILDREN to SELECT_CATALOG_ROLE;
```

A

Directory Structure

This appendix describes the directory structure that is created when Oracle Enterprise Manager Release 2.2 is installed.

Directory Structure of Oracle Enterprise Manager Release 2.2

The following directories are created when Oracle Enterprise Manager Release 2.2 is installed.

Directory Structure for $ORACLE_HOME\sysman

The directory structure for `$ORACLE_HOME\sysman` is listed below:

- `$ORACLE_HOME\sysman\admin`
- `$ORACLE_HOME\sysman\config`
- `$ORACLE_HOME\sysman\dbapp`
- `$ORACLE_HOME\sysman\doc\readme`
- `$ORACLE_HOME\sysman\log`
- `$ORACLE_HOME\sysman\mesg`
- `$ORACLE_HOME\sysman\temp`
- `$ORACLE_HOME\sysman\ifiles`
- `$ORACLE_HOME\sysman\report`
-

$ORACLE_HOME\sysman\admin

The `$ORACLE_HOME\sysman\admin` directory contains SQL scripts and registry files that are used by the Enterprise Manager Configuration Assistant. The contents must not be altered.

$ORACLE_HOME\sysman\config

The `$ORACLE_HOME\sysman\config` directory contains several configuration files. Only the following files should be altered by the user:

- `clientconfig.properties`
- `dbappscfg.properties`
- `omsconfig.properties`
- `paging.cfg.template`

Any other files in this directory must not be altered.

Tracing information for the Oracle Enterprise Manager Release 2.2 components is stored in the `omsconfig.properties` and `clientconfig.properties` files.

The dbappscfg.properties file contains settings for SQL*Plus worksheet.

The dbappscfg.properties is used to specify additional environment variables for SQL*Plus.

By default, the following is set:

```
SQLPLUS_ENDOFBUFTOKEN=OEM_sqlplus_input_finished
```

The paging.cfg.template file enables tracing for the Oracle Enterprise Manager Paging Server 2.2.

$ORACLE_HOME\sysman\ifiles
When you save init.ora parameters to a file while using Instance Management tool, the files are saved to the $ORACLE_HOME\sysman\ifiles directory by default.

$ORACLE_HOME\sysman\log
The $ORACLE_HOME\sysman\log directory contains the output of traces that are redirected to disk. This directory contains the oms.log and oms.nohup files. The oms.nohup file contains Management Server error messages which appear before the Management Server starts up. The oms.log file contains messages generated when the Management Server is starting and running.

$ORACLE_HOME\sysman\mesg
The $ORACLE_HOME\sysman\mesg directory contains message files.

$ORACLE_HOME\sysman\doc\readme
The $ORACLE_HOME\sysman\doc\readme directory contains readmes.

$ORACLE_HOME\sysman\report
The ORACLE_HOME\sysman\report directory contains reports generated on the fly.

$ORACLE_HOME\sysman\temp
The $ORACLE_HOME\sysman\temp directory contains temporary files that may be created in the course of processing management operations.

Other Important Directories

Other important directories include:

$ORACLE_HOME\RelNotes\EM
All readmes that ship with Enterprise Manager are installed in this directory.

$ORACLE_HOME\Doc\EM
Documentation in html and PDF formats that ship with Enterprise Manager are installed in this directory. For Unix and Windows platforms, the documentation is on a separate CD and is not installed when you install Enterprise Manager software.

B

Configuration Assistant Operations

The Enterprise Manager Configuration Assistant is used to create, remove, and upgrade repositories, and to maintain the configuration parameters for the local Management Server.

Repository creation is described in "Creating a Release 2.2 Repository" on page 2-1.

This appendix discusses:

- how to upgrade a Release 2.0 or 2.1 repository to a Release 2.2 repository
- how to drop a repository
- how to redirect the local Management Server to use a different repository or to respond to changes in the repository user's password

It also includes information about repository creation and parameters configuration when the `omsconfig.properties` file is inaccessible.

If you are using a previous Enterprise Manager Release 1.x release and want to migrate your 1.x repository or repositories directly to a Release 2.2 repository, you will need to perform additional steps using the Enterprise Manager Migration Assistant after creating your Release 2.2 repository. Refer to Chapter 7, "Migrating a Release 1.x Repository to a Release 2.2 Repository" for information about migrating one or more Release 1.x repositories into the shared Release 2.2 repository schema.

Upgrade a Release 2.0 or 2.1 Repository to a Release 2.2 Repository

If you plan to upgrade your repository from Release 2.0 or 2.1 to Release 2.2, you must first upgrade all your Oracle Enterprise Manager products other than the Intelligent Agent to Release 2.2 before upgrading your repository.

Note: For guidelines to upgrading your Oracle Enterprise Manager framework and Management Packs from previous 2.x releases to Release 2.2, refer to "Upgrading Your Oracle Enterprise Manager Framework and Management Packs" on page 1-19.

The Oracle Enterprise Manager Configuration Assistant takes an existing repository and upgrades it directly. After the upgrade, the repository is at the newer version.

Note: The repository must remain in the same schema during upgrade. For example, it cannot be exported, and then imported into a different schema and upgraded; the credentials will be unusable in this case.

Because an Enterprise Manager repository is shared, it is important to coordinate your repository upgrade with the installation of the new Oracle Enterprise Manager software on all the machines that share the repository. If you do not upgrade your repository, the new version of the software will not operate with that older repository.

However, if you do upgrade your repository, the older version of the software will not operate with that newer repository.

Remember that both the base Oracle Enterprise Manager system, which includes the Management Server, and the Oracle Enterprise Manager packs share a repository, so if you want all your users to continue to perform their work, you must ensure that the repository upgrade is coordinated with the software upgrades on all relevant machines.

In order to upgrade a repository, you must connect to the database as a user with DBA privileges.

Note: Before you attempt to upgrade the repository, you must first back up the database or repository schema. If there is a failure during a repository upgrade, the repository will no longer be usable. The failed repository no longer appears in the list of available repositories that can be upgraded.

To upgrade the repository, follow the steps outlined in the following sections.

For information about starting the Enterprise Manager Configuration Assistant, refer to "Starting the Enterprise Manager Configuration Assistant" on page 2-6.

Note: Before you attempt to perform an upgrade, you must first stop all Management Servers and Oracle Enterprise Manager applications that are using this repository. If any Management Server is currently using this repository, upgrading the repository causes a server error.

Step 1 "Configuration Operation"

When you start the Enterprise Manager Configuration Assistant, the "Configuration Operation" page appears.

Select "Upgrade an existing repository" from the list of configuration operations and press Next to continue. The "Select Database for Repository" page appears.

Step 2 "Select Database for Repository"

Log in to the database which contains the repository you want to upgrade. You must connect to the database as a user with DBA privileges.

Note: The repository schema user created by the Enterprise Manager Configuration Assistant will not have the necessary DBA privileges for this step. To avoid potential security issues, do not grant more privileges to your repository schema user than is necessary. Connect to the database as a different user with DBA privileges instead. For example, `system/manager`.

For information about logging in to the database which contains the repository, refer to Step 2 "Select Database for Repository" on page 2-8.

If you log in successfully, the "Select Repository" page appears.

Step 3 "Select Repository"

If the Enterprise Manager Configuration Assistant detects any previous versions of 2.x repositories in the specified database, it displays them. Select the appropriate repository and press the Next button to continue."

Note: The Enterprise Manager Configuration Assistant does not display Release 2.2 repositories in this situation, because they do not need to be upgraded; they are already at the most up-to-date version.

If the specified database does not contain any Release 2.x repositories, the list of repositories is empty and grayed out, and a note stating that "No repositories were found in the database" appears. You may click the Cancel button to exit the Enterprise Manager Configuration Assistant or click the Back button to return to previous pages to change the information.

Step 4 "Repository Login Information"

In the "Repository Login Information" page, you must supply the repository user password.

During repository creation, a database user (repository schema user) who owns the repository was created by the Enterprise Manager Configuration Assistant with the username and password you have supplied.

In order to perform a repository upgrade, it is necessary to logon to the repository database as this user.

The repository user name has been entered into the username field as a result of your choice in the previous page. However, you will need to enter the password.

Press Next to continue. The "Upgrade Repository Summary" page appears.

Step 5 "Upgrade Repository Summary"

The "Upgrade Repository Summary" page provides a summary of all the information supplied during the upgrade repository wizard. Click Finish to initiate repository upgrade or click Back to return to previous pages to change the information.

Step 6 "Configuration Assistant Progress"

When you click the Finish button, the Configuration Assistant Progress window appears, showing the processing performed and the processing steps that comprise the operation being performed. Each processing step is shown by a line of text.

If you want to view detailed information, click the "Show Details" button to expand the dialog to show a text area. You can hide the text area by pressing the "Hide Details" button.

The Cancel button changes to a Close button when processing is completed whether it is successful or not.

When all of the steps have been completed without error, the "Processing completed." message appears.

You can cancel the requested operation before it completes by clicking the Cancel button. However, if you cancel the operation, the repository will become unusable.

Note: Before you attempt to upgrade the repository, you must first back up the database or repository schema. If there is a failure during a repository upgrade, the repository will no longer be usable. The failed repository no longer appears in the list of available repositories that can be upgraded.

Click the Close button when you are finished.

During the Configuration Assistant upgrade operation, the Oracle Management Service will be created, if it does not already exist.

Drop an Existing Repository

In order to drop a repository, you must connect to the database as a user with DBA privileges.

To drop the repository, follow the steps outlined in the following sections.

For information about starting the Enterprise Manager Configuration Assistant, refer to "Starting the Enterprise Manager Configuration Assistant" on page 2-6.

Note: Before you attempt to drop the repository, you must first stop all Management Servers and Oracle Enterprise Manager applications that are using this repository. If any Management Server is currently using this repository, deleting the repository causes a server error.

Step 1 "Configuration Operation"

When you start the Enterprise Manager Configuration Assistant, the "Configuration Operation" page appears.

Select "Drop an existing repository" from the list of configuration operations and press Next to continue. The "Select Database for Repository" page appears.

If the Configuration Assistant cannot write to the `omsconfig.properties` file, the "Configuration File Not Accessible" page appears.

Step 2 "Select Database for Repository"

Log in to the database which contains the repository you want to drop. You must connect to the database as a user with DBA privileges.

Note: The repository schema user created by the Enterprise Manager Configuration Assistant will not have the necessary DBA privileges for this step. To avoid potential security issues, do not grant more privileges to your repository schema user than is necessary. Connect to the database as a different user with DBA privileges instead. For example, `system/manager`.

For information about logging in to the database which contains the repository, refer to Step 2 "Select Database for Repository" on page 2-8. If you log in successfully, the "Select Repository" page appears.

Step 3 "Select Repository"

If the Enterprise Manager Configuration Assistant detects that Release 2.2 repositories exist in the specified database, they are displayed. Choose the appropriate repository and press the Next button to continue.

If the specified database does not contain any Release 2.2 repositories, the list of repositories is empty and grayed out, and a note stating that "No repositories were found in the database" appears. You may click the Cancel button to exit the Enterprise Manager Configuration Assistant or click the Back button to return to previous pages to change the information.

Step 4 "Select Drop Repository Options"

From the "Select Drop Repository Options" page, you can choose to drop the repository user and all its schema objects or merely the repository objects.

If you choose to drop only the repository, you must supply the repository user's password so that the Enterprise Manager Configuration Assistant can connect to the repository in order to invoke the Oracle Enterprise Manager Release 2.2 SQL drop scripts. Only repository objects are dropped. Other schema objects in the repository remain.

If you choose to drop the repository user and all its schema objects, a password is not required.

Note: Make sure that you do not have other objects of value in that schema before proceeding with this step. Valuable data may be lost if you do not ensure this.

If the Configuration Assistant detects that a managed repository is specified in the `omsconfig.properties` file, and you are not dropping that repository, the Configuration Assistant will not change the Management Server configuration.

If you are dropping the managed repository, the Configuration Assistant will clear the Management Server configuration.

Press Next to continue. The "Drop Repository Summary" page appears.

Step 5 "Drop Repository Summary"

The "Drop Repository Summary" page provides a summary of all the information supplied during the drop repository wizard. Click Finish to initiate repository removal or click Back to return to previous pages to change the information.

Step 6 "Configuration Assistant Progress"

When you click the Finish button, the Configuration Assistant Progress window appears, showing the processing performed and the processing steps that comprise the operation being performed. Each processing step is shown by a line of text.

If you want to view detailed information, click the "Show Details" button to expand the dialog to show a text area. You can hide the text area by pressing the "Hide Details" button.

The Cancel button changes to a Close button when processing is completed whether it is successful or not.

When all of the steps have been completed without error, the "Processing completed." message appears.

You can cancel the requested operation before it completes by clicking the Cancel button.

Click the Close button when you are finished.

Edit Configuration Parameters

Use the Edit Configuration Parameters selection if you want to perform the following tasks:

- set up a Management Server to manage an already existing repository.
- change the Management Server configuration to use another repository in the same or another database.
- change the password that the Management Server uses to log into the repository when it starts. You must change the password if someone has changed the repository user password; otherwise, the Management Server will fail to start. The Enterprise Manager Configuration Assistant, when editing the configuration parameters, only change the `omsconfig.properties` file; it does not change the repository credentials in the database.

The Configuration Assistant can only set or change configuration parameters (`omsconfig.properties` file) for the machine on which it is running. It does not have the ability to change another machine's configuration parameters; you must go to each of the other Management Servers using (sharing) the repository and run the Configuration Assistant using the Edit Configuration Parameters option to change each machine's configuration parameters.

You must set up or change the repository connect information (user name, password, service) to point to the correct repository. It is important that all the Management Server machines that are using (sharing) the same repository have consistent configuration parameters.

Note: If you change the password for the database user account which owns the repository, you must also change the corresponding Management Server configuration parameter for every Management Server that uses the repository; otherwise, the next Management Server start will fail.

To edit the Management Server configuration parameters, follow the steps outlined in the following sections.

Note: You can change the Management Server configuration parameters even when the database is not accessible.

For information about starting the Enterprise Manager Configuration Assistant, refer to "Starting the Enterprise Manager Configuration Assistant" on page 2-6.

Step 1 "Configuration Operation"

When you start the Enterprise Manager Configuration Assistant, the "Configuration Operation" page appears.

Select "Edit Configuration Parameters" from the list of configuration operations and press Next to Continue. The "Configuration Parameters" page appears.

Step 2 "Configuration Parameters"

Set up or change the parameter you want. This information will be used when this machine's Management Server next initializes. If any of the information is invalid, then the Management Server will not start successfully.

User Name

Enter the repository's user name to change the Management Server configuration to use another repository. The user name is a database username, not an Oracle Enterprise Manager administrator name.

Password

Enter the repository user's password to change the password that the Management Server uses to log into the repository when it starts.

If you change the password, you must also change the Confirm field so that it matches the password you changed.

Service

Enter the service / database where the repository resides to change the Management Server to use a repository in another database.

Note: In order to progress to the next page, you must change at least one of the parameters in this page. If the Next button is pressed without changing anything, an error message appears: "There were no changes to the configuration parameters. Make changes or cancel." In this case, the Enterprise Manager Configuration Assistant does not allow navigation to the next page.

Step 3 "Modify Configuration Parameters"

The "Modify Configuration Parameters" page provides a summary of all the information supplied during the modify Management Server parameters wizard operation. Click Finish to initiate the change or click Back to return to previous pages to change your information.

Note: When you use the Edit Configuration Parameters to change parameters, the Configuration Assistant changes the Management Server configuration parameters, which are stored in the configuration file: `ORACLE_HOME\sysman\config\omsconfig.properties`. These parameters provide the necessary input to the Management Server, so that it may connect to the repository user within the proper database. The Configuration Assistant does not change the repository username or password in the repository itself once the repository has been created. The Configuration Assistant only manipulates the repository user's password at repository creation time when it creates the repository user.

Configuration File Not Accessible

The "Configuration File Not Accessible" page appears when you have chosen to create or drop a repository and the `omsconfig.properties` file was not accessible. The `omsconfig.properties` file may not be accessible because write permissions are not available on the file.

You can continue to perform the repository operation without modifying the `omsconfig.properties` file or you may choose not to continue with the operation.

If you select "Perform the repository operation anyway," the Next button is enabled and you are allowed to continue with the normal sequence of creating or dropping a repository. However, in this case, the `omsconfig.properties` file will not be modified.

If you are performing a repository creation, the Configuration Assistant creates the repository, but not the `omsconfig.properties` file. You must have write access to the file so that the Configuration Assistant can write the configuration properties to it. Before the Management Server can start up, the proper parameters must be in the file.

The summary page will indicate that the configuration file will not be updated, and "Set Configuration Parameters" will not appear as a processing step in the Configuration Assistant Progress window."

Later, when you have gained write access to the omsconfig.properties file, you can use the "Edit Configuration Parameters" option to enter the database username, password and service information for the repository that the Management Server will use. Once the configuration file has been updated, you will be able to start the Management Server.

If you select "Do not perform the repository operation," the "Configuration File Not Accessible" page becomes the last page. The Next button is disabled. No changes are performed. In this case, you can either go back to the previous page, or cancel.

C

Upgrading the Intelligent Agent and Data Gatherer

Upgrading the Intelligent Agent

Each release of the Intelligent Agent improves Agent performance, functionality, and reliability. We therefore recommend upgrading your Intelligent Agent to the latest version available for your platform. As an integral part of your Enterprise Manager environment, certain steps must be followed to make sure the transition to a newer Agent does not affect your Enterprise Manager jobs and/or events.

Agent Upgrade Guidelines for Enterprise Manager Version 2

1. Install the latest Intelligent Agent under a new Oracle Home.
2. Make sure that any jobs or events you wish to keep have been saved in the job or event library respectively. To add a job/event to a job/event library, select the job/event from the job/event pane, click on the desired entry using the right mouse button and select Copy to Library from the context-sensitive menu.
3. Move any event alerts to event history. You can save the contents of the history pane or clear them.

Note: If you have events registered against multiple targets, use the Create Like menu option to create individual events for each target and save these events to the Event Library.

---

4. From the Enterprise Manager Console, de-register any existing events and remove any active jobs scheduled against the node on which you ar upgrading the agent.
5. Shut down the old Agent.
6. Start the new Agent
7. From the OEM Console, refresh the node in the Navigator.
8. Resubmit the saved jobs and events to the new Agent.

Migrating Enterprise Manager Jobs/Events from an 8.1.5 or 8.1.6 Agent to an 8.1.7 Agent

If you have existing jobs/events submitted against an 8.1.5/8.1.6 Intelligent Agent, and want to upgrade to an 8.1.7 Agent without having to re-submit jobs or re-register events, you must migrate all existing jobs/events using the following procedure.

1. Install the 8.1.7 Agent in a separate ORACLE_HOME.
2. Type `lsnrctl dbsnmp_stop` at the command line to stop the older 8.1.x Agent.
3. Copy all files (*.q files, *.inp files, tcl* files) from the older Agent's ORACLE_HOME/network/agent directory to the 8.1.7 Agent's ORACLE_HOME/network/agent directory. Do not copy the directories. These files should now be owned by the user who installed the 8.1.7 Agent. Check the ownership of these files in the newer Agent's directory.
4. Type `lsnrctl dbsnmp_start` to start the 8.1.7 Agent.
5. Make sure that the services (databases, listeners etc.) discovered by the new Agent are identical to those discovered by the older Agent.

   A quick comparative check between service names and definitions in the older Agent's `ORACLE_HOME/network/agent/services.ora` file and that of the newer Agent, is highly recommended.
6. From the Enterprise Manager Console, refresh the Agent's node.

After migration, all previous jobs/events should continue to run as before.

Upgrading From a Previous Version of the Data Gatherer

It is possible to install the new version of the Oracle Data Gatherer into a different Oracle Home than the previous version. If you plan to do this, follow these steps:

1. Stop the previous version of the Oracle Data Gatherer. See "Controlling Operations of the NT and UNIX Data Gathering Service" in the *Oracle Intelligent Agent's User's Guide* for more information on stopping the Oracle Data Gatherer.
2. Install the new version of the Oracle Data Gatherer, but do not start it.
3. Move the Capacity Planning configuration files (state files) and data files associated with the previous version of Oracle Data Gatherer to the Oracle Home where you have installed the new version of Oracle Data Gatherer.

   The Oracle Data Gatherer state and data files are located in the `$ORACLE_HOME/odg/reco` directory. You need to copy the files into the new `$ORACLE_HOME/odg/reco` directory before you use Oracle Capacity Planner to connect to the new version of the Oracle Data Gatherer and set up any new collections.

   If you do not move these files, the following problems will occur:

   a. Binary data is not loaded.

      Any binary data files created by Oracle Data Gatherer which have not yet been loaded into the Capacity Planner database will not be loaded.

   b. Data collection definitions are not maintained.

      You will need to redefine your Capacity Planner data collections.

   If you have installed the new version of Oracle Data Gatherer into the same Oracle Home as the previous version or if you do not currently use the Oracle Capacity Planner, do not move the state and data files.
4. Start the new version of the Oracle Data Gatherer. See "Controlling Operations of the NT and UNIX Data Gathering Service" in the *Oracle Intelligent Agent's User's Guide* for more information about starting the Oracle Data Gatherer.

D

Troubleshooting

Please check the compatibility matrix in the Oracle Enterprise Manager Readme before installing or using Oracle Enterprise Manager. `emreadme.txt` or `emreadme.html` is located in the `ORACLE_HOME\RelNotes\EM` directory. For example, `C:\Oracle\Ora81\RelNotes\EM`.

This chapter describes possible troubleshooting issues.

- Reporting Problems to Oracle Support
- Setting Up Logging and Tracing
- Troubleshooting the Management Server
- Troubleshooting the Paging Service
- Troubleshooting the Web Browser
- Resetting the Password
- Troubleshooting the Enterprise Manager Configuration Assistant
- Changing the Permissions on the omsconfig.properties File
- Determining the SGA Size
- Troubleshooting Job Notifications

Reporting Problems to Oracle Support

When you use Oracle Enterprise Manager and encounter problems, you can turn to many sources for help.

Before you contact Oracle Technical Support, please take the time to consult your manuals and the *Oracle Enterprise Manager Readme*. A list of Oracle Enterprise Manager manuals are listed in the Preface under Documentation Set on page xv.

Manuals

Manuals of particular interest are listed below:

- The *Oracle Enterprise Manager Readme* Release 2.2 provides important notes on updates to the software and other late-breaking news, as well as any differences between the product's behavior and how it is documented.
- The *Oracle Intelligent Agent Users Guide* describes how to administer the Oracle Intelligent Agent and provides troubleshooting information.
- The *Oracle Enterprise Manager Messages Manual* Release 2.2 contains probable causes and recommended actions for Oracle Enterprise Manager errors.

MetaLink

In addition to the manuals and online help, Oracle offers OracleMetaLink, an electronic support service available to Oraclemetals (Gold, Silver, Bronze) customers, 24 hours a day, seven days a week. Customers can register on-line through `http://www.oracle.com/support`.

MetaLink 2.0 includes the following features:

- *My Headlines*

  Uses push technology to provide you with proactive notifications. *My Headlines* gives you the ability to customize information in your user profile such that you get only the specific information you desire when you access the *My Headlines* section of MetaLink. You can also choose to have this information sent to you via email. The information delivered to you falls into the following categories and can be personalized by product and platform: *News & Notes*, *Knowledge Base*, *Patches*, *Bugs*, *TAR Updates*, *Product Lifecycle*, and *Forum Updates*.

- *User Administration*

  Gives companies the ability to manage access of MetaLink users at the support identifier / CSI level. In situations where you want to restrict the access to certain areas of MetaLink to specific users at your site, this feature enables that control. For example, only internal help desk employees at your site may be allowed to create TARs in MetaLink.

- *User Profile*

  You can update your contact information, add and remove support identifiers, view other users registered under the same support identifier, customize MetaLink, change your password, and view your license information. You will now have a choice of languages in which to view the MetaLink interface: English, German, or French.

- *Technical Libraries*

  Organized by product and platform, these libraries enable you to access information that support analysts have determined will aid you in your installation and use of Oracle products (documentation, white papers, problem / solution articles, and more).

- *Forums*

  You can post questions to technical analysts and receive responses within two business days. Users also share information and ideas with other Oracle users.

- *File Access*

  Previously referred to as Download, this section provides you the ability to download patches and patch sets directly from within MetaLink. View the Readme files to find out which bugs have been fixed in the patch sets.

- *Knowledge Base Search*

  Allows you to do a full-text search against the internal repositories within Oracle Support Services. Advanced searching is also available.

- *Bug Search*

  Provides you with query access to published header and abstract information in the Oracle Bug Database.

Oracle Technical Support

If the manuals and MetaLink do not answer your questions, contact Oracle Technical Support and provide them with the following information:

1. What is the problem?
2. What were you doing when the problem occurred?
   - In which product or component is the problem occurring?
   - What operations were you performing? Is the problem reproducible? What are the steps you took to see the problem?
3. What is your environment?
   - What is your operating system and version?
   - What version of Oracle Enterprise Manager are you using and where is it installed?
   - What version of the Intelligent Agent are you using and where is it installed?
   - What version of the database are you using and where is it installed?
   - Where is the Management Server installed?
   - What version of the Data Collection Service are you using and where is it installed?
   - Provide schema, data, scripts, or any other relevant information about your environment. If possible, provide log files to assist in problem reproduction.
4. What error messages and numbers did you see?
5. Turn on tracing (when available) and provide tracing information.
6. Look at log files (when available) and provide log information.

Setting Up Logging and Tracing

The Oracle Enterprise Manager Release 2.2 system supports tracing and logging. Tracing is the writing of data to a display for informational purposes. Logging is the redirection of trace information to a file.

This appendix discusses the following topics:

- Tracing and Logging for the Management Server
- Tracing for the Client
- Tracing for the Web Browser
- Tracing for Paging

For information about logging and tracing for the Intelligent Agent, refer to the *Oracle Intelligent Agent User's Guide.*

Tracing and Logging for the Management Server

Logging and tracing of the Management Server is specified in the `omsconfig.properties` file, located in the `$ORACLE_HOME\sysman\config` directory.

Logging and Tracing Properties

The logging and tracing properties are listed below:

TRACING.ENABLED = <true>|<false>
Activates / deactivates tracing. Default is false.

LOGGING.ENABLED = <true>|<false>
Activates / deactivates logging. Default is false.

LOGGING.DIR = <directory_spec>
Default is `$ORACLE_HOME\sysman\log.`

Note: In order to set `LOGGING.DIR` to a directory of `c:\temp`, you must use "\\" and set `LOGGING.DIR=c:\\temp`

If you do not, the `\t` in `c:\temp` is read as a tab character and the Management Server fails to start.

TRACING.LEVEL = <oem_trace_levels>
Set value to specify the detail of trace information to collect if tracing is enabled.

Possible values for `<oem_trace_levels>` are listed below:

- 5 - user: displays only messages of a critical or error level.
- 3 - admin: displays user trace level messages and warning messages.
- 2 - dev: displays all messages from admin trace level as well as informational and debug message

LOGGING.FILENAME = <filename>
Defaults to `oms.log.0`, `oms.log.1`, `oms.log.2`, and so on.

LOGGING.MAX_SIZE = <integer>
Controls the total maximum size of the log files. The value you specify for the `LOGGING.MAX_SIZE` property is in MB. Its default value is 50 and will result in two log files of max size 25MB. Setting the parameter to 0 indicates that a single log file will be used with no limit.

LOGGING.MAX_FILE_CNT = <integer>
Defines the maximum number of files the log will span at any given time. The cumulative size of all the files would be less than or equal to LOGGING.MAXSIZE.

Default value is 2.

If LOGGING.MAX_SIZE=0 (unlimited log size), LOGGING.MAX_FILE_CNT will not make sense and hence ignored.

Note: LOGGING.MAX_SIZE and LOGGING.MAX_FILE_CNT control how much disk space is used for the Management Server log files. You can affect the size and disk usage of the log files with these parameters.

LOGGING.SAVE_PREVIOUS_LOG = <true>|<false>
A true value indicates that the Management Server is to rename any existing log files from a previous Management Server invocation. Such log files would be appended with a timestamp (format: `yyyyMMddHHmmss`) when they are renamed.

Default value is false.

Note: When you enable logging and tracing, you automatically enable Backup and Data Management logging and tracing.

Management Server Logs

The Management Server places all its trace messages in Management Server log files (`oms.log.0`, `oms.log.1`, `oms.log.2`, and so on). It writes to one log file, and when the log file is full, it writes to the next file, recycling the last two files.

The Management Server's log files have size limits. By default, when the Management Server starts, it can only create log files with a size of 25 MB. The initial log file name is oms.log.0. If the file reaches its 25 MB limit, a separate log file is created. The separate log file name is `oms.log.1`. If that file reaches its 25 MB limit, the `oms.log.0` file is deleted and a new log file, `oms.log.2`, is created. The last two log files are kept.

Important Note: When the Management Server starts, all previous log files of the name `oms.log.*` are automatically deleted.

Tracing for the Client

To activate client tracing of all client applications integrated with Enterprise Manager, add and save the following parameters and values for the `clientconfig.properties` file, located in the `$ORACLE_HOME\sysman\config` directory.

```
TRACING.ENABLED=TRUE
TRACING.LEVEL=2
```

In addition, for Windows NT only, open a DOS window and set the following environment variable:

```
C:\>SET ORACLE_OEM_CLIENTTRACE=TRUE
```

Then start a client application from the command line using the OEMAPP script.

For example

```
oemapp console
```

Note: You cannot start an application using icons or shortcuts if you want to trace it and redirect its output to a file.

Tracing for the Web Browser

If you encounter problems bringing up Oracle Enterprise Manager in a browser, collect tracing information before reporting the problem to Oracle Support Services.

To set up tracing for your browser perform the following steps:

1. Exit your browser session
2. Start the Java plug-in Console.

   From the Windows Start menu, click Programs-> JInitiator Control Panel. A window appears.

   a. Check the "Show Java Console" checkbox.

   b. In the Java Run Time Parameters box, append the following to the end of the line:

   ```
   -DTRACING.ENABLED = TRUE -DTRACING.LEVEL = 2
   ```

   c. Click the Apply button.

   d. Close the Oracle JInitiator Properties panel.
3. Restart your browser and reload Oracle Enterprise Manager.

   The Java Console window appears, showing the Java classes loaded by the plugin as well as any exceptions that may occur. If no exceptions are displayed, clear the screen (by clicking the Clear button) every 3rd or 4th screen-full of displayed information.
4. If an exception appears in the Java Console window, please cut and paste it into a file and send it to Oracle Support Services along with a description of your problem.

Tracing for Paging

The paging service can be debugged and traced separately from the Management Server. Tracing for the paging server is disabled by default. If tracing is enabled, the server writes trace statements for all telephone line handling and any successes or failures. Since information is logged whenever a page is sent, the log file grows proportionally to the number of pages sent. To delete a tracing file, you must shut down the paging server and delete the file.

The installation of the Oracle Enterprise Manager Paging Server provides a template configuration file, `paging.cfg.template`, located in the `ORACLE_HOME\sysman\config` directory.

1. Copy the `paging.cfg.template` file to the `paging.cfg` file, which is also located in the `ORACLE_HOME\sysman\config` directory.

   Oracle recommends copying this file (not renaming it) to retain information. If you do not copy this file, all comments concerning paging configuration will be removed. In addition, when updates to Enterprise Manager software are made, any configuration will be lost and not retrievable.

2. Based on the instructions in the `paging.cfg.template` file, modify the `paging.cfg` file according to your tracing needs and save it.

In the `paging.cfg` file, the following parameters influence the tracing:

TRACING.ENABLED
Set value for debugging purposes; paging service will then track what paging is occurring by writing trace statements for all telephone line handling and any successes or failures.

The value can be either TRUE or FALSE. If the value is set to TRUE, you must specify a value for `TRACEFILENAME` and a value for `TRACING.LEVEL`. If the value is set to FALSE, you need not specify values for `TRACEFILENAME` and `TRACING.LEVEL`.

TRACING.LEVEL
Set value to specify the detail of trace information to collect if tracing is enabled.

Value can be either 5 (user level which collects critical messages and error messages), 3 (administrator level which collects critical, error, and warning messages) or 2 (developer level which collects maximum trace information).

TRACEFILENAME

Set value for where to write tracing output if tracing is enabled.

Oracle recommends setting the value to PAGING_LOG.TRC. By default, this file is located in the Paging Server's `ORACLE_HOME\SYSMAN\LOG` directory.

If you specify a different directory, you must specify <Drive_Letter>:\\<directory_path>\paging_log.trc. For example, if you want the tracing file stored in C:\temp\, set the value to C:\\temp\paging_log.trc.

Troubleshooting the Management Server

This section contains the following topics:

- Management Server May Not Run Correctly from a Non-Default Oracle Home
- Management Server Does Not Start
- Error Messages When Starting the Management Server
- Changing Your Management Server for Client Access

Management Server May Not Run Correctly from a Non-Default Oracle Home

On Unix, if the ORACLE_HOME environment variable is not set to the Oracle home where the management server is running, the management server will not start correctly. It will try to find its class files in the default Oracle home instead of the correct Oracle home.

csh

To set the environment variable:

```
setenv ORACLE_HOME '/usr/local/oracle'
```

ksh/sh

To set the environment variable:

```
ORACLE_HOME = '/usr/local/oracle'
export ORACLE_HOME
```

On UNIX systems, the Oracle environment can also be set by calling `coraenv` (for the CSH) or `oraenv` (for any other shell). This shell script sets the oracle environment for a given identifier. This identifier can be a specific database or it can point to an `ORACLE_HOME` which contains the Management Server software. These scripts can be customized to include specific machine or server based settings.

Refer to the specific operating system's Oracle Administration documentation for more information about the `coraenv` and `oraenv` scripts.

Management Server Does Not Start

For information to troubleshooting the Management Server if it does not start, refer to the following resources:

- the `oms.log` file
- the `oms.nohup` file
- the Windows NT Event Log (for Windows NT)
- OEMCTRL batch file

oms.log File

The `$ORACLE_HOME\sysman\log` directory contains the output of traces that are redirected to disk. This directory contains the `oms.log` and `oms.nohup` files.

The Management Server places all its trace messages in `oms.log` file. The `oms.log` file contains messages generated when the Management Server is starting and running.

oms.nohup File

The `oms.nohup` file in the $ORACLE_HOME/sysman/log directory contains Management Server error messages which appear before the Management Server starts up and critical messages during its run.

Windows NT Event Log

To access the Windows NT Event Log to view the events logged by the Management Server.

1. From the Start menu->Programs->Administrative Tools (Common), select the Event Viewer item or search for eventvwr.exe.
2. Select Application from the Log menu.
3. When the log screen appears, double-click any event logged by the Oracle<Oracle_Home_Name>ManagementServer service which has red octagonal stop signs next to them. These will be the errors reported by the Management Server, if any.

Events and event numbers which the Management Server can log in the event viewer are listed below:

Event Number	Message	Meaning
101	(OracleEM22ManagementServer) could not be found. It contains the following insertion string(s): OracleEM22ManagementServer.	Problem starting service. Look at log and trace files for more information
105	The service was started.	Informational message
108	The service was stopped	Informational message
110	The service is entering production run mode	Informational message
112	The service has terminated abnormally.	See the oms.log file for more information.
113	Fatal error Process terminated abnormally	See log file for more information.

Errors will only be reported in the Event Viewer if the Management Server is voluntarily shutting down.

OEMCTRL Batch File

To obtain more information for debugging, you can change the JRE startup command in the OEMCTRL script.

- On Windows, change

  ```
  SET JRE=jre -nojit -mx32m
  ```

  to

  ```
  SET JRE=jre -nojit -mx32m -verbose
  ```

- On Unix, change

  ```
  JRE="jre -native -nojit -mx32m "
  ```

  to

  ```
  JRE="jre -native -nojit -mx32m -verbose "
  ```

Performing this procedure enables you to identify class loading problems caused by environmental or installation problems. When you have collected the data from the batch file, send the information to Oracle Support Services.

Note: If you encounter problems starting the Management Server, turn on tracing for the Console first. If you still cannot determine what the cause is, perform other troubleshooting procedures before using the OEMCTRL batch file procedure.

Error Messages When Starting the Management Server

If you receive the following error when starting the Management Server, refer to the solutions below:

```
Could not start the Oracle<ORACLE_HOME_NAME>ManagementServer service on <HOST
NAME>.
Error 0203:  The system could not find the environment option that was entered.
```

- The Management Server has been installed but not configured. You must run the Enterprise Manager Configuration Assistant to create a new repository or to edit an existing repository.

  For Windows NT: The Enterprise Manager Configuration Assistant has been run, and you have chosen to not save the repository connection's username and password to a file (in secure Management Server mode). You must select the Oracle<ORACLE_HOME_NAME>ManagementServer service and then enter the username and password in the Control Panel's Startup Parameters' field or you must enter the repository credentials when you are prompted for them in a dialog.

Changing Your Management Server for Client Access

If a Management Server fails in a multi-Management Server environment, it only affects the clients connected to it. Each Management Server is independent of the other Management Servers connected to the repository.

To change your Management Server node to another node where a Management Server is still running, follow the procedure below.

1. In the Oracle Enterprise Manager login, select a node that has a Management Server which is configured with the repository you want to access from the Management Server pull-down list.

   If the node name where the Management Server is running does not appear in the pull-down list, follow the instructions below:

   a. Click the Management Servers button. The Management Servers dialog appears.

   b. Click the Add button. The Add Management Server dialog appears.

   c. Type in the name of the node where the Oracle Management Server is running that is configured with the repository you want to access and click OK.

d. Select the node where the Oracle Management Server is running from the pull-down list.

2. On each machine which runs Oracle Enterprise Manager through a web browser, return to the EmWebSite.html page to change the machine name to point to the node where a management server is running. You cannot simply enter a new Management Server machine name at the Oracle Enterprise Manager Login screen.

Troubleshooting the Paging Service

Page Notification Fails

If a page notification fails, the paging service will try to resend the page three more times. The interval of time between these retries is a value that can be altered. By default, the interval of time between retries is 1 minute. You can change this default setting by editing the OMSCONFIG.PROPERTIES file located in the Management Server's `ORACLE_HOME\sysman\config` directory. Users can add the property

```
OEM.PAGING.RETRYINTERVAL=<integer>
```

to the OMSCONFIG.PROPERTIES file and replace `<integer>` with the number of minutes between retries.

Troubleshooting the Web Browser

If you start the web browser, log in to the Console, but the Console hangs, and the following is displayed in JInitiator Console:

```
@org.omg.CORBA.INITIALIZE[completed=MAYBE, reason=java.net.BindException:
Cannot assign requested address]
```

You must perform the following steps:

1. Check that the JInitiator uses browser settings for the proxy.
   a. From the Windows Start menu, click Programs-> JInitiator Control Panel. A window appears.
   b. Choose the Proxies tab.
   c. View the contents.
2. Append the domain name to the webserver address you type in the browser, e.g. `@.us.oracle.com`
3. Edit the browser settings and add that domain to "no proxy settings for" or edit the browser settings and choose Direct Connection to Internet.

Resetting the Password

If you forget your SYSMAN password and need to reset it to `oem_temp`, follow the instructions below:

You must first be connected to the Management Server repository (via SQL*Plus) before using the reset_sysman() procedure.

1. Start SQL*Plus from the command line by typing:

   ```
   sqlplus
   ```

2. When you are prompted for the connection information, type:

   ```
   <emrepository>/<emrepository-pwd>@<em-repository>
   ```

   to connect to the database.

   For example:

   ```
   mynode/mypassword@mynode.world
   ```

   since the default repository name is the hostname.

3. Then type:

   ```
   execute smp_maintenance.reset_sysman();
   ```

Troubleshooting the Enterprise Manager Configuration Assistant

Enterprise Manager Configuration Assistant Errors

This section describes the Enterprise Manager Configuration Assistant error messages and their probable causes, and provides the actions recommended to correct them.

Configuration File Not Accessible

If the `omsconfig.properties` file is not writable, the "Configuration File Not Accessible" page appears. Please refer to Configuration File Not Accessible on page B-12 for more information.

The Database User You Chose Does Not Have the Necessary DBA Privileges

When you login as a DBA user on a selected database, the Configuration Assistant checks whether the user has the necessary privileges. If the user does not have the necessary DBA privileges, a message appears: "The database user you chose does not have the necessary DBA privileges. Logon to the database as a user with DBA privileges." Click OK to dismiss the message box. You must enter the proper credentials in order to continue. Enter the credentials and try again.

Select Database for Repository Login is Unsuccessful

If you have entered an invalid username, password, or service, an error message indicating the failure appears. For example: "Connection failed ORA-01017: Invalid username/password; logon denied" message appears. Click OK to dismiss the message box. Enter the data and try again.

The User Already Exists

The user already exists, and already contains an incomplete Enterprise Management Release 2 repository. A repository create, drop, or upgrade operation may be in progress, or a previous operation may have failed. Continuing the current operation can replace incomplete components and create missing components in the repository.

What would you like to do?

- Select another user.
- Continue and use the selected repository.

If a repository operation is already actively in progress elsewhere, do not continue. Attempting to perform simultaneous operations on the same repository may cause repository corruption.

The user "<username>" already contains a complete and up-to-date Enterprise Manager V2 repository

The user "<username>" already contains a complete and up-to-date Enterprise Manager Release 2 repository. If you wish to overwrite the existing repository, first use the Drop option.

The User Already Exists and Contains a V1 Repository

If the Oracle Enterprise Manager Configuration Assistant detects that the chosen repository name is the name of an already existing user/schema in the database and that it contains an Oracle Enterprise Manager Release 1.x repository, a message appears: “The user already exists and contains a V1 repository. A V2 repository may not coexist with a V1 repository in the same schema. Please choose another user name.”

The User Already Exists in this Database

If the Oracle Enterprise Manager Configuration Assistant detects that the chosen repository name is the name of an already existing user/schema in the database, and that it contains neither an Oracle Enterprise Manager Release 2.x nor Release 1.x repository, a message appears: "The user already exists in this database. Do you wish to create the repository within this user’s schema anyway?"

If you choose no, you may select a different user name.

If you choose yes, the "Create Repository Summary" page appears. Refer to Step 5 "Create Repository Summary" on page 2-16 for more information.

The Management Server on this Machine is Currently Managing a Repository Owned by user <user_name> on service <service_name>

During create repository, if the Configuration Assistant detects that a managed repository is already specified in the `omsconfig.properties` file, and you are creating a repository that is different from the managed repository, a message appears: "The Management Server on this machine is currently managing a repository owned by user <user_name> on service <service_name>. Would you like to change it to now manage the repository owned by user <user_name> on service <service_name>?"

If you choose yes, the configuration will be updated. The Management Server must be stopped and restarted in order for the changes to the configuration file to take effect. If you choose no, the configuration will not be updated. The “Create Repository Summary” page and the steps in the Configuration Assistant Progress Window will reflect your choices.

You have chosen the user's default or temporary tablespace to be SYSTEM.
Note that the Configuration Assistant, when it creates the user for an Oracle Enterprise Manager repository, asks you for the default and temporary tablespaces to use. If you choose SYSTEM for either of these, Configuration Assistant puts up the following warning: "You have chosen the user's default or temporary tablespace to be SYSTEM. We recommend the SYSTEM tablespace be used only for data dictionary tables and the SYSTEM rollback segment. Are you sure?" Pick another tablespace.

The Default Tablespace for the Repository Does Not Contain Enough Free Space
If the Oracle Enterprise Manager Configuration Assistant detects that the default tablespace for the repository does not contain enough free space, the following message appears: "The default tablespace for the repository does not contain enough free space." Refer to Repository Database Default Tablespace Does Not Contain Enough Free Space on page D-22 for information for possible solutions.

Repository Database Default Tablespace Does Not Contain Enough Free Space

The Configuration Assistant checks that the selected default tablespace for the repository has the appropriate attributes/characteristics, but if it does not contain enough free space, the following message appears: "The default tablespace for the repository does not contain enough free space."

Use the `OEM_REPOSITORY` tablespace if it exists. It is the default tablespace for Enterprise Manager.

If you are creating a repository in a new user, the Configuration Assistant's Select Repository User Tablespaces screen strongly encourages you to create an OEM_REPOSITORY tablespace. Using the Enterprise Configuration Assistant to create the OEM_REPOSITORY tablespace ensures that the tablespace has appropriate attributes/characteristics.

However, if you prefer, you can create another tablespace, or use an existing tablespace. If you decide to use an existing tablespace, you may have to increase its size.

Note: You do not have to exit from the Configuration Assistant when using DBA Studio's Storage Management tool to create another tablespace or increase the size of an existing tablespace.

Refer to Appendix E, "Repository Sizing" to determine storage requirements and disk space allocation for your Oracle Enterprise Manager repository.

Creating an OEM_REPOSITORY Tablespace if One Does Not Exist

If the `OEM_REPOSITORY` tablespace has not been created for you, the "Create a new OEM_REPOSITORY tablespace (recommended)" option is available on the "Select Repository User Tablespaces" page of the Enterprise Manager Configuration Assistant.

Select this option if you want to create the OEM_REPOSITORY tablespace. Using the Enterprise Manager Configuration Assistant to create the OEM_REPOSITORY tablespace gives that tablespace appropriate attributes/characteristics. Then use it as the user's default tablespace.

Creating Another Tablespace

Using the Configuration Assistant is the preferred method for creating a tablespace since it creates the tablespace with the proper attributes in any of the supported databases. The attributes of the default tablespace depend on the database version.

To use DBA Studio's Storage Management tool to create a new tablespace, follow the procedure described in this section:

1. Start the DBA Studio in standalone mode.

   - On Windows NT:

     You can start the DBA Studio from the Windows Start Menu->Programs->Oracle-<Oracle_Home_Name>-> Database Administration->DBA Studio.

   - On UNIX:

     You can start the DBA Studio from the command line using the command:

     ```
     oemapp dbastudio
     ```

   When the login dialog appears, choose Connect directly to databases and press OK.

2. Double-click the database node in the DBA Studio navigator tree and connect to the database as a user with the SYSDBA privilege.
3. Select Create from the Object menu, then Tablespace, and click Create. The Create Tablespace property sheet appears.
4. In the Create Tablespace Property Sheet's General page, enter the name of the new tablespace and specify that the tablespace will be used to hold permanent database objects.
5. In the Datafile section, enter the size of the new datafile. The File Name and File Directory columns should already contain default entries.
6. Right-click the "+" sign which appears next to the name of the datafile (<name>.ora) and choose Edit, double-click the datafile row, or choose the Edit button (pencil icon). The Create Datafile property sheet appears.
7. In the Create Datafile's Storage page, select the "Automatically extend datafile when full (AUTOEXTEND)" box so that the datafile will automatically increase in size when more space is needed in the database.
8. Click the OK button in the Create Datafile property sheet.

9. In the Create Tablespace Property Sheet's Storage page, choose a method of space management. You cannot alter the method at a later time.
10. Click the Create button in the Create Tablespace Property Sheet.

Increasing the Size of an Existing Tablespace

Using the Configuration Assistant is the preferred method for creating a tablespace since it creates the tablespace with the proper attributes in any of the supported databases. The attributes of the default tablespace depend on the database version.

To use DBA Studio's Storage Management tool to increase the size of an existing tablespace, follow the procedure described in this section:

1. Start the DBA Studio in standalone mode.
   - On Windows NT:

     You can start the DBA Studio from the Windows Start Menu->Programs->Oracle-<Oracle_Home_Name>-> Database Administration->DBA Studio.
   - On UNIX:

     You can start the DBA Studio from the command line using the command:

     ```
     oemapp dbastudio
     ```

   When the login dialog appears, choose Connect directly to databases and press OK.
2. Double-click the database node in the DBA Studio navigator tree and connect to the database as a user with the SYSDBA privilege.
3. Expand the Storage Management node.
4. Double-click the datafile you want to increase from the Datafiles folder. The General page of the Datafile property sheet appears, allowing you to edit the file size of the datafile.
5. Click the Apply button in the General page.
6. Click on the Storage tab. The Storage page of the Datafile property sheet appears.
7. Check the "Automatically extend datafile when full (AUTOEXTEND)" box and click the Apply button.

Database Parameters Not Large Enough for Repository Operation

An Oracle Management Server will open a number of repository database sessions while processing work on behalf of clients and managed nodes.

The number of sessions required by a single Management Server generally ranges from 3 to 5, depending on the load placed on the Management Server. More repository database sessions may be required under the following circumstances:

- many Consoles are actively submitting jobs / registering events
- multiple Management Servers are concurrently using the same repository
- many Intelligent Agents are sending notifications back to the Management Servers

If other applications are accessing the same database used for the Enterprise Manager Repository this will increase the session load on the database and should be considered when setting up the database.

If your processes setting is too low for Oracle Enterprise Manager, you will receive an error message similar to the following in the `oms.log` file located in the `Oracle_OEM_Home/sysman/log` directory.

```
can't open a session
```

For large workloads, or for cases where multiple applications are accessing the database where the repository resides, you can increase the processes parameter in the database init.ora to accommodate the workload.

To use Instance Management tool to change your database parameters, follow the procedure described in this section:

1. Start the DBA Studio in standalone mode.

   - On Windows NT:

     You can start the DBA Studio from the Windows Start Menu->Programs->Oracle-<Oracle_Home_Name>-> Database Administration->DBA Studio.

   - On UNIX:

     You can start the DBA Studio from the command line using the command:

     ```
     oemapp dbastudio
     ```

   When the login dialog appears, choose Connect directly to databases, and press OK.

2. Double-click the database node in the DBA Studio navigator tree and connect to the database as a user with the SYSDBA privilege.
3. Expand the Instance Management node.
4. Click the All Initialization Parameters button in the Database Property Sheet's General page.
5. Change the value of the parameter.
6. Click Save As button on the All Initialization Parameters page. The Save Initialization Parameters dialog appears.
7. Enter the complete directory path and a file name or use the Browse button to find a location on your local operating system to place the file and enter the file name.
8. Press OK to save the file.

Changing the Permissions on the omsconfig.properties File

If you have chosen to store your repository credentials in the `omsconfig.properties` file during repository creation, you may want to change the permissions on the file to restrict who can view it.

If you change the file permissions, other users cannot view the file.

Note: The repository credentials stored in the `omsconfig.properties` file do not expose plain text passwords. The password, if present, is encrypted in that file.

UNIX:

To change the file permissions, at the command prompt, enter:

```
$ chmod 600 omsconfig.properties
```

This command sets the read and write permissions only for the owner of the file.

Windows NT:

To change the file permissions, perform the following steps.

1. From the Start menu->Programs, select the Windows NT Explorer item.
2. From `Oracle_Home/sysman/config` directory, select the `omsconfig.properties` file.
3. Right-click the selected file, and then choose the Properties item in the resulting pop-up menu.
4. Select the Security tab from the Properties dialog. Note: This step only applies to NTFS file systems.
5. Press the Permissions push-button on the Security page to display the File Permissions dialog. The default is "Everyone" has Full Control (All). The type of Access is Full Control.
6. Click the Remove button to remove this entry.
7. Click the Add button to display the Add Users and Groups window.
8. Click the Show Users button to view all users.

9. Select the user who starts the Management Server regularly and uses the Enterprise Manager Configuration Assistant for the "type of access" field and select "select full control" from the drop down list.
10. Click the OK button to dismiss the Add Users and Groups dialog.
11. Click the OK button to dismiss the File Permissions dialog.
12. Click the OK button to dismiss the file Properties dialog.

You can provide access to multiple usernames.

Determining the SGA Size

The two primary factors in determining SGA size are:

- amount of RAM available to the instance, and
- the amount of activity you expect on the instance.

The amount of RAM available to the instance is memory dedicated to the repository's instance. This must not include memory needed for other instances and applications on the repository host node. The amount of activity includes all active (submitted) jobs, active (registered) events, hosts monitored, and connected administrators. As activity increases, so will the demands on the instance.

If the instance is dedicated to the Management Server repository, the basic minimums are listed below:

```
db_block_size = 2048             # EM is a strict OLTP application

db_block_buffers = 2048           # **May need increase under heavy load**

sort_area_size = 128000           # **May need increase under heavy load**

sort_area_retained_size = 128000  # **May need increase under heavy load**

log_buffer = 64000               # **May need increase under heavy load**
```

The Management Server repository transactions tend to be short, so rollback space usually is not a problem. Watch your redo log size and log_buffer size if a high transaction (activity per above) rate is expected.

Troubleshooting Job Notifications

Problem

The job notifications are not being delivered and the Console status remains in scheduled. Sometimes the jobs work and sometimes the jobs fail. Resubmitting one of the jobs results in a "job already submitted" error.

Solution

The Intelligent Agent may be delivering job status/output for the job to two different Consoles operating at different IP addresses.

Another Enterprise Manager installation is probably running on another node with the same repository name as the first node. Some job notifications are delivered to the first node and some notifications to the second node, depending on which machine last registered itself. You must check what is running on the nodes and decide which one is your Management Server.

E

Repository Sizing

This appendix provides guidelines for determining storage requirements and disk space allocation for your Oracle Enterprise Manager repository.

Space requirements can vary greatly as a result of what Oracle Enterprise Manager tools you are licensed to use and the amount of data generated by the work you perform. In addition, the growth of the repository could vary slightly depending upon the database version (release 8.1.6 versus release 8.0.6, etc.) in which the repository is created.

If you choose to create a new repository from a typical installation session and accept the default configuration for that new repository; then, a new tablespace is generated labeled OEM_REPOSITORY. The OEM_REPOSITORY tablespace contains repository objects for the Oracle Enterprise Manager Console, DBA Management Pack and all separately licensable Packs regardless if you have installed or purchased licenses for them. In addition, depending on the database version in which the repository is created, the repository could initially allocate between 6 - 26 MB of hard disk space.

Depending on how you actually use Oracle Enterprise Manager products, the repository size may increase. To determine by how much your repository could grow, refer to the table below. To accommodate an increase in repository size, the default OEM_REPOSITORY tablespace is automatically configured to autoextend. For example, if you have created the default OEM_REPOSITORY tablespace which allocates 4 MB for using Capacity Planner for a single, small database, but you actually plan to use Capacity Planner on a more regular basis - for example, for three large databases - then you should expect the size of your repository to increase by approximately 16 MB. In such situations, the tablespace would autoextend automatically to accommodate the increase.

If you choose to create a new repository from a typical installation session and want to use an existing tablespace, follow these steps to determine how much disk space the repository will use:

1. Review the "Product" column to find the products you are using.
2. Identify those actions you perform with each product in the "If you…" column.
3. Add the corresponding hard disk space requirements for those actions from the "then allocate…" column. The total of these requirements is the expected size of your repository.

Product	If you...	Then allocate...
Oracle Enterprise Manager Console and DBA Management Pack	■ use only the Console and DBA Management Pack ■ save little (if anything) in job history	4 - 9 MB
Oracle Diagnostics Pack	■ collect less than 4 MB of Trace Data ■ use Capacity Planner for a single, small database over a few days	8 MB
	■ collect between 4 - 20 MB of Trace Data ■ use Capacity Planner for a single, medium-sized database over several months	30 MB
	■ collect between 20 - 60 MB of Trace Data ■ use Capacity Planner for up to three large databases over several months	80 MB

Product	If you...	Then allocate...
Oracle Tuning Pack	save less than: ■ 50 tuned SQL statements ■ 5 scoped tuning sessions ■ 10 tablespace jobs in job history	less than 15 MB
	save between: ■ 50 - 150 tuned SQL statements ■ 5 - 15 scoped tuning sessions ■ 10 - 30 tablespace jobs in job history	15 - 45 MB
	save more than: ■ 150 tuned SQL statements ■ 15 scoped tuning sessions ■ 30 tablespace jobs in job history	more than 90 MB
Oracle Change Management Pack	■ for a schema with approximately 500 objects: 1 baseline, with 2 saved versions of baseline 1 saved comparison 1 change plan (propagate the schema)	10 MB

Product	If you...	Then allocate...
	■ for a schema with approximately 500 objects 2 baselines, with 2 saved versions of baseline 2 saved comparisons ■ 5 change plans	25 MB
	■ for a schema with approximately 500 objects 5 baselines, with 2 saved versions of baseline 5 saved comparisons, with 2 versions each ■ 10 change plans	50 MB
Oracle Management Pack for Oracle Applications	■ use Capacity Planner for a single, small database over a few days	4 MB
	■ use Capacity Planner for a single, medium-sized database over several months	10 MB
	■ use Capacity Planner for up to three large databases over several months	20 MB
Oracle Management Pack for SAP R/3	■ use Capacity Planner for a single, small database over a few days	4 MB

Product	If you...	Then allocate...
	■ use Capacity Planner for a single, medium-sized database over several months	10 MB
	■ use Capacity Planner for up to three large databases over several months	20 MB
Oracle Standard Management Pack[1]	■ for a schema with approximately 500 objects:· 1 baseline, with 2 saved versions of baseline· 1 saved comparison	10 MB
	■ for a schema with approximately 500 objects· 2 baselines, with 2 saved versions of baseline· 2 saved comparisons	20 MB
	■ for a schema with approximately 500 objects· 5 baselines, with 2 saved versions of baseline· 5 saved comparisons, with 2 versions each	40 MB

[1] While the other separately licensable Packs are available with Oracle8i Enterprise Edition, the Oracle Standard Management Pack is only available with Oracle8*i* standard edition.

For example, if you:

- use the Console and DBA Management Pack regularly but typically do not save large output to the job history (approximately 7 MB)
- collect approximately 45 MB of Trace Data (approximately 45 MB)
- use Capacity Planner very little (approximately 4 MB)
- save approximately 100 tuned SQL statements, 11 scoped tuning sessions and 25 tablespace jobs in job history (approximately 32 MB)

The total of all these space allocations (7 MB + 45 MB + 4 MB + 32 MB) is 88 MB. Thus, you can expect to allocate approximately 88 MB for your repository.

Important: This is only a guideline based upon default configuration of the Oracle Enterprise Manager environment; any custom configuration done may significantly affect repository sizing requirements. What applications you are actually using in the Console and the various Packs; how you have configured certain parameters, etc., all will affect how much disk space the repository will require. For instance, the default sampling frequency for Oracle Diagnostics Pack is five minutes. If you reduce the sampling frequency then you will need to allocate more disk space. How much you save in the job history will also affect the amount of space necessary for the repository. If you have large outputs of 40-50 MB and you save those in job history, then you should allocate an additional 40-50 MB of disk space.

F

Configuring the Webserver and Directory Mapping

If you are installing the Oracle Enterprise Manager Web Site without the Oracle HTTP Server that is packaged with Enterprise Manager by default, configure your supported webserver with the instructions below.

- Apache 1.3.9 and higher on Unix
- Internet Information Server (IIS) 4.0 on Windows NT or Windows 2000

Apache 1.3.9 or Higher on Unix

1. Install the Enterprise Manager web site without the Oracle HTTP Server.
2. Install Apache 1.3.9 or higher. Consult your Apache-specific configuration documentation for detailed information.
3. Edit the `httpd.conf` in the Apache home -> conf ->httpd.conf/. Stop and restart the web listener.
4. ScriptAlias controls which directories contain server scripts. ScriptAliases are essentially the same as Aliases, except that documents in the realname directory are treated as applications and run by the server when requested rather than as documents sent to the client.

   The same rules about trailing "/" apply to ScriptAlias directives as to Alias.

   ```
   ScriptAlias /oem_webstage/cgi-bin
   "/private/oemv2/oem_webstage/cgi-bin"
   ```

   Note: `/private/oemv2/` is your Oracle Home.

5. Add as many aliases as you need (with no limit). The format is

   ```
   Alias fakename realname
   ```

   Note that if you include a trailing "/" on fakename, then the server requires that it is present in the URL. In this example, "/icons" is not aliased. "/icons/" is aliased.

   ```
   Alias /icons/ "/usr/local/apache/icons/"
   Alias /oem_webstage "/private/oemv2/oem_webstage/"
   ```

   Note: `/private/oemv2/` is your Oracle Home.

6. Change "/apache/cgi-bin" to where your ScriptAliased CGI directory exists, if you have that configured.

   `<Directory "usr/local/apache/cgi-bin">` to

   `<Directory "/oem_webstage/cgi-bin">`

   `AllowOverride all`

```
Allow from all
</Directory>
```

AddHandler allows you to map certain file extensions to "handlers", actions unrelated to filetype. These can be either built into the server or added with the Action command.

Internet Information Server (IIS) 4.0

To use the Internet Information Server, you will need to create three virtual directories pointing to the oem_webstage directory and two subdirectories inside of that directory. The oem_webstage directory is created automatically by the installation procedure when you install the Oracle Enterprise Manager Web Site components during one of the following installations:

- Oracle8*i* Enterprise Edition 8.1.7.0.0-> Custom
- Oracle8*i* Management and Integration 8.1.7.0.0-> Oracle Management Server
- Oracle8*i* Management and Integration 8.1.7.0.0-> Custom

1. Install the Enterprise Manager web site without the Oracle HTTP Server.
2. Install Internet Information Server (IIS) 4.0. Consult your Internet-Information-Server-specific configuration documentation for detailed information.
3. From the Windows NT Program Start Menu, select Microsoft Internet Information Server 4.0->Internet Service Manager to configure the Internet Information Server. The "Microsoft Internet Service Manager" screen is displayed.
4. Click on "Default Web Site" and right mouse-click to display the associated submenu.
5. Click on "Properties" to display the Properties sheet of the Default Web Site.
6. Verify that the IP address of the node is correctly set in the Properties sheet. Then click "Ok".
7. Select New, Virtual Directory.
8. Enter the name of the virtual directory. For example, `oem_webstage`.
9. Specify the following settings:

   Alias: `/oem_webstage`

   Path: `ORACLE_HOME\oem_webstage`

   Access: Read, Execute
10. After saving the settings, expand the "Default Web Site" to display the new virtual directory.
11. Select the new oem_webstage virtual directory.

12. Click on the Action button, select New, Virtual Directory to create a additional virtual directory with the following settings:

    Alias: `cgi-bin`

    Path: `ORACLE_HOME\oem_webstage\cgi-bin`

    Access: Read, Execute

13. Create an additional virtual directory with alias "\oem_webstage\java-plugin" and directory `ORACLE_HOME\oem_webstage\java-plugin` with the following settings:

    Alias: `java-plugin`

    Path: `ORACLE_HOME\oem_webstage\java-plugin`

    Access: Read-only

    Note: Make sure you do not enable execute permissions; otherwise, you will not be able to download the plug-in.

G

Keyboard Shortcuts

This appendix provides a list of general Windows keyboard shortcuts. For a complete list of Windows keyboard shortcuts and navigation, refer to your operating system documentation.

Figure G–1 General Windows Keyboard Shortcuts

Key	Action
F1	Displays Help information for the active object or the window as a whole.
WINDOWS LOGO KEY OR CTRL+ESC	Opens the Start menu located on the taskbar.
CTRL+ALT+DELETE	In Microsoft Windows, opens the Close Program dialog box, which contains a list box of applications to be closed and the command buttons End Task, Shut Down, and Cancel. In Microsoft Windows NT, opens the Windows NT Security dialog box, with the following options: Lock Workstation, Logoff, Shut Down, Change Password, Task Manager, and Cancel. If you are not logged on, opens the logon dialog box.
DELETE	Deletes the selected item(s). If the items are files, moves them to the Recycle Bin.
SHIFT+DELETE	Delete the selected item(s). If the items are files, destroys them immediately without moving them to the Recycle Bin.
CTRL+N	Opens the New dialog box. (You also can choose the New command from the File menu.)
CTRL+O	Opens the Open dialog box. (You also can choose the Open command from the File menu.)
CTRL+P	Opens the Print dialog box. (You also can choose the Print command from the File menu.)
CTRL+S	Opens the Save dialog box. (You also can choose the Save command from the File menu.)
CTRL+X	Cuts the selected item(s) to the Clipboard. (You also can choose the Cut command from the Edit menu.)
CTRL+INSERT OR CTRL+C	Copies the selected item(s) to the Clipboard. (You also can choose the Copy command from the Edit menu.)
SHIFT+INSERT OR CTRL+V	Pastes the copied items(s) from the Clipboard. (You also can choose the Paste command from the Edit menu.)
ALT+BACKSPACE OR CTRL+Z	Undoes the last action. Note that not all actions, such as shutting down, can be undone. (You also can choose the Undo command from the Edit menu.)
ALT+SHIFT+BACKSPACE	Redoes the previously undone action. (You also can choose the Redo command from the Edit menu.)

Key	Action
WINDOWS LOGO KEY+M	Minimizes all open windows. The keyboard focus goes to the least recently selected icon on the desktop. Add SHIFT to expand previously opened windows and return focus to the most recently used application.

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