# Oracle® Enterprise Manager

Configuration Guide

Release 2.1

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ORACLE®

Oracle Enterprise Manager Configuration Guide, Release 2.1

Part No.  A75685-01

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**Oracle Enterprise Manager Configuration Guide, Release 2.1**

**Part No.  A75685-01**

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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 2.1.

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, see the *Oracle Enterprise Manager Readme*.

After you have completed the configuration procedures, see 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* Release 2 (8.1.6) and how it works, see the *Oracle8i Release 2 (8.1.6) Concepts Guide*. For information about database administration procedures, see the Oracle8*i* Release 2 (8.1.6) documentation set. The Oracle8*i* Release 2 (8.1.6) 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* Release 2 (8.1.6) 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 Solaris system. See the documentation for your Windows or Solaris 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 for configuring Oracle Enterprise Manager. |
| Chapter 2, "Creating a Release 2.1 Repository" | This chapter describes how to create a new repository using the Oracle 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 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 2.1. |
| Chapter 7, "Migrating a Release 1.x Repository to a Release 2.1 Repository" | This chapter describes methods for migrating the user's private Release 1.x repositories into a specific user in a new Release 2.1 repository. |
|  | For information about upgrading a Release 2.0 repository to a Release 2.1 repository, see "Upgrade a Release 2.0 Repository to a Release 2.1 Repository" on page B-2. |
| 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 2.1. |
| 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, "Troubleshooting" | This appendix describes possible issues for troubleshooting. |
| Appendix D, "Repository Sizing" | This appendix contains recommendations for repository sizing. |
| Appendix E, "Configuring the Webserver and Directory Mapping" | This appendix contains information about configuring your webserver and directory mapping if you did not install the Oracle Application Server Listener. |

## Documentation Set

The Oracle Enterprise Manager Release 2.1 documentation includes the following:

- The *Oracle Enterprise Manager Readme* Release 2.1 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 2.1 provides information about configuring the Oracle Enterprise Manager system.

- The *Oracle Enterprise Manager Concepts Guide* Release 2.1 provides an overview of the Enterprise Manager system.

- The *Oracle Enterprise Manager Administrator's Guide* Release 2.1 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 2.1 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.

# 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* Release 2 (8.1.6) and how it works, see *Getting to Know Oracle8i Release 2 (8.1.6)* and *Oracle8i Release 2 (8.1.6) Concepts.*

- For information about administering the Oracle8*i* Release 2 (8.1.6), see the *Oracle8i Release 2 (8.1.6) Administrator's Guide.*

- For the procedures for migrating a previous version of Oracle, see *Oracle8i Release 2 (8.1.6) Migration.*

- For information on Oracle's SQL commands and functions, see the *Oracle8i Release 2 (8.1.6) SQL Reference.*

- For information about utilities bundled with the Oracle8*i* Release 2 (8.1.6), refer to the *Oracle8i Release 2 (8.1.6) SQL Reference.*

- For information about Oracle messages and codes, refer to *Oracle8i Release 2 (8.1.6) Error Messages.*

- For information about the Oracle networking system, see your network-specific documentation.

- For information about the Oracle8*i* Release 2 (8.1.6) on Windows NT, see the *Oracle8i Release 2 (8.1.6) Installation Guide for Windows NT,* the *Oracle8i Release 2 (8.1.6) Administrator's Guide for Windows NT,* and the *Release Notes.*

- For information on Oracle Parallel Server, refer to the *Oracle8i Release 2 (8.1.6) Parallel Server Setup and Configuration Guide,* which provides essential information for preparing Oracle8*i* Release 2 (8.1.6) 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* Release 2 (8.1.6) 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 you see a 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 a graphical 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
- Oracle Enterprise Manager System and Hardware Requirements
- Basic Terminology
- Configuring Oracle Enterprise Manager Overview

# Oracle Enterprise Manager's Architecture

Oracle Enterprise Manager has a three-tiered architecture. The first tier, the client, consists of a Java-based Console and integrated applications. The second tier is the Management Server or designated group of Management Servers which provides centralized intelligence and distributed control between clients and targets. The third tier is comprised of targets, such as databases, nodes, or other managed services. An Intelligent Agent resides on each target 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 agent can exist per machine, regardless of the number of services on that machine.
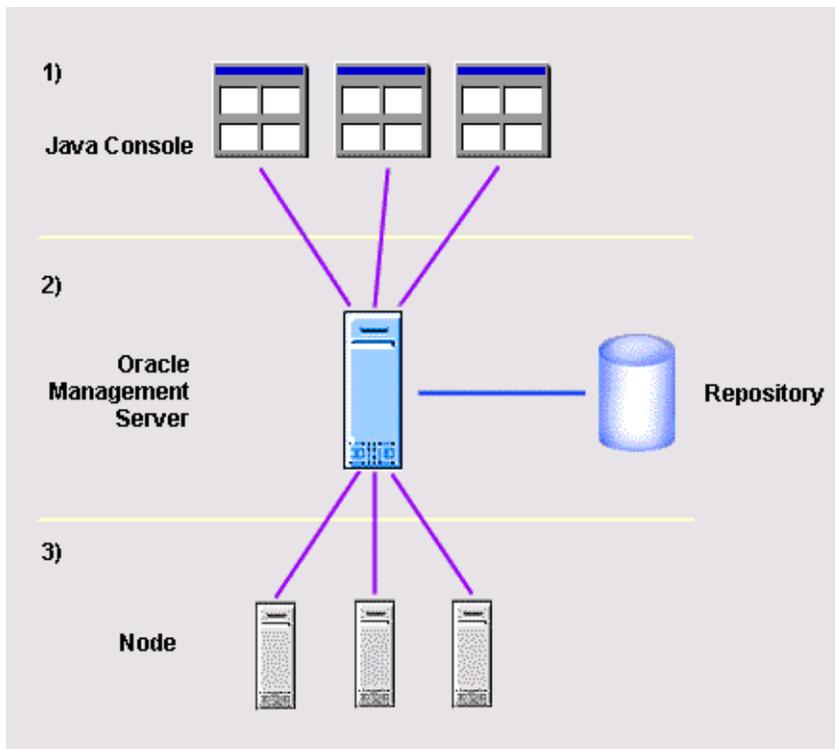
Oracle Enterprise Manager's three main components are listed below:

| 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 provides centralized intelligence and distributed control between the Console and the managed nodes. It processes system management tasks sent by the Console and administers the distribution of these tasks across the enterprise. The Oracle Management Server stores all system data, application data, and information about the state of managed nodes in a repository, which is a set of tables stored in a database. The Management Server in charge of a job or event stores all the information about the status of the job or event (whether it is scheduled, waiting for a response from the Intelligent Agent, waiting to notify the Console, and so on.) High performance and scalability is ensured because the workload is automatically shared and balanced when there are multiple Management Servers. |
| 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. |



For further details regarding the architecture of Oracle Enterprise Manager Release 2.1, refer to chapter 1 of the *Oracle Enterprise Manager Concepts Guide.*

# 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.

Running Enterprise Manager components on separate machines requires the following:

Machine running only the Console and DBA Management Pack:

- Pentium I 266 MHz or SPARC 20

- 64 MB RAM

- 190 MB available hard disk space

Note: Running the Enterprise Manager Console from a web browser requires 64 MB RAM. Running the web site and Oracle Application Server Listener requires 102 MB.

Note: The integrated applications require an additional 18 MB.

Machine running only the Management Server:

- Pentium II 300 MHz or SPARC Ultra 1

- 64 MB RAM

- 190 MB available hard disk space (If you turn Tracing on, you should allocate an additional 50 MB for Trace logs.)

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

- 128 MB RAM

- 190 MB available hard disk space (Includes 6-26 MB for configuring the Repository. Refer to Appendix D, "Repository Sizing" for information on how much you can expect your repository to grow. In addition, if you turn Tracing on, you should allocate an additional 50 MB for Trace logs.)

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:

- 40-50 different machines

- A total of 80-100 managed database instances or other managed targets (up to 10 managed targets on any one node)

- Up to 12-15 Consoles actively being used at one time or unlimited Consoles being used for intermittent/passive work

- 10 jobs running per node per day

- 10 events triggering per node per day

To improve performance when the number of managed nodes increases, Oracle recommends either (1) adding one Management Server per 50 nodes managed or (2) increasing CPU capacity on the Management Server machine/s.

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

# Basic Terminology

Refer to the *Oracle Enterprise Manager Concepts Guide* and the *Oracle Enterprise Manager Administrator's Guide* for detailed information about the terms listed below.

### What is a repository?

A repository is a set of tables in a database containing state information 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 owner?

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. 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?

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. Using this account you can create other super administrators, as needed. Administrative data stored in the repository is filtered based on administrator permissions. Preferences, such as preferred credentials, login password, and notification schedules, must be set for each administrator.

The Oracle Enterprise Manager Release 2.1 credentials should not be confused with the username and password of an individual database user account (which is different from an Oracle Enterprise Manager administrator account or the repository credentials).

### What is a Console?

The Console, a graphical interface for administrators, 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?

Management Servers provide centralized intelligence and distributed control between clients and managed nodes, and process system management tasks.

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 installed on each node to run jobs and monitor events sent by the Management Server. 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?

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.

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 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.

# Configuring Oracle Enterprise Manager Overview

In order to configure Oracle Enterprise Manager, you need to perform the following steps.

Some of the steps are optional depending on which features you intend to use.

| Procedure | Required or Optional | See |
|---|---|---|
| Install an Oracle database and install Oracle Enterprise Manager. | Required | Refer to the installation guide provided with the database release. |
| Run the Enterprise Manager Configuration Assistant to create a repository if you do not have one. During the Oracle Enterprise Manager installation, you will be asked if you want to use an existing repository or create a new one.<br><br>If you need to upgrade your repository from Release 2.0 to Release 2.1, see "Upgrade a Release 2.0 Repository to a Release 2.1 Repository" on page B-2. | Required | "Creating a Release 2.1 Repository" on page 2-1. |
| Run the 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 2.1 repository | Optional<br><br>If you do not have a Version 1 repository, skip this step. | "Migrating a Release 1.x Repository to a Release 2.1 Repository" on page 7-1. |
| Add additional Management Servers | Optional<br><br>If you do not need to add additional Management Servers, skip this step. Many environments will require just one Management Server. | "Adding Additional Management Servers" on page 4-1. |
| Start Intelligent Agent | Required | "Starting the Intelligent Agent" on page 5-1. |
| Start Management Servers | Required<br><br>Starting and configuring at least one Management Server is required. | "Controlling the Management Server" on page 3-1. |

| Procedure | Required or Optional | See |
|---|---|---|
| Start Console | Required | "Starting the Enterprise Manager Console" on page 6-2. |
| Discover services | Required<br><br>You must identify the network services so that these services, such as databases and listeners, can be administered with Enterprise Manager components. | "Discovering Services" on page 6-4. |
| Create administrator accounts | Required<br><br>Creating accounts gives administrators the ability to customize their own Console views and share and secure management data between administrators | "Creating Administrator Accounts" on page 6-5. |
| Install the web browser, install the Oracle Enterprise Manager web site, and install and configure a webserver (if you have not installed the Oracle Application Server Listener) to run Oracle Enterprise Manager from a web browser. | Optional<br><br>If you do not want to run Oracle Enterprise Manager from a web browser, skip this section. | "Running Oracle Enterprise Manager from a Web Browser" on page 6-6. |
| Create Windows NT user account with privileges to submit jobs | Required<br><br>In order for the Intelligent Agent to execute jobs on a managed node, an appropriate NT user account must exist. | "Creating a Windows NT User Account for Running Jobs" on page 6-12. |
| Set up Preferred Credentials on nodes | Required<br><br>In order for the Intelligent Agent to execute jobs on a managed node, the preferred credentials for the node must be set for each administrator. | "Setting Up Preferred Credentials for Managed Services" on page 6-16. |
| Set up email notification | Optional<br><br>Setting up email notifications enables you to receive notifications for jobs or events via email. | "Setting Up Email Notification" on page 6-17. |
| Set up paging service | Optional<br><br>One paging service installation per network is required if you want to receive notifications for jobs or events via pagers. | "Configuring and Starting the Paging Service" on page 6-20. |

| Procedure | Required or Optional | See |
|---|---|---|
| Configure a remote database for backup or SYSDBA administration | Required if not already set | "Configuring a Remote Database for Backup or SYSDBA Administration" on page 6-38. |
| | Before using one of the backup management wizards or starting up or shutting down a database through Oracle Enterprise Manager, your database must be set up for remote sysdba management. | |
| | You may need to configure both the server and client if they have not been configured already through the Database Configuration Assistant. | |
| Set up DBA Studio. | Optional | "Setting Up DBA Studio" on page 8-1. |
| | Configure DBA Studio if you want to access database administration features and manage multiple databases from one tool | |

# 2

# Creating a Release 2.1 Repository

In Oracle Enterprise Manager Release 2.1, 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. In Release 2.1, it now creates the repository for all Oracle Enterprise Manager products. 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.

The Enterprise Manager Configuration Assistant provides the database administrator with repository creation, removal, upgrade, and configuration parameter maintenance.

If you are a new Oracle Enterprise Manager user, or if you want to create a new Release 2.1 repository, you will use the Create a New Repository option of the Enterprise Manager Configuration Assistant to create and load your Release 2.1 repository and set up the configuration parameters for a local Management Server.

If you are using a Release 2.0 repository and want to upgrade your repository from Release 2.0 to Release 2.1, refer to "Upgrade a Release 2.0 Repository to a Release 2.1 Repository" on page B-2.

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 2.1 repository, you will need to perform additional steps using the Enterprise Manager Migration Assistant after creating your Release 2.1 repository. Refer to Chapter 7, "Migrating a Release 1.x Repository to a Release 2.1 Repository" for information about migrating one or more Release 1.x repositories into the shared Release 2.1 repository schema.

Refer to "Setting Up an Additional Management Server" on page 4-2 for information on setting up or adding a Management Server to manage an already existing repository.

In a multiple Management Server environment, you must run the Enterprise Manager Configuration Assistant on every machine that will be running a Management Server. The repository can exist on a different machine from the Management Server.

> **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 2.0 Management Server and repository with a Release 2.1 Console nor can you use a Release 2.1 Management Server and repository with a Release 2.0 Pack. Any Enterprise Manager Release 2.1 product must use a Release 2.1 Management Server and repository, where product refers to any of the following:
>
> - Oracle Enterprise Manager Console
>
> - Oracle DBA Management Pack
>
> - 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 2.1, ensure that all Enterprise Manager products you intend to use with the repository are of Release 2.1. For instance, do not upgrade the Management Server and repository to Release 2.1 if you are still using Diagnostics Pack Release 2.0 or Change Management Pack Release 2.0. If you upgrade your Management Server and repository to Release 2.1 before obtaining the Release 2.1 Pack software you intend to use, you will not be able to use the older Pack product(s).

# Creating a New Release 2.1 Repository

The Oracle Enterprise Manager Release 2.1 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 2.1, administrators have individual accounts and preferences within a single "shared" repository schema.

When creating a new Release 2.1 repository, the Enterprise Manager Configuration Assistant performs 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 necessary

- loads information into the repository; this information is required when running Oracle Enterprise Manager.

- creates and/or updates the local Management Server's configuration file: `ORACLE_HOME\sysman\config\omsconfig.properties`

- loads information into the Oracle Enterprise Manager client, thereby allowing the Oracle Enterprise Manager Console to include the Management Server node in the list of accessible Management Server nodes

- starts your Management Server service if you had launched the Enterprise Manager Configuration Assistant from an installation session and have chosen to save your repository username and password during repository creation (Windows NT 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:

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

- 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
> this 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 2-6.

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

## Step 2 "Select Database for Repository"

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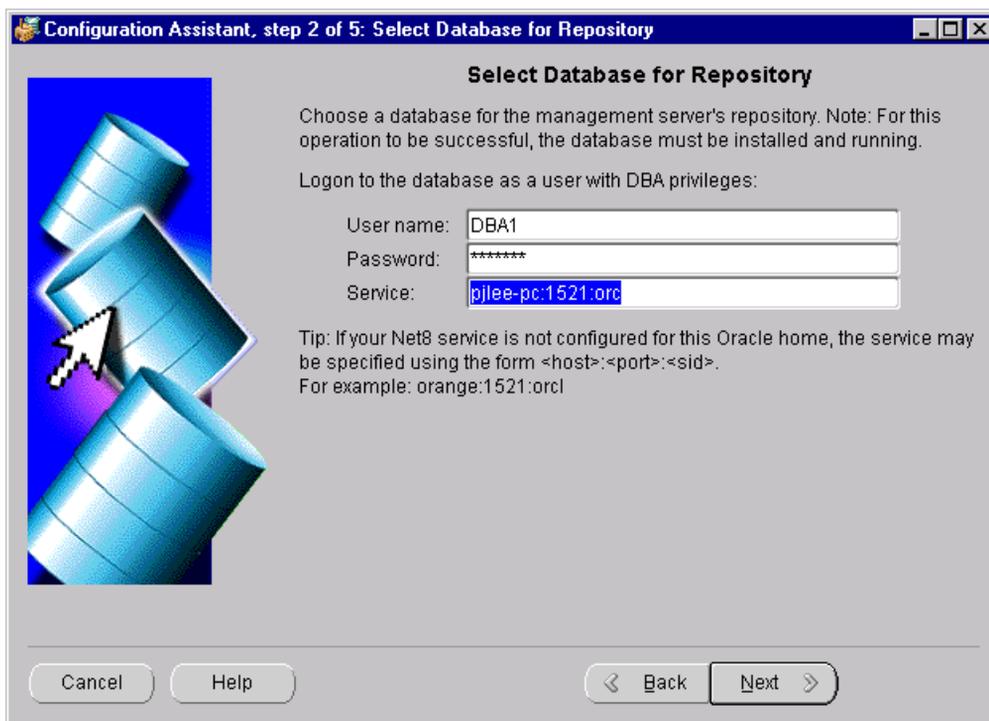


*User name and Password*: You must connect to the database as a user with DBA privileges. This is an individual database user account, not an Oracle Enterprise Manager administrator account.

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:

```
pjlee-pc:1521:orcl
```

which connects to the `orcl` database using port 1521 on the pjlee-pc machine.

Press Next to continue.

Refer to "Troubleshooting the Enterprise Manager Configuration Assistant" on page C-18 for information about error messages.

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

- the database is always available.

- the database will not be shutdown by other administrators.

- the database does not compete for resources on the machine where it is running.

## 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.



*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.

*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; if they are not saved, the Management Server prompts 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.

If the username you chose for your repository already exists, the Select Repository User Tablespace page is skipped. The Create Repository Summary page is your next page.

> **Note:**   The repository schema user created by the Enterprise Manager Configuration Assistant is different from the individual database user account with DBA privileges that you use to connect to a database in the "Select Database for Repository" step of the Enterprise Manager Configuration Assistant. The repository schema user 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.
>
> For the "Select Database for Repository" step of the Enterprise Manager Configuration Assistant, connect to the database as a **database user with DBA privileges** instead of granting DBA privileges to the repository schema user and using it to connect to the database. For example, `system/manager`.
>
> For the "Repository Login Information" step of the Enterprise Manager Configuration Assistant, logon to the repository database as the **repository schema user**.

## Step 4 "Select Repository User Tablespaces"

The Select Repository User Tablespaces page does not appear:

- If the repository user already exists,

  or

- If the Enterprise Manager Configuration Assistant is run from a typical install, 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.

For more details, refer to the *Oracle8i Release 2 Concepts Guide.*

---

If the OEM_REPOSITORY tablespace already exists, the following screen appears.
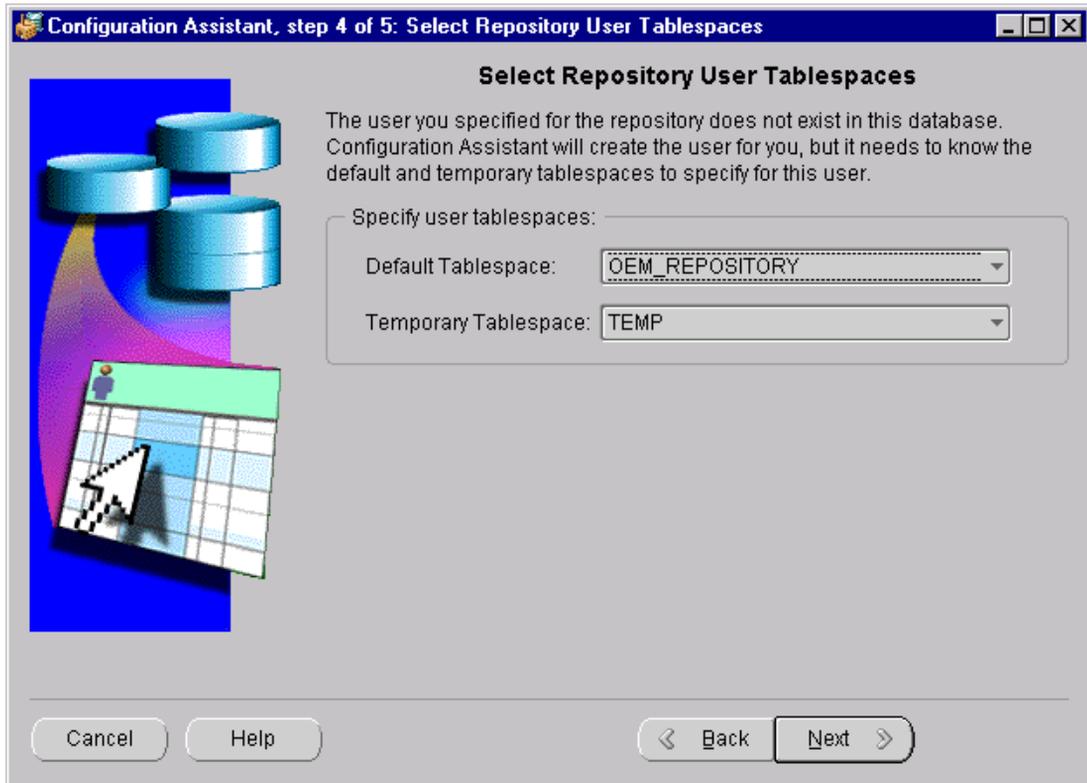


Select the default and temporary tablespaces for the Enterprise Manager repository to use.

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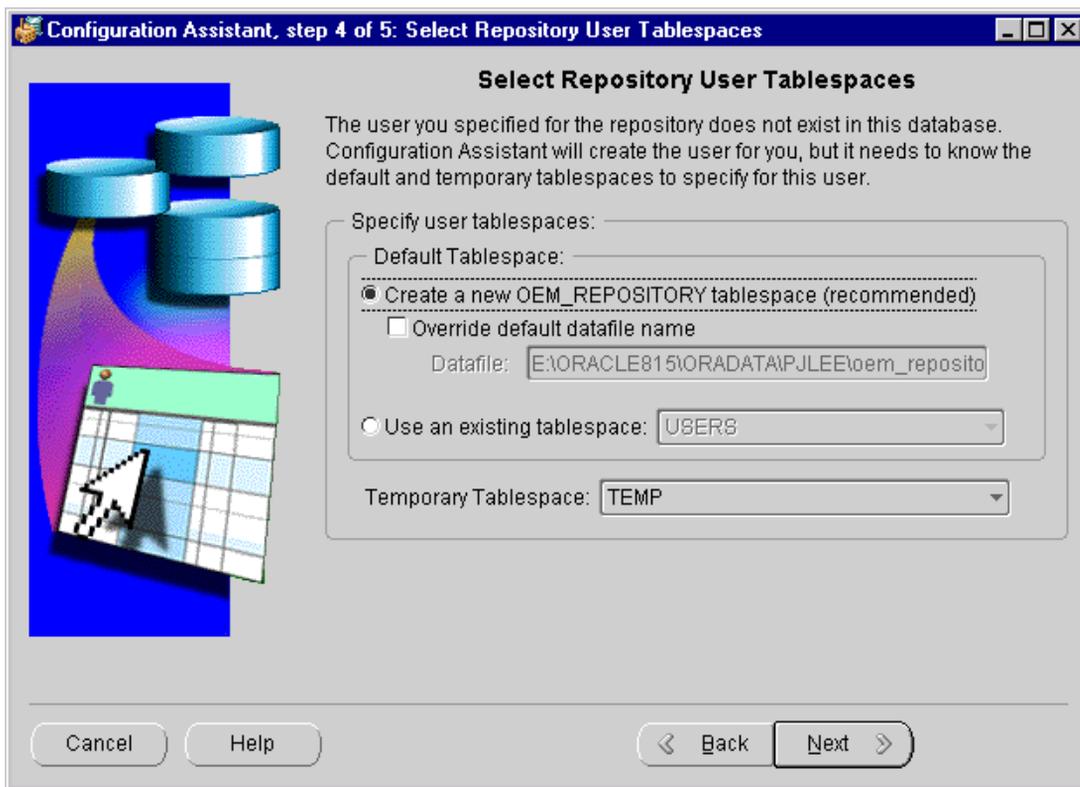


*Default Tablespace:*

- 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 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.

- 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.

## 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.
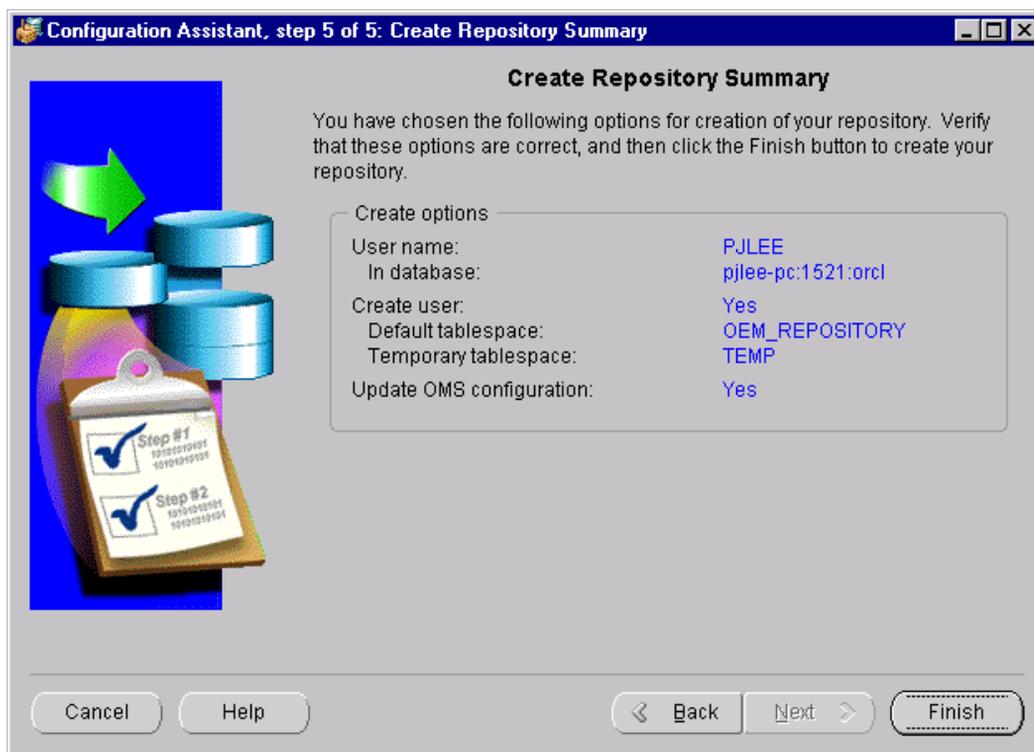


Click Finish to initiate repository creation or click Back to return to previous pages to make modifications.

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 see 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.
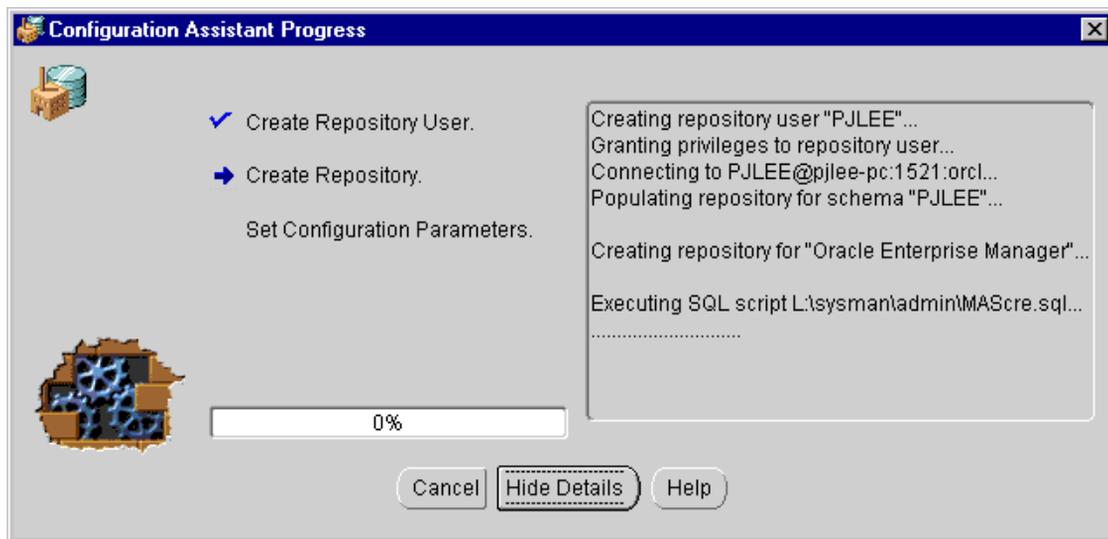


The Cancel button changes to a Close button when processing is completed whether it is successful or not.

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.

# 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

# Starting the Management Server

> **Note:**   The repository database must be started and open before starting the Management Server.

To start the Management Server, perform the following steps.

> **Note:**   Oracle Enterprise Manager does not support starting a Management Server that is not local to your machine (i.e., a remote Management Server).

See "Edit Configuration Parameters" on page B-8 if you need to add or change the repository connection information for a Management Server.

For information on troubleshooting the Management Server if it does not start, refer to "Checking the Management Server Log Files" on page 3-7.

**On Windows NT:**

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 Startup push-button to access the Service Startup dialog box.

   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.

   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; otherwise, it may no longer appear when you log out.

      *   Ensure that the "Allow Service to Interact with Desktop" box is deselected. Do not check "Allow Service to Interact with Desktop" unless you are requested by support for troubleshooting purposes. If this box is checked, the Management Server will try to create a DOS

console on the default desktop. If no one is logged in, the Management Server will hang.

**c.** If you have chosen not to store your repository credentials during repository creation, you must enter the repository's user name that was used to create the database user and the password for that user in the Service Startup dialog box when you start the Management Server.

If you do not supply your repository credentials in the Service dialog, the Management Server will not start. If you enter the wrong credentials, the Management Server also will not start.

For a complete definition of a repository owner, refer to "Step 3 "Repository Login Information"" on page 2-8.

For information on troubleshooting the Management Server if it does not start from the Windows NT Start menu, refer to "Management Server Does Not Start from the Windows NT Start Menu" on page C-12.

**4.** Click the Start push-button to start the Management Server.

---

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

If you have chosen not to save your repository credentials, you must enter them in the Service Startup dialog box.

---

**On UNIX:**
At the command line, enter

```
% oemctrl start oms
```

If you want to start the Management Server as a background process, at the command prompt, enter

```
% oemctrl start oms&
```

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

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 2-8.

> **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 C-11.

# Checking the Status of the Management Server

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

```
% oemctrl status oms
```

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

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 1-6.

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 2.1.0.0.0
Copyright (c) 1998, 1999 Oracle Corporation.  All rights reserved.

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

  The server has been up for 0 00:03:55.437

  Target database session count: 1 (session sharing is off)
  Operations queued for processing: 0
  Number of OMS systems in domain: 1 (pjlee-pc)
  Number of administrators logged in: 1
  Repository session pool depth: 15
  Repository session count: 6 in-use and 1 available, pool efficiency: 70%
```

# 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:**
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 1-6.

**On UNIX:**
At the command line, enter

```
% oemctrl stop oms
```

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

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 1-6.

# Checking the Management Server Log Files

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 (for Solaris)

- the Windows NT Event Log (for Windows NT)

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.

The `oms.nohup` file contains Management Server error messages which appear before the Management Server starts up.

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.

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 have red octagonal stop signs next to them. These will be the errors reported by the Management Server, if any.

# 4

# Adding Additional Management Servers

With its three-tiered architecture, Oracle Enterprise Manager is more scalable than ever in maintaining performance and automating routine tasks in rapidly growing, distributed environments.

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

Multiple Oracle Management Servers provide fault tolerance for each other. If an Oracle Management Server fails, the other Management Servers continue to perform and operate. The clients that registered with the failed Management Server can immediately log in again, registering with any of the other Management Servers administering 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.

To improve performance when the number of managed nodes increases, Oracle recommends either (1) adding one Management Server per 50 nodes managed or (2) increasing CPU capacity on the Management Server machine/s.

This chapter describes how to set up or add a Management Server to manage an already existing repository.

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

# Installing an Additional Management Server

You must install the additional Oracle Management Server from the Oracle Server CD-ROM on any machine where there are no other Management Servers installed. 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 2-4.

## 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 administer.

**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; if they are missing, the Management Server prompts you for the 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.

> **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 the Intelligent Agent

Oracle Intelligent Agents are processes running on remote nodes in the network. Oracle Enterprise Manager uses Intelligent Agents to discover services on the node where it resides and to run jobs, monitor events, and collect data on remote sites. 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. 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

- 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.wri` 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

This section contains information on controlling the Intelligent Agent through the Windows NT 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

To start the Intelligent Agent on Windows NT, 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

To stop the Intelligent Agent on Windows NT, 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

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 to see 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. It is not supported. Use the `net` command for Windows NT 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 |

> **Note:** You must always start and stop the Intelligent Agent as the same operating system user.

# 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

- General Setup

# 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.

   - 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 6-6 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 the 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.

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 Management Server, the Intelligent Agent and the manageable services on the machine where the Management Server is running are automatically discovered if the Intelligent Agent is running. The Console Navigator then displays all the discovered services on the Management Server machine.

To discover a remote node:

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. 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.

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

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

## Creating Administrator Accounts

Enterprise Manager Release 2.1 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 or standalone application.

The installation of Enterprise Manager creates a single default super administrator account. This super administrator account name is sysman, and the initial password is oem_temp.

The super administrator sysman has the ability to create administrators using the Manage Administrators item in the System menu. In addition to a username and password, each account can be tagged as a "super administrator" account or a "regular" account.

Super administrators automatically have full privileges for all objects. Most super administrators also have a separate account for daily operations but use their super administrator account for special operations only available to super administrator, such as starting and stopping the management server or creating new Enterprise Manager administrators.

> **Note:** Using the sysman account for routine administration tasks is not recommended.

Regular Administrators can have full access to all other Console operations but they will only see or be able to modify those jobs, events, or groups to which they have access.

See 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 2.1, 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 supported on the following operating systems: Windows NT, Windows 95, and Windows 98

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 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 Management (integrated application) | X | |
| Oracle Application Manager (integrated application) | X | |

> **Note:** Oracle Parallel Server Management and Oracle Application Manager are the only integrated applications which support 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.

1. Install the web browser.

   Supported web browsers are listed below:

   - Netscape Navigator® 4.6 on Windows NT, Windows 95, and Windows 98

   - Microsoft® Internet Explorer 5.0 on Windows NT, Windows 95, and Windows 98

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

2. Install the Oracle Enterprise Manager Web Site.

   The Oracle Enterprise Manager Web Site is installed:

   - By default with the top level component Oracle8*i* Management Infrastructure and its install type Oracle Management Server. In this case, the Oracle Application Server Listener is installed automatically.

   - Through the custom install type of the top level component, Oracle8*i* Enterprise Edition or Oracle8*i* Management Infrastructure. Through the custom install, the Oracle Application Server Listener is selected by default, but you can deselect it and use a different webserver if you want.

   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.

**3.** Install and configure the webserver.

If you have installed the Oracle Application Server Listener, the web site is automatically configured. Once the web site and listener are installed, you only need to enter the URL.

You can start the Oracle Application Server Listener for both Windows NT and Solaris from the command line using the command:

```
emwebsite start
```

You can stop the Oracle Application Server Listener for both Windows NT and Solaris from the command line using the command:

```
emwebsite stop
```

If you want to use another webserver, the supported webservers are listed below:

- Apache 1.3.9 on Solaris

- Oracle Application Server 4.0.8 on Windows NT and Solaris

- Internet Information Server (IIS) 4.0 on Windows NT

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

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 C-16.

---

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

```
http://<webserver hostname>:<port number>/
oem_webstage/EMWebSite.html.
```

For example:

```
http://jfox-sun:3339/oem_webstage/EMWebSite.html
```

> **Note:** The Oracle Application Server Listener port number is 3339.

An index page appears, allowing 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.

If you are entering the URL for the first time, you must install Oracle JInitiator Release 1.1.7 or higher plug-in.

- 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, 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, enter the URL:
> `http://<webserver hostname>:<port number>/oem_webstage/java-plugin/`
> `install_win32.html`.

- On Microsoft Internet Explorer, you must enter the following URL to install the plug-in:

  `http://<webserver hostname>:<port number>/`
  `oem_webstage/java-plugin/install_win32.html`

3. 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.

   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.

4. 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.

> **Note:** If you are not able to connect to the Management Server specified, you must return to the 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.

5. Bookmark the URL.

## General Setup

This section includes information about setting up the Console for jobs, email and paging notification, and remote SYSDBA management:

- Setting Up the Job System
- Setting Up Email Notification
- Configuring and Starting the Paging Service
- Configuring the Console If Using a Dialup Line to Connect to the Management Server
- Configuring a Remote Database for Backup or SYSDBA Administration

## Setting Up the Job System

This section contains the following topics:

- Creating a Windows NT User Account for Running Jobs

- Setting Up Preferred Credentials for Managed Services

### Creating a Windows NT User Account for Running Jobs

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

- an NT 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 NT 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 6-16.

- the user must have read/write permissions to ORACLE_HOME\NET80 directory as well as write permissions to the TEMP directory or the ORACLE_HOME directory.

Creating a Windows NT 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 run jobs on the node.

---

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

**Creating a New Windows NT User Account**  To create a new Windows NT user account on the Windows NT 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 Start Menu. See the Windows NT 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" is not used for the user name.

3.  Under the Policies menu of the User Manager NT 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 NT 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 NT 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 NT Domain User as Your Intelligent Agent User

> **Note:** The NT 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 NT 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 for 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.

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 many events that it runs. If you have not set the preferred credentials correctly, jobs and events may fail.

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

# Setting Up Email Notification

### Setting Up the SMTP Gateway

Oracle Enterprise Manager supports sending email notifications using SMTP. To allow administrators to use email for notification, you 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, 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 you do not specify the above information, when an 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.

Complete this property sheet page to set up paging and email notification methods for the administrator. You can also send a test page or email with the Test options on this page.

**Paging Information**

| Item | Description |
|------|-------------|
| Carrier: | After a node containing paging services has been discovered, select the name of the paging carrier service from the pull-down list. |
| Pin: | Enter the paging personal identification number (PIN) for your page. A PIN is only required for alphanumeric pagers, and not for numeric pagers. This entry is required for the GSM, TAP, and FLEXTD protocols for alphanumeric pagers. For GSM, the PIN is the actual phone number of the administrator. For numeric pagers, enter the pager number. |
| Test: | To test the validity of the paging information, select the paging service from the pull-down menu, enter the PIN number (if needed), and click the Test button. A message appears informing you of the status of the page.If the test fails, check the paging services configuration file (`paging.cfg`). Refer to "Configuring and Starting the Paging Service" on page 6-20 for explicit instructions on paging setup and configuration. You can also view the paging trace log file in the `ORACLE_HOME\sysman\log` directory if tracing is enabled for paging on the machine which has the Intelligent Agent Paging Extensions. |

**Email Parameters**

| Item | Description |
|------|-------------|
| Receiver's Mail: | Enter the email address of the administrator to whom email notification will be sent. |
| Test: | Click the Test button to check the validity of the mail information. A message displays to inform you of the status of the test email. If the test fails, check the email configuration. If tracing has been enabled for the Management Server, you can also view the mail trace log file in the `ORACLE_HOME\sysman\log` directory. |
| Subject Prefix: | Enter an optional prefix that is added to the email notifications. This allows you to further differentiate notifications from the Enterprise Manager Console that are sent to administrators. |

**Event Notification Filter**

The Event Notification Filter allows you to filter email/pages sent to administrators according to the event's level of severity. Filtering is set at the user level through Administrator Preferences dialog. You can select any combination of the following levels of event severity. 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 administrators according to job status. As with the Event Notification Filter, filtering is set at the user level through the Administrator Preferences dialog. Selecting all job statuses provides no filtering.

- Start

- Complete

- Fail

- Delete (Job removed)

## Configuring and Starting the Paging Service

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

> **Note:**  Paging Service Agent Extensions are only supported on Windows NT.

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) and

- GSM (Global System for Mobile Communications)

- FLEXTD

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

---

3. Install the Paging Service Agent Extensions. Refer to the installation guide provided with the database release for information.

4. The installation of the Paging Service Agent Extensions provides a template configuration file, `paging.cfg.template`, located in the `ORACLE_HOME\sysman\config` directory. Review this template, which contains detailed instructions and examples on how to define the configuration

properties specific to your carrier and service provider for configuring your paging service.

5. Copy the `paging.cfg.template` file to the `paging.cfg` file, which is also located in the `ORACLE_HOME\sysman\config` directory. This is the Oracle Home of the database where the Intelligent Agent is installed. Oracle recommends copying this file (not renaming it) in order to retain paging configuration 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.

6. Based on the instructions in the `paging.cfg.template` file, modify the `paging.cfg` file according to your paging needs and save it. Refer to the Table 6–1, "Paging Configuration Properties" for summary information about the paging configuration properties. The `paging.cfg.template` file contains 14 properties, but not all of these properties require a value and certain properties are only applicable to certain types of pagers (numeric or alphanumeric).

7. Restart the Intelligent Agent.

   a. Go to Start > Settings > Control Panel > Services.

   b. Select the Oracle<ORACLE_HOME_NAME>Agent service, click Stop and then click Start.

   > **Note:** Whenever paging configuration changes are made (additions or deletions), the Intelligent Agent must be restarted.

On the machine from which you run the Management Server, follow these instructions:

8. Ensure the Oracle Management Server is running. If it is not running, you must start it.

   a. Go to Start > Settings > Control Panel > Services.

   b. Select the Oracle<ORACLE_HOME_NAME>ManagementServer service and click Start.

> **Note:** Configuring the paging service is independent of the management server. Only when you want to start the paging service do you require that the management server be up and running.

*Table 6–1   Paging Configuration Properties*

| Property | Can be set for Numeric Pagers | Can be set for Alphanumeric Pagers | Required | Comments |
|---|---|---|---|---|
| CARRIER_NAMES | Yes | Yes | Yes | Value cannot contain spaces |
| PAGER_TYPE | Yes | Yes | Yes | Value can be either NUMERIC or ALPHANUMERIC |
| COUNTRY | Yes | Yes | Yes | If dialing a DBA in the same country as the paging carrier, set value equal to that country's country code.<br><br>For example, if dialing a DBA in the United States and the paging carrier is in the United States, set value =1.<br><br>If dialing a DBA in India and the paging carrier is in India, set value =91.<br><br>If dialing a DBA in a different country as the paging carrier, you need to obtain not only the DBA's country code but also the code for dialing out of the paging carrier's country. |

*Table 6–1   Paging Configuration Properties(Cont.)*

| Property | Can be set for Numeric Pagers | Can be set for Alphanumeric Pagers | Required | Comments |
|---|---|---|---|---|
| COUNTRY (cont.) | | | | For example, if dialing a DBA in the United States (country code 1) and the paging carrier is in Brazil (use 00 to dial out), you would set value =001. |
| | | | | If dialing a DBA in Spain (country code 34) and the paging carrier is in Germany (use 00 to dial out), you would set value =0034. |
| | | | | Value cannot contain any extra punctuation or spaces. |
| AREA_CODE | Yes | Yes | Yes | Set value to the DBA's area code. |
| | | | | Value cannot contain any extra punctuation, such as parentheses ( '()' ). |
| PHONE_NUMBER | Yes | Yes | Yes | Set value to the number that needs to be dialed to send a page. |
| | | | | This number can be either the number of the paging carrier or the direct number to the pager itself (the latter case would not have a PIN). |
| | | | | Value cannot contain any extra punctuation, such as dashes ( '-' ), periods ( '.' ) or spaces. |

*Table 6–1   Paging Configuration Properties(Cont.)*

| Property | Can be set for Numeric Pagers | Can be set for Alphanumeric Pagers | Required | Comments |
|---|---|---|---|---|
| TIMEOUT | Yes | Yes | No | Total time taken for a page to complete. Numeric paging will timeout after the specified number of seconds in the timeout property if the page has not been completely sent. |
| | | | | Timeout must always be greater than the time it takes to send a page. |
| | | | | Do not set the timeout to a very high value as numeric pagers will wait for "timeout" number of seconds before they terminate. |
| | | | | If value is left blank, the paging service will use the modem's default setting. |
| | | | | Oracle recommends setting the value = 60. |
| CONNECTION_DELAY | Yes | No | No | Set value to the number of pauses that will be established on the phone line before the page message is sent. |
| | | | | The duration of a pause is modem-specific and typically used when the service carrier is not fast enough to receive a message. |

*Table 6–1    Paging Configuration Properties(Cont.)*

| Property | Can be set for Numeric Pagers | Can be set for Alphanumeric Pagers | Required | Comments |
|---|---|---|---|---|
| SUFFIX | Yes | No | Yes | Set value if your paging carrier has a voice prompted message. |
| | | | | Use commas as pauses to indicate the time to wait before choosing an option. |
| | | | | For example, if you want to establish four pauses and press 1 before sending the message, you set value =,,,,1 |
| | | | | If the voice prompted message requires pressing pound after option selection to start sending the message, then you set value =,,,1# |
| PROTOCOL | No | Yes | Yes | Value can be either TAP, FLEXTD, or GSM |
| OEM.MANAGEMENT_SERVER | Yes | Yes | No | Set value only if using a remote Management Server. |
| | | | | Enter the name of the machine where your Management Server is running. This is the Management Server you log in to. |
| | | | | OEM.MANAGEMENT _SERVER= <oms-hostname> |

*Table 6–1   Paging Configuration Properties(Cont.)*

| Property | Can be set for Numeric Pagers | Can be set for Alphanumeric Pagers | Required | Comments |
|---|---|---|---|---|
| OEM.MANAGEMENT_SERVER (cont.) | | | | **Notes on Multiple Management Servers:** |
| | | | | 1. You cannot configure multiple management servers in the paging.cfg file. When paging starts up, it will only read the second one if you have entered two management servers. |
| | | | | 2. Multiple management servers use the same paging service regardless of what is in the paging.cfg file because that information is stored in the repository. |
| | | | | 3. If the management server listed in the paging.cfg were to fail in a dual-management-server environment, paging will continue without needing to be restarted because it bound to the listed management server at start up. |

*Table 6–1    Paging Configuration Properties(Cont.)*

| Property | Can be set for Numeric Pagers | Can be set for Alphanumeric Pagers | Required | Comments |
| --- | --- | --- | --- | --- |
| OEM.MANAGEMENT_SERVER (cont.) | | | | 4. If the management server listed in the paging.cfg were to fail in a dual-management-server environment and if at some point the other management server also fails (or the paging service fails), the paging service will not start until you have listed the second management server in the paging.cfg file, assuming that the first management server also was not restarted at some point before the failure. |
| OEM.MANAGEMENT_SERVER.BOOTPORT | Yes | Yes | No | Set value only if not using default value of 7771.<br><br>Value needs to be an integer. |

*Table 6–1   Paging Configuration Properties(Cont.)*

| Property | Can be set for Numeric Pagers | Can be set for Alphanumeric Pagers | Required | Comments |
|---|---|---|---|---|
| TRACING.ENABLED | Yes | Yes | No | 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. |
| | | | | Value can be either TRUE or FALSE. |
| | | | | If value =TRUE then you must specify a value for the property TRACEFILENAME and a value for the property TRACING.LEVEL. |
| | | | | If value =FALSE then you need not specify values for TRACEFILENAME and TRACING.LEVEL. |
| TRACING.LEVEL | Yes | Yes | No | 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 (admin level which collects critical, error, and warning messages) or 2 (level which collects maximum trace information). |

*Table 6–1   Paging Configuration Properties(Cont.)*

| Property | Can be set for Numeric Pagers | Can be set for Alphanumeric Pagers | Required | Comments |
|---|---|---|---|---|
| TRACEFILENAME | Yes | Yes | No | Set value for where to write tracing output if tracing is enabled. |
| | | | | Oracle recommends setting the value =PAGING_LOG.TRC. |
| | | | | By default, this file is located in the Intelligent Agent's ORACLE_HOME\ SYSMAN\LOG\ directory. |

> **Note:**   You cannot leave the COUNTRY and AREA_CODE property entries blank even if the paging service and the DBA are in the same country or if the paging service and the DBA are in the same area code. If you leave the entries blank, paging notification will not function.

**Example 1**

For example, if you have and/or want the following:

- numeric paging

- paging service should register with a remote Oracle Management Server on a non-default boot port of 7774

- DBA located in Australia (country code 61)

- paging service located in New Zealand (use 00 to dial out of country)

- DBA's pager number - with area code - is (800) 555-1234

- paging service should establish four pauses before sending the page message

- paging service takes 60 seconds to send a page to the paging carrier

- paging carrier has voice prompted message and the paging service should choose option 1 after four pauses

- tracing not enabled

Your `PAGING.CFG` file would look like the following:

```
CARRIER_NAMES=CARRIER_NUMERIC_PAGER
OEM.MANAGEMENT_SERVER=nsulliva.us.oracle.com
OEM.MANAGEMENT_SERVER.BOOTPORT=7774
CARRIER_NUMERIC_PAGER.COUNTRY=0061
CARRIER_NUMERIC_PAGER.AREA_CODE=800
CARRIER_NUMERIC_PAGER.PHONE_NUMBER=5551234
CARRIER_NUMERIC_PAGER.CONNECTION_DELAY=4
CARRIER_NUMERIC_PAGER.TIMEOUT=60
CARRIER_NUMERIC_PAGER.PAGER_TYPE=NUMERIC
CARRIER_NUMERIC_PAGER.SUFFIX=,,,,1
CARRIER_NUMERIC_PAGER.TRACING.ENABLED=FALSE
```

**Example 2**

For example, if you have and/or want the following:

- alphanumeric pager with GSM protocol

- DBA located in Norway (country code 47)

- paging service located in Sweden (use 009 to dial out of country)

- DBA's pager number - with area code - is (800) 666-1234

- paging service takes 75 seconds to send a page to the paging carrier

- tracing enabled to the maximum level and to write to PAGINGLOG.TRC file

Your PAGING.CFG file would look like the following:

```
CARRIER_NAMES=CARRIER_ALPHANUMERIC_PAGER
CARRIER_ALPHANUMERIC_PAGER.COUNTRY=00947
CARRIER_ALPHANUMERIC_PAGER.AREA_CODE=800
CARRIER_ALPHANUMERIC_PAGER.PHONE_NUMBER=6661234
CARRIER_ALPHANUMERIC_PAGER.TIMEOUT=75
CARRIER_ALPHANUMERIC_PAGER.PAGER_TYPE=ALPHANUMERIC
CARRIER_ALPHANUMERIC_PAGER.PROTOCOL=GSM
OEM.TRACING.ENABLED=TRUE
OEM.TRACING.LEVEL=2
TRACEFILENAME=PAGINGLOG.TRC
```

**Example 3**

If you have the following in your modem settings:

- Outside line: 5 for local

- Outside line: 9 for long distance

- Area Code: 650

- Location: USA

Your PAGING.CFG file should have the following:

```
COUNTRY=1
AREA_CODE=650
PHONE_NUMBER=6380899
```

The number dialed will be 5 6380899.

If in the modem settings your area code was 210, the number dialed would be 9 1 650 6380899.

The "1" dialed for long distance is automatically computed based on the area code and country settings specified in control panel -> modem -> dialing properties.

> **Note:** Example 3 is not a complete example. It only shows how to set the COUNTRY, AREA_CODE, and PHONE_NUMBER.

**Example 4**

For example, if you have and/or want the following:

■ numeric pager

■ DBA located in the US (country code 1)

■ paging service located in the US

■ DBA's pager number - with area code - is (650) 645-8989

■ paging service should establish 4 pauses before sending the page message

■ paging service has voice prompted message and the paging service should choose option 1 after 4 pauses, then choose option 3 after 5 pauses.

```
CARRIER_NAMES=SERVICE1
PAGER_TYPE=NUMERIC
SERVICE1.SUFFIX=,,,,1#,,,3#
SERVICE1.CONNECTION_DELAY=4
SERVICE1.COUNTRY=1
SERVICE1.AREA_CODE=650
SERVICE1.PHONE_NUMBER=6458989
```

The above example causes the following number to be dialed:

```
16506458989 , , , , 1# , , , 3# , , , , 123456
<--number--><-------suffix----><|><--message-->
                            connection Delay
```

> **Note:** Example 4 is not a complete example and does not include all required properties. You must add all necessary properties.

## Starting the Paging Service

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

1. 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
   ```

On the machine from which you run the Enterprise Manager Console, follow these instructions:

2. Log on to the Console.

3. Discover the Node on which you configured the paging service or refresh discovery for that Node. The Paging Service should then appear underneath the discovered or refreshed Node as well as under a new Paging Service folder.

   See the *Oracle Enterprise Manager Administrator's Guide* for instructions on how to perform discovery.

4. Set paging notification preferences. Each administrator who wants paging notification must follow these steps.

   a. Within the Console go to System > Preferences > Notification.

   b. Select a paging service Carrier from the drop down list. What is listed here depends on what was set in the PAGING.CFG file on the Intelligent Agent machine.

   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 Test.

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

5. Set administrator notification schedule. Each administrator who wants paging notification must follow these steps.

    **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.

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

### 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 NT Services Control Panel.

You can also stop paging service by typing

```
oemctrl stop paging
```

### Paging Status Codes for Numeric Pages

Numeric pages need to be interpreted as follows:

For job notifications, you will receive a 6 digit number. The first 3 digits indicate the job-id. The last 3 digits indicate job status.

For event notifications you will receive the event ID with the status code.

The job and event IDs are internal numbers not shown on the Console.

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

If JJJ= job id then,

```
JJJ100 => job started for job# JJJ
JJJ200 => job completed for job# JJJ
JJJ300 => job failed for job# JJJ
```

For example, if 001100 is displayed on your numeric pager, then you know that job id 001 just started. If 001300 appears, then you know job id 001 just failed.

If EE= event ID then,

```
EE500 => event cleared for event # EE
```

For example, if 7500 is displayed, you know that event number 7 had a status change and the status is now cleared.

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

> **Note:** DHCP is not supported for Oracle Enterprise Manager on nodes running the Management Server or the Intelligent Agent. It is supported only on 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 NT, Windows 95, Windows 98) to the application (Console).

In order that the operating system 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. Select Control Panel -> Network

2. Select Protocols

3. Select TCP-IP Protocol-> Properties

**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.

1. Select "Obtain an IP address from a DHCP Server."

2. Apply your changes.

3. Configure the listener.ora file with the new dynamic IP address obtained by the machine. You must add the following entry:

```
(ADDRESS=
     (PROTOCOL= TCP)
      (HOST= dynamic host name)
      (Port= 1521)
)
```

---

**Note:** The listener.ora file must be configured when the repository is on the dialup line.

---

4. 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 (NT)

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

   ```
   $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.

## Server Side (UNIX)

**1.** Login as ORACLE and set your environment variables.

```
setenv ORACLE_HOME your_oracle_home
setenv ORACLE_SID your_oracle_sid
```

> **Note:** This example assumes that you have set up your database as ORACLE.

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

```
cd $ORACLE_HOME/dbs
```

**3.** Run the ORAPWD executable to create a new password file.`$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.

**4.** Edit the *init.ora* file. Add or change the following parameter `remote_login_passwordfile=exclusive` in the *init.ora* file.

**5.** 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
```

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

# 7

# Migrating a Release 1.x Repository to a Release 2.1 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 2.1 repository schema.

> **Note:** Migration requires that you first create a Release 2.1 repository using the Enterprise Manager Configuration Assistant. Migration is performed from a Release 1.x repository into an already existing Release 2.1 repository.

An Oracle Enterprise Manager Release 1.x repository schema is not the same as an Oracle Enterprise Manager "shared" Release 2.1 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 2.1, administrators have accounts within a single shared repository schema, and all individual preferences are stored in the administrator's account.

> **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 2.1 repository:

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

> **Note:** The Migration Assistant only runs on Windows NT.

# 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 2.1 environment can be recovered in the event of an unexpected failure.

> **Note:** If you perform any work with Release 2.1 after you have fully migrated your Release 1.x repository to Release 2.1, 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 2.1 is supported only if you perform the complete set of pre-migration steps and you do not begin work in the Release 2.1 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 2.1 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

4. Confirming a Successful Migration

# How the Differences Between Release 1.x and Release 2.1 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 7-23 for a comprehensive list of the Release 1.x objects and whether or not they can be migrated to Release 2.1.

### Repository

The Oracle Enterprise Manager Migration Assistant migrates Release 1.6.5 repositories to Release 2.1. 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 2.1. 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 2.1 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 2.1, 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 2.1, a separate job or event object will appear in the Release 2.1 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 2.1 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 2.1. **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 2.1 job library, but are not automatically submitted. The Release 2.1 fixit jobs must be resubmitted from the Release 2.1 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 2.1 event library and Release 2.1 job library respectively (not submitted). After migration, you must edit the Release 2.1 event in the Release 2.1 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 2.1 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 2.1 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 2.1 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 2.1

"Destination Type" of this job to match the "Destination Type" of the Release 2.1 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 2.1 architecture, an "event" is the collection of individual tests. The Release 2.1 "event" is similar to the Release 1.x "event set." In Release 2.1, 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 2.1 as a separate event.

■ For Release 2.1 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 2.1 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 2.1 Event.

**Frequency**

Frequency options for jobs and events in Release 2.1 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 2.1 must be submitted or scheduled again in the Release 2.1 environment. For example: Release 2.1 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 2.1 repository, but each must be associated with its own unique Release 2.1 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 2.1 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 2.1 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 2.1 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 2.1 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 2.1 Administrator. Each user must define a new paging schedule in the Release 2.1 environment.

- Paging configuration information will not be migrated to Release 2.1. Each user must define new paging confirmation information in the Release 2.1 environment.

### Email Services

- Schedule information for a Release 1.x user will not be migrated to a Release 2.1 Administrator. Each user must define a new email schedule in the Release 2.1 environment.

- Email configuration information will not be migrated to Release 2.1. Each user must define new email confirmation information in the Release 2.1 environment.

# Preparing for Repository Migration

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

- Install Oracle Enterprise Manager Release 2.1. Refer to the installation guide provided with the database release for detailed information.

- Create New Release 2.1 Administrators

- Refresh All Services in the Release 1.x Console

- Shut Down the Release 1.x Console and the Release 2.1 Management Server

- Check the Information Currently in the Release 1.x Repository

- Back Up the Existing Release 1.x Repository

## Create New Release 2.1 Administrators

Using the Migration Assistant, you can migrate a single Release 1.x repository to a single Release 2.1 repository or migrate multiple Release 1.x repositories to a single Release 2.1 repository.

For both cases, you must first create the new administrators which will have Release 1.x repository information migrated to their Release 2.1 account.

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

> **Note:** If you do not create new Release 2.1 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 2.1.

To create new administrators, follow the steps below:

1. Start the Management Server.

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

2. Log into the Oracle Enterprise Manager Console Release 2.1 using the SYSMAN account. See 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, see the Console chapter in 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 2.1 Management Server

Shut down the Release 1.x console and the Management Server, if running. The remote 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 2.1.

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 2.1 environment can be recovered in the event of an unexpected failure, you should backup both the Release 1.x repository and the Release 2.1 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.

```
exp 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.



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.
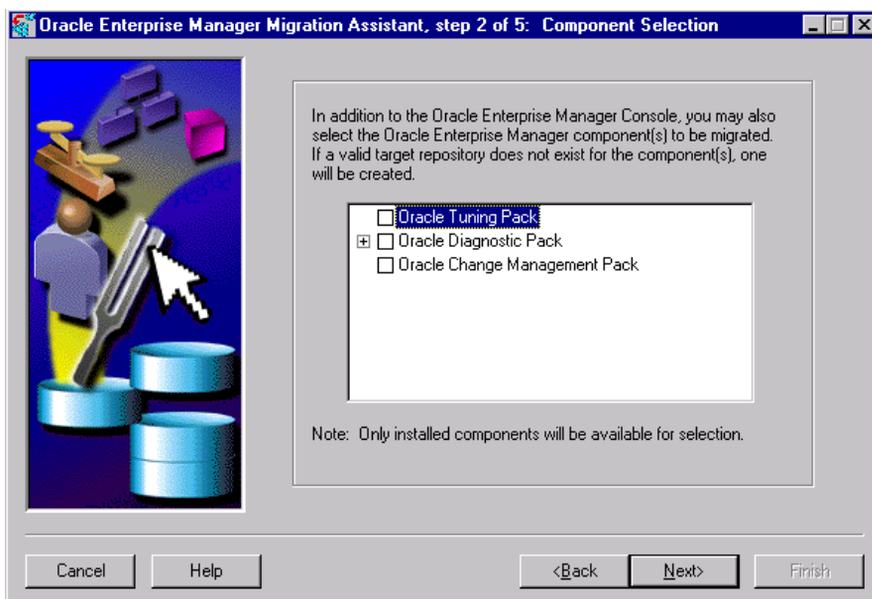


After you have made your selection, press the Next button to continue.

## Step 3 "Source Repository Login"

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



*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 2.1 repository.
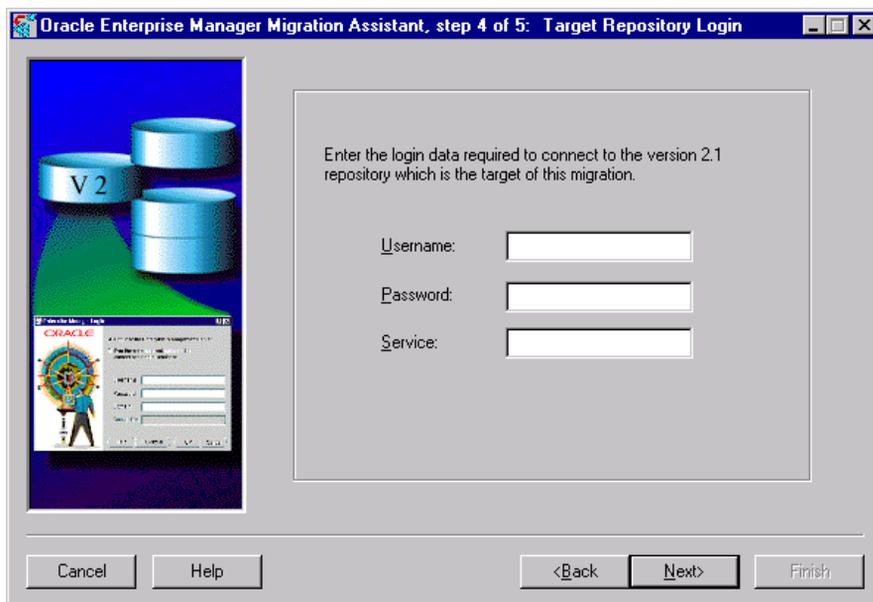


*Username and Password:* The Oracle Enterprise Manager username must be the same as the username under which the Release 2.1 repository is created. In other words, these are the repository schema owner's credentials. The Oracle Enterprise Manager Release 2.1 repository is an Oracle database schema. The 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 2.1 repository, proceed to Step 5 "Administrator Data" on page 7-17. The Oracle Enterprise Manager Migration Assistant also informs you through a dialog if the information to be migrated already exists in the Release 2.1 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 2.1 administrator where the information will be migrated.

---

**Note:** If you have not created additional Release 2.1 administrator accounts, all object migrated will be migrated to the SYSMAN administrator account.

---
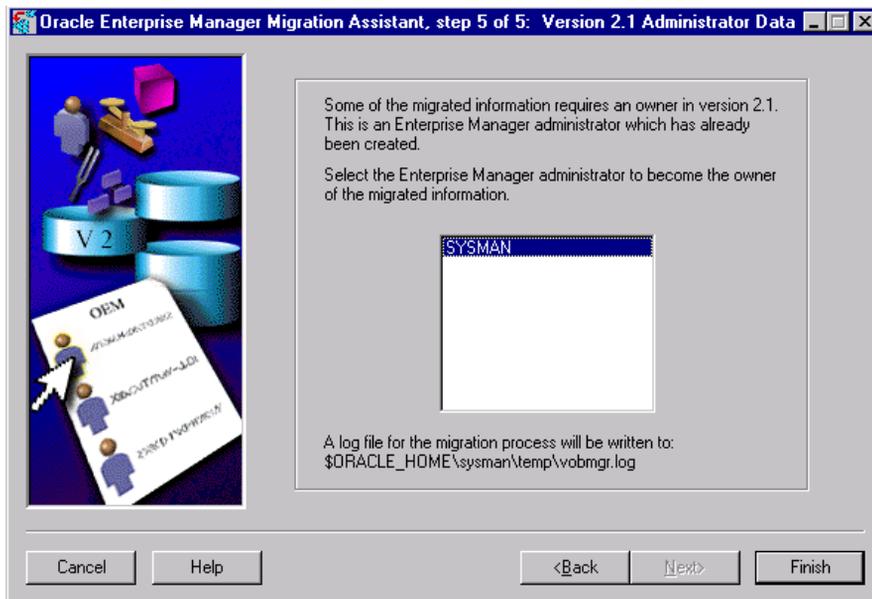


Click Finish to initiate the migration process or click Back to return to previous pages to change the information.

## 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 2.1 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 2.1 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 2.1 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 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 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 2.1 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 2.1 repository.

---

## Confirming a Successful Migration

After the Migration Assistant has moved the Release 1.x repository information into the specified Release 2.1 administrator, login to the Release 2.1 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 2.1 Console navigator to access the database using the migrated credentials.

> **Note:** If the Release 2.1 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 2.1 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 2.1. These need to be taken into account as well. Refer to Release 1.x Objects Reference on page 7-23 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 7-23 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 2.1.

# 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 Release 2 (8.1.6) 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 2.1.

## Release 1.x Objects Which Will Migrate to Release 2.1

The following Release 1.x objects can be migrated to Release 2.1:

**Preferred Credentials**
Username, passwords, and roles are migrated. When migrating multiple Release 1.x repositories to a single Release 2.1 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 2.1 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 2.1 side. All of the Release 1.x group members will migrate individually to Release 2.1. The group will need to be recreated in Release 2.1, 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 discovered targets | |

## Release 1.x Objects Which No Longer Exist

Release 1.x objects which no longer exist in Release 2.1 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:

- Instance Management: Start or shut down a database, edit database initialization parameters, manage resource allocations and users' sessions.

- Security Management: Administer users, privileges, and profiles.

- Schema Management: Create, edit, and examine schema objects.

- Storage Management: Administer tablespaces, datafiles, rollback segments, and redo logs. You can also view controlfile and archive log information.

In previous releases of Enterprise Manager, there were individual database tools (Instance Manager, Schema Manager, Storage Manager, and Security Manager) for performing the above functions. Should you want to continue using these separate independent tools rather than the well-integrated DBA Studio, refer to the installation guide provided with the database release for instructions on installing them.

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.
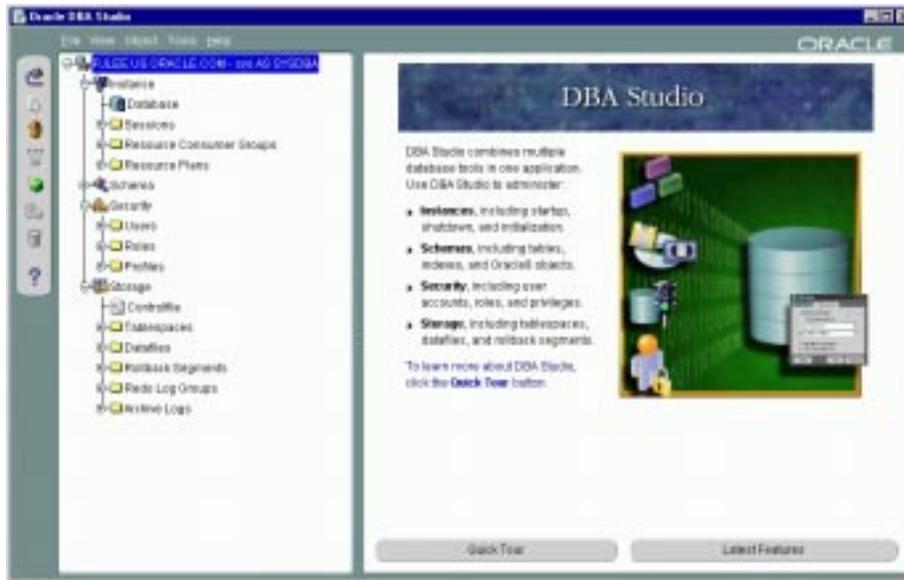
This chapter discusses the topics listed below:

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

# DBA Studio in Standalone or Management Server 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 or groups
- access all databases previously discovered from the Console
- run DBA Studio through a web browser
- use the analyze, backup, and data management wizards

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
- add net service names (the databases you want to manage) to the DBA Studio navigator tree
- connect to the database
- set up local preferred credentials if you want

## 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>-> DBA Management Pack->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.
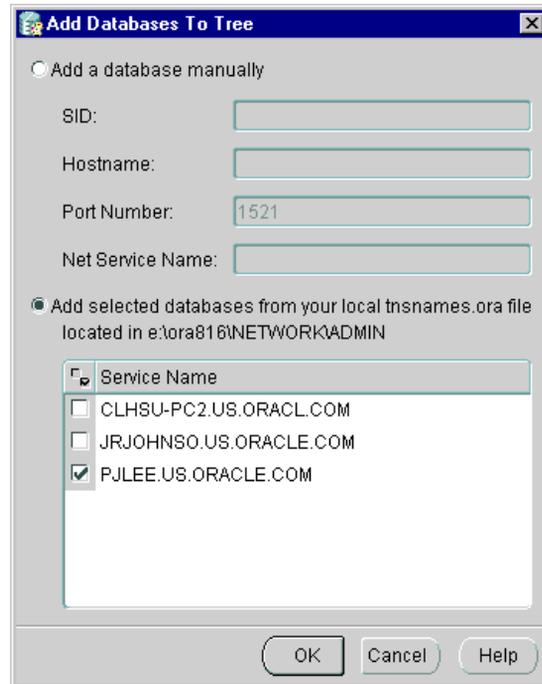


The Add Database To Tree dialog allows you to manually enter the net service names or add them from the local tnsnames.ora file.

**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.

> **Note:** Currently only TCP/IP service names can be manually
> entered.

**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:** 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

- Double-click the database icon in the DBA Studio navigator tree

- Select the Connect item from the File menu.

- Click the Connect icon from the toolbar.

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

**Service Name**
Network service name for the database to which you are connecting.

For example: use a Net8 service name, such as orcl.pjlee-pc, which connects to the orcl database on the pjlee.us.oracle.com machine.

**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 to prevent the file from being used on other machines.

This login information is used when a connection is established for 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 to see 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.



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

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

- set up DBA Studio to connect to a Management Server
- start DBA Studio
- connect to the database

### 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 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 2.1 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 OMS Mode

1. Start DBA Studio.

   - On Windows NT:

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

3. Enter the credentials for the super administrator account:

   **Administrator**: `sysman` or the user 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
- Double-click the database icon in the DBA Studio navigator tree
- Select the Connect item from the File menu.
- Click 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

**Service Name**
Network service name for the database to which you are connecting.

For example: use a Net8 service name, such as orcl.pjlee-pc, which connects to the orcl database on the pjlee.us.oracle.com machine.

**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

## 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.

# A

## Directory Structure

This appendix describes the directory structure that is created when Oracle Enterprise Manager Release 2.1 is installed.

# Directory Structure of Oracle Enterprise Manager Release 2.1

The following directories are created when Oracle Enterprise Manager Release 2.1 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\log
- $ORACLE_HOME\sysman\temp
- $ORACLE_HOME\sysman\ifiles

**$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:

- omsconfig.properties
- clientconfig.properties
- dbapps.cfg

Any other files in this directory must not be altered.

Tracing information for the Oracle Enterprise Manager Release 2.1 components is stored in the omsconfig.properties and clientconfig.properties files.

The dbapps.cfg file contains settings for SQL*Plus worksheet.

The dbapps.cfg is used to specify additional environment variables for SQL*Plus. Also, to run SQL*Plus Worksheet in another NLS language, you must specify additional environment variables in the dbapps.cfg, like you would do in command line sqlplus.

By default, the following is set:

```
SQLPLUS_ENDOFBUFTOKEN=OEM_sqlplus_input_finished
```

### $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\temp
The $ORACLE_HOME\sysman\temp directory contains temporary files that may be created in the course of processing management operations.

### $ORACLE_HOME\sysman\ifiles
When you save init.ora parameters to a file while using Instance Management, the files are saved to the $ORACLE_HOME\sysman\ifiles directory by default.

## 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 format that ships with Enterprise Manager is installed in this directory. PDF formatted documentation is not installed in this directory. Note: For Solaris, the documentation is on a separate CD and is not installed when you install Enterprise Manager.

# B

# Configuration Assistant Operations

The Enterprise Manager Configuration Assistant assists the database administrator with repository creation, removal, upgrade, and configuration parameter maintenance.

Repository creation is described in "Creating a Release 2.1 Repository" on page 2-1.

This appendix discusses:

- how to upgrade a Release 2.0 repository to a Release 2.1 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.

> **Note:**  An Oracle Enterprise Manager Release 1.x repository is not the same as an Oracle Enterprise Manager Release 2.1 repository. A Release 2.1 repository may not coexist with a Release 1.x repository in the same schema.

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 2.1 repository, you will need to perform additional steps using the Enterprise Manager Migration Assistant after creating your Release 2.1 repository. Refer to Chapter 7, "Migrating a Release 1.x Repository to a Release 2.1 Repository" for information about migrating one or more Release 1.x repositories into the shared Release 2.1 repository schema.

# Upgrade a Release 2.0 Repository to a Release 2.1 Repository

> **Note:** If you plan to upgrade your repository from Release 2.0 to Release 2.1, you must first upgrade your products to Release 2.1 before upgrading your repository.
>
> The Oracle Enterprise Manager Configuration Assistant takes an existing repository and upgrades it directly. After the upgrade, the original repository is at the newer version.
>
> It is necessary for all users of the repository to upgrade all their Oracle Enterprise Manager products, including packs, to Release 2.1 on all machines where the software will be used, including, but not necessarily limited to Management Servers. As soon as the repository has been upgraded, all Release 2.0 products will cease to operate against that repository, regardless of where they are running.

 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 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 2-4.

> **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 2-6.

If you log in successfully, the "Select Repository" page appears.

## Step 3 "Select Repository"

If the Enterprise Manager Configuration Assistant detects that Release 2.0 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 2.0 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 see 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.

# 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 2-4.

---

**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 2-6. If you log in successfully, the "Select Repository" page appears.

## Step 3 "Select Repository"

If the Enterprise Manager Configuration Assistant detects that Release 2.1 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 2.1 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 2.1 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 see 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

- change the password that the Management Server uses to log into the repository when it starts

- change the Management Server to use a repository in another database

> **Note:** The Enterprise Manager Configuration Assistant will only set or change configuration parameters for the machine that it is running on.

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 administering 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 administering 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.

For information about starting the Enterprise Manager Configuration Assistant, refer to "Starting the Enterprise Manager Configuration Assistant" on page 2-4.

## 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.

# 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 will not be able to start the Management Server until you have write access to 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

# Troubleshooting

Please check the compatibility matrix in the Oracle Enterprise Manager Readme before installing or using Oracle Enterprise Manager. `emreadme.wri` 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 xii.

## Manuals

Manuals of particular interest are listed below:

- The *Oracle Enterprise Manager Readme* Release 2.1 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 2.1 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, see 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 2.1 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

## 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 `OEM.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.

Note: If LOGGING.MAX_SIZE=0 (unlimited log size), LOGGING.MAX_FILE_CNT will not make sense and hence ignored.

**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:** Logging and tracing of the Backup and Data Management is also specified in the `omsconfig.properties` file:

`OEM.TRACING.ENABLED = TRUE`

`OEM.TRACING.LEVEL = 2`

---

### 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.

```
OEM.TRACING.ENABLED=TRUE
OEM.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 via the OEMAPP script. You cannot perform logging tracing of the client application on STDOUT. In other words, you cannot start the applications using icons or shortcuts if you want to trace them, and redirect the 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->Oracle JInitiator Control Panel 1.1.7+. A window appears. Click the "Show Java Console" checkbox and click Apply. Close the plug-in properties window.

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. If tracing is enabled, the server writes trace statements for all telephone line handling and any success or failure.

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.

Possible values are listed below:

- 5 - user level: collects critical messages and error messages

- 3 - admin level: collects critical, error, and warning messages

- 2 - dev: 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 Intelligent Agent's `ORACLE_HOME\SYSMAN\LOG` directory.

# 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 from the Windows NT Start Menu
- Changing Your Management Server for Client Access
- Setting the Ping Interval

## 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 from the Windows NT Start Menu

If you are starting the Management Server from the Windows NT Start menu and if you have chosen not to store your repository credentials during repository creation, you must enter the repository's user name that was used to create the database user and the password for that user in the Service Startup dialog box when you start the Management Server.

### You Did Not Enter the Repository Credentials in the Service Dialog

If you do not supply the repository's user name and the password in the Service dialog, the Management Server logs a message in the Windows NT Event Log. See Accessing the Windows NT Event Log for more information.

Consequently, the Management Server will not start.

### You Enter the Wrong Credentials in the Service Dialog

If you enter the wrong credentials, the Management Server will not start.

The Management Server log file will contain an error. The Management Server log file, oms.log, is located in the $ORACLE_HOME\sysman\log directory. Check the output to determine the problem. The message will probably say, "invalid login."

No error message will appear on screen; the information is logged in the Windows NT Event Log instead. See Accessing the Windows NT Event Log for more information.

You must restart the Management Server and reenter the correct credentials in the Service dialog for the Management Server to start.

### Accessing the 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.

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 have red octagonal stop signs next to them. These will be the errors reported by the Management Server, if any.

## 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.

## Setting the Ping Interval

In Release 2.1, 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>
```

Note that the interval set determines the interval at which the Management Server tests for node up/down, regardless of what you set in the event which contains a node up/down test.

# Troubleshooting the Paging Service

### Paging Does Not Work

If you have followed the instructions for configuring your paging service and it still does not work, check the following:

- Do all required properties of the `PAGING.CFG` file contain values? See Table 6–1, "Paging Configuration Properties" for more information.

- After configuring your paging service, did you restart the Intelligent Agent?

- Are there multiple entries of the following in the `NMICONF.LST` file located in the Intelligent Agent's `ORACLE_HOME\Network\Agent\Config\` directory? Only one entry should exist. If there are duplicates of this entry, remove all but one:

  ```
  <drive letter>:\<the Intelligent Agent's
  ORACLE_HOME>\network\agent\config\NMIPAGING.TCL
  ```

  For example, if the Intelligent Agent is installed on `F:\Oracle\Ora81`, you should see only one entry for the following:

  ```
  F:\Oracle\Ora81\network\agent\config\NMIPAGING.TCL
  ```

### Registering the Paging Service with a Remote Oracle Management Server

By default paging services are configured to register with a local Management Server using boot port 7771.

However, you must edit the PAGING.CFG file so that the service registers with the remote Management Server and/or registers with the Management Server on a different boot port if the Management Server is:

- remote,

- configured to use a boot port other than the default, or

- remote and configured to use a different boot port.

You must add the following properties to the `PAGING.CFG` file located in the Intelligent Agent's `ORACLE_HOME/sysman/config` directory:

```
OEM.MANAGEMENT_SERVER=<oms-hostname>
OEM.MANAGEMENT_SERVER.BOOTPORT=<integer>
```

Replace `<oms-hostname>` with the hostname of the remote Oracle Management Server and `<integer>` with the boot port the Management Server is using.

### Modifying the Paging Service Information from the Enterprise Manager Console

From the Enterprise Manager Console, you may modify dialing information for your paging service (i.e. country code, area code, phone number and suffix.). You can edit these properties by following the instructions below:

1. Go to the Navigator pane of the Console.

2. Open the Paging Services folder.

3. Right mouse-click on the appropriate paging carrier.

4. Select Edit and the Edit Paging Carrier dialog box appears.

### 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:

The Console hangs after you start the web browser and log into the Console. The following message is displayed in the 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 JInitiator uses browser settings for the proxy.

2. Append the domain name to 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.

**omsconfig.properties file is 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-10 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 2.1 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 2-14 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 C-21 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."

For 8.1.x, 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 increase the size of an existing tablespace.

> **Note:** You do not have to exit from the Configuration Assistant when using DBA Studio's Storage Management to create another tablespace or increase the size of an existing tablespace.

Refer to Appendix D, "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

To use DBA Studio's Storage Management 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>-> DBA Management Pack->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 icon 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

To use DBA Studio's Storage Management 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>-> DBA Management Pack->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 icon 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 5 to 3, 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 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>-> DBA Management Pack->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 icon 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 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.

# D

# 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 <br> ■ save little (if anything) in job history | 4 - 9 MB |
| | | |
| Oracle Diagnostics Pack | ■ collect less than 4 MB of Trace Data <br> ■ use Capacity Planner for a single, small database over a few days | 8 MB |
| | ■ collect between 4 - 20 MB of Trace Data <br> ■ use Capacity Planner for a single, medium-sized database over several months | 30 MB |
| | ■ collect between 20 - 60 MB of Trace Data <br> ■ 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:<br>■ 50 tuned SQL statements<br>■ 5 scoped tuning sessions<br>■ 10 tablespace jobs in job history | less than 15 MB |
| | save between:<br>■ 50 - 150 tuned SQL statements<br>■ 5 - 15 scoped tuning sessions<br>■ 10 - 30 tablespace jobs in job history | 15 - 45 MB |
| | save more than:<br>■ 150 tuned SQL statements<br>■ 15 scoped tuning sessions<br>■ 30 tablespace jobs in job history | more than 90 MB |
| | | |
| Oracle Change Management Pack | ■ for a schema with approximately 500 objects:<br>1 baseline, with 2 saved versions of baseline<br>1 saved comparison<br>1 change plan (propagate the schema) | 10 MB |

| Product | If you... | Then allocate... |
|---|---|---|
| | ■ for a schema with approximately 500 objects | 25 MB |
| | 2 baselines, with 2 saved versions of baseline | |
| | 2 saved comparisons | |
| | ■ 5 change plans | |
| | ■ for a schema with approximately 500 objects | 50 MB |
| | 5 baselines, with 2 saved versions of baseline | |
| | 5 saved comparisons, with 2 versions each | |
| | ■ 10 change plans | |
| | | |
| 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.

# E

# Configuring the Webserver and Directory Mapping

If you are installing the Oracle Enterprise Manager Web Site without the Oracle Application Server Listener that is packaged with Enterprise Manager by default, configure your supported webserver with the instructions below.

- Apache 1.3.9 on Solaris

- Oracle Application Server 4.0.8 on Windows NT and Solaris

- Internet Information Server (IIS) 4.0 on Windows NT

# Apache 1.3.9 on Solaris

1. Install the Enterprise Manager web site without the Oracle Application Server Listener.

2. Install Apache 1.3.9. 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"
   ```

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/"
   ```

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.

You must uncomment the following lines to use server side includes or CGI outside ScriptAliased directories:

```
#
# To use CGI scripts:
AddHandler cgi-script .exe
```

# Oracle Application Server 4.0.8 on Windows NT and Solaris

> **Note:** The steps below do not apply to the Oracle Application Server Listener that is packaged with Enterprise Manager by default; they only apply to the Oracle Application Server that you install separately from Oracle Enterprise Manager.

1. Install the Enterprise Manager web site without the Oracle Application Server Listener.

2. Install Oracle Application Server 4.0.8. Consult your Oracle-Application-Server-specific configuration documentation for detailed information.

3. Invoke your web browser and point to the Oracle Application Server V4.0 administration page at the URL `http://<webserver>:<admin-port>/`

   e.g. `http://myserver.mydomain:8888/`

4. Expand the main section "Website40" site.

5. In the "HTTP Listener" section, associate the virtual directories to the physical directories on the "Directory" page.

| File-system directory | Flag | Virtual Directory |
|---|---|---|
| <drive>:\oem_webstage\ | NR | /oem_webstage/ |
| <drive>:\oem_webstage\cgi-bin\ | CR | /oem_webstage/cgi-bin/ |

6. After setting up the virtual directories, you must stop and restart the corresponding webserver listener.

> **Note:** If you are using Oracle Application Server 4.0.8, you must use Microsoft® Internet Explorer 5.0 or Netscape Navigator® 4.51 or later browsers.
>
> If you attempt to use Microsoft® Internet Explorer 4 with Oracle Application Server 4.0.8, the following error occurs when launching the Console:
>
> exception: Sun.applet.AppletSecurityException: checkpropsaccess.key

# Internet Information Server (IIS) 4.0

1.  Install the Enterprise Manager web site without the Oracle Application Server Listener.

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.  Right-click and choose service properties; then, tab to directories. Click Add.

8.  Enter the name of the virtual directory. For example, `oem_webstage`.

9.  Specify the following settings:

    Alias: `/oem_webstage`

    Path: `c:/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: `c:\oem_webstage\cgi-bin`

    Access: Read, Execute

**13.** Create an additional virtual directory with alias "\oem_webstage\java-plugin" and directory `c:\oem_webstage\java-plugin` with the following settings:

Alias: `java-plugin`

Path: `c\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.

**14.** Verify that the plug-in is installed on the system where you are running your web browser. It is located in the directory `c:\oem_webstage\java-plugin`.

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