

Oracle® Enterprise Manager

Grid Control Installation and Basic Configuration

10g Release 1 (10.1)

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Oracle Enterprise Manager Grid Control Installation and Basic Configuration, 10g Release 1 (10.1)

Part No. B12012-01

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Preface

This guide is your primary source of pre-installation requirements and certifications, installation options and strategy, and post-installation configuration information for Oracle Enterprise Manager.

This preface contains the following topics:

- [Intended Audience](#)
- [Documentation Accessibility](#)
- [Structure](#)
- [Related Documents](#)
- [Conventions](#)

Intended Audience

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

Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible, with good usability, to the disabled community. 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

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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.

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Structure

This guide contains four chapters and three appendixes.

Chapter 1, "Pre-Installation Considerations"

This chapter contains hardware and software requirements, operating system, browser, and components certifications.

Chapter 2, "Installing Enterprise Manager"

This chapter contains descriptions of the different deployment options.

Chapter 3, "Post-Installation Configuration Tasks"

This chapter identifies the configuration tasks required after installation is complete.

Chapter 4, "Getting Started with Enterprise Manager"

This chapter describes the standard out-of-box configuration upon installation and provides information on starting Grid Control and controlling the Management Agent and Management Service.

Appendix A, "Patches and Packages"

This appendix contains the additional software requirements of certified operating systems, such as patches and packages, and includes required patches for the Management Repository.

Appendix B, "Management Repository Database Settings"

This appendix contains the recommended initialization parameter values for your Management Repository database, as well as other recommended settings.

Appendix C, "Using the Downloadable Management Agent"

This appendix contains instructions on installing multiple Management Agents using the `agentDownload` script.

Related Documents

For more information, see the following manuals in the Oracle Enterprise Manager documentation set:

- *Oracle Enterprise Manager Concepts*
- *Oracle Enterprise Manager Advanced Configuration*
- *Extending Oracle Enterprise Manager*

Oracle Enterprise Manager also provides extensive online help. Click **Help** at the top of any Enterprise Manager page to display the online help window. This installation guide has been designed to work hand-in-hand with the online help provided with the installation.

Conventions

This section describes the conventions used in the text and code examples of this documentation set. It describes:

- [Conventions in Text](#)
- [Conventions in Code Examples](#)

Conventions in Text

We use various conventions in text to help you more quickly identify special terms. The following table describes those conventions and provides examples of their use.

Convention	Meaning	Example
Bold	Bold typeface indicates an element in the user interface.	Click Help for more information.
<i>Italics</i>	Italic typeface indicates book titles or emphasis.	<i>Oracle Database Concepts</i> Ensure that the recovery catalog and target database do <i>not</i> reside on the same disk.
lowercase monospace (fixed-width font)	Lowercase monospace typeface indicates executables, filenames, directory names, and sample user-supplied elements. Such elements include computer and database names, net service names, and connect identifiers, as well as user-supplied database objects and structures, column names, packages and classes, usernames and roles, program units, and parameter values. Note: Some programmatic elements use a mixture of UPPERCASE and lowercase. Enter these elements as shown.	Enter <code>sqlplus</code> to open SQL*Plus. The password is specified in the <code>orapwd</code> file. Back up the datafiles and control files in the <code>/disk1/oracle/dbs</code> directory. The <code>department_id</code> , <code>department_name</code> , and <code>location_id</code> columns are in the <code>hr.departments</code> table. Set the <code>QUERY_REWRITE_ENABLED</code> initialization parameter to <code>true</code> . Connect as <code>oe</code> user. The <code>JRepUtil</code> class implements these methods.

Conventions in Code Examples

Code examples illustrate SQL, PL/SQL, SQL*Plus, or other command-line statements. They are displayed in a monospace (fixed-width) font and separated from normal text as shown in this example:

```
SELECT username FROM dba_users WHERE username = 'MIGRATE';
```

The following table describes typographic conventions used in code examples and provides examples of their use.

Convention	Meaning	Example
<>	Angle brackets in command syntax denote an item for which you can substitute a real value. Do not enter the angle brackets.	<code><host>:<port>:<oracle_sid></code>
<i>Italics</i>	Italicized text indicates placeholders or variables for which you must supply particular values.	<code>CONNECT SYSTEM/<i>system_password</i></code> <code>DB_NAME = <i>database_name</i></code>

Pre-Installation Considerations

This chapter introduces you to Enterprise Manager and its components and provides pre-installation requirements and certifications. This chapter also lists all targets that Enterprise Manager is certified to manage. The following topics are covered in this chapter:

- [Enterprise Manager Component Overview](#)
- [Pre-Installation Requirements for Enterprise Manager](#)
- [Enterprise Manager Certifications](#)

Oracle recommends reading this chapter before proceeding with your installation so that you will have a better understanding of the requirements and certifications for the Enterprise Manager installation environment.

Enterprise Manager Component Overview

Enterprise Manager is Oracle's single, integrated solution for administering and monitoring targets that are based on the Oracle technology stack. See [Table 1-6](#) for a list of Oracle targets and components that Enterprise Manager can manage.

Oracle Enterprise Manager Grid Control framework includes the Oracle Management Agent, Oracle Management Service, and Oracle Management Repository, as well as Grid Control, a browser-based central console through which administrators can perform all monitoring, administration, and configuration tasks for the enterprise.

[Table 1-1](#) explains what the different components are and how they work together to manage your enterprise.

Table 1-1 Enterprise Manager Grid Control Framework Components

Component	Definition
Grid Control	<p>The Enterprise Manager Web-based user interface for centrally managing your entire computing environment. The Grid Control is installed from a separate CD-ROM Pack that is shipped with the Oracle Database 10g Release 1 (10.1) CD-ROM Pack.</p> <p>From the Grid Control, you can monitor and administer your entire computing environment from one location on the network. All the services within your enterprise, including hosts, databases, listeners, application servers, HTTP Servers, and Web applications, are easily managed as one cohesive unit.</p>
Management Agent	<p>The Oracle Management Agent, a process that is deployed on each monitored host, is responsible for monitoring all targets on the host, for communicating that information to the middle-tier Management Service, and for managing and maintaining the host and its targets.</p>

Table 1–1 (Cont.) Enterprise Manager Grid Control Framework Components

Component	Definition
Management Service	<p>The Oracle Management Service is a J2EE Web application that renders the user interface for Grid Control, works with all Management Agents to process monitoring and jobs information, and uses the Management Repository as its data store.</p> <p>The Oracle Management Service is installed and deployed using Oracle Application Server. As a result, when you install the Oracle Management Service, the installation procedure first installs Oracle Application Server. Specifically, the installation procedure installs the Oracle Application Server J2EE and Web Cache installation type, which is used to deploy the Oracle Management Service.</p>
Management Repository	<p>The Oracle Management Repository consists of two tablespaces in an Oracle Database that contain all available information about administrators, targets, and applications managed within Enterprise Manager.</p> <p>The Management Service uploads the monitoring data it receives from the Management Agents to the Management Repository. The Management Repository then organizes the data so that it can be retrieved by the Management Service and displayed in Grid Control's user interface. Because data is stored in the Management Repository, it can be shared between any number of administrators accessing Grid Control.</p> <p>For information on tablespaces, refer to the "Managing Tablespaces" chapter of the <i>Oracle Database Administrator's Guide</i>.</p>

For more information on these components, refer to *Oracle Enterprise Manager Concepts*.

Note: The Management Service is deployed on an Oracle Application Server instance that is installed as part of Enterprise Manager Grid Control. This application server instance is dedicated to the Management Service and should not be used to deploy other applications. As a result, you should not make any configuration changes to the application server instance.

Pre-Installation Requirements for Enterprise Manager

This section provides information about the minimum hardware and software requirements for Enterprise Manager components:

- [Enterprise Manager Hardware Requirements](#)
- [Enterprise Manager Software Requirements](#)

Refer to [Appendix A](#) for patching information for all of Enterprise Manager's supported operating systems.

Enterprise Manager Hardware Requirements

[Table 1–2](#) describes the hardware requirements for each Enterprise Manager component.

Table 1–2 Hardware Requirements

Component	Disk Space Requirements	Memory Requirements
Management Repository	<p>Allocating 1 GB of disk space to the Management Repository should be sufficient for small environments with fewer than 25 managed targets. This requirement grows as the number of targets increases.</p> <p>The Management Repository is created within two tablespaces that initially require 120 MB of disk space: 20 MB for the <code>MGMT_TABLESPACE</code> tablespace and 100 MB for the <code>MGMT_ECM_DEPOT_TS</code> tablespace.</p> <p>Make sure there is enough disk space available for these two initial tablespaces, or you will receive an error message.</p>	<p>For a reasonably sized enterprise of around 500 targets, the <i>minimum</i> memory required for the repository node is 1 GB; the <i>recommended</i> size is 2 GB.</p> <p>Performance increases as memory for the repository increases. With more memory, you can increase the <code>dbcache</code> parameter for information caching.</p> <p>See Appendix B for recommended database initialization parameters.</p>
Management Service	At least 240 MB of initial disk space is required.	For the host running the Management Service, the minimum memory recommended is 1 GB .
Management Agent	<p>At least 310 MB of initial disk space is required.</p> <p>For logging, tracing, and temporarily stored data collections, allocate an additional 50 MB.</p>	<p>The Management Agent requires approximately 20 MB to monitor a database, and more to monitor an Application Server. This requirement increases as the number of targets monitored increases.</p> <p>While resource consumption is minimal for Management Agents, enabling the Beacon capability increases requirements. For information on the Beacon capability, refer to the "About Beacons" and "Using Beacons to Monitor Web Application Availability" topics in the Enterprise Manager online help.</p>
Application Server Core ¹	Approximately 500 MB of initial disk space is required.	For the host running the Application Server Core, the minimum memory recommended is 512 MB .

¹ The Oracle Application Server Core consists of OracleAS J2EE and WebCache, against which the middle-tier Management Service Web application is deployed.

Considering Resource Allocation

Consider carefully when choosing the disk on which to install the Enterprise Manager framework and Management Repository database. Enterprise Manager's out-of-box monitoring starts generating information upon installation, meaning that resource consumption begins immediately. As such, consider the base system resource consumption prior to installing. Select your installation locations strategically, taking into account system load, memory usage, and disk input/output.

For example, you can split the input/output load across disks. Avoid installing the Management Repository database or the Enterprise Manager framework on the swap volume, a volume with a busy state (as `periostat`) of 10% or more, or on a memory constrained system. As with any data intensive application, if your Management Repository will service a large number of targets, it is important to tune the database appropriately to maximize input/output capacity. Refer to the *Database Performance Tuning Guide* for more information.

While adding more memory can help alleviate potential resource problems (for instance, adding a second disk spindle dedicated to the Enterprise Manager framework on a system), understanding and accounting for resource allocation is the best way to achieve strategic setup and good performance.

Enterprise Manager Software Requirements

Table 1-3 describes the software requirements for each Enterprise Manager component.

Table 1-3 Software Requirements

Component	Software Requirements
Management Repository	<p>The embedded Oracle9i Database Release 1 (9.0.1.5), Enterprise Edition, is supported for Management Repository creation. Otherwise, you may only install the Management Repository into one of the following existing databases:</p> <ul style="list-style-type: none"> ■ Oracle9i Database Release 2 (9.2.0.4 or higher), Enterprise Edition ■ Oracle9i Real Application Clusters Database Release 2 (9.2.0.4 or higher) <p>Note that the Enterprise Edition database you use for the Management Repository must have fine-grained access control turned on. When using an existing database for the repository, be sure that all software, patch, and tuning requirements are met for the existing database and host, as well as for the repository.</p> <ul style="list-style-type: none"> ■ See Appendix B for the recommended database initialization parameters. ■ See "Management Repository Database Patches" in on page A-6 for the list of required patches for qualified existing databases.
Management Service	No additional software requirements.
Management Agent	<p>The Oracle Net files contain information about the databases and listeners running on the machine. Prior to the installation and starting of the Management Agent, if your Oracle Net files are in a non-standard location, you must set the TNS_ADMIN environment variable to point to the directory with the valid files so that the targets on the machine can be added for monitoring and administration by Enterprise Manager.</p> <p>For example:</p> <pre>export TNS_ADMIN=\$HOME/mydir/network</pre> <p>Standard Oracle Net file locations are:</p> <ul style="list-style-type: none"> ■ <Oracle_Home>/network/admin ■ /var/opt/oracle/ for Solaris Operating System ■ /etc for HP-UX, HP Tru64, IBM AIX <p>All other Oracle Net file locations are non-standard.</p> <p>Enterprise Manager's process for adding targets will use the directory in a standard location to obtain information about the Oracle Net configuration. For more information about configuring Oracle Net, refer to the <i>Oracle Net Services Administrator's Guide</i>.</p>

Attention: If you want to create a Management Repository in an existing Oracle home directory, thick JDBC may be required in that home so that the LOADJAVA commands in the installation procedure can create the Management Repository.

Thick JDBC is not installed by default. To check for the "Oracle JDBC/OCI driver for JDK x.x" option, where x.x can take the values of 1.1, 1.2, 1.3, and 1.4, click the **Installed Components** button on the Oracle Universal Installer screen and explore the list of components.

Enterprise Manager Certifications

This section contains certification information for each Enterprise Manager component, including the Management Repository, Management Service, and Management Agent. Browser certifications for Grid Control are also given.

Also included in this section are the certifications for all targets managed by Enterprise Manager.

- [Operating System Certifications](#)
- [Browser Certifications for Grid Control](#)
- [Certified Enterprise Manager Targets](#)

Operating System Certifications

[Table 1–4](#) describes the operating system platforms certified for each Enterprise Manager component: Management Repository, Management Service, and Management Agent.

Table 1–4 Certified Operating Systems for Enterprise Manager Components

Platform (Version)	Repository?	Service?	Agent?
Solaris Operating System (SPARC 32-bit) (8, 9)	X	X	X
Solaris Operating System (SPARC 64-bit) (8, 9)	X	X	X
HP-UX 64-bit (11.0, 11i)	X	X	X
HP Tru64 (5.1b)	X	X	X
IBM AIX 64-bit (5L)	X	X	X
Red Hat Enterprise Linux ES andAS (2.1)	X	X	X
Red Hat Enterprise Linux (3)	X	X	X
United Linux 1.0 (Service Pack 3)	X	X	X
Windows NT 4.0 (Service Pack 6a)	X	N/A	X
Windows 2000 (Service Pack 4)	X	N/A	X
Windows XP (Professional Edition)	X	N/A	X
Windows 2003 (Standard Edition)	X	N/A	X

Note: Specific instructions for installing the Oracle Management Agent on the Windows platform are available on the Oracle Management Agent for Windows CD-ROM.

Browser Certifications for Grid Control

[Table 1–5](#) lists the browser versions that are certified for the Solaris, Windows, and Linux operating systems for Enterprise Manager Grid Control.

Table 1–5 Browser Certifications for Grid Control

Operating System	Browser	Version
Solaris	Netscape Navigator	7.0.1, 7.1.0
Windows	Netscape Navigator	4.78, 4.79, 7.0.1, 7.1.0
	Microsoft Internet Explorer	5.5 (Service Pack 1); 6.0 (Service Pack 2)
Linux	Mozilla	1.3.1
Microsoft Pocket PC ¹	Pocket Internet Explorer	2.0 (for HTTP), 3.0 (for HTTPS)

¹ Any PDA running Microsoft Pocket PC Internet Explorer 2.0 and up is supported.

Note: To record and play back Web application transactions using the Transaction Recorder, you must use Internet Explorer 5.5 (Service Pack 1) or higher. This feature is not supported on other browsers. Refer to Enterprise Manager online help for details on using Transaction Recorder.

Certified Enterprise Manager Targets

Table 1–6 identifies the Oracle targets and components that Enterprise Manager Grid Control can manage.

Table 1–6 Oracle Targets and Components

Supported Targets	Version
Oracle Application Server ¹	9.0.2.x
	9.0.3.x
	9.0.4.x
Oracle Database ² and Listener	8.1.7.4
	9.0.1.5 and higher
	9.2.0.4 and higher
	10.1.0.2
Oracle Real Application Clusters Database	9.2.0.4 and higher
	10.1.0.2
Management Service and Management Repository	9.0.1.5 and higher
	9.2.0.4 and higher
	10.1.0.2
Management Agent	10.1.0.2
Host	All supported platforms. See Table 1–4.
Oracle Collaboration Suite	9.0.4.1.x
Beacon ³	10.1.0.2
Web Application ⁴	N/A

¹ Includes Oracle HTTP Server, Oracle Application Server Containers for J2EE (OC4J), and Oracle Application Server Web Cache. Only 32-bit Application Server targets are supported.

² Enterprise Edition, Standard Edition, Personal Edition

³ Beacons are not supported on Windows platforms.

⁴ Web applications running on an Oracle Application Server on a Windows platform are not supported.

Installing Enterprise Manager

This chapter describes the possible deployment paths, or installation options, available for Enterprise Manager and provides basic instructions for installing with Oracle Universal Installer. This chapter contains the following sections:

- [Configuring Host Names](#)
- [Enterprise Manager Installation Options](#)
- [Using Oracle Universal Installer](#)

Note: For information on migrating to Oracle Enterprise Manager 10g from previous versions of Enterprise Manager, see *Oracle Enterprise Manager Advanced Configuration*.

Configuring Host Names

Before you can begin installing Enterprise Manager on a UNIX system, Oracle Universal Installer requires that fully qualified host name information appears in the configuration files for your system. A fully qualified host name includes both the name of the system and its domain.

Verify that `/etc/hosts.*` has the following format:

```
<IP_ADDRESS> <FULLY_QUALIFIED_HOSTNAME> <SHORT_HOSTNAME> <ALIASES>
```

The following example shows a properly configured `/etc/hosts.*` file:

```
148.87.9.44 oasdocs.us.oracle.com oasdocs oracleinstall
```

In addition to `/etc/hosts`, ensure the following files use the fully qualified host name:

```
/etc/nodename  
/etc/inet/hosts  
/etc/hostname.*  
/etc/net/ticlts/hosts  
/etc/net/ticots/hosts  
/etc/net/ticotsord/hosts  
/etc/inet/ipnodes
```

See Also: For more information on the host name file configuration, refer to the *Oracle Application Server Installation Guide*. After you have properly configured the host name information, reboot your system before beginning the installation.

Enterprise Manager Installation Options

The following pre-defined installation options described in [Table 2-1](#) determine which components will be installed on your system. During installation, you are prompted to choose one of the following options.

Table 2-1 Enterprise Manager Installation Options

Installation Option	Description	Memory Pre-requisite ¹
Enterprise Manager 10g Grid Control Using a New Database	Installs the Enterprise Manager Grid Control framework ² onto the host machine, creating the Management Repository on a new Enterprise Edition Oracle9i Database Release 1 (9.0.1.5). Oracle recommends installing Enterprise Manager on a separate disk from the Oracle Database containing the Management Repository.	1024 MB
Enterprise Manager 10g Grid Control Using an Existing Database	Installs the Enterprise Manager Grid Control framework onto the host machine, creating the Management Repository on a qualified existing database, which may be local to the host or remote.	512 MB
Additional Management Service	Installs the Enterprise Manager Grid Control framework, without the Management Repository, onto the host machine. Allows you to specify an existing Management Repository, either local or remote.	512 MB
Additional Management Agent	Installs the Management Agent on the target machine you want to monitor with Grid Control. The Management Service and Management Repository are not required on the same machine as the Management Agent, but must exist within the enterprise. The Management Agent may be installed on a cluster node.	No minimum requirement

¹ This pre-requisite check is performed by the Oracle Universal Installer prior to installation and is set in the oraparam.ini file supplied with the product.

² The Enterprise Manager Grid Control framework consists of the Management Repository, Management Service, Management Agent, and OracleAS J2EE and Web Cache, against which the middle-tier Management Service Web application is deployed.

Note: Enterprise Manager Java Console and Change Management Pack are available on the separate Database Client CD-ROM.

See Also: Refer to *Oracle Enterprise Manager Concepts* for more detailed information about Grid Control, the Management Repository, Management Service, and Management Agent, and how they work together.

Refer to "[Performing Silent Installations](#)" for information on using a response file to install in silent mode.

Note: If you have chosen to perform a full Enterprise Manager Grid Control installation in either a new or an existing database, and the installation fails to start the Management Agent installation after installing the Management Service, perform the following steps:

1. Set the EM_REPOS_PWD environment variable to the value you specified for the SYSMAN password during installation.
2. Run the Universal Installer with the following command:

```
./runInstaller -responseFile OMS_HOME/install/agent.rsp
```

This will start the Management Agent portion of the Enterprise Manager Grid Control installation.

Enterprise Manager 10g Grid Control Using a New Database

Select this option, the default, if you want Enterprise Manager Grid Control and all its required dependencies installed on a single host machine. If you choose this installation option, you do not need an existing Enterprise Edition database.

Enterprise Manager 10g Grid Control Using an Existing Database

Select this option if you want to perform a complete Enterprise Manager Grid Control installation and have a qualified existing database in which to create the Management Repository. The database can be local or remote to the machine on which you're installing. Real Application Clusters databases must be on a shared disk.

See Also: Refer to the "System and Network Configuration" chapter of the *Oracle High Availability Architecture and Best Practices* guide for information on cluster configuration recommendations.

[Table 1–3, "Software Requirements"](#) on page 1-4 includes information on the versions of the Oracle Database and Real Application Clusters Database that qualify for Management Repository creation.

Attention: The hardware requirements for the Management Repository and the operating system patch requirements for the host machine must be satisfied regardless of whether you choose to create a new database or use an existing database for the Management Repository during the installation session.

If you plan to use an existing database for your Management Repository creation, check all software requirements for the database and host, as well as for the repository.

For hardware and software requirements, refer to [Chapter 1](#). For a list of required patches, refer to [Appendix A](#).

Note: The Enterprise Manager Repository Configuration Assistant will fail if the SYSMAN user already exists in the database you specify for the Management Repository. The configuration assistant will also fail if a Management Repository already exists in the database.

Refer to the "Maintaining and Troubleshooting the Management Repository" chapter in *Oracle Enterprise Manager Advanced Configuration* for instructions on how to drop the existing Repository from the database.

Additional Management Service

Select this option if you need to add an additional Management Service to your environment because the current Management Service is running out of CPU or RAM resources.

See Also: Refer to the "Reconfiguring the Management Agent and Management Service" chapter of *Oracle Enterprise Manager Advanced Configuration* for information on controlling the Management Service.

For information on assigning custom port numbers for Enterprise Manager components, refer to the "[Assigning Custom Ports \(the "Static Ports" Feature\)](#)" section.

Additional Management Agent

Select this option to install the Management Agent in an Oracle home directory on a specified host target. Each host you wish to monitor must have an Agent installed.

Note: Enterprise Manager does not support uploading data to the same Management Repository from two Management Agents running on the same host.

You can install the Management Agent in the following ways:

- On each host computer, run Oracle Universal Installer from the Enterprise Manager CD-ROM and select the **Additional Management Agent** installation type. This method installs one Agent at a time in interactive GUI mode. You may also perform silent installations using a response file.
- Use the `agentDownload` script to install and deploy Management Agents to many managed hosts through HTTP or over the network.

See Also: For a full and detailed explanation on installing Management Agents using the `agentDownload` script, refer to [Appendix C](#) in this guide.

For information on assigning custom port numbers for Enterprise Manager components, refer to the "[Assigning Custom Ports \(the "Static Ports" Feature\)](#)" section.

Attention: If you install the Management Agent on a system where you have already installed an Oracle Application Server instance, you must install the Management Agent from a user account that belongs to the group used to install the Application Server. Otherwise, you won't be able to monitor the application server metrics.

- To see which group was used to install the Application Server, type `ls -l` on the command line in the directory containing `opmn.xml`: `<AS_ORACLE_HOME>/opmn/conf`.
 - To see the groups to which you belong, type `groups` on the command line. You may be a member of several groups. Note that it is not enough to be a member of the group used to install the Application Server; that group must be your current group.
 - To see which user/group you are currently using, type `id` on the command line. Use the `newgrp` command to change to the group used to install the Application Server. Oracle recommends installing all software using a single group.
-
-

Using Oracle Universal Installer

Enterprise Manager installation uses the Oracle Universal Installer, a Java-based graphical user interface (GUI) application that enables you to install Oracle components from a CD, multiple CDs, or the Web.

See Also: For information on using Universal Installer to install Oracle software, refer to the *Oracle Universal Installer Concepts Guide*.

Performing Silent Installations

The Management Agent supports silent installations in which you can install components without displaying screens or responding to questions. In silent installations, a response file provides the necessary installation information, normally answered by the user, using stored values.

Note: You do not need to set the `DISPLAY` environment variable for silent installations in Universal Installer.

[Table 2–2](#) shows the response files made available for each installation type. The response files are available on the installation CD-ROM at:

`Disk1/stage/Response`

Table 2–2 Available Response Files for Silent Installation

Installation Option	Response File
Enterprise Manager 10g Grid Control Using a New Database	<code>em_with_new_db.rsp</code>
Enterprise Manager 10g Grid Control Using an Existing Database	<code>em_using_existing_db.rsp</code>
Additional Management Service	<code>additional_mgmt_service.rsp</code>
Additional Management Agent	<code>additional_agent.rsp</code>

See Also: For more information on silently installing Management Agents on multiple hosts using the `agentDownload` script, refer to [Appendix C](#).

Starting the Installer

Start the Oracle Universal Installer by running the `runInstaller` script from the top directory of Disk 1:

```
$ ./runInstaller
```

To specify a response file for a silent installation, use the following command:

```
$ ./runInstaller -responseFile <responsefile_name> <optional_parameters>
```

See Also: Refer to the "Creating and Customizing Response Files" chapter of the *Oracle Universal Installer Concepts Guide* for more information on silent installations.

After you enter the `./runInstaller` command, the installation runs pre-requisite checks on:

- Operating System Version
- Operating System Packages
- Operating System Patches
- TEMP and SWAP space
- DISPLAY Colors
- Additional Patches
- Kernel version (for Linux)

These pre-requisite checks can be viewed in the initialization parameters file located in the following directory of the product-specific installation CD-ROM:

```
Disk1/install/oraparam.ini
```

If a pre-requisite check fails, you are prompted to continue or stop the installation process. You may install the missing software at this point or discontinue the installation. Note, however, that you may have newer patches that supersede the required patches. Refer to [Appendix A](#) for patching information.

Once you continue, follow the installation instructions on the screen. At any time while installing Enterprise Manager, you can click **Help** for information about the screens.

Assigning Custom Ports (the "Static Ports" Feature)

You can specify custom port numbers for components, instead of having the installer assign default port numbers. This feature is called the "static ports" feature. To use static ports, you set up a file with component names and desired port numbers. The installer uses the values from the file instead of the default port numbers.

This file is typically called the `staticports.ini` file, but you can name it anything you wish. The ["Format of the staticports.ini File"](#) section describes the file format.

See Also: For more information on assigning custom port numbers for installation components, refer to the *Oracle Application Server 10g Installation Guide for Solaris Operating Systems*.

When you start the installer, specify the appropriate parameter and the full path to the `staticports.ini` file on the command line. Make sure that you use the correct parameter for the installation type that you are using. If you use the incorrect parameter, the installer assigns default ports to all components.

Table 2–3 shows the parameters for specifying the static ports file on the command line, where `<full path>` denotes the full path to the local `staticports.ini` file.

Table 2–3 Parameters for Installing Using Static Ports File

Installation Type	Parameter
Enterprise Manager 10g Grid Control Using a New Database	<code>oracle.sysman.top.em_seed:s_staticPorts=<full path></code>
Enterprise Manager 10g Grid Control Using an Existing Database	<code>oracle.sysman.top.em_noseed:s_staticPorts=<full path></code>
Additional Management Service	<code>oracle.sysman.top.oms:s_staticPorts=<full path></code>
Additional Management Agent	<code>oracle.sysman.top.agent:s_staticPorts=<full path></code>

For example, to install an additional Management Agent, in the `Disk1` directory, type the following command at the command line:

```
./runInstaller oracle.sysman.top.agent:s_staticPorts=<full path>
```

Note: If you do not specify the full path to the `staticports.ini` file, the installer changes the current directory to a different one from the directory from which you started the installer, and the installer will not be able to find the file. In this event, the installer will assign default ports for all components, and it will do this without displaying any warning.

Copy the `staticports.ini` file from the Disk 1 CD-ROM to your hard disk. The file is located at:

```
Disk1/stage/Response/staticports.ini
```

Edit the local copy (the file on the hard disk) to include the desired port numbers.

You do not need to specify port numbers for all components in the `staticports.ini` file. If a component is not listed in the file, the installer uses the default port number for that component.

When installation is complete, you can check the `ORACLE_HOME/install/portlist.ini` file to view the assigned ports.

Notes: When choosing port numbers, consider the following:

- Port numbers cannot be greater than 65536.
 - If you use a port number less than 1024 for a component, you must run the component as the root user.
 - If you use a port number less than 1024 for a component, the installer will not be able to start up the component at the end of installation. You may need to configure the component first before you can start it up. See the appropriate component documentation for details.
-
-

The installer verifies that the ports specified in the file are available by checking memory. This means that it can only detect ports that are being used by running processes. It does not look in configuration files to determine which ports an application is using.

If the installer detects that a specified port is not available, it displays an alert. The installer will not assign a port that is not available. To fix this:

1. Edit the `staticports.ini` file to specify a different port, or shut down the application that is using the port.
2. Click **Retry**. The installer re-reads the `staticports.ini` file and verifies the entries in the file again.

Tip: The `staticports.ini` file uses the same format as the `ORACLE_HOME/install/portlist.ini` file, which is created after an Oracle Application Server installation. If you have installed Oracle Application Server and you want to use the same port numbers in another installation, you can use the `portlist.ini` file from the first installation as the `staticports.ini` file for subsequent installations.

Format of the `staticports.ini` File

The `staticports.ini` file has the following format. Replace `port_num` with the port number that you want to use for the component.

```
# Enterprise Manager
Enterprise Manager Central Console port = port_num
Enterprise Manager Central Agent port = port_num
Oracle Management Service Upload (non-SSL) port = port_num

# J2EE and Web Cache
Oracle HTTP Server port = port_num
Oracle HTTP Server Listen port = port_num
Oracle HTTP Server SSL port = port_num
Oracle HTTP Server Listen (SSL) port = port_num
Oracle HTTP Server Diagnostic port = port_num
Oracle HTTP Server Jserv port = port_num
Java Object Cache port = port_num
DCM Java Object Cache port = port_num
Oracle Notification Server Request port = port_num
Oracle Notification Server Local port = port_num
Oracle Notification Server Remote port = port_num
Application Server Control port = port_num
```

```
Application Server Control RMI port = port_num
Oracle Management Agent port = port_num
Web Cache HTTP Listen port = port_num
Web Cache HTTP Listen (SSL) port = port_num
Web Cache Administration port = port_num
Web Cache Invalidation port = port_num
Web Cache Statistics port = port_num
Log Loader port = port_num

# Business Intelligence and Forms
Discoverer OSAgent port = port_num
Reports Services SQL*Net port = port_num

# Infrastructure
Oracle Internet Directory port = port_num
Oracle Internet Directory (SSL) port = port_num
Oracle Certificate Authority SSL Server Authentication port = port_num
Oracle Certificate Authority SSL Mutual Authentication port = port_num
```

Error Conditions that Will Cause the Installer to Resort to Default Ports

Check your `staticports.ini` file carefully because a mistake can cause the installer to use default ports without displaying any warning. Here are some things that you should check:

- If you specify the same port for more than one component, the installer will use the specified port for the first component, but for the other components, it will use the components' default ports. The installer does not warn you if you have specified the same port for multiple components.
- If you have syntax errors in the `staticports.ini` file (for example, if you omitted the = character for a line), the installer ignores the line. For the components specified on such lines, the installer assigns the default ports. The installer does not display a warning for lines with syntax errors.
- If you misspell a component name, the installer assigns the default port for the component. Names of components in the file are case sensitive. The installer does not display a warning for lines with unrecognized names.
- If you specify a non-numeric value for the port number, the installer ignores the line and assigns the default port number for the component. It does this without displaying any warning.
- If you misspell the parameter on the command line, the installer does not display a warning. It continues and assigns default ports to all components.
- If you specify a relative path to the `staticports.ini` file (for example, `./staticports.ini`) on the command line, the installer will not find the file. The installer continues without displaying a warning and it will assign default ports to all components. You must specify a full path to the `staticports.ini` file.
- If the parameter you specify on the command line does not match the installation type that you are performing (for example, if you specify the parameter for middle tier but you are installing the infrastructure), the installer does not give a warning. It continues and assigns default ports to all components.

Post-Installation Configuration Tasks

This chapter identifies post-installation configuration tasks you must complete after installation. The following topics are covered in this chapter:

- [Running root.sh to Complete the Post-Installation](#)
- [Checking Database Settings](#)
- [Accessing the OracleMetaLink Web Site](#)
- [Setting Credentials for the Job System \(Windows Only\)](#)
- [Configuring Database and ASM Targets for Monitoring](#)

Running root.sh to Complete the Post-Installation

If you have performed and completed a silent installation, you must run the `root .sh` script as `root` to complete the post-installation. The `root .sh` script finishes the post-installation steps for the Oracle Management Agent, Management Service, and Management Repository database. If you used interactive mode to install Enterprise Manager, you were prompted to run `root .sh` before completing your installation.

On the Management Service machine, run the `root .sh` script as `root` from the `$ORACLE_HOME` directory.

Note: For a cluster installation, you must run the `root .sh` script on each host of the cluster on which you installed a Management Agent.

Checking Database Settings

After the Management Repository has been created you may need to set certain database parameters or settings after installation. Refer to [Appendix B](#) for initialization parameters and additional database settings.

Accessing the OracleMetaLink Web Site

To search OracleMetaLink and download Oracle software patches and patchsets using Enterprise Manager, refer to the following sections.

Specifying OracleMetaLink Credentials

Enterprise Manager uses OracleMetaLink credentials to search for and download OracleMetaLink patches. If you did not specify your OracleMetaLink credentials during installation, you can do the following:

1. On the Enterprise Manager Grid Control Home page, click **Setup**.
2. On the Setup page, click **Patching Setup**.
3. Specify your *OracleMetaLink* user name and password in the fields provided.

The URL to access the *OracleMetaLink* Web site is displayed in the **Patch Search URL** field on this page:

Access *OracleMetaLink* directly by going to the following Web site:

```
http://oracle.com/support/metalink/index.html
```

From this page, Oracle licensees can register for an account or log in with an existing account. Once logged in, you can search for patches, download patches, etc.

Setting Up the Proxy Configuration for the Management Service

If your firewall prevents you from accessing Web sites without the use of an HTTP proxy, then you must set the proxy settings for Enterprise Manager to access *OracleMetaLink*.

See Also: For information about configuring Enterprise Manager components, such as Management Agents and Beacons, for use in a firewall environment, refer to *Oracle Enterprise Manager Advanced Configuration*.

If Enterprise Manager is using a proxy server for external access, the following properties must be properly set in the `sysman/config/emoms.properties` file:

```
proxyHost=www-fooproxy.here.com
proxyPort=80
dontProxyFor=.here.com
```

See Also: For information about configuring the Management Service properties file, refer to *Oracle Enterprise Manager Advanced Configuration*.

You can also specify domain names that will cover all hosts with those domain. For example:

```
dontProxyFor=.us.mycompany.com, .uk.mycompany.com
```

If the proxy properties are set incorrectly or not set at all, and you try to search for a patch, you will receive an error message indicating that Enterprise Manager cannot access the *OracleMetaLink* Web site.

Setting Up the Proxy Configuration for the Management Agent

There are two ways to specify proxy information for a Management Agent:

- Specify values for `s_proxyHost` and `s_proxyPort` using a response file when performing a silent installation using Oracle Universal Installer.
- Specify values directly through the command line option when invoking Oracle Universal Installer. For example:

```
runInstaller oracle.sysman.top.agent:s_proxyHost="<value>"
oracle.sysman.top.agent:s_proxyPort="<value>"
```

Setting Credentials for the Job System (Windows Only)

Windows systems (NT 4.0, 2000, XP, 2003) require that you set the correct credentials for the Jobs system to work properly in Enterprise Manager. By default, the Management Agent service is installed as a LocalSystem user. When submitting jobs, the user submitting the job must have the "Log on as a batch job" privilege enabled.

Perform the following steps to establish that privilege for the job user:

1. Start the **Local Security Policy** tool located in the **Start** menu by clicking **Settings**, then **Control Panel**, then **Administrative Tools**. In Windows NT 4.0, access the security policy tool through User Manager.
2. Under **Local Policies/User Rights Assignment**, add the user to the "Log on as a batch job" privilege.
3. Windows 2000 may require a restart for the policy change to take effect. Restart as necessary.

If a user exist both locally and at the domain level, Windows gives the local user precedence. So when you are submitting a job, make sure that the user has the necessary privileges and provide that user's password.

Note: If the Management Agent NT service is installed as any other user (i.e., *not* LocalSystem), then, in addition to granting the "Log on as a batch job" privilege, the user must be granted the following three privileges:

- Act as part of the operating system.
- Adjust memory quotas for a process. (This is named "Increase memory quotas" on Windows 2000 and NT 4.0.)
- Replace a process level token.

In this case, the above three privileges must be granted to the "NT service" user, not the "job" user.

Configuring Database and ASM Targets for Monitoring

When you first display the Database Home page for an Oracle Database 10g target, the Database Home page may display no monitoring data and the status of the database may indicate that there is a metric collection error. This is because you need to supply the DBSNMP password to use to monitor the database. The database may also be listed as being down because the DBSNMP user account has been locked due to unsuccessful login attempts.

Similarly, the first time you display the home page for an Automatic Storage Management (ASM) target, the status of the ASM instance may be unknown or unavailable, and the home page may indicate that the Management Agent is down. Again, this is because you need to supply the ASM SYS password.

Note: You may first need to unlock the DBSNMP user account before setting the monitoring credentials. If the account is not locked, skip ["Unlocking the DBSNMP User Account"](#) and proceed to ["Setting Monitoring Credentials"](#) for instructions.

To fix this problem for an Oracle Database 10g target, do the following in Grid Control:

1. Unlock the DBSNMP account (if necessary).
2. Update the DBSNMP account password.

These steps are described in detail in the following sections:

- [Unlocking the DBSNMP User Account](#)
- [Setting Monitoring Credentials](#)

Unlocking the DBSNMP User Account

To unlock the DBSNMP user account:

1. From Grid Control, navigate to the Database Home page and click **Administration** to display the list of administration functions.
2. Under Security, click **Users** to display the list of all user accounts. If you are prompted to log in to the database, make sure to use a database user account with DBA privileges such as SYSTEM.
3. Find and select the DBSNMP user account, select **Unlock User** from the Actions menu, and click **Go** and confirm your choice.
4. Set the DBSNMP password as described in the "[Setting Monitoring Credentials](#)" section. Once the password is set, monitoring can begin.

Setting Monitoring Credentials

You must reset the monitoring credentials for database and ASM targets if the passwords you specified during installation were different from the defaults that Enterprise Manager expects. If you change a password at any time, make sure to update all components using that password as well.

This section contains the following subsections:

- [Setting Monitoring Credentials for Database Targets](#)
- [Setting Monitoring Credentials for ASM Targets](#)

Setting Monitoring Credentials for Database Targets

To set the monitoring credentials for a single-instance or cluster Oracle Database 10g target:

1. In Grid Control, navigate to the Configure Database: Properties page:
 - a. On the **Targets** tab, click **Databases** to display the list of database targets.
 - b. Find and select the database target and click **Configure**.Enterprise Manager displays the Configure Database: Properties page.
2. Enter the correct password for the DBSNMP user in the **Monitor Password** field and click **Test Connection** to verify the monitoring credentials.
3. If the connection is successful, click **Next**, then click **Submit**.

You should now be able to view the complete Database Home page for the Oracle Database 10g target. For more information, see Section 1.4.2, "Specifying New Target Monitoring Credentials," in *Oracle Enterprise Manager Advanced Configuration*.

Note: If you change the DBSNMP password at a later date, you must update the password for Grid Control and Database Control and may need to unlock the account.

If you are using Database Control, update the DBSNMP password by doing the following:

1. Click **Monitoring Configuration** under Related Links on the Database Control Home page. Enterprise Manager displays the Configure Database: Properties page.
 2. Enter the correct password in the **Monitor Password** field and click **Test Connection**. If the connection is successful, click **Next**, then **Submit**.
-
-

Setting Monitoring Credentials for ASM Targets

To set the monitoring credentials for an ASM target:

1. In Grid Control, click **All Targets** on the **Targets** tab to display a list of all managed targets.
2. Find and select the ASM target that you want to modify.
3. Click **Configure** to display the ASM Monitoring Configuration page.
4. Enter the ASM SYS password in the **Password** field and click **OK**.

You should now be able to view the complete home page for the ASM target with no Management Agent or collection errors. For more information, see Section 1.4.2, "Specifying New Target Monitoring Credentials," in *Oracle Enterprise Manager Advanced Configuration*.

Getting Started with Enterprise Manager

After the Enterprise Manager installation, the Management Service and Grid Control are automatically started. You can immediately log in to Grid Control with the SYSMAN account and begin using Enterprise Manager to manage your enterprise.

This chapter covers Enterprise manager's out-of-box configuration, recommends tasks to perform after installation to begin customizing Enterprise Manager for your particular environment, and contains information on how to configure the Oracle Management Agent and Management Service. The following topics are covered in this chapter:

- [Enterprise Manager's Out-of-Box Configuration](#)
- [Using Grid Control for the First Time](#)
- [Controlling the Management Service and Management Agent](#)

Enterprise Manager's Out-of-Box Configuration

At install time, the following tasks are automatically performed, with no user interaction required:

- Default Super Administrator SYSMAN account is created with the password you specified.
- The SYSMAN account is automatically configured to receive e-mail notifications if you provided the e-mail notification settings at installation time.
- E-mail notifications are set up with default Notification Rules for the critical conditions.
- Supported targets located on the same host machine as the Management Agent are automatically discovered.
- Targets subtabs are created: Hosts, Databases, Application Servers, Web Applications, Groups, All Targets.

Default Super Administrator: SYSMAN

A default Super Administrator account, SYSMAN, is created with the password you specified during the installation. After installation, you can immediately log in to Grid Control with this user name and password to perform management tasks. The SYSMAN account owns the database schema containing the Management Repository.

See Also: To learn more about the SYSMAN user account, refer to the "Setting Up Enterprise Manager for Your Environment" chapter of *Oracle Enterprise Manager Concepts*.

E-mail Notifications

The SYSMAN account is automatically configured to receive e-mail notifications from Enterprise Manager if, during installation, you specified the Outgoing (SMTP) Mail Server and SYSMAN e-mail address. Also, as part of the self-monitoring feature, a script is created that enables the user to be notified by e-mail in the event that Enterprise Manager goes down unexpectedly.

Note: If you do not specify the mail server, there will be no notification. If you specify the mail server, but not the e-mail address, the system is set up to send e-mail notifications, but the SYSMAN account will not receive any notifications. If you did not specify the information during install, you can set up e-mail notification afterwards using Enterprise Manager Grid Control.

Notification Rules

E-mail notifications are set up with default Notification Rules for the critical conditions that could occur for all supported target types. For example, for the database target type, a rule is created such that e-mail notifications are sent when any database becomes unavailable, or if any of its key health metrics (Datafile Usage %, Archiver Hung Error Stack, Tablespace Space Used %, and others) becomes critical. The e-mail notifications will be sent to the e-mail address associated with the SYSMAN account. These rules are public; when other administrators are created, they can subscribe to them later.

See Also: For more information on the notification rules, in Enterprise Manager, click **Preferences**, then **Rules**. Click **Help** on that page.

Automatic Discovery

The first time the Management Agent is started, the supported targets that are located on the same host machine as the Management Agent are automatically discovered and default monitoring levels and data collections are automatically enabled.

See Also: For a list of certified targets for Enterprise Manager Grid Control, refer to [Table 1-6](#) on page 1-6.

Troubleshooting Problems with Target Discovery

If you are unable to discover targets on a Management Agent host, check for the following problems:

When the Management Agent is installed, an automatic discovery is performed to detect any existing Oracle*9i*AS 9.0.2 or 9.0.3 instances. If the 9.0.2 or 9.0.3 Oracle*9i*AS instances were installed by a different OS user than the user that installs the Management Agent, then the file protections on `targets.xml` within that Oracle*9i*AS installation may prevent the Management Agent from reading the file. This will prevent the discovery of that Oracle*9i*AS instance.

To confirm that this is the problem, check the Management Agent logs located at `AGENT_HOME/sysman/log/` for "permission denied" errors, where `AGENT_HOME` is the Oracle home for the Management Agent. To correct the problem, set the file permissions so that it can be read by the user who installed the Management Agent.

This problem does not occur when discovering other existing Oracle Application Server versions on a machine.

See Also: If you encounter problems monitoring Oracle Database 10g or ASM targets, refer to "[Configuring Database and ASM Targets for Monitoring](#)" in this book.

Targets Subtabs

The **Hosts, Databases, Application Servers, Web Applications, Groups, and All Targets** target subtabs are created. These subtabs are categories of targets that provide immediate access to the targets you may want to access most often.

See Also: Refer to the Enterprise Manager online help for detailed information on managing each of these target areas.

Using Grid Control for the First Time

Enterprise Manager Grid Control provides a Web-based interface for managing your entire enterprise. [Table 4–1](#) provides a roadmap of the actions you may want to perform now that Enterprise Manager is installed and running.

The first column describes actions that you may wish to perform; the second contains considerations and reasons for performing the action; the third helps you navigate to the appropriate online help page in Enterprise Manager.

All help topics are contained within the "Setting Up Enterprise Manager" directory of the online help.

Table 4–1 *Using Grid Control for the First Time*

Action	Purpose	For More Information ¹
Plan Target Management	Consider: <ul style="list-style-type: none"> ■ Which administrators have access to which targets? ■ How much access does each administrators have to the targets? ■ Which administrators, if any, get system level access? With proper planning, you will have a clearer picture on how to divide the workload among the administrators.	"Setting Up Targets to Monitor and Manage" "Defining Administrators"
Create Additional Notification Methods	If the default e-mail notification is not sufficient. When new administrators are created, they can immediately have access to the methods.	"Setting Up Notifications for Alerts"
Review and Edit Default Notification Rules	If you want SYSMAN to receive notifications for all conditions. If you want a method other than e-mail to be used.	"Managing Notification Methods" in "Setting Up Notifications for Alerts" subdirectory
Create Groups	Logically organize your targets into groups for effective management. You can later grant group access to administrators rather than individual target access.	"Defining Groups"

Table 4–1 (Cont.) Using Grid Control for the First Time

Action	Purpose	For More Information ¹
Create Roles	Create roles to access certain targets and specific management features. Roles are especially useful if there are several administrators that share similar responsibilities.	"Creating, Editing, and Viewing Roles" in "Defining Administrators" subdirectory
Create Administrators	Make sure administrators reflect your management team. Assign administrators roles/privileges to divide their responsibilities. Ensure that no one shares an account. SYSMAN should be the only Super Administrator account.	"Creating, Editing, and Viewing Administrators" in "Defining Administrators" subdirectory
Perform Advanced Configuration Tasks	Enable Secure Mode for Enterprise Manager. Configure firewalls that exist between various components of Enterprise Manager.	For advanced configuration topics, refer to <i>Oracle Enterprise Manager Advanced Configuration</i> .

¹ For more information, go to the online help topic listed in this column. All topics are contained in the **Setting Up Enterprise Manager** directory.

Controlling the Management Service and Management Agent

The Management Service and Grid Control are automatically started after the Enterprise Manager installation. This section provides information on how to manipulate the Management Agent and Management Service after installation.

See Also: For information on how Enterprise Manager is installed, refer to the "Understanding the Enterprise Manager Directory Structure" section of *Oracle Enterprise Manager Advanced Configuration*.

For information about configuring Enterprise Manager components, such as Management Agents and Beacons, for use in a firewall environment, refer to *Oracle Enterprise Manager Advanced Configuration*.

Starting the Management Repository Database

If you need to start the Management Repository database, use SQL*Plus to connect to Oracle as SYSDBA, and then issue the STARTUP command.

See Also: For instructions on managing the repository database, refer to the "Maintaining and Troubleshooting the Management Repository" chapter of *Oracle Enterprise Manager Advanced Configuration*.

For detailed instructions on starting up a database, refer to the "Starting Up and Shutting Down" chapter in the *Oracle Database Administrator's Guide*.

Starting and Stopping the Management Service

The relevant `emctl` commands are listed in the following table.

You must be in the `AS_HOME/bin` directory to issue the `emctl` commands, where `AS_HOME` is the Oracle Application Server home directory in which the Oracle Management Service is installed and deployed.

If you want to ...	Enter the following command
Start the Management Service	emctl start oms
Stop the Management Service	emctl stop oms
Verify status of the Management Service	emctl status oms
Start all components of the Application Server, including the Management Service and WebCache	opmnctl startall
Start all components of the Application Server, including the Management Service and WebCache	opmnctl stopall

See Also: For more information on using command line utilities, refer to the "Using the Enterprise Command-Line Utility (emctl)" section of *Oracle Enterprise Manager Advanced Configuration*.

Starting and Stopping the Management Agent

The relevant `emctl` commands are listed in the following table.

You must be in the `AGENT_HOME/bin` directory to issue the `emctl` commands, where `AGENT_HOME` is the Oracle home directory for your Management Agent. Note that this directory is different than the `AS_HOME/bin` directory, which is for the Oracle Application Server Control Agent.

If you want to ...	Enter the following command
Start the Management Agent	emctl start agent
Stop the Management Agent	emctl stop agent
Verify status of the Management Agent	emctl status agent

See Also: For more information on using command line utilities, refer to the "Using the Enterprise Command-Line Utility (emctl)" section of *Oracle Enterprise Manager Advanced Configuration*.

Accessing Enterprise Manager Grid Control

The Oracle Enterprise Manager Grid Control is the primary tool for managing your Oracle environment.

If you need to log in to Enterprise Manager Grid Control, it is accessible through the following URL:

```
http://<oms_hostname>.<domain>:<port>/em
```

or

```
https://<oms_hostname>.<domain>:<port>/em
```

If the Management Service is running in non-secure mode, access Grid Control using the Web Cache port. Using the Web Cache port is a prerequisite for self-monitoring. The default port is assigned in the 7777-7877 range.

```
http://<oms_hostname>.<domain>:7777/em
```

If the Management Service is running in secure mode, access Grid Control over HTTPS. The default port is assigned in the 4443-4533 range.

`https://<oms_hostname>.<domain>:4443/em`

If you are uncertain about the port number, you can refer to one of the following files:

- `ORACLE_HOME/install/setupinfo.txt` as displayed by the Oracle Universal Installer at the end of the install
- `ORACLE_HOME/install/portlist.ini` on the Management Service machine

When the login dialog appears, enter the username and password for the Super Administrator SYSMAN.

See Also: For more information on Grid Control security, refer to the "Enterprise Manager Security" chapter of *Oracle Enterprise Manager Advanced Configuration*.

For more information on port settings, refer to the "Viewing a Summary of the Ports Assigned During the Application Server Installation" section of the "Configuring Firewalls" chapter of *Oracle Enterprise Manager Advanced Configuration*.

Refer also to "Viewing and Modifying Application Server Port Assignments" in the Enterprise Manager online help.

Patches and Packages

Oracle recommends that you check for required patches and packages for Oracle Application Server, Oracle Database, and Oracle Real Application Clusters Databases for your operating system platform and version.

Note: This appendix contains the required patches, packages, and other software requirements for supported operating systems. For the most current list of supported operating system specific software, refer to *OracleMetaLink*:

<http://metalink.oracle.com>

Refer to the *Oracle Application Server Installation Guide* for more detailed information on Solaris, HP-UX, Linux, IBM AIX, HP Tru64, and Windows platforms, including patching and other software requirements for Application Server. The books are distributed on the Oracle Application Server Disk 1 CD-ROM.

Refer to the *Oracle Database 10g Installation Guide for UNIX Systems* for the appropriate version of your existing database for database requirements.

Further documentation may be found at:

<http://otn.oracle.com/documentation>

This appendix contains the following sections:

- [Operating System Patches and Packages](#)
- [Management Repository Database Patches](#)

Operating System Patches and Packages

The operating system must have all the required patches for the Management Agent, Management Service, and Management Repository. For the latest patch information, you must actively consult the operating system vendors' Web sites to ensure that the target host is at the right patch level.

While Oracle recommends that you deploy the latest available patch clusters, the only requirement is that the operating system be patched to this level or later. You may also run the installer to find out which patches failed pre-requisite checking and install only those patches.

Solaris Operating System Patches

For the Solaris Operating Systems, Enterprise Manager requires JDK 1.4.2.

You can fulfill all the patch requirements for Solaris Operating System Release 8 and Release 9 by installing the J2SE patch cluster and the domain name patch (112138-01 or greater). The domain name patch is *not required* for either the silent or interactive Additional Management Agent installation.

Obtain the patch cluster at:

<http://sunsolve.sun.com/pub-cgi/show.pl?target=patches/patch-access>

Note: The following patches within the J2SE patch cluster are *not required* when performing silent Management Agent installations on the Solaris Operating System:

- **108652-76** X11 6.4.1: Xsun patch
- **108921-18** CDE 1.4: dtwm patch
- **108940-57** Motif 1.2.7 and 2.1.1: Runtime library patch for Solaris 8
- **112003-03** SunOS 5.8: Unable to load fontset in 64-bit Solaris 8 iso-1 or iso-15
- **108773-18** SunOS 5.8: IIIM and X Input & Output Method patch

These patches are required when interactively installing the Management Agent through the Oracle Universal Installer graphical user interface.

Solaris Operating System Packages

Check that your computer contains the following operating system packages. If the packages are not present, the installer cannot continue.

SUNWarc
SUNWbtool
SUNWhea
SUNWlibm
SUNWlibms
SUNWsprout
SUNWsprout
SUNWttoo
SUNWi1of
SUNWxwfont
SUNWi1cs
SUNWi15cs

The last two packages (SUNWi1cs and SUNWi15cs) are required for the ISO8859-1 and ISO8859-15 codesets.

Note: The packages SUNWi1cs and SUNWi15cs are *not required* when performing silent Management Agent installations on the Solaris Operating System.

These packages are required when interactively installing the Management Agent through the Oracle Universal Installer graphical user interface.

To check if an operating system package is installed on your computer, run the `pkginfo` command with the name of the package. The syntax for running `pkginfo` is:

```
pkginfo package_name1 package_name2 ...
```

For example, to check if all of the packages listed above are installed on your computer, run the following command:

```
pkginfo SUNWarc SUNWbtool SUNWhea SUNWlibm SUNWlibms SUNWsprot SUNWsprx
SUNWtoo SUNWilof SUNWxfnt SUNWilcs SUNWi15cs
```

If your computer is missing a package, contact your system administrator.

HP-UX 64-bit

For information about HP-UX patches, see the following Web site:

<http://www.hp.com/products1/unix/java/infolibrary/patches.html>

For more detailed information on software requirements, refer to the *Oracle Application Server Installation Guide* for HP-UX PA-RISC (64-bit) and Linux x86.

The book is distributed on the Oracle Application Server Disk 1 CD-ROM. Further documentation may be found at:

<http://otn.oracle.com/documentation>

HP-UX 11.0 (64-bit)

Table A-1 Software Requirements for HP-UX 11.0 Systems

Item	Requirement
Operating System	HP-UX 11.0 (64-bit)
JDK	1.4.1_05 or higher
Patches for JDK	Install all patches required for the version of the JDK installed. This list is constantly under review and is published on the JDK download page on the HP web site.
Quality Pack	Sept 2002 Quality Pack (QPK1100 B.11.00.58.5) or higher
Patches	<ul style="list-style-type: none"> ■ PHKL_27813 s700_800 11.00 POSIX AIO;getdirent;MVFS;rcp;mmap/IDS patch ■ PHSS_26559 s700_800 11.00 ld(1) and linker tools cumulative patch
Packages	Motif 2.1 Development Environment X11MotifDevKit.MOTIF21-PRG:B.11.00.01

HP-UX 11i (64-bit)

Table A-2 Software Requirements for HP-UX 11i Systems

Item	Requirement
Operating System	HP-UX 11i (11.11) PA-RISC or higher
JDK	1.4.1_05 or higher

Table A-2 (Cont.) Software Requirements for HP-UX 11i Systems

Item	Requirement
Patches for JDK	Install all patches required for the version of the JDK installed. This list is constantly under review and is published on the JDK download page on the HP web site.
Quality Pack	Dec 2001 Consolidate Patches (Dec01GQPK11i_Aux_Patch B.03.02.06) or higher
Patches	<ul style="list-style-type: none"> ■ PHKL_25212 vm preemption point, mlock/async_io patch ■ PHKL_25506 asyncio driver patch ■ PHKL_27091 s700_800 11.11 Core PM, vPar, Psets Cumulative, slpq1 perf patch ■ PHKL_28267 s700_800 11.11 thread perf, user limit, cumulative VM ■ PHNE_28089 s700_800 11.11 cumulative ARPA Transport patch ■ PHSS_24638 s700_800 11.11 HP aC++ -AA runtime libraries (aCC A.03.33) ■ PHSS_26263 s700_800 11.11 ld(1) and linker tools cumulative patch ■ PHSS_26792 s700_800 11.X ANSI C compiler B.11.11.04 cumulative patch ■ PHSS_26793 s700_800 11.X +O4/PBO Compiler B.11.11.04 cumulative patch
Packages	Motif 2.1 Development Environment (X11MotifDevKit.MOTIF21-PRG) B.11.11.01

Linux Operating Systems

Oracle supports the following Linux operating systems:

- Red Hat Enterprise Linux AS and ES 2.1
- Red Hat Enterprise Linux 3
- United Linux 1.0 (Service Pack 3)

For more detailed information on software requirements, refer to the *Oracle Application Server Installation Guide* for HP-UX PA-RISC (64-bit) and Linux x86.

The book is distributed on the Oracle Application Server Disk 1 CD-ROM. Further documentation may be found at:

<http://otn.oracle.com/documentation>

Red Hat Enterprise Linux

Customers can obtain the latest supported patchsets from Red Hat at:

<http://www.redhat.com>

The following table lists the software requirements for Red Hat Enterprise Linux AS/ES 2.1 systems.

Table A–3 Software Requirements for Red Hat Enterprise Linux AS/ES 2.1 Systems

Item	Description
Operating System	Red Hat Enterprise Linux AS/ES 2.1
Red Hat Patches	Errata 25 kernel or a higher errata patch approved by Red Hat. One of the following, depending on the type of RedHat installation: kernel-2.4.9-e.25 kernel-smp-2.4.9-e.25 kernel-enterprise-2.4.9-e.25 The minimum supported glibc version is glibc-2.2.4-32.
Software Packages	gcc-2.96-108.1 pdksh-5.2.14-13 openmotif-2.1.30 sysstat-4.0.1 compat-glibc-6.2-2.1.3.2 libstdc++-2.96-108.1

The following table lists the software requirements for Red Hat Enterprise Linux 3.0 systems.

Table A–4 Software Requirements for Red Hat Enterprise Linux 3.0 Systems

Item	Description
Operating System	Red Hat Enterprise Linux 3.0
Red Hat Patches	The minimum supported kernel and glibc versions are: <ul style="list-style-type: none"> ■ 2.4.21-4-EL ■ 2.3.2-95.3
Software Packages	gcc-3.2.3-20 setarch-1.3-1 pdksh-5.2.14 openmotif21-2.1.30-8 ¹ gnome-libs-1.4.1.2.90-34.1 compat-glibc-7.x-2.2.4.32.5 compat-gcc-7.3-2.96.122 compat-libstdc++-7.3-2.96.122 compat-libstdc++-devel-7.3-2.96.122 compat-gcc-c++-7.3-2.96.122 sysstat-4.0.7

¹ For Red Hat Enterprise Linux 3.0, the equivalent to openmotif-2.1.30 is openmotif21-2.1.30-8, which can be installed from Disk 3 of the Red Hat distribution by entering: `$ rpm -ivh openmotif21-2.1.30-8`.

United Linux 1.0

[Table A–5](#) lists the software requirements for United Linux systems. For more information, refer to:

<http://www.unitedlinux.com>

Table A-5 Software Requirements for United Linux 1.0 Systems

Item	Description
Operating System	United Linux 1.0 (Service Pack 2a and Service Pack 3) The minimum supported kernel and glibc versions are: <ul style="list-style-type: none"> ■ For SP2a: 2.4.19 and glibc-2.2.5-179 ■ For SP3: 2.4.21 and glibc-2.2.5-213
Other Software	gcc_old-2.95.3 pdksh-5.2.14 openmotif-2.1.30ML14 sysstat-4.0.3 libstdc++-3.2.2-38

HP Tru64 and IBM AIX 64-bit

For the latest information on the software requirements of these platforms, refer to the *Oracle Application Server Installation Guide* for HP Tru64 and IBM AIX.

Further documentation may be found at:

<http://otn.oracle.com/documentation>

Management Repository Database Patches

If you select the **Enterprise Manager 10g Grid Control Using a New Database** install option, no database patches are required. However, if you select the **Enterprise Manager 10g Grid Control Using an Existing Database** install option, then you must manually apply required patches to the database.

See Also: Refer to [Table 1-3](#) on page 1-4 for a list of Oracle Database versions certified for the Management Repository.

Note: Some of the Management Repository patches may not yet be available on all supported platforms for this release.

9.2.0.4 Management Repository Patches

Table A-6 Required Repository Patches for Oracle Database Release 2 (9.2.0.4)

Operating System	Required Patches
Solaris 32-bit	2718937, 2742518
HP-UX 64-bit	
Linux	
Solaris 64-bit	2718937
HP Tru64	

You can search for these patches on the *OracleMetaLink* Web site:

<http://metalink.oracle.com>

Management Repository Database Settings

The following topics are covered in this appendix:

- [Initialization Parameters](#)
- [Other Database Settings](#)

Initialization Parameters

The *required* initialization parameters must be set correctly for your qualified existing Enterprise Edition database to be able to run a Management Repository. You should also set all *recommended* parameters for your Management Repository database.

See Also: For more information about managing initialization parameters, refer to the "Managing Initialization Parameters Using the Server Parameters File" chapter of the *Oracle Database Administrator's Guide*.

After making the changes, you must shut down and restart the database.

See Also: For instructions on shutting down the database, refer to the "Starting Up and Shutting Down" chapter in the *Oracle Database Administrator's Guide*.

Required Parameters

The following table lists the minimum or absolute values for required initialization parameters for the existing Enterprise Edition database you have selected for the Management Repository. These required parameters are verified by Oracle Universal Installer pre-requisite checks during installation. Management Repository creation will fail if these required settings are not met.

Note: Make sure that the Enterprise Edition database you select for your Management Repository has the **fine-grained access control** option set to true. This is required for successful Management Repository creation. Check `v$options` for this setting.

Table B-1 Minimum Required Oracle Database Parameter Values

Parameter	Value
job_queue_processes	10
db_block_size	8192

Table B-1 (Cont.) Minimum Required Oracle Database Parameter Values

Parameter	Value
resource_manager_plan	FALSE
remote_login_passwordfile	EXCLUSIVE
timed_statistics	TRUE
open_cursors	300
shared_pool_size	67108864
dispatchers ¹	NULL
aq_tm_processes ²	1
compatible	9.0.1.3 or greater

¹ This parameter must either be NULL or not present in the init.ora file. No other value should be used.

² If this parameter is not set, or is set to zero, dequeued messages will not be purged. Set to 1 or greater.

Recommended Parameters

The following table lists the minimum values for recommended initialization parameters for the existing Enterprise Edition database you have selected for the Management Repository. These parameters should be set in addition to all required parameters.

Table B-2 Minimum Recommended Oracle Database Parameter Values

Parameter	Value
db_cache_size	134217728
session_cached_cursors	200
large_pool_size	0
processes	150
fast_start_mttr_target	300
hash_area_size	1048576
sort_area_size	1048576
pga_aggregate_target	33554432
undo_management	AUTO
undo_retention	10800
undo_tablespace	UNDOTBS
compatible	9.0.0

Other Database Settings

You may want to check the following settings for your Management Repository database to make sure they are set correctly.

UNDO Tablespace and Temporary Tablespace

Oracle recommends that the Management Repository database have the UNDO Tablespace and the Temporary Tablespace set to AUTOEXTEND ON.

See Also: For more information, refer to the "Managing the UNDO Tablespace" chapter of the *Oracle Database Administrator's Guide*.

Archive Logging

Oracle recommends that the Management Repository database have archive logging turned on for any environment where continuity of data is important. Regular backups are also recommended.

Ensure the Database is Not in QUIESCE Mode

Oracle recommends that you do not put the Management Repository database in QUIESCE mode. Check your Resource Plan for INTERNAL_QUIESCE.

1. Navigate to the Database Home page of your Management Repository.
2. On the Administration property page, under Resource Manager, click **Resource Plans**.
3. Make sure INTERNAL_QUIESCE has not been selected.

In QUIESCE mode, only DBA transactions are processed; all other transactions are suspended. Putting the Management Repository database in the QUIESCE mode suspends Enterprise Manager transactions.

Using the Downloadable Management Agent

This appendix describes how to add additional Host targets to the Oracle Enterprise Manager Grid Control by downloading and installing the Oracle Management Agent using the `agentDownload` script.

To add a Host target, you must install the Management Agent on the host computer you want to manage. When the Management Agent on that host begins communicating with the Oracle Management Service, the Agent target and the Host target will appear in the list of targets.

See Also: For more information about the directories and files installed by the Enterprise Manager installation, see *Oracle Enterprise Manager Advanced Configuration*.

Methods for Installing the Management Agent

After you install the Management Service, your next step is to install the Management Agent on each host computer that you want to manage. Enterprise Manager provides a number of installation methods:

- On each host computer, run the Oracle Universal Installer from the Enterprise Manager CD-ROM and select the **Additional Management Agent** installation type. Instructions for using this Management Agent installation method are included in [Chapter 2](#). You can also share the software on the network, then download and run Oracle Universal Installer in silent mode on each local host using the response file (`agent_download.rsp`) and initialization parameters file (`oraparam_agent.ini`) provided with the Management Service installation:

```
AS_HOME/sysman/agent_download/
```

See Also: Refer to the *Oracle Universal Installer Concepts Guide* for details on using response files and initialization parameter files with the Universal Installer.

- Use the `agentDownload` script to install Management Agents. This method is preferred for environments with multiple hosts or if the targets are not set up with the required packages for an interactive installation.

This appendix describes how to use the `agentDownload` script to install and deploy Management Agents across managed hosts within your enterprise.

About the agentDownload Script

The downloadable Agent software contains a sample script called `agentDownload`. This script provides a means for installing Management Agents that can be customized for specific environments using a silent, scripted installation. The `agentDownload` script is fully functional and self-documenting so it can be customized easily for specific environments.

The `agentDownload` script uses "pull" technology. In other words, even though the script does not have to exist on a local file system, it must always be executed from the target host computer. You must be logged into the target host to run the script. Files are not "pushed" from a central location to a list of target hosts. Instead, files are "pulled" to the local `$ORACLE_HOME` from the staged product installation location.

This means that the `agentDownload` needs to be launched from each target host where you want the Management Agent installed. Because the installation is scripted, it is possible to use a wrapper script, UNIX cron job, `rdist`, or a combination of operating system features to fully automate this process for mass deployments.

Benefits of the agentDownload Script

The download script deploys the standard Management Agent installation, with some additional benefits:

- Can be modified for specific user environments.
- Non-interactive, silent, installations.
- Output is text-only (non-graphical).
- Management Agents installed using the script are identical to Management Agents installed with the Oracle Universal Installer graphical installation.
- Simplifies deploying Management Agents in secure Web environments that are configured to provide HTTP access.

Obtaining the agentDownload Software

The downloadable Agent software is available on the platform-specific CD from which the Oracle Management Service was installed, and from the following Oracle Technology Network Web site:

<http://otn.oracle.com/software/products/oem/index.html>

To initiate a silent Oracle Universal Installer session using HTTP to install Management Agents, download and execute the `agentDownload` script described in this appendix to perform the installation. (Note that proxy servers are not supported.)

Using the agentDownload Script

To deploy multiple Management Agents using the `agentDownload` script, you must do the following:

1. Install the Oracle Management Service.

You install the Management Service using the Oracle Universal Installer and the instructions in [Chapter 2](#). The Management Service is installed and deployed into its own Oracle Application Server home directory.

See Also: For more information about the directory structure of a typical Management Service installation, see *Oracle Enterprise Manager Advanced Configuration*.

2. The download stage for the Management Service platform is installed with the Management Service. For example, for Solaris operating systems, the download stage can be found in:

```
AS_HOME/sysman/agent_download/solaris
```

The agentDownload script, the response file, and readme file can be found in:

```
AS_HOME/sysman/agent_download/
```

3. Download the agentDownload script to the target host from the Management Service URL.

The Management Service installation creates a Web server alias called agent_download that maps to a physical directory in the Oracle Application Server home directory where the Management Service is installed and deployed. For example, if you installed the Management Service on a host named mgmthost27.acme.com, you could access the following URL from a browser:

```
http://mgmthost27.acme.com:4889/agent_download/
```

Note: Port 4889 is the default port for Grid Control, so should be available after you install the Management Service.

Using this Web server alias, you can download the script to the target host computer using the following URL. Save the script locally as agentDownload (no extensions).

```
http://mgmthost27.acme.com:4889/agent_download/agentDownload.OS
```

Where OS represents the operating system platform. For example, for Solaris operating systems, the script is named agentDownload.solaris.

Any method of retrieving the file is acceptable: cp, rcp, scp, FTP, etc. The script can also be retrieved by launching a browser on the target machine and saving the link to a local file.

4. Execute the agentDownload script on the target host.

Before launching the script, ensure that:

- The execute bit is set and the script file has the proper file protection settings (use chmod to ensure the file has the correct privileges).
- The \$ORACLE_HOME environment variable is set in the user environment. This will be the location of the Management Agent home on the target host; if the directory does not exist it will be created during the installation. If it exists, it must be empty.
- The jar executable file is in the PATH environment variable.
- The wget (or other file transfer mechanism) has been defined in the script. The script default is to call /usr/local/bin/wget.
- The \$AGENT_INSTALL_PASSWORD environment variable is set in the environment if the Management Agent will be uploading to a secure Management Service.

See Also: For more information about enabling Security for Enterprise Manager components, see *Oracle Enterprise Manager Advanced Configuration*.

- The script user has the necessary file access permissions for the Management Agent home directory
5. After the Management Agent installation is complete, change directory to the Agent home directory and run the `root.sh` script as the `root` user.

For example:

```
$PROMPT>su root
Password: root_password
#./root.sh
#exit
$PROMPT>
```

The `root.sh` script must be run as `root`; otherwise, it will exit and the Enterprise Manager job system will not be available. The job system is required for some Enterprise Manager features, such as hardware and software configuration tasks and configuring managed database targets.

Script Details

The `agentDownload` script performs the following actions:

- Creates home directories for the Management Agent and Oracle Universal Installer if they don't exist, based on the `$ORACLE_HOME` environment variable:
- Downloads the `agent_download.rsp` response file from the Management Service Web server.

The Management Service installs the response file with the name and port number of the Management Service. As a result, the Management Agent you install will be configured to use the Management Service from which the response file was downloaded.

- Downloads a jarred Oracle Universal Installer for the target operating system from the Management Service Web server.
- Unjars the Oracle Universal Installer and points the Oracle Universal Installer to the product definition file (`products.xml`) hosted by the Management Service Web server.
- Launches the Oracle Universal Installer in silent mode from the local machine; the Universal Installer pulls files from the Web server to the target machine via HTTP.

Note: This script uses the `-ignoreSysPrereqs` flag to bypass pre-requisite check messages during installation; pre-requisite checks are still performed and saved to the installer logs. While this makes the Management Agent easier to deploy, check the logs to make sure the target machines on which you are installing Management Agents are properly configured for successful installation.

- The resulting installation and configuration, including the automatic discovery of managed targets on the Management Agent host, is identical to that provided by the Management Agent install on the Enterprise Manager CD set.

- The agentDownload script creates a log file in \$ORACLE HOME.
- The script will not install into an existing directory if it contains any files other than agentDownload session logs. Do not modify the script to install into an existing ORACLE HOME!
- At the end of a successful install, the Agent will be started and should begin successfully uploading to the OMS, presuming automatic discovery and automatic start were not disabled at the command line.

To run the script use the following command:

```
./agentDownload41 [-dhioستx]
```

Descriptions of the script options follow:

Option	Description
-d	Do not automatically discover targets during installation.
-h	Usage: Displays and describes the options that can be used with this script.
-i	Inventory pointer location file: Can be used to point the installer to a non-default inventory.
-o	ORACLE_HOME: Can be picked up from the inventory or specified on the command line.
-s	Installer stage directory: Points to an installer previously downloaded by the script. If defined, the local installer will be launched and the jarred installer will not be downloaded.
-t	Do not automatically start the Agent at the end of installation.
-x	Debug output: Turns on shell debugging.

Customization

You can edit the contents of the agentDownload script so it uses a specific tool for transferring files from the Management Service Web server. The contents of the file contain instructions for doing so, as shown in the following example:

```
WGET="/usr/local/bin/wget --dot-style=mega --verbose --tries=5"
InstallerDownloadCmd=$WGET
# Define the command to be used to download the jarred installer from
# the web server hosting the OMS.
# Other download possibilities: ftp; cp/scp; use local browser to save the
# link to a file on the target machine.
# This example uses wget, a GNU tool for http and ftp file transfers.
# If the products.xml referenced by the Oracle Installer is a URL, then the
# Installer will download its files via http. This greatly facilitates
# performing installs in a secure environment that may include firewalls
# and servers with limited access (no ftp server, NFS mounts not available,
# etc.).
# Enterprise Manager version number. This is used to construct the
# home name used by the installer
```

GNU wget is available for most platforms and can be downloaded from the following location:

```
http://www.gnu.org/software/wget/wget.html
```

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