Oracle® Enterprise Manager

Configuration Guide

Release 9.0.1

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Oracle Enterprise Manager Configuration Guide, Release 9.0.1

Part No. A88769-01

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Preface

The *Oracle Enterprise Manager Configuration Guide* explains how to configure Oracle® Enterprise Manager Release 9.0.1.

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.

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

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

Intended Audience

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

For general information about the Oracle9*i* and how it works, refer to *Oracle9i Database Concepts*. For information about database administration procedures, refer to the Oracle9*i* documentation set. The Oracle9*i* documentation set contains specific and thorough descriptions of the database administration tasks you can perform with Oracle Enterprise Manager tools. In addition, the Oracle9*i* documentation set provides recommendations on how to administer your database optimally.

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

Structure

This manual contains the following chapters and appendices:

Chapter	Description
Chapter 1, "Introduction"	This chapter provides an overview of the Oracle Enterprise Manager configuration. The introduction contains topics on Oracle Enterprise Manager architecture, deployment strategies, certification, and system and hardware requirements.
Chapter 2, "Standalone"	This chapter will describe configuration requirements for running the Console standalone.
Chapter 3, "Configuring and Controlling the Management Server"	This chapter contains additional configuration tasks that you must perform on the middle tier Management Server machine(s) if you have chosen to deploy the entire Enterprise Manager framework (for example, Console, Management Server, and Intelligent Agents).
Chapter 4, "Configuring the Console when Connected to a Management Server"	This chapter will describe how to configure the Enterprise Manager Console when it is connected to a middle tier Management Server.

Chapter	Description
Chapter 5, "Running Enterprise Manager from a Web Browser"	This chapter contains information on the additional tasks you need to perform to run Enterprise Manager through a web browser.
Chapter 6, "Tuning the Oracle Management Server"	This chapter contains information about tuning the Oracle Management Server.
Appendix A, "Directory Structure"	This appendix describes the directory structure of Oracle Enterprise Manager Release 9i.
Appendix B, "Activating Logging and Tracing"	This appendix contains information about specifying parameters for logging and tracing for Enterprise Manager.
Appendix C, "General Repository Guidelines"	This appendix provides guidelines for determining storage requirements and disk space allocation for your Oracle Enterprise Manager repository.
Appendix D, "Globalization Support"	This appendix lists the languages into which Enterprise Manager has been translated.
Appendix E, "Using Enterprise Manager on Windows 2000"	This appendix contains the difference between using Enterprise Manager on Windows NT and Windows 2000.
Appendix F, "Troubleshooting"	This appendix contains information about possible troubleshooting issues.
Appendix G, "Keyboard Navigation"	This appendix contains non-standard keys.

Documentation Set

The Oracle Enterprise Manager Release 9*i* documentation includes the following:

- The *Oracle Enterprise Manager Readme* Release 9*i* 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 9*i* provides information about configuring the Oracle Enterprise Manager system.
- The *Oracle Enterprise Manager Concepts Guide* Release 9*i* provides an overview of the Enterprise Manager system.
- The *Oracle Enterprise Manager Administrator's Guide* Release 9*i* describes the components and features of the Oracle Enterprise Manager system.
- The *Oracle Intelligent Agent User's Guide* describes how to administer the Oracle Intelligent Agent.
- The *Oracle Enterprise Manager Messages Manual* Release 9*i* contains probable causes and recommended actions for Oracle Enterprise Manager errors.

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

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

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

Related Documents

Related publications are listed below:

- For information on the new features, new options, and enhancements of Oracle9*i*, refer to *Oracle9i Database New Features*. It identifies what is available with each edition of Oracle9*i* (Standard Edition, Enterprise Edition, and Personal Edition). It references the documentation that is available for Oracle9*i* and identifies deprecated or desupported features.
- For information on how the Oracle server functions, *Oracle9i Database Concepts* offers a conceptual foundation for much of the practical information contained in other Oracle server manuals.

- For information on administering the operation of an Oracle database system, refer to the *Oracle9i Database Administrator's Guide*. This guide will contain information for creating Oracle databases, ensuring their smooth operation, and monitoring their use.
- For information on Oracle's SQL commands and functions, refer to the *SQL*Plus User's Guide and Reference*.
- For information on error messages that may appear while using products that are part of Oracle, refer to *Oracle9i Database Error Messages*. Each message listing in the manual contains the message statement, an explanation of the probable cause(s) of the message, and a recommended action.
- For information about Oracle Globalization Technology matters, refer to *Oracle9i Globalization Support Guide*.
- For information about the process of planning and executing migrations, upgrades, and downgrades on the Oracle database system, refer to *Oracle9i Database Migration*.
- For information about ways to enhance Oracle performance by writing and tuning SQL properly, using performance tools, and optimizing instance performance, refer to *Oracle9i Database Performance Guide and Reference*.
- For information on ways to improve Oracle performance by starting with good application design and using statistics to monitor application performance, refer to *Oracle9i Database Performance Methods*.
- For information on how to use the Oracle9*i* utilities for data transfer, data maintenance, and database administration, refer to *Oracle9i Database Utilities*.
- For a basic conceptual overview of Oracle backup and recovery, refer to *Oracle9i Backup and Recovery Concepts*.
- For conceptual and task-oriented information you need to perform backup and recovery procedures using the Recovery Manager utility, refer to *Oracle9i Recovery Manager Reference* and *Oracle9i Recovery Manager User's Guide*.
- For information about the Oracle networking system, refer to your network-specific documentation.

Conventions

The following sections explain the conventions used in this guide.

Examples

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

```
SELECT * FROM emp
```

Examples in this guide follow these case conventions:

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

Command Syntax

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

Documentation Accessibility

Oracle's goal is to make our products, services, and supporting documentation accessible to the disabled community with good usability. To that end, our documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Standards will continue to evolve over time, and Oracle is actively engaged with other market-leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For additional information, visit the Oracle Accessibility Program web site at http://www.oracle.com/accessibility/.

Accessibility of Code Examples in Documentation

JAWS, a Windows screen reader, may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an otherwise empty line; however, JAWS may not always read a line of text that consists solely of a bracket or brace.

1

Introduction

This chapter describes key concepts and requirements associated with deploying Oracle Enterprise Manager and its separately licensable Management Packs:

- Product Architecture
- Deployment Options
- Certifications
- System and Hardware Requirements

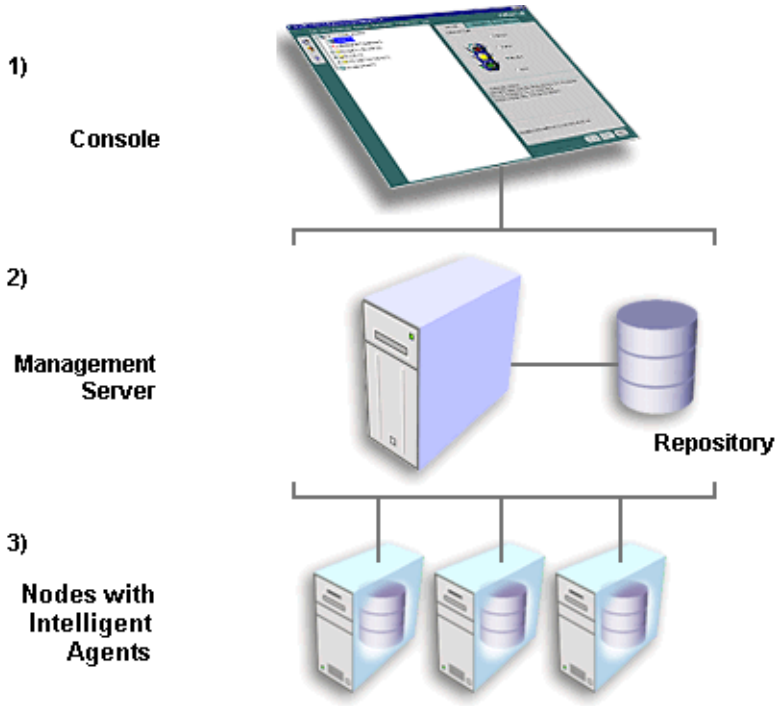
Product Architecture

Oracle Enterprise Manager is Oracle's single, integrated solution for administering and monitoring global enterprises. Enterprise Manager is based upon a lightweight, three-tier architecture that offers flexible deployment options, round-the-clock reliability, and unparalleled scalability. The product's three-tier architecture is comprised of the following:

- Consoles, integrated applications and Management Packs
- Management Server(s) and database repository
- Intelligent Agents

This architecture, which underlies the Enterprise Manager framework, is described in more detail below.

Figure 1–1 Three-Tier Architecture



First Tier: Centralized Consoles

The primary responsibility of first-tier Enterprise Manager clients is to present the user interface to administrators for all their management tasks. Depending on what has been installed and licensed, first tier clients could consist of the following components:

- Consoles

> **Note:** Beginning with Release 9.0, Oracle DBA Studio functionality has been fully integrated within the Console.

- Integrated management applications including:
  - Oracle Forms Server Manager
  - Oracle Policy Manager
  - OLAP Services
  - Oracle Cube Viewer
  - Oracle Directory Manager
  - Oracle Net Manager
  - Oracle Spatial Index Advisor
  - Oracle Data Guard Manager
  - Oracle LogMiner Viewer
  - SQL*Plus Worksheet
  - Oracle Text Manager
- Applications from the following Management Packs:
  - Oracle Diagnostics Pack
    - Oracle Performance Manager
    - Oracle Capacity Planner
    - Oracle TopSessions
    - Oracle Trace

- Oracle Tuning Pack
  - Oracle Expert
  - Oracle Index Tuning Wizard
  - Oracle SQL Analyze
  - Oracle Tablespace Map
  - Reorg Wizard
  - Outline Editor (New in Oracle 9*i*)
  - Outline Management (New in Oracle 9*i*)
- Oracle Change Management Pack
  - Oracle Change Manager
- Oracle Standard Management Pack
  - Oracle Performance Manager
  - Oracle Index Tuning Wizard
  - Oracle Create Baseline
  - Oracle Compare Database Objects
  - Oracle Advanced Database and Node Events
- Oracle Management Pack for Oracle Applications
  - Oracle Performance Manager
  - Oracle Capacity Planner
  - Concurrent Processing Tuning Assistant
  - Oracle Applications Advanced Events
- Oracle Management Pack for SAP R/3
  - Oracle Performance Manager
  - Oracle Capacity Planner
  - Oracle Advanced Events

Note: Oracle Management Pack for SAP R/3 is available on its own CD-ROM in your CD Pack; Pack for SAP R/3 is not installed with the database.

Because these first-tier Consoles and applications depend upon the second-tier Management Server(s) for the bulk of their application logic, these clients are able to run without the overhead and processing burden of housing critical management services.

Second Tier: Central, Scalable and Reliable Oracle Management Servers

The second-tier component of Oracle Enterprise Manager, the Management Server, is the framework engine. The Management Server maintains centralized intelligence and distributed control between clients and managed nodes. It is responsible for all back-end application logic and critical services (i.e. event system, paging and e-mail notifications, reporting, job system, etc.) for maintaining an enterprise.

This middle tier processes requests from first-tier clients, stores the information in a database repository, and distributes tasks for third-tier Intelligent Agents to perform.

The repository also serves as a persistent back-end store where it maintains system data, application data, and the state of managed targets distributed throughout the environment. Data stored in the repository can be shared between any number of administrators accessing one or more Management Servers connected to a single repository.

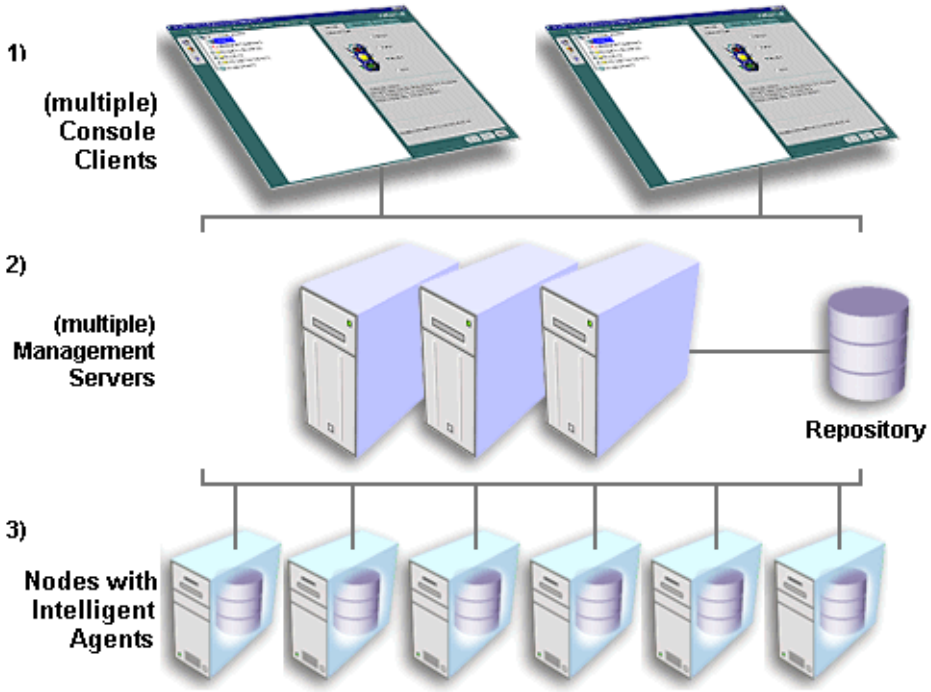
Third Tier: Managed Targets and Autonomous Intelligent Agents

The third tier in the Enterprise Manager framework consists of managed targets and Intelligent Agents. Managed targets (for example, nodes, databases, web servers, application servers, applications, and others) rely on Intelligent Agents to execute tasks given by the Management Server. Once tasks are assigned, autonomous Intelligent Agents will perform the work as scheduled regardless of the state of the managed targets, Management Server, or clients. Examples of such tasks include executing SQL scripts, monitoring available space in a tablespace, performing weekly database backups, monitoring the real-time database physical I/O rate, or monitoring the availability of the application server.

Architectural Extensibility

To offer vital framework functionality the Enterprise Manager architecture can be easily extended on each tier. The first tier allows any number of clients to access one or more second-tier Management Servers. Deploying additional Management Servers provides increased scalability and reliability as well as a choice between grouping the Management Servers together with one repository or dividing them into smaller sets, each set with its own repository. The former configuration allows all administrators to share data contained in the single repository, while the latter offers autonomous units which never interact with each other. Lastly, the number of third-tier managed services and Intelligent Agents can increase with business demands.

Figure 1–2 Architectural Extensibility



Across all three-tiers, the Enterprise Manager architecture establishes the foundation for the robust Enterprise Manager framework.

Deployment Options

Enterprise Manager's three tier architecture enables the highest level of reliability and scalability. However, not all enterprises need to implement Enterprise Manager as a three tier system. That is, not all businesses need to deploy each of the three tiers, nor need all companies deploy each tier on a separate machine. Because of the flexibility of Enterprise Manager's architecture, many deployment options are available. Through analyzing your environment, determining your general administrative needs, and careful planning, you can effectively choose the deployment option best suited for your enterprise. Identified below are the available deployment options.

Client/Server Deployment

A client/server deployment is one where only the Console and management applications are deployed. Neither the middle tier Management Server nor the Intelligent Agent are installed and used. In this standalone configuration, the client connects directly to the managed target and performs administration tasks.

Note: With Enterprise Manager Release 9.0, this type of deployment is only supported against databases. No other target type is currently supported for client/server deployment.

You should use this type of deployment model if the following conditions apply:

- Only Oracle databases need to be administered.
- Sharing of administrative data across multiple administrators is not a requirement.
- Being proactively notified of potential problems is not a requirement.
- Automating repetitive administrative tasks is not a requirement.
- Running the client from within a web browser is not a requirement.

Three Tier Deployment

A three tier deployment involves the installation and configuration of the entire Enterprise Manager framework: Console, Management Server / Repository, and Intelligent Agent.

You should use this type of deployment model when you require the following features:

- Management of several different target types (for example, database, web server, application server, applications, and others)
- Sharing of administrative data across multiple administrators
- Proactive notification of potential problems
- Automation of repetitive administrative tasks
- Running the client from within a web browser

For optimal performance with a three tier deployment of Enterprise Manager, follow these guidelines:

- Avoid cases where the Management Server machine runs out of CPU or RAM for prolonged periods of time. A good strategy for protecting against such resource starvation is to run the Management Server on a machine that is dedicated solely to the Management Server and / or database repository. Thus, competition with other concurrently running applications is not a factor.
- Install the Management Server(s) in the same Local Area Network (LAN) as most of the Enterprise Manager administrators who will be connecting to it. Otherwise, excessive network traffic may occur which could have a significant impact on performance.
- Install a Management Server for every 70 managed nodes in your enterprise that combined contain up to 400 targets. This recommendation is applicable when the Management Server is on a machine which meets the recommended hardware requirements documented on page 1-13. The number of nodes and targets that a single Management Server can manage could change based upon the type of machine on which the Management Server runs. For instance, if the machine on which the Management Server is installed exceeds the specified hardware requirements, then the number of recommended managed nodes and targets could increase.
- Deploy at least two Management Servers in order to provide fault tolerance and load balancing among the Management Servers.

Define Management Regions for large, global deployments or deployments which span a series of WANs and LANs. Management Regions will ensure that cross regional or cross network communication does not occur. In addition, Management Regions allow for mapping nodes across firewall boundaries.

Note: For information on defining Management Regions, a feature introduced with Enterprise Manager release 9i, refer to the *Oracle Enterprise Manager Administrator's Guide*.

Certifications

Regardless of the deployment method selected, the following operating system certifications apply to the various components of Oracle Enterprise Manager Release 9.0:

Table 1–1 Operating System Support

	Windows NT 4.0, Service Pack 6a	Windows 2000	Windows 98	Sun SPARC Solaris 64 bit 2.6, 2.7, 2.8	HP-UX 64 bit 11.0	IBM AIX 64 bit 4.3.3	Compaq Tru64 5.0a, 5.1	Intel Linux 32 bit SuSe 7.1 Kernal 2.4 glib 2.2
Console	x	x	x	x	x	x	x	x
Integrated Applications	x	x	x	x	x	x	x	x
Packs:	x	x	x	x	x	x	x	x
Tuning Pack,								
Diagnostics Pack,								
Change Management Pack,								
Standard Management Pack,								
Management Pack for Oracle Applications								
Management Pack for SAP R/3	x	x	x					
Management Server	x	x		x	x	x	x	x

Table 1–1 Operating System Support

	Windows NT 4.0, Service Pack 6a	Windows 2000	Windows 98	Sun SPARC Solaris 64 bit 2.6, 2.7, 2.8	HP-UX 64 bit 11.0	IBM AIX 64 bit 4.3.3	Compaq Tru64 5.0a, 5.1	Intel Linux 32 bit SuSe 7.1 Kernal 2.4 glib 2.2
Oracle HTTP Server 1.3.12 automatically installed with middle-tier	x	x	x	x	x	x	x	x

Note: For platform-specific details, refer to the given platform's release notes.

The following components of the Packs listed are not available on any UNIX platform:

- SQL Analyze
- Expert
- Index Tuning Wizard
- Trace Data Viewer

If you choose to run Enterprise Manager from a browser, then the following certifications also apply.

Table 1–2 Operating System Support for Web-Enabled Enterprise Manager

	Windows NT 4.0, Service Pack 6a	Windows 2000	Windows 98	Sun SPARC Solaris 2.6, 2.7, 2.8
Thin Client (Oracle HTTP Server 1.3.12)	x	x	x	
Apache 1.3.9 and higher	x	x		x
Microsoft Internet Information Server (IIS) 4.0 and higher	x	x		
Netscape Navigator® 4.7 and higher	x	x	x	
Microsoft® Internet Explorer 5.0 and higher	x	x	x	

Note: Thin Client in the above table refers to the Console, all integrated applications, and all Management Pack applications with the following exceptions: Oracle Management Pack for SAP R/3, Oracle Directory Manager, Oracle Net Manager, Oracle Expert, SQL Analyze, Oracle Index Tuning Wizard, Trace Data Viewer, and Oracle Capacity Planner. These components are not web enabled.

System and Hardware Requirements

After determining how to deploy Enterprise Manager and verifying certifications, ensure that the following system and hardware requirements are satisfied prior to installation and configuration.

Note: Hard disk space requirements for FAT Windows-based operating systems could be as much as four times those indicated below.

Table 1–3 System and Hardware Requirements

Component	Disk Space	Minimal Processor/RAM	Recommended Processor/RAM
Console	510 MB	Pentium 166 / 64 MB SPARC 20 / 128 MB	Pentium 1 266 / 128 MB SPARC Ultra 1 / 128 MB
Oracle Diagnostics Pack	515 MB	Pentium 166 / 64 MB SPARC 20 / 128 MB	Pentium 1 266 / 128 MB SPARC Ultra 1 / 128 MB
Oracle Tuning Pack	511 MB	Pentium 166 / 64 MB SPARC 20 / 128 MB	Pentium 1 266 / 128 MB SPARC Ultra 1 / 128 MB
Oracle Change Management Pack	625 MB	Pentium 166 / 64 MB SPARC 20 / 128 MB	Pentium 1 266 / 128 MB SPARC Ultra 1 / 128 MB
Oracle Management Pack for Oracle Applications	511 MB	Pentium 166 / 64 MB SPARC 20 / 128 MB	Pentium 1 266 / 128 MB SPARC Ultra 1 / 128 MB
Oracle Standard Management Pack	625 MB	Pentium 166 / 64 MB SPARC 20 / 128 MB	Pentium 1 266 / 128 MB SPARC Ultra 1 / 128 MB
Management Server	730 MB	Pentium 266 / 128 MB SPARC Ultra 1 / 128 MB	Pentium II 300 / 256 MB SPARC Ultra 1 / 256 MB
Enterprise Manager Web Site	820 MB	depends on web server	depends on web server

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.

2

Standalone

Beginning with Release 9.0 when you launch the Enterprise Manager Console or various other Enterprise Manager applications, you are prompted to choose between launching the product standalone (i.e. not connecting to the middle tier Management Server) or logging into a Management Server.

Launching the Console standalone allows a single administrator to perform simple database schema, instance, storage, security, and other database tasks by connecting directly to the target database(s).

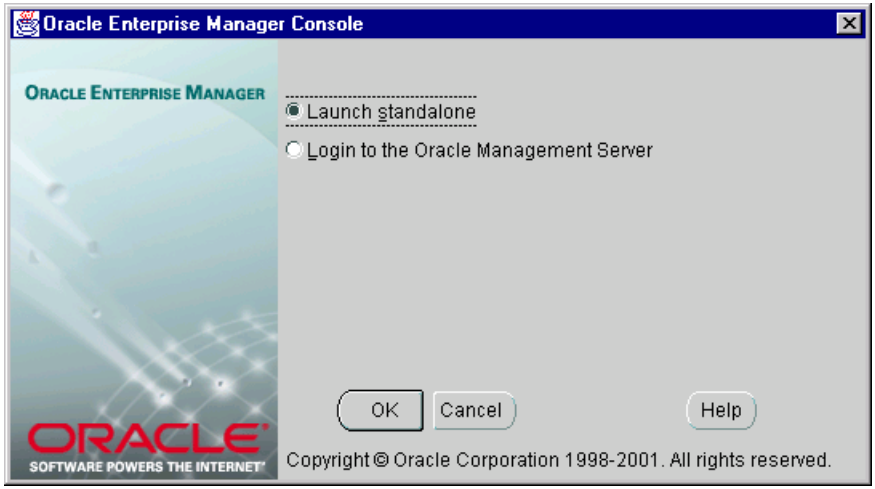
Launching standalone does not require a middle tier Management Server or Intelligent Agents on target machines.

This chapter will describe configuration requirements for running the Console standalone.

Choosing to Launch the Console Standalone

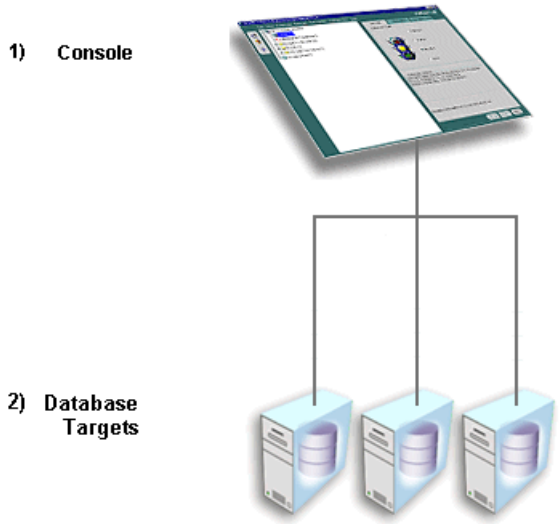
When you launch the Enterprise Manager Console, you are prompted to choose between launching the product standalone or logging into a Management Server.

Figure 2–1 Oracle Enterprise Manager Login



Choose to launch the Console standalone when you want to connect directly to your managed target(s) to perform administration tasks. With Enterprise Manager Release 9.0 the standalone Console only supports connecting directly to database targets, no other target types are currently supported.

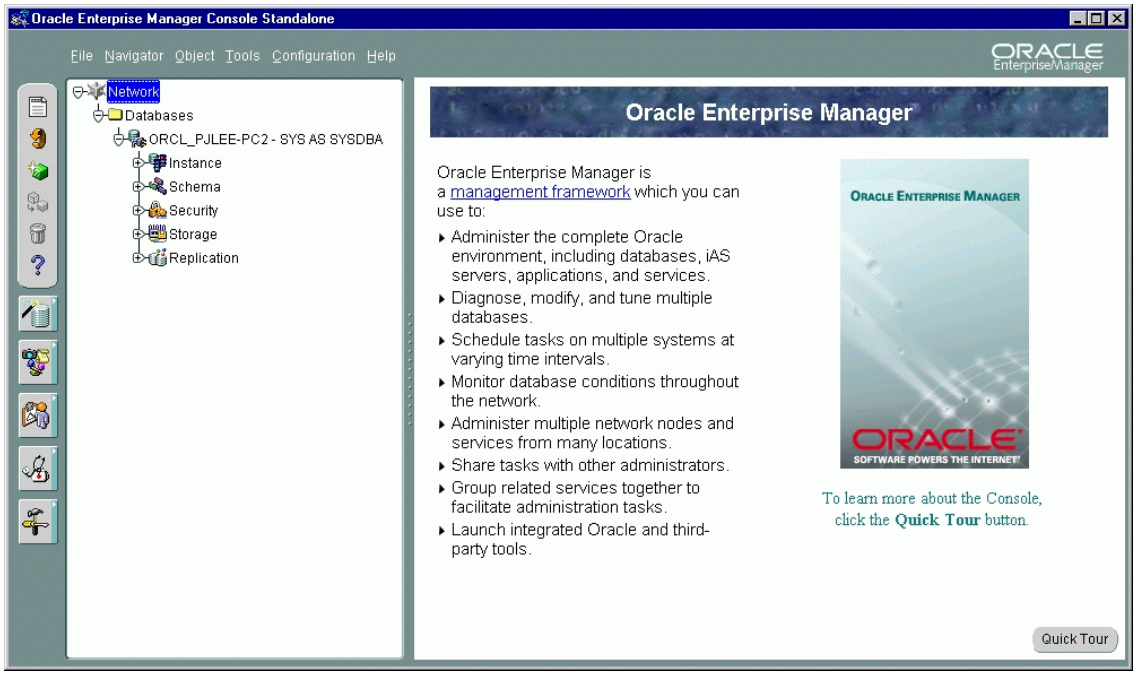
Figure 2–2 Standalone Configuration



Launching standalone does not require a Management Server as a middle tier or Intelligent Agents on managed targets. Consequently, when you launch the Console standalone, you do not have access to functionality typically available through the Management Server and Intelligent Agent, such as:

- Management of several different target types (for example, database, web server, application server, applications, and others)
- Sharing of administrative data among multiple administrators
- Proactive notification of potential problems
- Automation of repetitive administrative tasks
- Backup and data management tools
- Customization, scheduling, and publishing of reports
- Running the client from within a web browser

Figure 2–3 Standalone Console



Starting the Standalone Console

On Windows-based platforms, you start the Console from the Windows Start Menu.

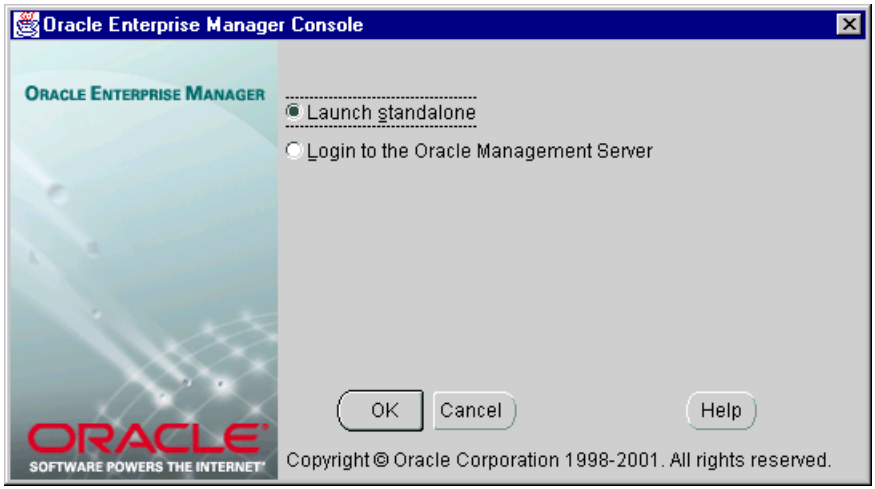
On any supported platform, you can launch the Console from the command line by using the command:

```
oemapp console
```

On UNIX platforms, the oemapp part of the command line is case-sensitive and must be entered with lowercase characters.

Regardless of how you started the Console, you will be presented with the Console login dialog.

Figure 2–4 Enterprise Manager Login



When the dialog appears, choose "Launch standalone" and press OK.

Note: The login choice is remembered for the next time you log in whether the last login was Launch standalone or Login to the Oracle Management Server. If you had selected Login to the Oracle Management Server, the Management Server is remembered.

To bypass the Console login, you can enter the following command at any supported operating system command line:

```
oemapp console oem.loginmode=standalone
```

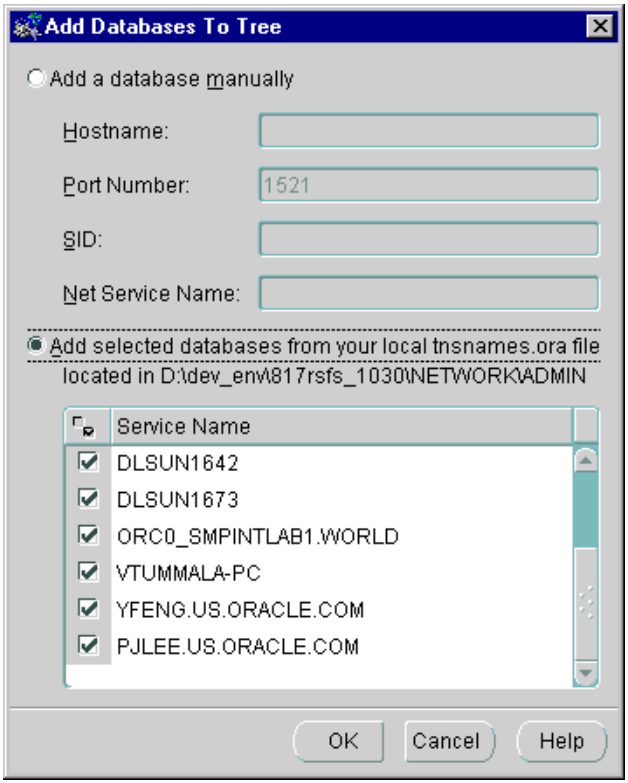
By entering the command, you will immediately see the standalone Console.

If you are starting the standalone Console for the first time, the left panel of standalone Console 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 the Standalone Console

The Add Database To Tree dialog is also available from the Navigator menu.

Figure 2–5 Add Database to Tree



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

Add a database manually

You can add databases to the standalone Console navigator tree by manually filling in the following fields:

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

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

  For example: ORCL.world.

.

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

Add selected databases from your local tnsnames.ora file

You can populate the standalone Console 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 your tnsnames.ora file from which you can select or deselect. Click the column header to the left of Service Name to either select or deselect all the databases. If you have deselected all the databases, you can choose specific databases by selecting their checkboxes.

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

After adding databases to the tree, see the *Oracle Enterprise Manager Administrator's Guide* for details on how to use the standalone Console to perform administration tasks.

Standalone Repository

The standalone Console includes several integrated applications. Some of these integrated applications require a standalone repository in which to save information; they include:

- Change Manager
- Oracle Expert
- Oracle SQL Analyze
- Oracle Index Tuning Wizard
- Oracle Tablespace Manager

Note: The standalone repository is different from the repository used by the Management Server since it is used for a single user while the Management repository is used for multiple users.

The first time one of the above standalone applications is accessed, you will be prompted to create a database user who will own the standalone repository schema or if you have already created the user to specify its username and password.

Figure 2–6 Prompt to Create Database User

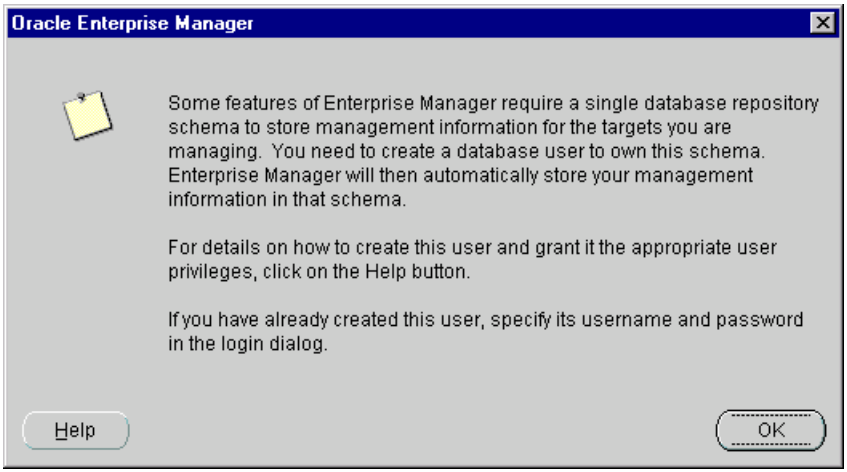
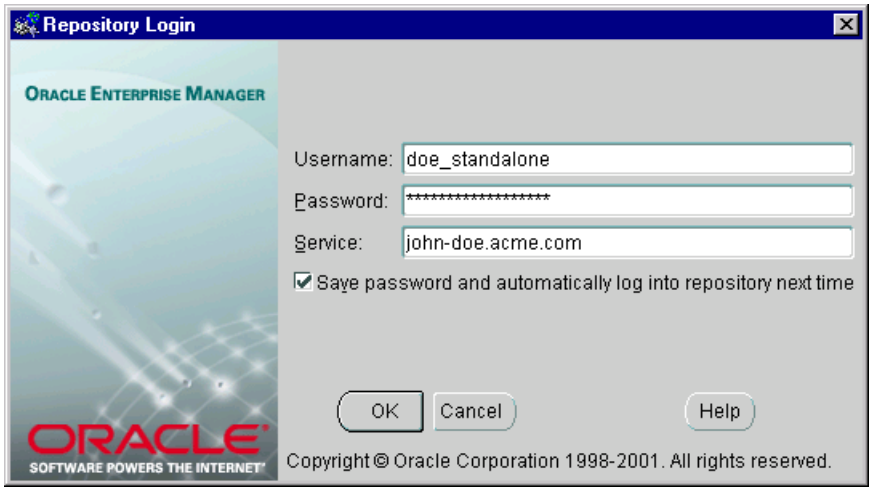


Figure 2–7 Repository Login



Because this database user must have certain roles and privileges, Oracle recommends creating a new database user to own the standalone repository schema. In addition, because certain tablespace attributes are required for the

standalone repository, you should also create a new tablespace. Once the user and tablespace have been created, you can supply the user's username and password, and the standalone application will automatically create the standalone repository for you.

When subsequent standalone applications which require a standalone repository are accessed, they will all use the same standalone repository.

Note: You do not have to be prompted with the standalone repository dialog every time you start your standalone application. You can click the "Save password and automatically log into repository next time" checkbox to save the credentials for future use.

Database Requirements for Standalone Repository

The following database releases are supported for the standalone repository:

- Enterprise Edition or standard edition release 9.0
- Enterprise Edition or standard edition release 8.1.7
- Enterprise Edition or standard edition release 8.1.6
- Enterprise Edition release 8.0.6 (with Objects option installed and enabled)

You must ensure that the database in which the repository will be placed has object support. If it does not, repository creation will fail. Either choose another database that has object support, or install and enable object support on the chosen database.

Note: Object support is installed and enabled by default for database releases 9.0, 8.1.7, and 8.1.6, but is not installed and enabled by default for the enterprise edition database release 8.0.6.

Create a Tablespace for Standalone Repository

Create a tablespace with the following attributes:

- Type: Permanent
- Storage attributes for 8i or later database:
  - Extent Management: Locally managed
- Storage attributes for pre-8i database:
  - Initial Size: 16K
  - Next Size: 128K
  - Minimum Size: 16K
  - Increment Size: 0%
  - Minimum Number: 1
  - Maximum Number: Unlimited

- Datafile attributes:
  - Size:
    - For 2 Kb blocks: 16 MB
    - For 4 Kb blocks: 24 MB
    - For 8 Kb blocks: 32 MB
    - For sizes above 8 KB: 64 MB
  - Reuse Existing File: Yes
  - AUTOEXTEND: Yes
  - AUTOEXTEND increment: 5MB
  - AUTOEXTEND maximum: 2000MB

To create a tablespace for the standalone repository, first select the database in which you want to place the standalone repository, ensuring it meets the requirements outlined on page 2-12. Then, follow the procedure described in this section:

1. Start the standalone Console.
   - On Windows:

     You can start the standalone Console from the Windows Start Menu.
   - On UNIX:

     You can start the standalone Console from the command line using the command:

     ```
     oemapp console
     ```

   When the login dialog appears, choose "Launch standalone" to connect directly to databases and press OK.
2. Double-click the database node in the navigator tree and connect to the database as a user with the NORMAL privilege.
3. Select Create from the Object menu. The Create window appears.
4. Expand the database node in the Create window and select Tablespace. Then click the Create button. The Create Tablespace property sheet appears.

5. In the Create Tablespace Property Sheet's General page,
   a. Enter the name of the new tablespace, OEM_REPOSITORY.
   b. Specify that the tablespace will be used to hold permanent database objects.
6. In the Datafile section, enter the size of the new datafile. The File Name and File Directory columns should already contain default entries. The datafile is called OEM_REPOSITORY.dbf or OEM_REPOSITORY.ora depending on the version of the database.
7. Right-click the "+" sign which appears next to OEM_REPOSITORY.dbf and choose Edit. The Create Datafile property sheet appears.
8. In the Create Datafile's General page, select the Reuse Existing File box.
9. In the Create Datafile's Storage page, fill the appropriate attributes
   a. 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.
   b. Specify 5 MB as the Increment.
   c. Specify 2000 MB as the Maximum Size.
10. Click the OK button in the Create Datafile property sheet.
11. In the Create Tablespace Property Sheet's Storage page, fill in the proper attributes according to the database version

    for 9.0, 8.1.7, and 8.1.6 databases, choose Locally Managed as the method of space management.

    for an 8.0.6 database:

    - Initial Size 16K
    - Next Size 128K
    - Minimum Size 16 K
    - Increment Size by 0 %
    - Minimum Number 1
    - Maximum Number UNLIMITED
12. Click the Create button in the Create Tablespace Property Sheet.

Create a Database User for Standalone Repository

A standalone repository is owned by a database user. A database user (repository schema user) who will own the repository must be created before the standalone repository can be created by Enterprise Manager.

To create a database user who will own the standalone repository, follow the procedure described in this section:

1. Start the standalone Console.
2. Double-click the database node in the navigator tree and connect to the database as a user with the NORMAL role.
3. Select Create from the Object menu. The Create window appears.
4. Expand the database node in the Create window and select User. Then click the Create button. The Create User property sheet appears.
5. In the General page, provide the name of the user and its password and select OEM_REPOSITORY as the default tablespace and TEMP as the temporary tablespace.
6. In the Role page, grant the CONNECT and SELECT_CATALOG_ROLE roles to the repository user.
7. In the System Privileges page grant the CREATE TRIGGER, CREATE PROCEDURE, EXECUTE ANY PROCEDURE, CREATE TYPE, EXECUTE ANY TYPE, SELECT ANY TABLE, and (for 9*i*) SELECT ANY DICTIONARY privileges to the repository user.
8. In the Quota page, specify unlimited for OEM_REPOSITORY and TEMP.
9. Click the Create button in the Create User property sheet.

Once you have a tablespace and a repository user, launch a standalone application which requires a standalone repository.

When the dialog appears informing you that certain features of Enterprise Manager require a standalone repository and you must create a new database user to own the standalone repository schema, click OK to dismiss the dialog since you have already created the user.

Supply the user's username and password for the repository login and press OK. The standalone application will automatically create the standalone repository for you.

Note: If you use the Console standalone but later want to deploy the entire framework, you will not be able to migrate the standalone repository to the full framework / Management Server repository. This type of migration is not supported. Exporting the data of the standalone repository and importing it into another schema and having that schema work with the Management Server repository is also not supported.

3

Configuring and Controlling the Management Server

If you have chosen to deploy the entire Enterprise Manager framework (for example, Console, Management Server, and Intelligent Agents), you will need to perform additional configuration tasks on the middle tier Management Server machine(s). On such a machine(s), you will need to use the Enterprise Manager Configuration Assistant to configure the Management Server.

This chapter will describe the following:

- Configuring a local Management Server
  - To use a new repository
  - To use an existing repository
- Upgrading a Release 2.x repository to a Release 9.0 repository
- Dropping a repository
- Controlling the Management Server after configuration

Starting the Enterprise Manager Configuration Assistant

The Enterprise Manager Configuration Assistant will launch automatically during the post install configuration phase when the Management Server is being installed and if you are performing one of the following installation scenarios:

- Oracle9*i* Enterprise Edition-> Custom
- Oracle9*i* Management and Integration-> Oracle Management Server
- Oracle9*i* Management and Integration-> Custom

The Enterprise Manager Configuration Assistant will not launch automatically during any other installations; you must manually launch the Enterprise Manager Configuration Assistant when installation completes.

Note: A database (a supported version for a 9*i* Management Server repository) must be installed and running anywhere on the network before you can create the Oracle Enterprise Manager repository schema.

Choose a database that also meets the following criteria:

- the database is always available.
- the database will not be shut down by other administrators.

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.

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

  ```
  emca
  ```

- On UNIX:

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

  ```
  emca
  ```

You must have write access to the `omsconfig.properties` file in the `$ORACLE_HOME\sysman\config` directory to run the `emca` command.

Configuring a Local Management Server To Use a New Release 9*i* Repository

Whenever you start the Enterprise Manager Configuration Assistant to create a new 9*i* repository (whether during a post install configuration or by launching the assistant manually), it will perform the following tasks for you:

- Optionally creates a local database instance into which the repository will be placed and a recovery catalog in the CATTBS tablespace. The recovery catalog user and password is `rman/rman`.
- Optionally creates an `OEM_REPOSITORY` tablespace.
- Creates a new database user who will own the Enterprise Manager and management packs repository, specifying default and temporary tablespaces for the user.
- Assigns proper privileges and roles to the new database user.
- 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.`
- Enters the necessary information into the local machine's client registry so that any Console which runs on the machine has the Management Server already in its list of those to which it can connect.
- (Windows NT or Windows 2000 only) checks to see if a Management Server Windows Service already exists. If one does not already exist, it creates the Management Server Windows Service and sets it to Manual. If one does exist, it will use it.
- (Windows NT or Windows 2000 only) starts the Management Server Windows Service.

Welcome

When you start the Configuration Assistant by launching it manually, the Welcome page appears.

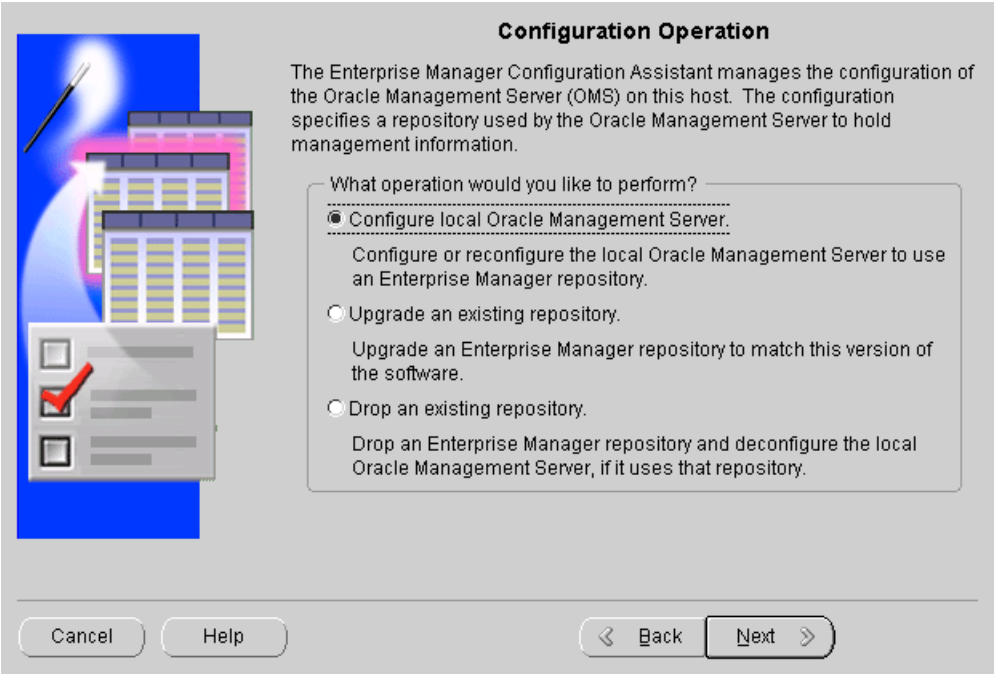
A checkbox "Show this page next time" is available to you so that you can specify not to show this page again once you are familiar with the Configuration Assistant. By default, the checkbox is selected. If you deselect the checkbox, the Configuration Assistant starts on the Configuration Operation page next time.

Figure 3–1 Welcome

Configuration Operation

After pressing the Next button on the Welcome page, the "Configuration Operation" page appears.

Figure 3–2 Configuration Operation



If you want to configure the Management Server by creating a repository or editing an existing repository configuration, select “Configure local Management Server” from the list of repository operations and press Next.

If no previous configuration exists, the Configure Oracle Management Server page appears.

If a configuration already exists, a dialog appears asking you if you want to edit this configuration or create a new configuration.

Figure 3–3 Edit or Create Dialog

Press the Edit or Create button.

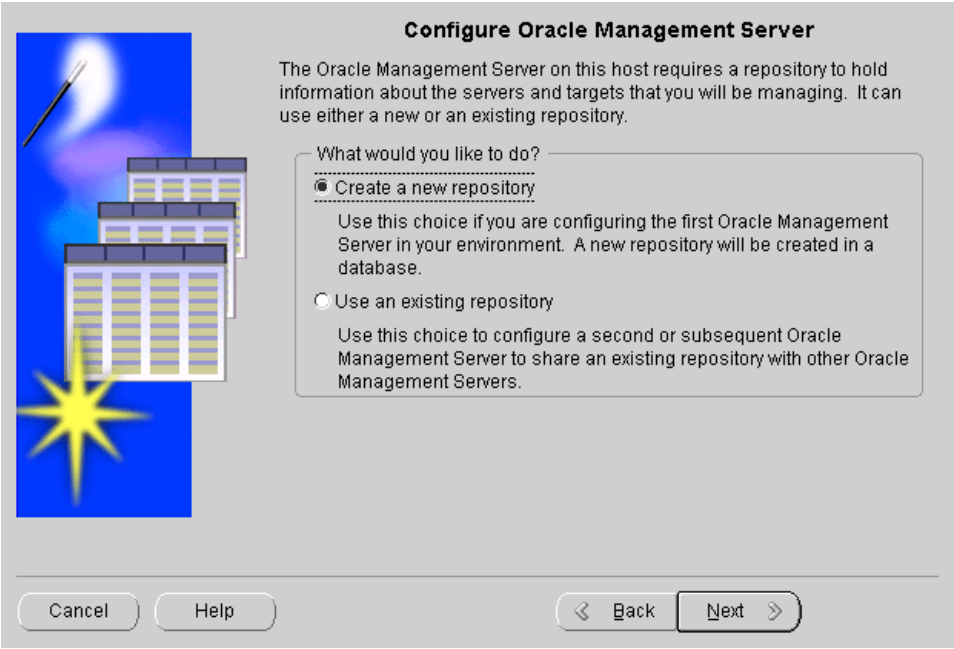
If you press the Edit button, the Edit Configuration Parameters page appears. For more information on editing the configuration, skip to Edit Configuration Parameters on page 3-28.

If you press the Create button, the Configure Oracle Management Server page appears.

Configure Oracle Management Server

The Management Server on this host requires a repository to hold information about the servers and targets that you will be managing.

Figure 3–4 Configure Management Server



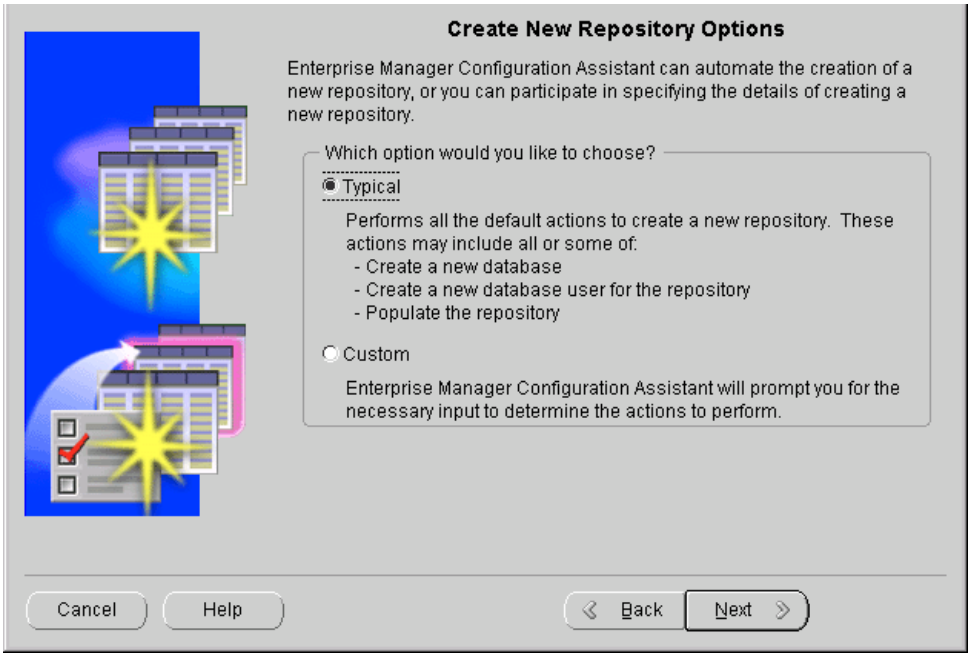
If you are a new Oracle Enterprise Manager user or if you want to configure the first Management Server in your environment and create a new Release 9*i* repository, you will use the "Create a new repository" choice. It will create and load your Release 9*i* repository and set up the configuration parameters for a local Management Server.

Create New Repository Options

The Enterprise Manager Configuration Assistant can automate the creation of a new repository or you can specify the details of creating a new repository.

Note: This page will only appear if the Configuration Assistant is run from an Oracle Home that contains a 9*i* database server installation.

Figure 3–5 Create New Repository Options



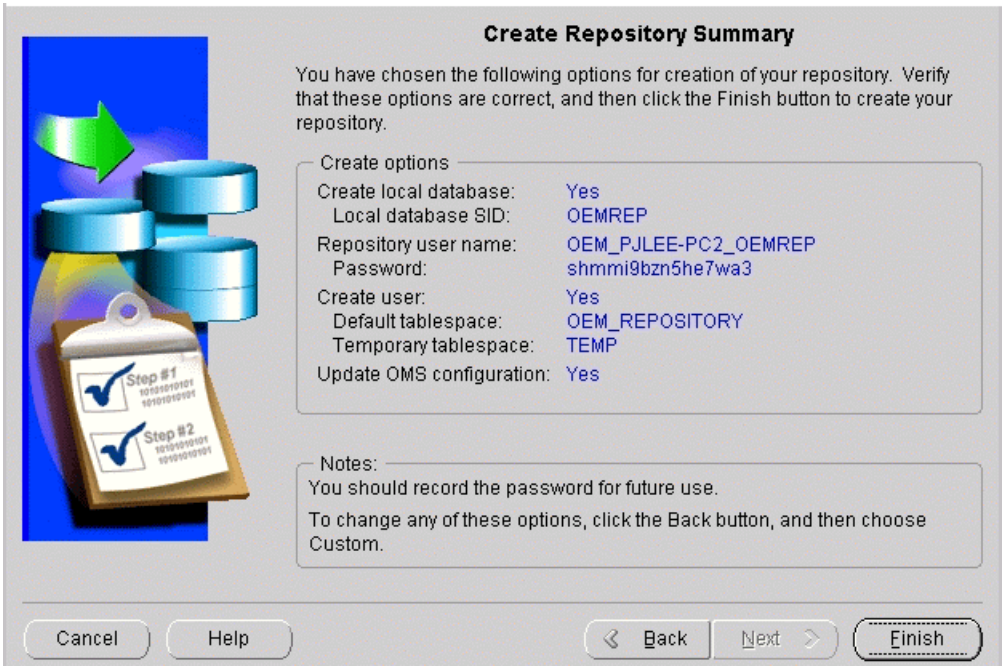
Typical

The actions may include all or some of the ones detailed below.

- Creates a local database
- Creates a new database user for the repository
- Populates the repository

If you choose Typical, there are no additional steps to perform, and the next page will be the Create Repository Summary page with special entries.

Figure 3–6 Create Repository Summary for Typical Repository Option



Note: Record the password for the repository user for future reference. This is the only time the password will appear, and you will need it to perform such tasks as dropping or upgrading the repository. For information on changing the password for the repository user at a later date, refer to "Changing the Repository User Password" on page F-23.

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

When you click the Finish button, the Enterprise Manager Configuration Assistant launches the Database Configuration Assistant to create the database instance.

Note: It may not be obvious that the Database Configuration Assistant is being run since there is no Database Configuration Assistant identification on the progress dialog.

When the Database Configuration Assistant allows you to change the passwords for the database on its last dialog, take the default passwords instead of changing them.

Note: Do not change the password for SYS. The Enterprise Manager Configuration Assistant assumes that the password is "change_on_install", and if you change this password now, when the Enterprise Manager attempts to login using those credentials, it will fail. You can change the password as soon as the Enterprise Manager Configuration Assistant has completed its operations, because it no longer needs the SYS credentials.

Once the instance has been created and the Database Configuration Assistant exits, the Enterprise Manager Configuration Assistant tries to connect to the database using the SYS credentials. Once the connection has been made, the Enterprise Manager Configuration Assistant then creates the repository user and populates the repository schema.

Custom

If you choose Custom, the assistant will allow you to select from the following actions later depending on the choices you make.

- Allows you to select the database location
- Allows you to select the database for the repository
- Allows you to change the SID when you choose to create a new database instance
- Allows you to choose the repository username and password
- Allows you to select the repository user tablespaces

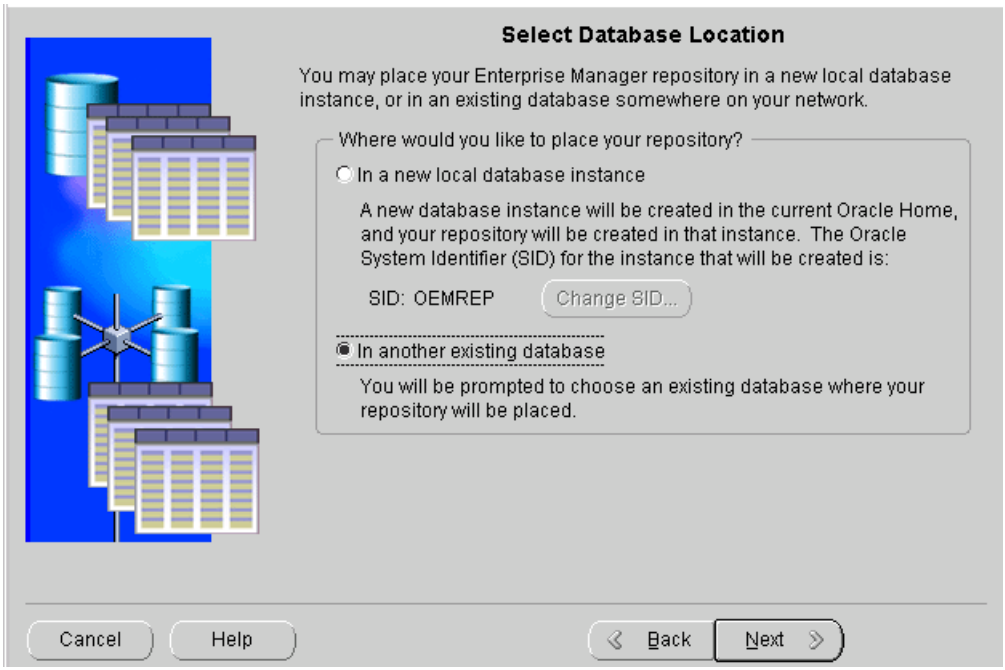
If you choose Custom, the Select Database Location page appears.

Select Database Location

You may place your Enterprise Manager repository in a new local database or in another existing database somewhere on your network. The database must be a version which supports a 9i Management Server repository.

Note: This page will only appear if the Configuration Assistant is run from an Oracle Home that contains a 9*i* database server installation.

Figure 3–7 Select Database Location



- In a new local database instance

  You will create a new database instance in the current Oracle Home, and your repository and RMAN (Oracle Recovery Manager) recovery catalog will be created in that instance.

The repository will be created in the OEM_REPOSITORY tablespace and the RMAN recovery catalog will be created in the CATTBS tablespace. The recovery catalog user and password is rman/rman. The SID will be OEMREP. If you want to change your SID, press the Change SID button.

Note: If you cancel the repository creation, the recovery catalog will not be created.

- In another existing database.

  You will be prompted to choose an existing database where your repository will be placed. Make sure that the database is installed and running.

If you select "In a new local database instance," without pressing the Change Database SID button, the Repository Login Information page appears. Skip to Repository Login Information on page 3-16 for details.

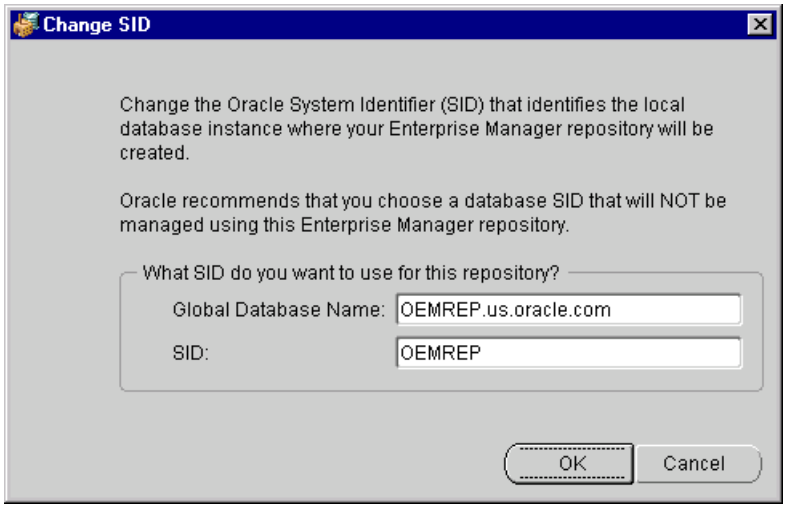
If you select "In a new local database instance" and press the Change Database SID button, the Change Database SID dialog appears. Skip to Change Database SID on page 3-13 for details.

If you select "In another existing database," the Select Database for Repository page appears. Skip to Select Database for Repository on page 3-15 for details.

Change Database SID

You can change the Oracle System Identifier (SID) that identifies the local database instance where your Enterprise Manager repository will be created.

Figure 3–8 Change Database SID



Oracle recommends that you choose a database SID that will not be managed using this Enterprise Manager repository.

- Global Database Name

  The full name of the database which uniquely identifies it from any other database. The global database name is of the form "database_name.database_domain", for example, oemrep.us.ovenbird.com.

  The database name portion, oemrep, is a simple name you wish to call your database. The database domain portion, us.ovenbird.com, specifies the database domain in which the database is located, making the global database name unique. When possible, Oracle recommends that your database domain mirror the network domain.

  The global database name is the default service name of the database, as specified by the SERVICE_NAMES parameter in the initialization parameter file.

- SID

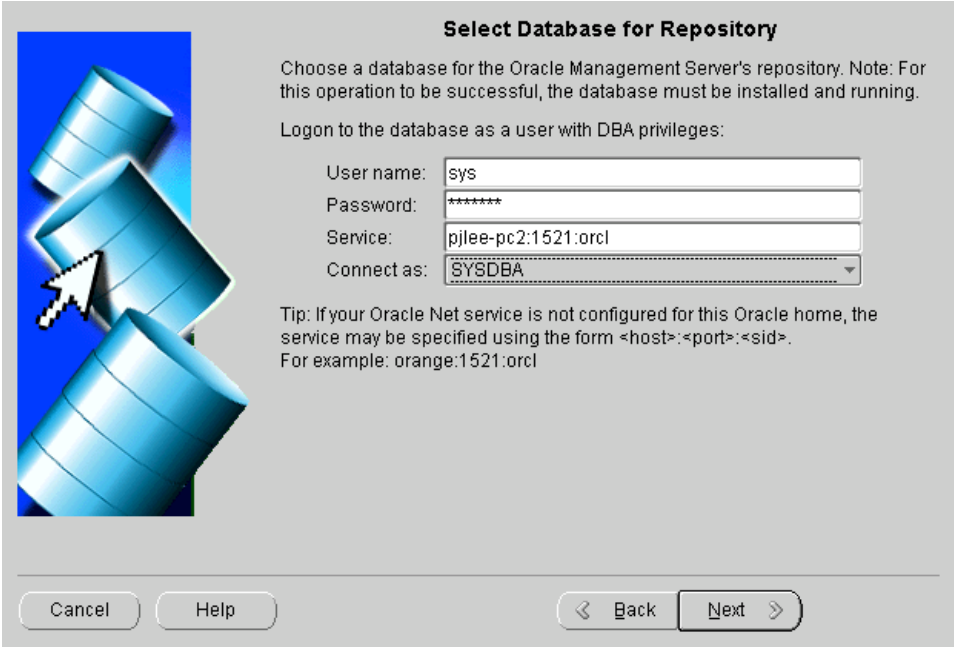
  The Oracle System Identifier (SID). A name that identifies a specific instance of a running Oracle database. For any database, there is at least one instance referencing the database.

Press OK to dismiss the dialog after changing the database name or SID. Then press the Next button on the Select Database Location page to proceed to the Repository Login Information page. Skip to Repository Login Information on page 3-16 for details.

Select Database for Repository

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

Figure 3–9 Select Database for Repository



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

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

For example, `system/manager`.

Service: The service may be specified using the form:

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

where

host is the machine name where the database is located

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

SID is the database system identifier

An example:

`my_em_machine:1521:em90`

which connects to the `em90` database using port 1521 on the `my_em_machine` machine.

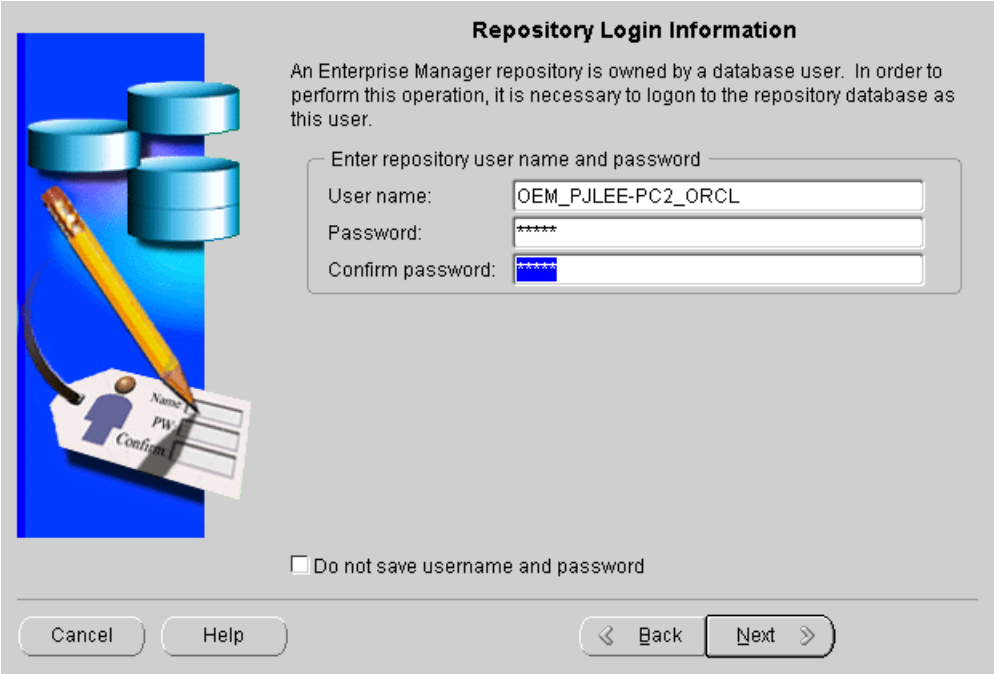
Note: Specifying the service as `<host>:<port>:<sid>` is the recommended method, but you may also use Oracle Net names if your Oracle Net client is properly configured.

Press Next to continue.

Repository Login Information

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

Figure 3–10 Repository Login Information



User name: By default, the Enterprise Manager Configuration Assistant uses `OEM_<TCP/IP hostname of machine>_<SID>` as the repository's user name that will be used to create a database user that will own the repository.

TCP/IP hostname of machine is the machine name where the database is located

SID is the database system identifier

The repository's user name must be unique across the network. If you choose another name, you must ensure that it is unique.

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

Password: Enter the password for that user.

Confirm: Verify the password by typing it again.

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

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

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

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

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

The roles and privileges required by the repository schema user which are automatically created by the Configuration Assistant are listed below:

- Roles: CONNECT and SELECT_CATALOG_ROLE
- Privileges: CREATE TRIGGER, CREATE PROCEDURE, EXECUTE ANY PROCEDURE,. CREATE TYPE, EXECUTE ANY TYPE, SELECT ANY TABLE, and (for 9*i* databases only) SELECT ANY DICTIONARY

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

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 an installation session and:
  - If the OEM_REPOSITORY tablespace already exists, and:
  - If the OEM_REPOSITORY tablespace has the appropriate size attributes

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

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

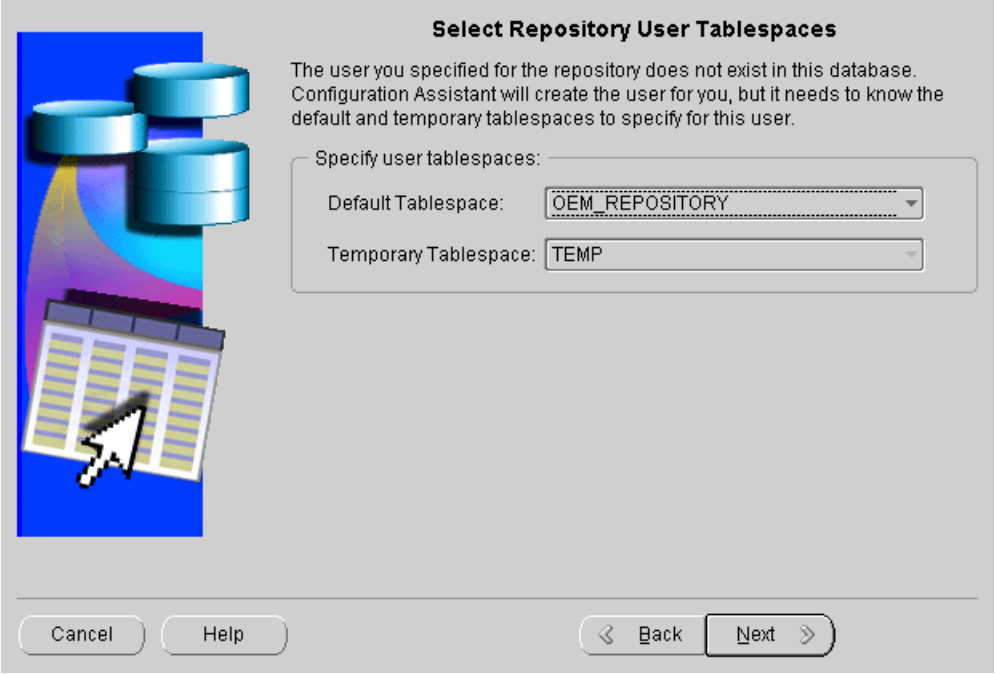
ROLLBACK tablespaces are used for creating rollback segments. Rollback segments are used by Oracle user processes to store rollback information.

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

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

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

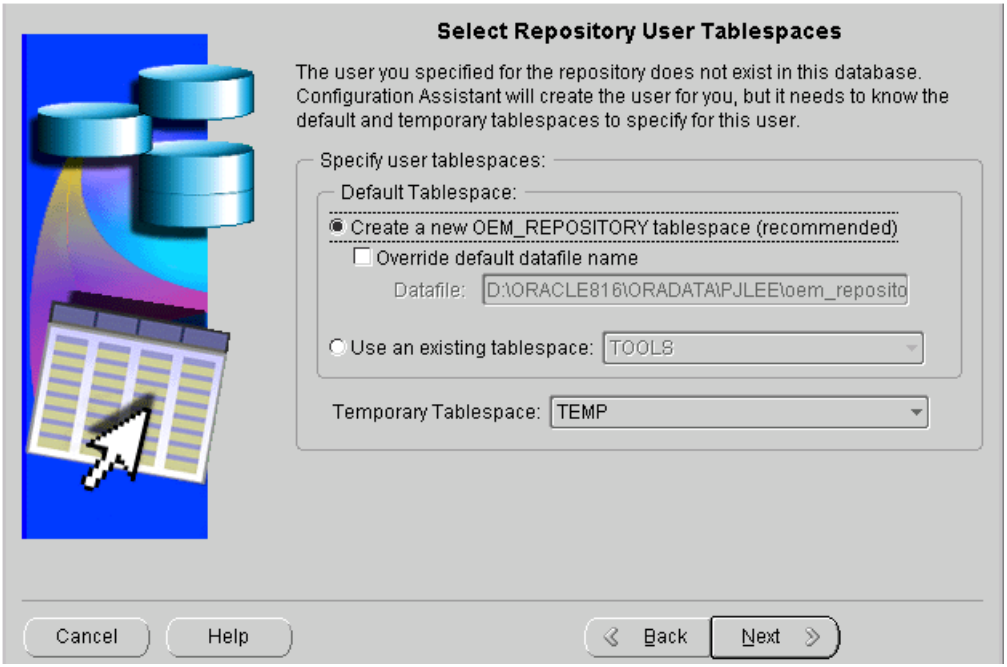
Figure 3–11 Select Repository User Tablespaces if OEM_REPOSITORY Exists



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

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

Figure 3–12 Select Repository User Tablespaces if OEM_REPOSITORY Does Not Exist



Default Tablespace:

- Create a new OEM_REPOSITORY tablespace (recommended).

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

- Override default datafile name.

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

- Use an existing tablespace

  Select an existing tablespace from the pull-down list.

Temporary Tablespace

Select a temporary tablespace from the pull-down list.

Click Next to continue.

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

Create Repository Summary

If you have chosen to specify the details of creating a new repository in the "Create New Repository Options" page, the "Create Repository Summary" page provides a summary of all the information supplied.

The following page appears at the end of the "Custom" sequence.

Figure 3–13 Create Repository Summary

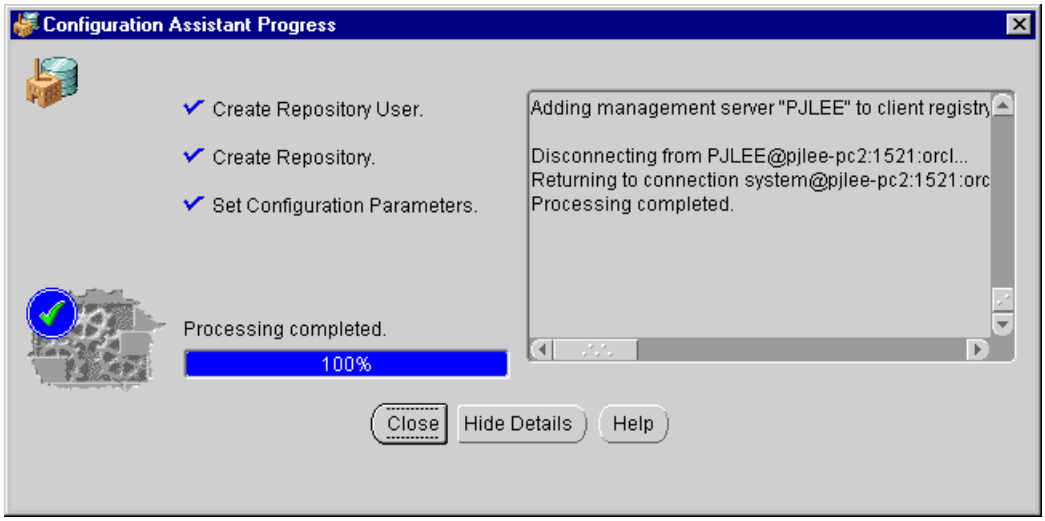
Click Finish to initiate repository creation or click Back to return to previous pages to make modifications.

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

Configuration Assistant Progress Window

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

Figure 3–14 Configuration Assistant Progress



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

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

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

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

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

If the repository creation fails, drop the repository, turn on tracing for the Management Server by adding the appropriate tracing properties to the `omsconfig.properties` file, and perform the repository creation procedure

again. For information on Management Server tracing and logging, refer to Appendix B, "Activating Logging and Tracing".

For information on dropping the repository, refer to Dropping an Existing Repository on page 3-38.

Configuring a Local Management Server To Use An Existing Repository

In an environment with multiple Oracle Management Servers, a set of Management Servers can share the same repository. There may be only one Management Server running per node.

Select the "Configure local Management Server" selection if you want to perform the following tasks:

- set up a Management Server to manage an already existing repository.
- change the Management Server configuration to use another repository in the same or another database.
- change the password that the Management Server uses to log into the repository when it starts. You must change the password if someone has changed the repository user password in the database; otherwise, the Management Server will fail to start. The Enterprise Manager Configuration Assistant, when editing the configuration parameters, only changes the `omsconfig.properties` file; it does not change the repository credentials in the database.

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

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

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

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

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

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

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

The Configuration Assistant can only set or change configuration parameters (`omsconfig.properties` file) for the machine on which it is running. It does not have the ability to change another machine's configuration parameters; you must go to each of the other Management Servers using (sharing) the repository and run the Configuration Assistant to change each machine's configuration parameters.

You must set up or change the repository connect information (user name, password, service) to point to the correct repository. It is important that all the Management Server machines that are using (sharing) the same repository have consistent configuration parameters.

Note: If you change the password for the database user account which owns the repository, you must also change the corresponding Management Server configuration parameter for every Management Server that uses the repository; otherwise, the next Management Server start will fail.

For information about starting the Enterprise Manager Configuration Assistant, refer to "Starting the Enterprise Manager Configuration Assistant" on page 3-2.

Configuration Operation

Select "Configure local Management Server" from the list of configuration operations in the Configuration Operation page and press Next to Continue.

For details about the Configuration Operation page, see Configuration Operation on page 3-6.

Configure Management Server

On the Configure Management Server page, choose "Use an existing repository" to configure a second or subsequent Management Server to share an existing repository with other Management Servers, and press Next to Continue.

If a configuration already exists, a dialog appears asking you if you want to edit this configuration or create a new configuration. See Figure 3–3, "Edit or Create Dialog". Clicking the Edit button takes you to the Edit Configuration Parameters page directly.

Edit Configuration Parameters

On the Edit Configuration Parameters page, direct the local Management Server to use an existing repository by entering the username, password, and service for an existing repository.

User Name

Enter the user name of the existing repository which you wish this machine's Management Server to use or 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 password for the above user name or enter the repository user's password to change the password that the Management Server uses to log into the repository when it starts. 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/database where the repository resides to change the Management Server to use a repository in another database.

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

Do not save username and password

You can choose whether to save the user name and encrypted password in the `omsconfig.properties` file, which is read by the Management Server on

startup. If the user name and encrypted password are stored in the file, the Management Server uses them to login to the repository.

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

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

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

Press the Next button to proceed from the Edit Configuration Parameters page.

If the username and password are not stored in the configuration file, you are prompted with a Login dialog for the credentials to log into the repository. The Configuration Assistant connects to the specified repository and validates the specified repository and displays any errors it encounters. If the validation was successful, the Select Management Region page appears.

Select Management Region

If you have a large, global deployment of Enterprise Manager or have Enterprise Manager deployed across a mixture of LANs and WANs, then you should consider using the new 9*i* feature Management Regions. In both situations, Management Regions can improve performance over slow networks by allowing you to assign a subset of Management Servers and a subset of discovered nodes to a Management Region to prevent cross-regional or cross-network communication. Additionally, Management Regions are useful for mapping discovered nodes within firewall boundaries.

For example: Company XYZ has a Management Server running in England and monitored targets in England. It also has a Management Server running at its headquarters in California and monitored targets in California.

With previous releases of Enterprise Manager, the Management Server in England could actually monitor the targets in California. You could not "bind" a Management Server to the targets. Additionally, if there is a firewall between the Management Server in England and the monitored node in California, the Management Server and the nodes would not interact with each other. Management Regions functionality in release 9*i* prevents this cross regional communication and allows users to specify that the Management Server in England should only monitor

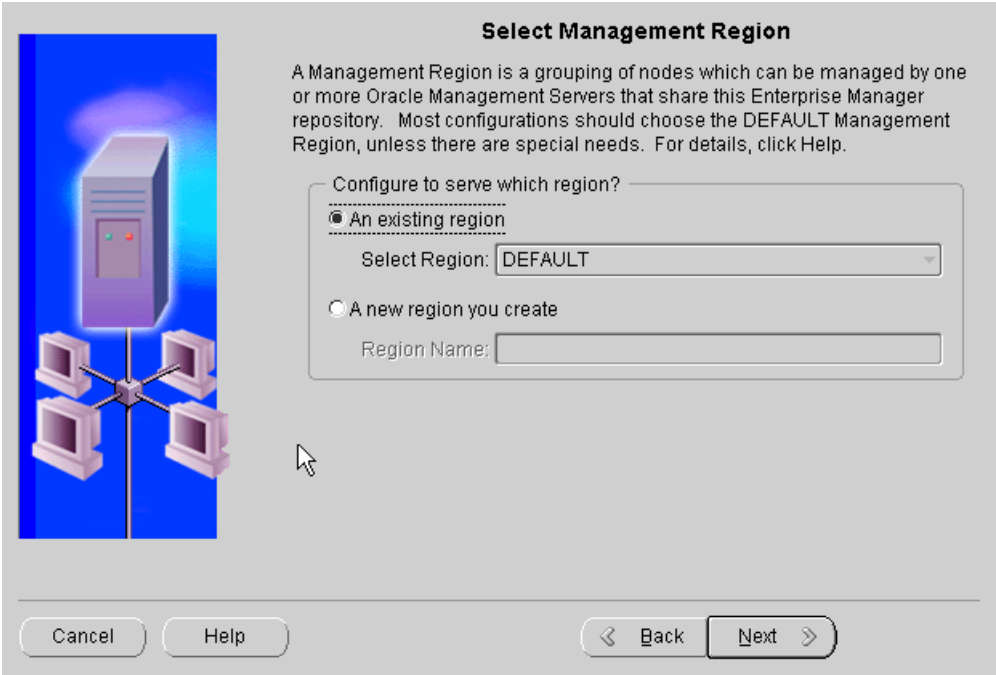
targets in England (within a firewall). It should not monitor the targets in California.

The Enterprise Manager Configuration Assistant by default creates the initial, default Management Region called DEFAULT. By default, all Management Servers that use the existing repository and all discovered nodes within the repository will be placed within this DEFAULT Management Region. If your enterprise does not see a need to use Management Region functionality (i.e. you do not have a large, global enterprise or a deployment that spans several LANs and WANs) then using this DEFAULT Management Region would be sufficient. However, if you want to take complete advantage of the Management Region functionality, then you should create additional Management Regions and specify a subset of discovered nodes and a subset of Management Servers within each Management Region.

When a Management Server is not already assigned to a Management Region, the Enterprise Manager Configuration Assistant will prompt you to assign it to one, or to create an entirely new Management Region to which the local Management Server will be assigned. Under most circumstances, the Select Management Region page will appear with the options disabled because the Management Server will have already been assigned to a Management Region. In this case, an explanatory message will appear in red within the page.

In situations where the local Management Server is not already assigned to a Management Region, you will see the following page in Enterprise Manager Configuration Assistant:

Figure 3–15 Assign Management Region



Note: Creating new Management Regions and assigning Management Servers to Management Regions is also accessible from the Enterprise Manager Console. From the Console, only Super Administrators have access to this functionality.

Select one of the listed options or enter a name for a new management region.

An existing region

Select Region: Select the region from the pull-down list.

By default, all nodes and Management Servers are in the same management region, called DEFAULT. You can reassign a node / Management Server from one management region to another if you are logged into the Console as a super administrator.

A new region you create

Region Name: Type in the name of the region.

Note: In order to progress to the next page, you must change at least one of the parameters in the Edit Configuration Parameters page or the Select Management Regions 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.

Configuration Parameters Summary

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

Note: When you use the Edit Configuration Parameters to change parameters, the Configuration Assistant changes the Management Server configuration parameters, which are stored in the configuration file: `ORACLE_HOME\sysman\config\omsconfig.properties`. These parameters provide the necessary input to the Management Server, so that it may connect to the repository user within the proper database. The Configuration Assistant does not change the repository username or password in the repository itself once the repository has been created. The Configuration Assistant only manipulates the repository user's password at repository creation time when it creates the repository user.

Upgrading a Release 2.x Repository to a Release 9*i* Repository

Existing pre-9*i* repositories are not upgraded automatically during installation. To upgrade, you must run the Oracle Enterprise Manager Configuration Assistant manually after the installation. Prior to upgrading, you need to create a new 9i repository.

The Oracle Enterprise Manager Configuration Assistant takes an existing Release 2.x repository and upgrades it directly to a Release 9i. After the upgrade, the repository is at the newer version.

Direct migration of Release 1.x repositories to a single Release 9i repository is not supported with the Enterprise Manager Configuration Assistant. This migration is a two step process. First you must run the Enterprise Manager Migration Assistant to migrate Version 1 to Version 2 and then run the Enterprise Manager Configuration Assistant Release 9i to upgrade Version 2 to Version 9. Refer to the *Oracle Enterprise Manager Configuration Guide Release 2.2* for instructions on migrating Version 1 repositories to a single Version 2 repository.

Stopping Management Servers and Enterprise Manager Applications

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.

Backing Up the Repository

Before you attempt to upgrade the repository, you must first back up the database or repository schema using the standard export mechanism.

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

The EXPORT utility is a base utility shipped with the Oracle database server. For detailed information about the Export utility, refer to *Oracle9i Utilities*.

If there is a failure during a repository upgrade, the repository will no longer be usable. The failed repository would no longer appear in the list of available repositories that could be upgraded.

Coordinating the Upgrade of Oracle Enterprise Manager Products

If you are using a Release 2.x repository and want to upgrade your repository to Release 9*i*, do not perform any repository upgrades until all Oracle Enterprise Manager components have been upgraded to Release 9*i*.

Because an Enterprise Manager repository is shared, it is important to coordinate your repository upgrade with the installation of the new Oracle Enterprise Manager software on all the machines that share the repository. If you do not upgrade your repository, the new version of the software will not operate with that repository.

However, if you do upgrade your repository, the older version of the software will not operate with that repository. Remember that both the base Oracle Enterprise Manager system, which includes the Management Server, and the Oracle Enterprise Manager packs share a repository, so if you want all your users to continue to perform their work, you must ensure that the repository upgrade is coordinated with the software upgrades on all relevant machines.

The Enterprise Manager Console, separately licensable Packs, Management Server and repository must all be of the same release. For example, you cannot use a Release 2.2 Management Server and repository with a Release 9*i* Console nor can you use a Release 9*i* Management Server and repository with a Release 2.2 Pack.

If the existing Management Server and repository are of a previous version, then you can upgrade them to the most recent version. In the case of upgrading a Management Server and repository to Release 9*i*, ensure that all Enterprise Manager products you intend to use with the repository are of Release 9*i*. For instance, do not upgrade the Management Server and repository to Release 9*i* if you are still using Diagnostics Pack Release 2.2 or Change Management Pack Release 2.2.

Note: Reports scheduled and generated with the Enterprise Manager Reporting Wizard Release 2.2 cannot be upgraded to Release 9.0.x.

Configuration Assistant Steps to Upgrading the Repository

To upgrade the repository, follow the steps outlined in the following sections.

Note: All job and event details in the repository are stored in binary fields to keep the information secure. The data itself is also encrypted using the schema owner name. Therefore, an Enterprise Manager repository can be moved to another database, but the owner of the repository must have the same schema name. You cannot change the schema name of a repository. If you export/import the repository from one user to another, the decryption key will not match and your jobs and events will no longer be usable.

For information about starting the Enterprise Manager Configuration Assistant, refer to "Starting the Enterprise Manager Configuration Assistant" on page 3-2.

Configuration Operation

When you press the Next button on the Welcome page, 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.

Select Database for Repository

Log in to the database which contains the repository you want to upgrade.

In order to upgrade a repository, you must connect to the database as a user with DBA privileges. 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 Select Database for Repository on page 3-15.

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

Select Repository for Upgrade

If you are selecting a repository to upgrade, the Select Repository page shows only Release 2.0, 2.1, and 2.2 repositories. The Enterprise Manager Configuration Assistant does not display Release 9.0.1 repositories in this situation, because they do not need to be upgraded; they are already at the most up-to-date version.

Username: The username of the repository.

Version: The version of the repository.

Type: The type of repository. Type can be either "Enterprise" or "Standalone". An Enterprise repository is used by the Oracle Enterprise Manager connected to a Management Server. A Standalone repository is required by certain applications when you use Oracle Enterprise Manager not connected to a Management Server.

Select the appropriate repository and press the Next button to continue.

If the specified database does not contain any Release 2.x repositories, the list of repositories is empty and grayed out, and a note stating that "No repositories were found in the database" appears. You may click the Cancel button to exit the Enterprise Manager Configuration Assistant or click the Back button to return to previous pages to connect to a different database.

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.

Upgrade Repository Summary

The "Upgrade Repository Summary" page provides a summary of all the information supplied during the upgrade repository session. Click Finish to initiate the repository upgrade or click Back to return to previous pages to change the information.

Upgrade Repository Configuration Assistant Progress

When you click the Finish button, the Configuration Assistant Progress window appears, showing the processing performed and the processing steps that comprise the operation being performed. Each processing step is shown by a line of text.

If you want to view detailed information, click the "Show Details" button to expand the dialog to show a text area. You can hide the text area by pressing the "Hide Details" button.

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

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

You can cancel the requested operation before it completes by clicking the Cancel button. However, if you cancel the operation, the repository will become unusable.

Click the Close button when you are finished.

During the Configuration Assistant upgrade operation, the Oracle Management Service will be created, if it does not already exist and only if the repository being upgraded is the one actually being used by the local Management Server.

Dropping 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 and deconfigure the local Management Server if it uses that repository, follow the steps outlined in the following sections.

Stop the Management Servers and Enterprise Manager Applications

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.

Start the Configuration Assistant

For information about starting the Enterprise Manager Configuration Assistant, refer to "Starting the Enterprise Manager Configuration Assistant" on page 3-2.

Drop Repository Configuration Operation

After pressing the Next button on the Welcome page, 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.

Select the Database of the Repository You Want to Drop

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.

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 Select Database for Repository on page 3-15. If you log in successfully, the "Select Repository" page appears.

Select Repository to Drop

If you are selecting a repository to drop, the Select Repository page shows all releases of repositories, beginning with 2.0.

Choose the appropriate repository and press the Next button to continue.

Username: The username of the repository.

Version: The version of the repository.

Type: The type of repository. Type can be either "Enterprise" or "Standalone". An Enterprise repository is used by the Oracle Enterprise Manager connected to a Management Server. A Standalone repository is required by certain applications when you use Oracle Enterprise Manager not connected to a Management Server.

If the specified database does not contain any Release 2.x or 9*i* 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.

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 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. 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 a repository is selected that is not at the current/latest version, the only valid choice is to drop the repository user because the drop scripts can only handle the latest/current version.

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.

Drop Repository Summary

The "Drop Repository Summary" page provides a summary of all the information supplied during the drop repository operation.

Click Finish to initiate repository removal or click Back to return to previous pages to change the information.

Drop Repository Configuration Assistant Progress

When you click the Finish button, the Configuration Assistant Progress window appears, showing the processing performed and the processing steps that comprise the operation being performed. Each processing step is shown by a line of text.

If you want to view detailed information, click the "Show Details" button to expand the dialog to show a text area. You can hide the text area by pressing the "Hide Details" button.

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

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

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

Click the Close button when you are finished.

Controlling the Management Server After Configuration

Once configured, 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 section are listed below:

- Starting a local Management Server
- Checking the status of the Management Server
- Stopping a local Management Server

Starting a Local Management Server

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

Starting a Local Management Server On Windows

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

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

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

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

   For information on troubleshooting the Management Server if it does not start, refer to "Management Server Does Not Start" on page F-16.
3. Select the Oracle<Oracle_Home_Name>ManagementServer service.

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

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

---

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

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

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

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

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

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

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

Starting a Local Management Server On UNIX

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

```
% oemctl start oms
```

When you are prompted, enter the repository's user name that was used to create the database user and the password for that user if you have chosen not to save your repository credentials during repository configuration. For a complete definition of a repository owner, refer to "Repository Login Information" on page 3-16.

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 F-15.

Checking the Status of the Management Server

To quickly check whether a local or remote Management Server is up or down on Windows or UNIX, at the operating system prompt, enter:

```
% oemctl ping oms
```

To check the status of the Management Server on Windows or UNIX, at the operating system prompt, enter:

```
% oemctl status oms
```

You will be prompted to enter the username and password of an Oracle Enterprise super administrator. 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. For example, znripley-pc.ovenbird.com.

The information that `oemctl status oms` returns include the following:

- Management Server version
- Whether the Management Server is running or not and how long it has been running
- Target database session count

  Indicates the number of target databases in the session. A target database session is obtained when a user tries to connect to a database (by expanding a

database under the Databases folder in the navigator). Because it is inefficient to open and close database sessions every time one is required, a certain number of target database sessions are kept in a pool and the Management Server tries to use these sessions before more are opened.

- Operations queued for processing

  Indicates the number of activities waiting for processing. Activities may include submitting jobs, registering events, deleting jobs, deleting events, sending email, or other maintenance procedures.

- Number of OMS systems in domain

  Indicates the number and host names of Management Servers running in the enterprise.

- Number of administrators logged in

  Indicates the number of Enterprise Manager administrators logged into this Management Server.

- Repository session pool depth

  Indicates the number of sessions available from the database repository to the Oracle Management Server to perform actions such as submitting jobs to and registering events with Oracle Intelligent Agents. By default, the session pool depth is set to 15. This default value should be sufficient for most environments. Since the repository sessions are consumed when jobs are submitted and events registered, you should only need to adjust this default value if your administrative team is performing many activities.

- Repository session count

  Indicates the number of repository sessions currently in the pool. A repository session is obtained when the management server performs any task that requires retrieving or updating information in the Enterprise Manager repository. For example, the task could be submitting a job or event, or viewing a group, job history, registered events, etc. Because it is inefficient to open and close a session every time it is required, a certain number of sessions to the repository are kept in a pool and the Management Server tries to use these sessions before more are opened. The Management Server takes up about 5-7 sessions on startup.

An example of the output is shown below:

```
OEMCTL for Windows NT: Version 9.0.0.0.0
Copyright (c) 1998, 2001 Oracle Corporation.  All rights reserved.

The Oracle Management Server on host [znripley-pc.ovenbird.com] is functioning
pr
operly.

  The server has been up for 0 00:00:25.953

  Target database session count: 0 (session sharing is off)
  Operations queued for processing: 1
  Number of OMS systems in domain: 1 (znripley-pc.ovenbird.com)
  Number of administrators logged in: 0
  Repository session pool depth: 15
  Repository session count: 8 in-use and 1 available, pool efficiency: 18%
```

Stopping a Local Management Server

To stop a local Management Server, perform the following steps:

On Windows:

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.

On UNIX:

At the command line, enter

```
% oemctl stop oms
```

You will be prompted to enter the username and password of an Oracle Enterprise super administrator.

4

Configuring the Console when Connected to a Management Server

Beginning with Release 9.0 when you launch the Enterprise Manager Console or various other Enterprise Manager applications, you are prompted to choose between launching the product standalone (i.e. not connecting to the middle tier Management Server) or logging into a Management Server. While launching the Console standalone allows a single administrator to perform direct database administration, launching the Console by connecting to a middle tier Management Server provides more comprehensive management capabilities, such as sharing of administrative data among multiple administrators, being proactively notified of potential problems, and automating repetitive administrative tasks. This chapter will describe how to configure the Enterprise Manager Console when it is connected to a middle tier Management Server.

The following topics will be discussed:

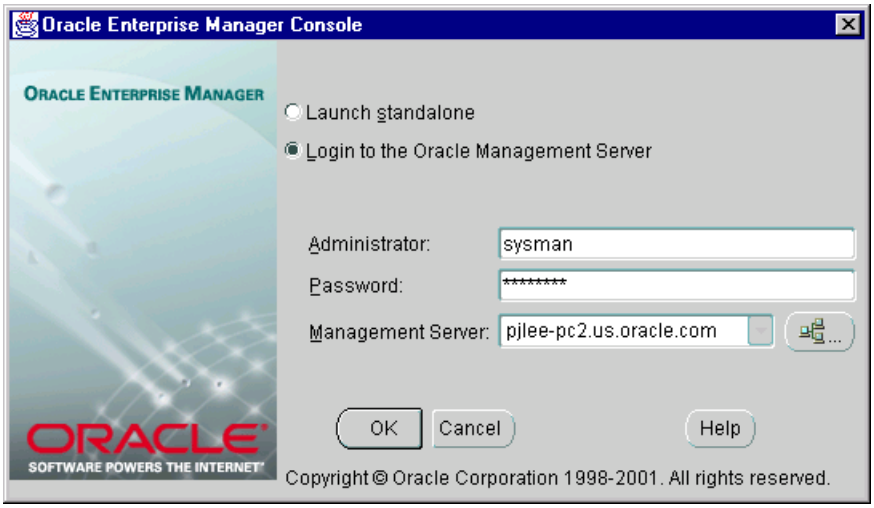
- Starting the Console with a Management Server Connection
- Discovering Nodes in Your Environment
- Creating Administrator Accounts
- Granting OEM_MONITOR Role to Database Preferred Credentials
- Enabling the Job System
- Configuring and Starting the Paging Server
- Configuring the E-mail Server
- Configuring Enterprise Manager Reporting
- Configuring the Console If Using a Dialup Line

Note: These features are not available in the standalone Console.

Choosing to Launch the Console by Logging into a Management Server

When you launch the Enterprise Manager Console, you are prompted to choose between launching the product standalone or logging into a Management Server.

Figure 4–1 Enterprise Manager Console Login

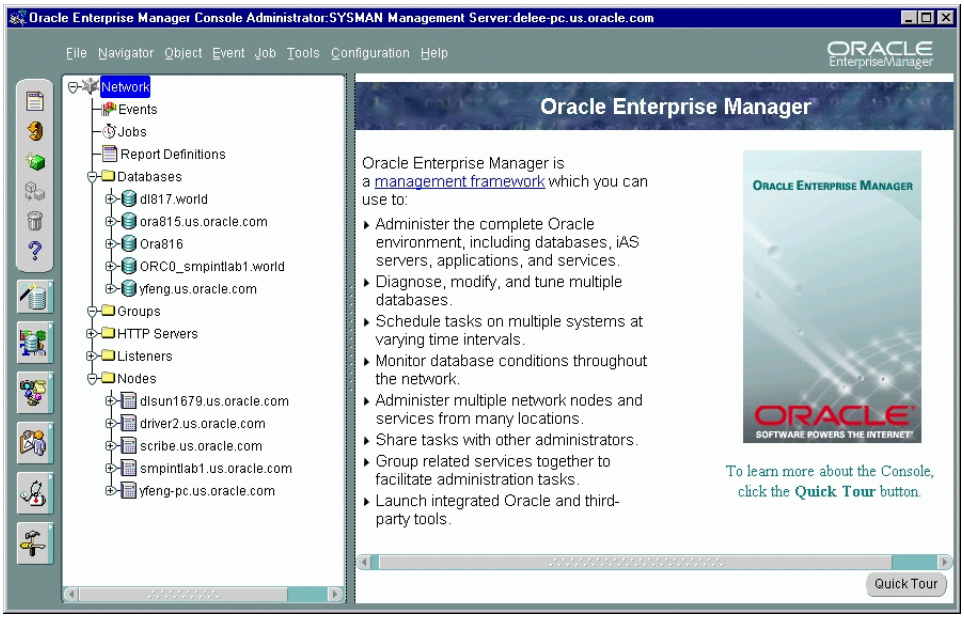


Note: Previous to launching the Console by logging into a Management Server you must first install and configure a Management Server. For installation instructions, refer to the Installation Guide. For configuration details, refer to Chapter 3, "Configuring and Controlling the Management Server".

Choose to launch the Console by logging into a Management Server when you want access to functionality such as:

- Management of several different target types (e.g. database, web server, application server, applications, etc.)
- Sharing of administrative data among multiple administrators
- Proactive notification of potential problems
- Automation of repetitive administrative tasks
- Backup and data management tools
- Customization, scheduling, and publishing of reports
- Running the client from within a web browser

Figure 4–2 Console Connected to a Management Server



Starting the Console with a Management Server Connection

On Windows-based platforms, you start the Console from the Windows Start Menu.

On any supported platform, you can launch the Console from the command line by using the command:

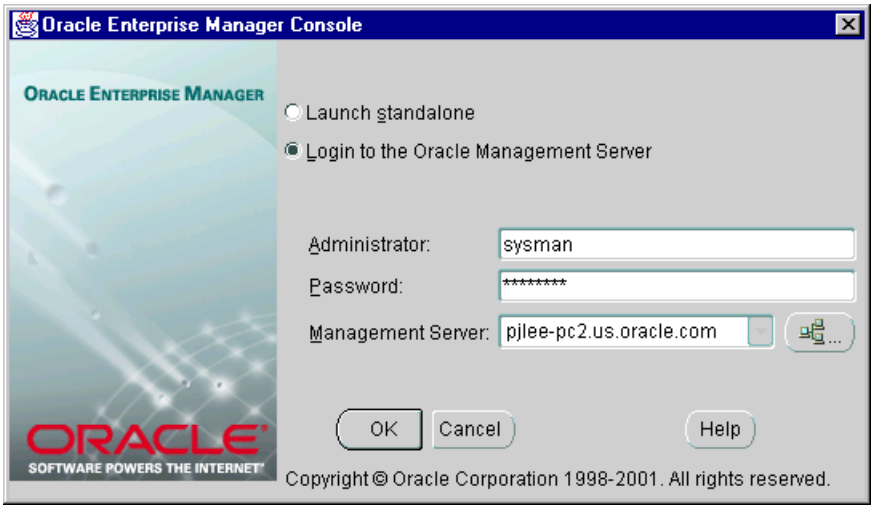
```
oemapp console
```

On UNIX platforms, the oemapp part of the command line is case-sensitive and must be entered with lowercase characters.

All of the above options prompt you with the Enterprise Manager login dialog. If you want to bypass the login dialog, you can enter the following command at the command line to automatically login to the Console by connecting to a Management Server:

```
oemapp console oem.loginmode=oms oem.credential=<username>/<password>@<oms>
```

Figure 4–3 Enterprise Manager Console Login



When the dialog appears, choose "Login to the Management Server" and if this is the first time you have logged in to the Management Server, enter the default credentials (e.g. Enterprise Manager administrator name and password) and the Management Server machine name. The default Enterprise Manager administrator name is `sysman` and its password is `oem_temp`. The Management Server on the

node you select or enter must be one which is already configured with the repository you want to access.

Note: The repository you use with a Management Server should not be confused with the standalone repository used with certain standalone, integrated applications.

If the name of the node where the Management Server is running does not appear in the pull-down list, you can either enter the machine name in the edit field or follow these instructions:

1. Click the Management Servers button, which is located to the right of the Management Server field. The Management Servers dialog appears.
2. Click the Add button. The Add Management Server dialog appears.
3. Type in the name of the node where the Management Server is running and click OK.

If you add a Management Server using the Management Server dialog it becomes the current choice when you return to the logon dialog.

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

After the initial login with `sysman/oem_temp`, a security dialog appears where you can change the default `sysman` password. The password you specify is not case sensitive. Other than spaces at the beginning or at the end of the password, you can specify any character in an Enterprise Manager Administrator's password.

Discovering Nodes in Your Environment

Oracle Enterprise Manager provides a Discovery Wizard for identifying network nodes and machines and populating the Console Navigator tree with these discovered nodes and targets. The discovered targets, such as databases and listeners, can then be administered with Enterprise Manager.

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

To discover additional nodes and targets which reside on nodes within your environment:

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 targets 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 or using the Import button to import a text file of node names. Then click Next to continue.
4. A Progress page appears, showing you the status of the node discovery. A checkmark indicates that the node was discovered successfully. An X indicates that the discovery has failed. If an error occurs, the error text explaining the reason for the error appears, giving you insight on how to continue. After the discovery process has completed, press the Finish button.
5. A Discovery Results dialog appears, telling you which nodes have or have not been automatically discovered. Press the OK button to dismiss the dialog.

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

   If no Intelligent Agent is running for some nodes which failed to be discovered, you can still add the node to the navigator, and add databases to that node using manual discovery.

During manual discovery, you will be prompted for the following information:

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

When a node is manually added, you cannot register events or submit jobs against the node.

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

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

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

---

6. If regular Enterprise Manager administrators are defined, an "Access to Target" page appears, allowing a super administrator to control what appears in the Console Navigator for regular Enterprise Manager administrators. This allows the super administrator to create customized Navigators for specific users. The page provides a multi-column list. The first column shows all objects that appear in the Console Navigator. Clicking on the plus "+" sign next to the objects name expands the object. One column exists for each Enterprise Manager administrator defined by the super administrator. To allow a regular administrator to see a particular object within the Navigator, in the column belonging to that administrator, click the checkbox in the row corresponding to the Navigator entry.
7. Press the Finish button.

Creating Administrator Accounts

Enterprise Manager 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 by connecting to a Management Server.

The installation of Enterprise Manager creates a single Super Administrator named `sysman`. The Super Administrator `sysman` can create administrators using the Manage Administrators item in the Configuration menu. In addition to an administrator name and password, each account can be tagged as a "Super Administrator" account or an account to which the administrator has access to only jobs and/or events.

Differences between the two types of accounts are as follows:

- **Super Administrators** automatically have full privileges for all objects in the system. To provide greater security, only Super Administrators can discover, refresh, or remove targets from the Console Navigator.

  Most Super Administrators also have a separate account for daily operations but use their Super Administrator account for special operations only available to Super Administrators, such as creating new Enterprise Manager Administrators, configuring paging or e-mail servers, defining management regions, or granting other administrators access to targets. Using the `sysman` account for daily administration work is not recommended. The Super Administrator account is similar to root on UNIX or Administrator on Windows NT and is a user which cannot be deleted or renamed. It is a user that can perform any task and therefore should be used only for setting up the environment.

- **Regular Administrators** can have access to a subset of Console operations and will only see these targets to which they have been granted access by the Super Administrator. For detailed information about customizing what administrators can see, refer to the *Oracle Enterprise Manager Administrator's Guide*.

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

Preferred Credentials must be set up for each administrator account. When an administrator connects to managed targets through the Management Server, the preferred credentials used are those defined explicitly for that administrator.

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

Granting OEM_MONITOR Role to Database Preferred Credentials

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

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

Here are the steps you need to perform:

1. Create a role called OEM_MONITOR

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

2. Grant the "connect" role to OEM_MONITOR

   ```
   grant connect to OEM_MONITOR;
   ```

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

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

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

   ```
   grant select_catalog_role to OEM_MONITOR;
   ```

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

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

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

Enabling the Job System

In order for Enterprise Manager administrators to be able to successfully submit jobs, certain configuration steps must be performed:

- An operating system user account must exist with the advanced user right, "logon as batch job" on any Intelligent Agent machine to which administrators plan to submit jobs. This only applies to Intelligent Agent machines running on Windows NT and Windows 2000 platforms. For details on creating a new operating system user or editing an existing user for this purpose, refer to the sections further below.
- Preferred credentials must be set for any node to which jobs will be submitted. The preferred credentials that are used on Windows NT and Windows 2000 must be the same as the operating system user account with the advanced user right "logon as batch job." For more details on preferred credentials, refer to the *Oracle Enterprise Manager Administrator’s Guide*.
- the operating system user account with advanced user rights must have read / write permissions to `ORACLE_HOME\NETWORK` directory as well as read, write, update, and delete permissions to the `TEMP` directory or the `ORACLE_HOME` directory.

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

You must create a Windows NT user account for every managed Windows NT node which will have jobs submitted against it. 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. Refer to 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" cannot be used for the user name.
3. Under the Policies menu of the User Manager Windows 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 Windows 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 Windows 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 Windows NT Domain User as Your Intelligent Agent User

Note: The Windows 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 Windows 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. 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.

Configuring and Starting the Paging Server

To enable administrators to receive page notifications, you must explicitly install the Oracle Enterprise Manager Paging Server and then the Super Administrator must configure it from the Console. Refer to the installation guide provided with the database release for more details.

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

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

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

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

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

your paging service provider for the phone number to call. It is the number for the modem for sending pages.

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

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

Configuring the Paging Server

Note: Only Super Administrators can configure the paging server; regular administrators cannot.

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

1. Install a modem.

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

2. Specify modem settings.
   a. Go to Start > Settings > Control Panel > Modems (Windows NT).
   b. Specify how your calls are dialed by clicking Dialing Properties from the Modems Properties page and then setting the following parameters:
      * From what area code you are dialing
      * From what country you are dialing
      * How you access an outside line. If you are not required to dial a number to access an outside line, leave this field blank.

c. Set the Maximum Speed parameter by clicking Properties from the Modems Properties page. Oracle recommends setting this parameter to 9600K Baud; however, you should find the baud rate setting optimal for your system.

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

---

3. Install the Oracle Enterprise Manager Paging Server. Refer to the installation guide provided with the database release for information.
4. Start the Paging Server.
   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 server by typing the following at a command prompt

   ```
   oemctl start paging
   ```

Adding a Paging Server

To add a paging server to the Enterprise Manager Console, perform the following operations:

1. From the Console Configuration menu, choose Configure Paging/Email. The Configure Paging/Email property sheet appears.
2. Click Paging Configuration in the tree list to display current paging server information.
3. Right click on Paging Configuration to display the context-sensitive menu and choose Add Server. You can also click the Add Server icon in the detail view. The Add Paging Server dialog appears.
4. Enter the name of the machine on which the paging server runs. For example, smpqa-pc.
5. Click OK.

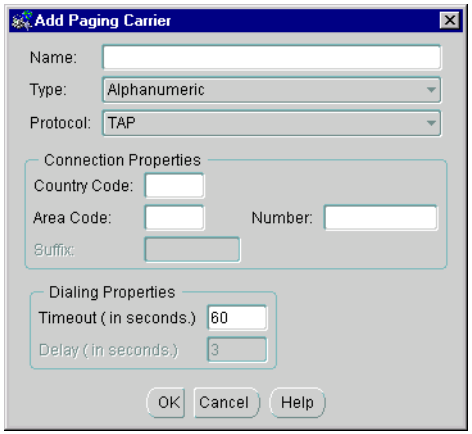
If the Console is unable to find the paging server with the given hostname, an error appears, saying "VD-4362: Could not add paging server, as paging server <hostname> could not be reached."

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

Adding Paging Carrier

1. From the Console Configuration menu, choose Configure Paging/Email. The Configure Paging/Email property sheet appears.
2. Expand the Paging Configuration object in the tree list. Right-click on one of the paging servers you added previously and choose Add Server from the context-sensitive menu. You can also click the Add Carrier icon in the detail view to the right. The Add Paging Carrier dialog appears.
3. Enter the requisite information in the text entry fields. Once the paging carrier is defined, you can view the paging carriers by expanding the appropriate paging server and carrier objects in the Configure Paging/Email tree list. See Figure 4–4, "Add Paging Carrier Dialog"
4. Click OK.

Figure 4–4 Add Paging Carrier Dialog



- Name

  Paging carrier name. Field accepts alphanumeric characters and underscores.

- Type

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

- Protocol

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

- Connection Properties

  * Country Code: The country code used to dial the pager if the call is international.
  * Area Code: Area code used by the country in which the pager is located.
  * Number: Local dialing number of the pager.
  * Suffix: Permits identification of voice messages from a paging carrier and allows the person being paged to choose from several options when using a touch tone phone. For example, commas can be used as pauses. The Suffix field accepts the following characters: integers, commas, pound sign, and the star (asterisk). This option is only available if the paging carrier type is set to Numeric.

- Dialing Properties

  * Timeout (in seconds): Maximum dialing time allowed for a successful page.
  * Delay (in seconds): Time delay before dialing. This option is only available if the paging carrier type is set to Numeric.

Specifying Paging Notification Preferences

After completing paging server configuration, notification and schedule preferences should be specified for all administrators and the configuration should be tested to ensure that it is properly configured. Refer to the *Oracle Enterprise Manager Administrator's Guide* for details.

Configuring the E-mail Server

To enable administrators to receive e-mail notifications, super administrators must first configure the e-mail server from the Console:

1. From the Console Configuration menu, choose Configure Paging/Email. The Configure Paging/Email dialog appears. By default, the Email Configuration is already selected.
2. Enter the node on which the SMTP mail gateway resides in the SMTP Mail Gateway entry field. For example, mailserver.company.com.
3. Enter the name you want to use to identify the sender of the e-mail in the Sender's SMTP Mail Address entry field.

After completing the SMTP mail configuration, notification and schedule preferences should be specified for all administrators who want to receive e-mail notifications. Refer to the *Oracle Enterprise Manager Administrator's Guide* for details.

Configuring Enterprise Manager Reporting

The Enterprise Manager reporting system provides flexible reporting functionality to administrators, permitting quick and easy access to information about the status of all monitored systems in their enterprise. Administrators can create, schedule, and publish a wide variety of enterprise system reports. When published to a web site, these reports can be accessed by a wider audience, enabling anyone from administrators to managers to executives to quickly access information regarding their monitored enterprise.

In order to access published reports, ensure that the Enterprise Manager Web Site component has been installed. By default, it is installed with the Management Server under the Oracle_Home/oem_webstage directory. In addition, the Enterprise Manager Web Site automatically installs a preconfigured Oracle HTTP server to act as the reporting web server. This is the same HTTP server that is used by default for the browser-based Enterprise Manager.

Starting and Stopping the Oracle HTTP Server

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

On Windows NT:

To start the Oracle HTTP Server:

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

On UNIX:

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

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

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

On Windows NT:

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

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

On UNIX:

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

```
$Oracle_Home/Apache/Apache/bin/apachectl stop
```

After installing the Enterprise Manager Web Site and starting the Oracle HTTP server, you must perform the following configuration steps in order to access the published reports.

Change the REPORTS_USER Administrator Password

You must change the default password (oem_temp) for the REPORTS_USER administrator.

To change the password:

1. From the Enterprise Manager Console, choose Manage Administrators from the Configuration menu. The Manage Administrators Accounts dialog appears.
2. Select REPORTS_USER from the list.
3. Click Edit. The Edit Administrator Preferences property sheet appears.
4. Enter a new password in the Password field and retype the new password in the Confirm Password area.
5. Click OK to set the password.

Run the oemctl configure rws Script

The `oemctl configure rws` script is a command-line utility that must be run on the machine where the Management Server and reporting web server are installed. Prior to executing the script, ensure that the Management server on the reporting web server machine is running.

To run the configuration utility:

1. Go to the machine running both the Management Server and reporting web server.
2. At the command prompt, type `oemctl configure rws`
3. Follow the instructions provided by the utility. You are prompted for the following information:
   - Reporting Web server host name: Enter the full node name.
   - Port Number: The default is 3339. Press Return to accept the default value.
   - Oracle Management Server host name: Enter the name of the machine running the Management Server. This defaults to the name entered for the web server.
   - Password for the REPORTS_USER: Enter the REPORTS_USER password.

     You must change the oem_temp password; otherwise the `oemctl configure rws` script will generate an error message when you run it if the REPORTS_USER password is left as the default.

4. The configuration utility confirms if you want to proceed with the configuration.

Note: Choosing "View Published Reports" from any Console menu before running `oemctl configure rws` will generate an error message indicating that you need to first configure the Reporting web site.

Configuring the Console If Using a Dialup Line

You must have the correct TCP/IP configuration; incorrect TCP/IP configurations result in timeouts and lost connections.

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

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

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

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

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

5. On the IP Address page, select "Obtain an IP address from a DHCP Server."
6. Click the OK button.

7. Connect to the network via your dial-up line. You will now be successfully able to launch the Console.

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

5

Running Enterprise Manager from a Web Browser

This chapter will describe how to run Enterprise Manager and its management applications from a web browser.

Running Oracle Enterprise Manager from a Web Browser

With Oracle Enterprise Manager, an administrator is not limited to managing targets from a particular machine where the product has been installed. Instead, administrators can deploy the Enterprise Manager Web Site in order to run Enterprise Manager from any supported web browser.

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

All Enterprise Manager products and applications are web-enabled with the following exceptions:

- Oracle Diagnostics Pack
  - Oracle Capacity Planner
  - Oracle Trace Data Viewer
- Oracle Tuning Pack
  - Oracle Expert
  - Oracle Index Tuning Wizard
  - Oracle SQL Analyze
- Integrated Applications
  - Oracle Directory Manager
  - Oracle Net Manager

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

Client Install

Ensure that a supported web browser is installed on the client(s) machines that will run web-enabled Enterprise Manager.

Supported web browsers are listed below:

- Netscape Navigator® 4.7 and higher on Windows 2000, Windows NT, and Windows 98

- Microsoft® Internet Explorer 5.0 and higher on Windows 2000, Windows NT, and Windows 98

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

Server-Side Install

1. Ensure that the Enterprise Manager web site component has been installed. By default, it is installed with the Management Server under the `Oracle_Home/oem_webstage/` directory. In addition, the Enterprise Manager web site automatically installs a preconfigured Oracle HTTP server to act as its web server. This is the same HTTP server that is used by the Enterprise Manager Reporting web site.
2. Start the Oracle HTTP Server by performing the following steps:

   On Windows NT:

   To start the Oracle HTTP Server:

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

   b. Select the OracleHTTPServer_<Oracle_Home_Name> service.

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

   On UNIX:

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

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

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

   On Windows NT:

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

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

   b. Select the OracleHTTPServer_<Oracle_Home_Name> service.

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

On UNIX:

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

```
$Oracle_Home/Apache/Apache/bin/apachectl stop
```

If you want to use a web server other than the default configured Oracle HTTP Server, you must install and manually configure another supported web server. Additional supported web servers include:

- Oracle Internet Application Server, Release 1.0 and higher, on Intel Solaris, Sun SPARC Solaris, HP-UX, IBM AIX, Compaq Tru64, Linux, Windows NT and Windows 2000
- Apache, Release 1.3.9 and higher, on Sun SPARC Solaris, Windows NT and Windows 2000
- Microsoft Internet Information Server (IIS), Release 4.0 and higher, on Windows NT or Windows 2000

For examples on configuring the non-Oracle web servers for use with browser-based Enterprise Manager, refer to "Configuring the Web Server and Directory Mapping for OEM_Webstage" on page 5-9.

Run the Browser-Based Oracle Enterprise Manager on the Client

After performing the above configuration steps, you are ready to start 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 web server that runs the Enterprise Manager web site.

If you should experience problems with the proxies, refer to "Troubleshooting the Web Browser" on page F-21.

---

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

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

   For example:

   ```
   http://znripley-sun.us.ovenbird.com:3339/
   ```

   Note: The default preconfigured Oracle HTTP Server's port number is 3339.

   The index (emwebsite.html) page will appear. The index page allows you to launch the Enterprise Manager Console, Enterprise Manager Reporting web site, and documentation, and access various web sites. For information on setting up the Enterprise Manager Reporting Web Site, see "Configuring Enterprise Manager Reporting" on page 4-18.

2. From this index page, if you want to launch the Console, enter the machine name for the Management Server to which you want to connect and click the Launch Console button. If you want to access published Enterprise Manager reports, enter the reporting web server hostname and port number (if it is different from the defaults) and click the Access Report button. You must have

configured Enterprise Manager Reporting prior to pressing the button. For information on setting up the Enterprise Manager Reporting Web Site, see "Configuring Enterprise Manager Reporting" on page 4-18

Figure 5–1 The emwebsite.html Page

3. If you are entering the URL for the first time, you must install the Oracle JInitiator plug-in Release 1.1.8.8
   - On Netscape, you are automatically prompted to install the plug-in.

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

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

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

5. After installing the java plug-in, a dialog will appear, which explains the following:

   - The Console applet has been launched from the browser window. Closing the dialog will cause the applet to stop.

     You will not be able to close the Oracle Enterprise Console screen without stopping the Console since the application has been launched from this browser window.

   - You can exit the emwebsite.html page without exiting the Console.

   In addition, the Oracle Enterprise Manager Login dialog will appear.

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

---

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

   Administrator = `sysman`

   Password = `oem_temp`

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

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

---

7. Bookmark the URL.

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

Configuring the Web Server and Directory Mapping for OEM_Webstage

If you want to use a web server other than the default preconfigured Oracle HTTP server for browser-based Enterprise Manager, you must install and manually configure another supported web server. Additional supported web servers include:

- Oracle Internet Application Server, Release 1.0 and higher, on Intel Solaris, Sun SPARC Solaris, HP-UX, IBM AIX, Compaq Tru64, Linux, Windows NT and Windows 2000
- Apache, Release 1.3.9 and higher, on Sun SPARC Solaris, Windows NT and Windows 2000
- Microsoft Internet Information Server (IIS), Release 4.0 and higher, on Windows NT or Windows 2000

To configure the Apache Server and Microsoft Internet Information Server, refer to the following instructions.

Apache 1.3.9 or Higher

1. Install the Enterprise Manager web site without the Oracle HTTP Server.
2. Install Apache 1.3.9 or higher. Consult your Apache-specific configuration documentation for detailed information.
3. Edit the `httpd.conf` located in the Apache home/conf/httpd.conf/.
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/ora90/oem_webstage/cgi-bin/"
   ```

   Note: `/private/ora90/ is your Oracle Home.`

5. Add as many aliases as you need (with no limit). The format is

   ```
   Alias fakename realname
   ```

Note that if you include a trailing "/" on fakename, then the server requires that it is present in the URL. In this example, "/icons" is not aliased. "/icons/" is aliased.

```
Alias /icons/ "/usr/local/apache/icons/"
Alias /oem_webstage/ "/private/ora90/oem_webstage/"
```

Note: /private/ora90/ is your Oracle Home.

6. Change "/apache/cgi-bin" to where your ScriptAliased CGI directory exists, if you have that configured.

   <Directory "/usr/local/apache/cgi-bin"> to

   <Directory "/private/ora90/oem_webstage/cgi-bin">

   ```
   AllowOverride all
   Allow from all
   </Directory>
   ```

7. Stop and restart the web server.

   ```
   apachectl stop
   apachectl start
   ```

Internet Information Server (IIS) 4.0

To use the Internet Information Server, you will need to create three virtual directories pointing to the oem_webstage directory and two subdirectories inside of that directory. The oem_webstage directory is created automatically by the installation procedure when the Oracle Enterprise Manager Web Site component is installed:

1. Install the Enterprise Manager web site without the Oracle HTTP Server.
2. Install Internet Information Server (IIS) 4.0. Consult your Internet-Information-Server-specific configuration documentation for detailed information.
3. From the Windows NT Program Start Menu, select Microsoft Internet Information Server 4.0->Internet Service Manager to configure the Internet Information Server. The "Microsoft Internet Service Manager" screen is displayed.

4. Click on "Default Web Site" and right mouse-click to display the associated submenu.
5. Click on "Properties" to display the Properties sheet of the Default Web Site.
6. Verify that the IP address of the node is correctly set in the Properties sheet. Then click "Ok".
7. Select New, Virtual Directory.
8. Enter the name of the virtual directory. For example, `oem_webstage`.
9. Specify the following settings:

   Alias: `/oem_webstage`

   Path: `ORACLE_HOME\oem_webstage`

   Access: Read, Execute
10. After saving the settings, expand the "Default Web Site" to display the new virtual directory.
11. Select the new oem_webstage virtual directory.
12. Click on the Action button, select New, Virtual Directory to create a additional virtual directory with the following settings:

    Alias: `cgi-bin`

    Path: `ORACLE_HOME\oem_webstage\cgi-bin`

    Access: Read, Execute
13. Create an additional virtual directory with alias "`\oem_webstage\java-plugin`" and directory `ORACLE_HOME\oem_webstage\java-plugin` with the following settings:

    Alias: `java-plugin`

    Path: `ORACLE_HOME\oem_webstage\java-plugin`

    Access: Read-only

    Note: Make sure you do not enable execute permissions; otherwise, you will not be able to download the plug-in.
14. Restart the web server.

6

Tuning the Oracle Management Server

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

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

Setting the Ping Interval

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

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

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

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

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

Setting the Maximum Connections Out

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

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

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

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

Setting the Maximum Connections In

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

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

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

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

Setting the Management Server Retry Interval

If the Management Server and the repository server lose connection, the Management Server can be configured to try to re-establish the connection to the repository server. The Management Server is designed to retry at a pre-defined intervals with these two parameters:

- oms.repository.connect_timeout
- oms.repository.connect_numTries

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

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

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

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

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

By default, the properties are set as follows:

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

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

Smoothing Over Temporary Network Failures

The Management Server tries to ping all nodes every interval in order to detect whether a node is up or down.

If it detects that it was able to successfully ping a node in the previous interval and not in the present interval, it would mark that node as down.

The ping can be made more tolerant to temporary network outages by the following parameters.

```
oms.vdg.conn_retries = (integer, default 1).
```

This parameter specifies the number of retries the Management Server will try to establish a connection either for pinging or for other communication. The Management Server defaults to 1. In other words, it will not retry any connection.

For networks prone to temporary outages, set it to 2 or 3.

```
oms.vdg.conn_retries_delay = (integer, default 5)
```

This parameter specifies the amount of time in seconds the Management Server will wait between retries to establish a connection.

This parameter needs to be set to a value depending on the duration of network outages.

The above parameters are documented in omsconfig.properties.template in $ORACLE_HOME/sysman/config directory.

A

Directory Structure

This appendix describes important directories and files that get created upon installation of Oracle Enterprise Manager.

While there are numerous directories created upon installation of Enterprise Manager and its components, the most important and useful directories for you to be aware of include:

$ORACLE_HOME/sysman/
This directory will be described in detail below.

$ORACLE_HOME/relnotes/em/
Contains any readme files specific to Enterprise Manager and its management applications. Such readme files identify differences between the delivered Oracle Enterprise Manager product and its documented functionality.

$ORACLE_HOME/doc/em/
Contains any documentation (selected for installation from the Documentation CD-ROM) specific to Enterprise Manager and its management applications. By default, this directory also includes the complete diagnostics help system in HTML format for use as a guide to Oracle performance metrics.

$ORACLE_HOME/sysman/ Directory

The $ORACLE_HOME/sysman/ directory contains several subdirectories with which you should be familiar:

admin/
Contains SQL scripts and registry files that are used by the Enterprise Manager Configuration Assistant to perform configuration of the Management Server and repository. The contents of this directory must not be altered.

config/
Contains several configuration files for Enterprise Manager components. Only the following files contained in this directory can be modified:

- dbappscfg.properties

  Contains configuration settings specific to SQL*Plus Worksheet.

- clientconfig.properties

  Contains a list of machines that run Management Servers. This file also allows you to enable tracing of the Enterprise Manager Console and management applications.

- clientconfig.properties.template

  Contains configuration details for enabling tracing of Change Manager.

- omsconfig.properties

  Contains configuration details of the local Management Server including database repository connection information. This file also allows you to enable tracing and logging of the middle tier Management Server.

- omsexternalregistry.registry.template

  Allows you to add an External Service registry file. This file currently contains the External Service registry settings for Management Server integration with Oracle Internet Directory Server. You must copy this file to omsexternalregistry.registry and restart the Management Server if you wish the Management Server to connect to a Directory Server. Oracle Internet Directory requires a Management Server External Service as it uses native libraries in your Oracle Home.

- paging.cfg.template

  Allows you to enable tracing of the Enterprise Manager Paging Server. This file is generated only when the Paging Server has been installed on a Windows NT

or Windows 2000 machine. The Paging Server is not available on any other platform.

$ORACLE_HOME/sysman/config/ Directory

Any other files located in the $ORACLE_HOME/sysman/config/ directory must not be altered, such as the following:

- oemclient.properties

  Contains information about all event tests and job tasks as well as details for launching applications in context.

- ifiles/

  Contains saved init.ora parameters from Instance Management. Initially, this directory is empty but after accessing Instance Management to save init.ora parameters, it will become populated with files.

- jlib/

  Contains needed jar files for Enterprise Manager components to function properly. The contents of this directory must not be altered.

- log/

  Contains tracing information that has been redirected to log files. Initially, this directory is empty; the directory is populated with the oms.nohup file. The oms.nohup file contains information corresponding to when the Management Server is started and stopped (and if the Management Server restarts itself for any reason). Any critical error messages (for example, running out of sessions, SQL exceptions, etc.) would also be logged to this file. Any other tracing information would be directed to the oms.log files if tracing and logging is enabled for the Management Server.

  Once tracing and logging are enabled, this directory would be populated with additional log files (e.g. oms.log).

- mesg/

  Contains message files specific to Enterprise Manager applications that have not been written in Java, including Trace Data Viewer, Oracle Expert, and SQL Analyze. This directory is created only on Windows-based platforms, not on UNIX based platforms. The contents of this directory must not be altered.

- report/

  Contains HTML formatted reports generated from Enterprise Manager Console and various management applications. Initially, this directory is empty but after generating a report from Enterprise Manager, it will become populated with HTML files. The contents of this directory should not be altered.

- reporting/

  Contains GIF files for generated HTML reports. The contents of this directory should not be altered.

- temp/

  This is a scratch directory used by the Management Server, as well as Enterprise Manager applications that have not been written in Java (e.g Trace Data Viewer, Oracle Expert and SQL Analyze), for creating temporary files. The contents of this directory should not be altered.

B

Activating Logging and Tracing

Each tier of the Enterprise Manager framework (e.g. Console, Management Server, and Intelligent Agents) supports its own tracing and logging capabilities. Both tracing and logging will provide the same detailed information on what actions the component is performing; however, tracing would be used to write data to a display for real-time viewing while logging would be used to redirect trace information to a file to view at a later time. This appendix will describe how to enable both tracing and logging of the various Enterprise Manager components.

Intelligent Agent Tracing/Logging

Tracing and logging of the third tier Intelligent Agent allows tracking of all communication between the Intelligent Agent and Management Server(s). For information on activating tracing and logging of the Intelligent Agent, refer to the *Oracle Intelligent Agent User's Guide*.

Management Server Tracing/Logging

Tracing and logging of the middle tier Management Server provides tracking of all communication between the Management Server and Intelligent Agents as well as communication between the Management Server and Consoles and/or other Enterprise Manager applications.

To enable tracing and/or logging, you must edit the omsconfig.properties file located on the Management Server machine in the $ORACLE_HOME/sysman/config/ directory. Any properties specified in the omsconfig.properties file are case sensitive. Thus, you must specify the parameters in the same case as you see in the file and/or in this documentation.

Tracing of the Management Server

To enable tracing of the Management Server, add the following properties and appropriate values to the omsconfig.properties file:

TRACING.ENABLED = <true>|<false>
Specifies if trace information is to be generated. If logging is disabled, the trace information will be written to the Console from which the Management Server was started. Default is FALSE.

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

VDB_VERBOSE_DEBUG.
Specific JDBC logging can be appended to the OMS.LOG file.

VDG.JOB.OUTPUT = <true>|<false>
In addition, if you want to collect detailed information concerning output of submitted Enterprise Manager jobs, then you can specify the VDG.JOB.OUTPUT property in the omsconfig.properties file.

VDG.JOB.OUTPUT specifies whether to include the output to submitted Enterprise Manager jobs in the OMS.LOG file. By default this information is not included in any log file.

Logging of the Management Server

When logging is enabled, and the trace output is written to a file, the Management Server will create a file called OMS.LOG in the $ORACLE_HOME\SYSMAN\LOG directory.

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.

This file will remain in use for as long as the Management Server is running. All messages will be written in that file.

Important Note: When the Management Server starts, all previous log files of the name `OMS.LOG.*` are automatically deleted.

The oms.nohup file is automatically created (on both Windows NT and UNIX). The oms.nohup file has entries corresponding to when the Management Server is started and stopped and if the Management Server restarts itself for any reason. Any critical error messages (for example, running out of sessions, SQL exceptions, and others) are also logged to this file. Any other detailed tracing is directed to the oms.log files (if tracing is turned on)

Note: When you enable logging and tracing, you automatically enable Backup and Data Management logging and tracing.

To enable logging of the Management Server, add the following properties and appropriate values to the omsconfig.properties file:

LOGGING.ENABLED = <true>|<false>
Specifies whether the trace information will to be written to a file. Information will only be written to a file if the TRACING.ENABLED flag is also activated. Default is FALSE.

LOGGING.DIR = <directory_spec>
Directory in which the OMS.log file will be written. Default value 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.

LOGGING.FILENAME = <filename>
Filename to use for the Management Server logging. An index counter will be appended to this file. Every time the maximum size is reached a new file with the increased index number will be created. At startup the counter is always 0 (ZERO), and the value of this counter will be increased if the log file reaches its specified maximum size. Defaults to `OMS.LOG.0`, `OMS.LOG.1`, `OMS.LOG.2`, and so on.

LOGGING.MAX_SIZE = <integer>
Controls the total maximum size of the log files. The value you specify for the `LOGGING.MAX_SIZE` property is in MB. Its default value is 50 and will result in two log files of max size 25MB. When set to 0 (zero), no file limit is imposed, and only 1 OMS.LOG file will be created and used. If a specific size is specified, all of the log files generated will be suffixed with a counter value.

LOGGING.MAX_FILE_CNT = <integer>
Defines the maximum number of files the log will span at any given time. The cumulative size of all the files would be less than or equal to LOGGING.MAXSIZE.

Default value is 2.

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

Note: LOGGING.MAX_SIZE and LOGGING.MAX_FILE_CNT control how much disk space is used for the Management Server log files. You can affect the size and disk usage of the log files with these parameters.

LOGGING.SAVE_PREVIOUS_LOG = <true>|<false>
Specifies if the previous OMS.LOG files will be renamed to a filename with a timestamp to prevent it from being overwritten when the Management Server is started again. Such log files would be appended with a timestamp (format: `yyyyMMddHHmmss`) when they are renamed. Default is FALSE.

Enterprise Manager Client Application Tracing

To enable tracing of the Enterprise Manager Console and its management applications, add the following properties and appropriate values to the clientconfig.properties file:

TRACING.ENABLED = <true>|<false>
Specifies if trace information is to be generated.

TRACING.LEVEL = <oem_trace_levels>
Set value to specify the detail of trace information to collect if tracing is enabled.

Set <oem_trace_levels> to 2.

Note: You cannot start an application using icons or shortcuts if you want to trace it and redirect its output to a file.

For all Windows platforms (Windows NT, Windows 2000, and Windows 98), open a DOS window and set the following environment variable:

```
C:\>SET ORACLE_OEM_CLIENTTRACE=TRUE
```

For UNIX, set the following environment variable

```
$ export ORACLE_OEM_CLIENTTRACE=TRUE
```

Then start a client application from the command line using the OEMAPP script and redirect the output to a file.

For example

```
oemapp console
```

If you need to perform additional JAVA debugging, you can modify the OEMAPP script file and add debugging parameters.

For example, on Windows, change

```
SET JRE=jre -nojit -mx32m -ms8m
```

to

```
SET JRE=jre -nojit -mx32m -ms8m -verbose -verbosegc
```

Browser-Based Enterprise Manager Tracing

If you encounter problems bringing up Oracle Enterprise Manager in a browser, collect tracing information before reporting the problem to Oracle Support Services.

To set up tracing for your browser perform the following steps:

1. Exit your browser session
2. Start the Java plug-in Console.

   From the Windows Start menu, click Programs-> JInitiator Control Panel. A window appears.

   a. Check the "Show Java Console" checkbox.

   b. In the Java Run Time Parameters box, append the following to the end of the line:

      ```
      -DTRACING.ENABLED = TRUE -DTRACING.LEVEL = 2
      ```

   c. Click the Apply button.

   d. Close the Oracle JInitiator Properties panel.
3. Restart your browser and reload Oracle Enterprise Manager.

   The Java Console window appears, showing the Java classes loaded by the plugin as well as any exceptions that may occur. If no exceptions are displayed, clear the screen (by clicking the Clear button) every 3rd or 4th screen-full of displayed information.
4. If an exception appears in the Java Console window, please cut and paste it into a file and send it to Oracle Support Services along with a description of your problem.

Paging Server Tracing

The Enterprise Manager Paging Server can be debugged and traced separately from the Management Server. Tracing for the paging server is disabled by default. If tracing is enabled, the server writes trace statements for all telephone line handling and any successes or failures to a log file by default. Since information is logged whenever a page is sent, the log file grows proportionally to the number of pages sent. To delete a log file, you must shut down the paging server and delete the file.

The installation of the Oracle Enterprise Manager Paging Server provides a template configuration file, `paging.cfg.template`, located in the `ORACLE_HOME\sysman\config` directory.

1. Copy the `paging.cfg.template` file to the `paging.cfg` file, which is also located in the `ORACLE_HOME\sysman\config` directory.

   Oracle recommends copying this file (not renaming it) to retain information. If you do not copy this file, all comments concerning enabling tracing of paging will be removed. In addition, when updates to Enterprise Manager software are made, any configuration will be lost and not retrievable.

2. Based on the instructions in the `paging.cfg.template` file, modify the `paging.cfg` file according to your tracing needs and save it.

To enable tracing of the Enterprise Manager Paging Server, add the following properties and appropriate values to the `paging.cfg` file:

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.

- 5 - user: collects critical messages and error messages.
- 3 - admin: collects critical, error, and warning messages.
- 2 - dev: collects all messages from admin trace level as well as informational and debug messages

TRACEFILENAME

Set value for where to write tracing output if tracing is enabled.

Oracle recommends setting the value to PAGING_LOG.TRC. By default, this file is located in the Paging Server's `ORACLE_HOME\SYSMAN\LOG` directory.

If you specify a different directory, you must specify <Drive_Letter>:\\<directory_path>\paging_log.trc. For example, if you want the tracing file stored in C:\temp\, set the value to C:\\temp\paging_log.trc.

SQL Engine Tracing

The SQL engine accepts, executes, and transmits the results of the SQL statements issued by the Enterprise Manager software.

Depending on how the client application was started, the SQL Engine can be running on either the client or the Management Server:

- A client application connecting to the Management Server will use the SQL Engine of the Management Server.
- A client application connecting directly to a database will use its own SQL engine.

Since the engine can be traced on both the client and the Management Server, these parameters can be specified in both the OMSCONFIG.PROPERTIES and the ClientConfig.properties files.

The possible VDB (SQL Engine) parameters are mutually exclusive. You should use the highest requested tracing.

VDB_DEBUG

When enabled, the SQL Engine will display trace stack traces and messages that are the first level of information. Boolean value. Possible values: TRUE and FALSE. Defaults to FALSE.

VDB_VERBOSE_DEBUG

In this case, the SQL engine will display the methods as they are being entered and exited as well as any DEVELOPER DEBUG information. Boolean value. Possible values: TRUE and FALSE. Defaults to FALSE.

VDB_SESSION_DEBUG

This is validated when displaying the contents of the database session pool. It is also used to trace session creation and destruction, as well as session pool activity. Boolean value. Possible values: TRUE and FALSE. Defaults to FALSE.

VDB_VERBOSE_SESSION_DEBUG

This parameter gives more detail on session activity including stack traces when sessions are opened, closed, released to, or retrieved from the session pool. Like VDB_VERBOSE_DEBUG, it is a verbose version of the session tracing. Boolean value. Possible values: TRUE and FALSE. Defaults to FALSE.

Tracing and Logging of Management Pack Applications

Refer to Database Tuning with the Oracle Tuning Pack for information on tracing for the management packs.

C

General Repository Guidelines

Repository Sizing

This section 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 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 the repository, a new OEM_REPOSITORY tablespace will be created. The OEM_REPOSITORY tablespace contains repository objects for the Oracle Enterprise Manager Console 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	■ use only the Console ■ save little (if anything) in job history	4 - 9 MB
Oracle Diagnostics Pack	■ collect less than 4 MB of Trace Data ■ use Capacity Planner for a single, small database over a few days	35 MB
	■ collect between 4 - 20 MB of Trace Data · ■ use Capacity Planner for a single, medium-sized database over several months	60 MB
	■ collect between 20 - 60 MB of Trace Data · ■ use Capacity Planner for up to three large databases over several months	120 MB

Product	If you...	Then allocate...
Oracle Tuning Pack	save less than: ■ 50 tuned SQL statements ■ 5 scoped tuning sessions ■ 10 tablespace jobs in job history	less than 15 MB
	save between: ■ 50 - 150 tuned SQL statements ■ 5 - 15 scoped tuning sessions ■ 10 - 30 tablespace jobs in job history	15 - 45 MB
	save more than: ■ 150 tuned SQL statements ■ 15 scoped tuning sessions ■ 30 tablespace jobs in job history	more than 90 MB
Oracle Change Management Pack	■ for a schema with approximately 500 objects · 1 baseline, with 2 saved versions of baseline· 1 saved comparison· 1 change plan (propagate the schema)	20 MB

Product	If you...	Then allocate...
	■ For a schema with approximately 500 objects. 2 baselines, with 2 saved versions of baseline· 2 saved comparisons· 5 change plans	40 MB
	■ For a schema with approximately 500 objects· 5 baselines, with 2 saved versions of baseline· 5 saved comparisons, with 2 versions each· 10 change plans	100 MB
Oracle Management Pack for Oracle Applications	■ use Capacity Planner for a single, small database over a few days	4 MB
	■ use Capacity Planner for a single, medium-sized database over several months	10 MB
	■ use Capacity Planner for up to three large databases over several months	20 MB
Oracle Management Pack for SAP R/3	■ use Capacity Planner for a single, small database over a few days	4 MB

Product	If you...	Then allocate...
	■ use Capacity Planner for a single, medium-sized database over several months	10 MB
	■ use Capacity Planner for up to three large databases over several months	20 MB
Oracle Standard Management Pack[1]	■ for a schema with approximately 500 objects· 1 baseline, with 2 saved versions of baseline· 1 saved comparison	20 MB
	■ for a schema with approximately 500 objects· 2 baselines, with 2 saved versions of baseline· 2 saved comparisons	35 MB
	■ for a schema with approximately 500 objects· 5 baselines, with 2 saved versions of baseline· 5 saved comparisons, with 2 versions each	80 MB

[1] While the other separately licensable Packs are available with Oracle9*i* Enterprise Edition, the Oracle Standard Management Pack is only available with Oracle9*i* standard edition.

For example, if you:

- use the Console 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 should allocate approximately 88Mb 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.

D

Globalization Support

Oracle Enterprise Manager Release 9.0 has been translated into the following six languages:

- German
- French
- Brazilian Portuguese
- Simplified Chinese
- Japanese
- Korean

These translations are bundled along with the English version of the product. To use Enterprise Manager and its applications in a language other than English, you must choose the appropriate language during product installation.

Only during a custom installation is language selection an option. However, regardless of the language you select to install, the English versions will always be installed automatically.

For further details regarding installation of Enterprise Manager components in languages other than English, refer to your installation guide.

Accessing Browser-Based Enterprise Manager in a Language Other Than English

To run browser-based Enterprise Manager in a language other than English, install the Enterprise Manager web site with the appropriate language in a custom install. When you access the index page, enter the following:

```
http://<machine name>:3339/emwebsite_<lang>.html
```

For example, to see the German-translated version of the index page, enter the following:

```
http://<webserver host name>:3339/emwebsite_de.html
```

Setting the Language for the Console

On NT:

Change the regional parameter to us if you want English to be displayed in the Oracle Enterprise Manager Console.

If you want the performance manager or capacity planner information in English (like database instance, contention, and others), change the NLS_LANG parameter.

E

Using Enterprise Manager on Windows 2000

This appendix contains these topics:

- Differences between using Enterprise Manager on Windows NT and Windows 2000
- Procedures

Differences between using Enterprise Manager on Windows NT and Windows 2000

Feature	On Windows NT	On Windows 2000
Services	Choose Start > Settings > Control Panel > Services to access the Services dialog box.	On Windows 2000, the Services Directory is located further down the Control Panel directory. Choose Start > Settings > Control Panel > Administrative Tools > Services
User Manager	Enables you to manage Windows computer security and create user accounts on Windows NT. Choose Start > Programs > Administrative Tools > User Manager	To create user accounts, choose Start > Settings > Control Panel > Administrative Tools > Active Directory Users and Computers

Procedures

This section documents how to perform the following tasks on Windows 2000:

- manipulate services (start, stop, change startup mode, etc.)
- create a new user
- assign privileges (i.e. "logon as batch job") to a user

Manipulating Windows 2000 Services

To manipulate Windows 2000 services:

1. Go to Start menu > Settings > Control Panel > Administrative Tools > Services
2. Select the service that you wish to manipulate.
3. Right-mouse click and select the action you wish to perform (start, stop, etc.). To modify the Startup Type, right-mouse click and select Properties and edit the Startup Type as needed.

Creating a New Windows 2000 User

To create new Windows 2000 user:

1. Go to Start menu > Settings > Control Panel > Users and Passwords
2. From the Users and Passwords screen that appears you can add new users.

Assigning Privileges to a Windows 2000 User

To assign privileges to a Windows 2000 User:

1. Go to Start menu > Settings > Control Panel > Administrative Tools > Local Security Policy
2. Select Local Policies in the tree on the left.
3. Select User Rights Assignment in the tree on the left.
4. Find and select the appropriate privilege on the right.
5. Right-mouse click and select Security. From the Local Security Policy Setting screen that appears you can add which user should have the specified privilege.

F

Troubleshooting

This chapter describes possible troubleshooting issues.

- Reporting Problems to Oracle Support
- Troubleshooting the Enterprise Manager Configuration Assistant
- Changing the Permissions on the omsconfig.properties File
- Troubleshooting the Management Server
- Troubleshooting the Paging Server
- Troubleshooting the Web Browser
- Changing the Repository User Password
- Resetting the Password
- Setting the Format of Dates

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 xiv.

Manuals

Manuals of particular interest are listed below:

- The *Oracle Enterprise Manager Readme* Release 9*i* 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 9*i* 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 Oracle customers with active support service contracts, 24 hours a day, seven days a week. Customers can register on-line through `http://www.oracle.com/support`.

MetaLink includes the following features:

- *My Headlines*

  Uses push technology to provide you with proactive notifications. *My Headlines* gives you the ability to customize information in your user profile such that you get only the specific information you desire when you access the *My Headlines* section of MetaLink. You can also choose to have this information sent to you via email. The information delivered to you falls into the following categories and can be personalized by product and platform: *News & Notes*, *Knowledge Base*, *Patches*, *Bugs*, *TAR Updates*, *Product Lifecycle*, and *Forum Updates*.

- *User Administration*

  Gives companies the ability to manage access of MetaLink users at the support identifier / CSI level. In situations where you want to restrict the access to certain areas of MetaLink to specific users at your site, this feature enables that control. For example, only internal help desk employees at your site may be allowed to create TARs in MetaLink.

- *User Profile*

  You can update your contact information, add and remove support identifiers, view other users registered under the same support identifier, customize MetaLink, change your password, and view your license information. You will now have a choice of languages in which to view the MetaLink interface: English, German, or French.

- *Technical Libraries*

  Organized by product and platform, these libraries enable you to access information that support analysts have determined will aid you in your installation and use of Oracle products (documentation, white papers, problem / solution articles, and more).

- *Forums*

  You can post questions to technical analysts and receive responses within two business days. Users also share information and ideas with other Oracle users.

- *File Access*

  Previously referred to as Download, this section provides you the ability to download patches and patch sets directly from within MetaLink. View the Readme files to find out which bugs have been fixed in the patch sets.

- *Knowledge Base Search*

  Allows you to do a full-text search against the internal repositories within Oracle Support Services. Advanced searching is also available.

- *Bug Search*

  Provides you with query access to published header and abstract information in the Oracle Bug Database.

- *Product Lifecycle*

  Product availability, product alerts, certifications, and de-support information online

- *Enter TARs Online*

  Submit, update, review, and close your TARs online (not available in some countries)

- *Skills-Based Routing*

  TARs submitted electronically are automatically matched to the right technical resource within Oracle Support Services (not available in some countries)

- *TAR Access and Reporting*

  Track issues by generating and viewing TAR reports

- *Context-Sensitive Help*

  Learn the features of MetaLink and see "how to" instructions

- *Feedback*

  Enter feedback about MetaLink

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?
   - 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.

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.

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 Manager Release 9 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 Release 9 repository

The user "<username>" already contains a complete and up-to-date Enterprise Manager Release 9 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 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 9*i* 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 Enterprise Manager Configuration Assistant detects that the chosen repository name is the name of an already existing user/schema in the database, and that it contains neither an Oracle Enterprise Manager Release 2.x nor Release 1.x repository, a message appears: "The user already exists in this database. Do you wish to create the repository within this user’s schema anyway?"

If you choose no, you may select a different user name.

If you choose yes, the "Create Repository Summary" page appears.

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 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 F-8 for information for possible solutions.

Repository Database Default Tablespace Does Not Contain Enough Free Space

The Configuration Assistant checks that the selected default tablespace for the repository has the appropriate attributes/characteristics, but if it does not contain enough free space, the following message appears: "The default tablespace for the repository does not contain enough free space."

Use the `OEM_REPOSITORY` tablespace if it exists. It is the default tablespace for Enterprise Manager.

If you are creating a repository in a new user, the Configuration Assistant's Select Repository User Tablespaces page strongly encourages you to create an OEM_REPOSITORY tablespace. Using the Enterprise Configuration Assistant to create the OEM_REPOSITORY tablespace ensures that the tablespace has appropriate attributes/characteristics.

However, if you prefer, you can create another tablespace, or use an existing tablespace. If you decide to use an existing tablespace, you may have to increase its size.

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

Creating an OEM_REPOSITORY Tablespace if One Does Not Exist

If the `OEM_REPOSITORY` tablespace has not been created for you, the "Create a new OEM_REPOSITORY tablespace (recommended)" option is available on the "Select Repository User Tablespaces" page of the Enterprise Manager Configuration Assistant.

Select this option if you want to create the OEM_REPOSITORY tablespace. Using the Enterprise Manager Configuration Assistant to create the OEM_REPOSITORY

tablespace gives that tablespace appropriate attributes/characteristics. Then use it as the user's default tablespace.

Creating Another Tablespace

Using the Configuration Assistant is the preferred method for creating a tablespace since it creates the tablespace with the proper attributes in any of the supported databases. The attributes of the default tablespace depend on the database version.

To use the Console's Storage Management functionality to create a new tablespace, follow the procedure described in this section:

1. Start the standalone Console.
   - On Windows NT:

     You can start the standalone Console from the Windows Start Menu.
   - On UNIX:

     You can start the standalone Console from the command line using the command:

     ```
     oemapp console
     ```

   When the login dialog appears, choose "Launch standalone" and press OK. For more information on using the Console in standalone mode, refer to Chapter 2, "Standalone".
2. Expand the Database folder.
3. Double-click the database node in the navigator tree and connect to the database as a user with the DBA privilege.
4. Select Create from the Object menu. The Create window appears.
5. Expand the database node in the Create window and select Tablespace. Then click the Create button. The Create Tablespace property sheet appears.
6. In the Create Tablespace Property Sheet's General page,
   a. Enter the name of the new tablespace.
   b. Specify that the tablespace will be used to hold permanent database objects.
7. In the Datafile section, enter the size of the new datafile. The File Name and File Directory columns should already contain default entries.
8. Right-click the "+" sign which appears next to the name of the datafile and choose Edit. The Create Datafile property sheet appears.

9. 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.
10. Click the OK button in the Create Datafile property sheet.
11. In the Create Tablespace Property Sheet's Storage page, choose a method of space management. You cannot alter the method at a later time.
12. Click the Create button in the Create Tablespace Property Sheet.

Increasing the Size of an Existing Tablespace

Using the Configuration Assistant is the preferred method for creating a tablespace since it creates the tablespace with the proper attributes in any of the supported databases. The attributes of the default tablespace depend on the database version.

To use the Console's Storage Management functionality to increase the size of an existing tablespace, follow the procedure described in this section:

1. Start the standalone Console.
   - On Windows NT:

     You can start the standalone Console from the Windows Start Menu.
   - On UNIX:

     You can start the standalone Console from the command line using the command:

     ```
     oemapp console
     ```

   When the login dialog appears, choose "Launch standalone" and press OK. For more information on using the Console in standalone mode, refer to Chapter 2, "Standalone".
2. Expand the Database folder.
3. Double-click the database node in the navigator tree and connect to the database as a user with the DBA privilege.
4. Expand the Storage Management node.
5. 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.
6. Click the Apply button in the General page.

7. Click on the Storage tab. The Storage page of the Datafile property sheet appears.
8. Check the "Automatically extend datafile when full (AUTOEXTEND)" box and click the Apply button.

Database Parameters Not Large Enough for Repository Operation

An Oracle Management Server will open a number of repository database sessions while processing work on behalf of clients and managed nodes.

The number of sessions required by a single Management Server generally ranges from 3 to 5, depending on the load placed on the Management Server. More repository database sessions may be required under the following circumstances:

- many Consoles are actively submitting jobs / registering events
- multiple Management Servers are concurrently using the same repository
- many Intelligent Agents are sending notifications back to the Management Servers

If other applications are accessing the same database used for the Enterprise Manager Repository the session load will increase on 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 functionality to change your database parameters, follow the procedure described in this section:

1. Start the standalone Console.

   - On Windows NT:

     You can start the standalone Console from the Windows Start Menu.

   - On UNIX:

     You can start the standalone Console from the command line using the command:

     ```
     oemapp console
     ```

   When the login dialog appears, choose "Launch standalone" and press OK. For more information on using the Console in standalone mode, refer to Chapter 2, "Standalone".

2. Expand the Database folder.
3. Double-click the database node in the navigator tree and connect to the database as a user with the DBA privilege.
4. Expand the Instance Management node.
5. Select the Configuration node.
6. Click the All Initialization Parameters button in the Configuration Property Sheet's General page.
7. Change the value of the parameter.
8. Click Save As button on the All Initialization Parameters page. The Save Initialization Parameters dialog appears.
9. 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.
10. 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 appropriately, other users cannot view or modify 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.

Troubleshooting the Management Server

This section contains the following topics:

- Management Server May Not Run Correctly from a Non-Default Oracle Home
- Management Server Does Not Start
- Error Messages When Starting the Management Server
- Changing Your Management Server for Client Access

Management Server May Not Run Correctly from a Non-Default Oracle Home

On Unix, if the ORACLE_HOME environment variable is not set to the Oracle home where the management server is running, the management server will not start correctly. It will try to find its class files in the default Oracle home instead of the correct Oracle home.

csh

To set the environment variable:

```
setenv ORACLE_HOME '/usr/local/oracle'
```

ksh/sh

To set the environment variable:

```
ORACLE_HOME = '/usr/local/oracle'
export ORACLE_HOME
```

On UNIX systems, the Oracle environment can also be set by calling `coraenv` (for the CSH) or `oraenv` (for any other shell). This shell script sets the oracle environment for a given identifier. This identifier can be a specific database or it can point to an `ORACLE_HOME` which contains the Management Server software. These scripts can be customized to include specific machine or server based settings.

Refer to the specific operating system's Oracle Administration documentation for more information about the `coraenv` and `oraenv` scripts.

Management Server Does Not Start

For information to troubleshooting the Management Server if it does not start, refer to the following resources:

- the `oms.log` file
- the `oms.nohup` file
- the Windows NT Event Log (for Windows NT)
- oemctl batch file

oms.log File

The `$ORACLE_HOME\sysman\log` directory contains the output of traces that are redirected to disk if logging is enabled. 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 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.

---

oms.nohup File

The `oms.nohup` file in the $ORACLE_HOME/sysman/log directory contains Management Server error messages which appear before the Management Server starts up and critical messages during its run.

Windows NT Event Log

To access the Windows NT Event Log to view the events logged by the Management Server.

1. From the Start menu->Programs->Administrative Tools (Common), select the Event Viewer item or search for eventvwr.exe.
2. Select Application from the Log menu.
3. When the log screen appears, double-click any event logged by the Oracle<Oracle_Home_Name>ManagementServer service which has red octagonal stop signs next to them. These will be the errors reported by the Management Server, if any.

Events and event numbers which the Management Server can log in the event viewer are listed below:

Event Number	Message	Meaning
101	(<NT OMS service name>) could not be found. It contains the following insertion string(s): <NT OMS service name>.	Problem starting service. Look at log and trace files for more information
105	The service was started.	Informational message
108	The service was stopped	Informational message
110	The service is entering production run mode	Informational message
112	The service has terminated abnormally.	See the oms.log file for more information.
113	Fatal error Process terminated abnormally	See log file for more information.

Errors will only be reported in the Event Viewer if the Management Server is voluntarily shutting down.

oemctl Batch File

To obtain more information for debugging, you can change the JRE startup command in the oemctl script.

- On Windows, change

  ```
  SET JRE=jre -nojit -mx32m
  ```

  to

  ```
  SET JRE=jre -nojit -mx32m -verbose
  ```

- On Unix, change

  ```
  JRE="jre -native -nojit -mx32m "
  ```

  to

  ```
  JRE="jre -native -nojit -mx32m -verbose "
  ```

Performing this procedure enables you to identify class loading problems caused by environmental or installation problems. When you have collected the data from the batch file, send the information to Oracle Support Services.

Note: If you encounter problems starting the Management Server, turn on tracing for the Console first. If you still cannot determine what the cause is, perform other troubleshooting procedures before using the oemctl batch file procedure.

Error Messages When Starting the Management Server

If you receive the following error when starting the Management Server, refer to the solutions below:

```
Could not start the Oracle<ORACLE_HOME_NAME>ManagementServer service on <HOST
NAME>.
Error 0203:  The system could not find the environment option that was entered.
```

The Management Server has been installed but not configured. You must run the Enterprise Manager Configuration Assistant to create a new repository or to edit an existing repository.

For Windows NT: The Enterprise Manager Configuration Assistant has been run, and you have chosen to not save the repository connection's username and password to a file (in secure Management Server mode). You must select the Oracle<ORACLE_HOME_NAME>ManagementServer service and then enter the username and password in the Control Panel's Startup Parameters' field or you must enter the repository credentials when you are prompted for them in a dialog.

Changing Your Management Server for Client Access

If a Management Server fails in a multi-Management Server environment, it only affects the clients connected to it. Each Management Server is independent of the other Management Servers connected to the repository.

To change your Management Server node to another node where a Management Server is still running, follow the procedure below.

1. In the Oracle Enterprise Manager login, select a node that has a Management Server which is configured with the repository you want to access from the Management Server pull-down list.

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

   a. Click the Management Servers button. The Management Servers dialog appears.

   b. 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.

   c. 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.

Running the Management Server on a Multiple NIC Machine

The default behavior of the Management Server when running on a multi NIC machine is to listen on all the network cards. If you want the Management Server to listen only on a specific network card, you must perform the following steps:

1. Add the following property to $ORACLE_HOME/sysman/config/omsconfig.properties

   ```
   MULTI_NIC.ENABLED=false
   ```

2. Modify the BootHost property in $ORACLE_HOME/sysman/config/omsconfig.properties to have the name of the network card on which the Management Server has to listen.

   Change "BootHost=localhost" to "BootHost=<network card host name>

   e.g. If a multi nic machine has 2 network cards and has names host1 and host2, setting "BootHost=host" will make the Management Server listen on host1

3. Restart the Management Server.

Troubleshooting the Paging Server

If a page notification fails, the paging server 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. You 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

Console Hangs

If you start the web browser, log in to the Console, but the Console hangs, and the following is displayed in JInitiator Console:

```
@org.omg.CORBA.INITIALIZE[completed=MAYBE, reason=java.net.BindException:
Cannot assign requested address]
```

You must perform the following steps:

1. Check that the JInitiator uses browser settings for the proxy.
   a. From the Windows Start menu, click Programs-> JInitiator Control Panel. A window appears.
   b. Choose the Proxies tab.
   c. View the contents.
2. Append the domain name to the web server address you type in the browser, for example, `@.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.

Console Does Not Launch Web Browser

If user.browser is not defined properly in the clientconfig properties file, the netscape browser will not launch from within the Enterprise Manager Console. The default Enterprise Manager browser (IceBrowser) will be launched instead.

Viewing reports from the Console does not work, it may be because Netscape is using a script and not the actual program.

You must perform the following task in order for Unix to know how to launch Netscape.

Set the following property in ClientConfig.properties:

```
user.browser=/usr/local/packages/netscape/netscape
```

The user.browser should be set to the actual name of the browser, not a script.

/usr/local/bin/netscape is a script and not an executable.

user.browser should be pointed to an executable and not to a shell script.

Changing the Repository User Password

You can change the password on the repository using ALTER USER and then use the Configuration Assistant to edit the configuration parameters.

1. Execute the ALTER USER command once for the database user.

```
ALTER USER <repository username>
           IDENTIFIED BY <new password>;
```

2. Run the Enterprise Configuration Assistant to edit the Management Server configuration once on each host that is running a Management Server that is using that repository. Refer to Configuring a Local Management Server To Use An Existing Repository on page 3-26.

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();
```

Setting the Format of Dates

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

- NLS_DATE_FORMAT for the month, date, and year

  `mm-dd-yyyy`

- NLS_TIMESTAMP_FORMAT for the date and time

  `mm-dd-yyyy hh:mi pm`

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

Windows Platforms

To set the environment variable:

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

UNIX

To set the environment variable:

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

G

Keyboard Navigation

Oracle Enterprise Manager supports standard keyboard navigation. Standard keyboard navigation includes the use of the tab key, mnemonics (using the Alt key and the underlined character), and accelerators (such as Alt+F4 to exit a window).

The following table contains keyboard actions that are not commonly known or for which there is no firm standard.

Keyboard Action	Result
F10 (release), Space	Drops the system menu for a window or dialog
When focus is on a selected tree item or a selected table item, type Shift + F10	Drops the context menu for the selected item
With focus on an edit field within a table, type in a new value and press Enter	Accepts new value is accepted and the focus is moved to the next row of the table.
With focus on a drop down list within a table, press Space.	Changes the drop down list from opened to closed or from closed to open.

Accelerators for picture buttons are documented in the Help for the dialog or window where the picture buttons appear.

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