

Oracle® Enterprise Manager
Grid Control Installation and Basic Configuration
10g Release 2 (10.2) for Linux x86
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Oracle Enterprise Manager Grid Control Installation and Basic Configuration, 10g Release 2 (10.2) for Linux x86

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Preface

This manual is your primary source of pre-installation requirements and certifications, and describes the installation options, and post-installation configuration information for Oracle Enterprise Manager Grid Control.

Note that later versions of this and other Enterprise Manager books may be available on the Oracle Technology Network:

<http://www.oracle.com/technology/documentation/oem.html>

This preface contains the following topics:

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

Intended Audience

This guide is written for Oracle system administrators who want to install and configure Oracle Enterprise Manager Grid Control. 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. Accessibility 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 more information, visit the Oracle Accessibility Program Web site at

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Accessibility of Code Examples in Documentation

Screen readers 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, some screen readers may not always read a line of text that consists solely of a bracket or brace.

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TTY Access to Oracle Support Services

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Related Documents

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

- *Oracle Enterprise Manager Concepts*
- *Oracle Enterprise Manager Grid Control Quick Installation Guide*
- *Oracle Enterprise Manager Advanced Configuration*
- *Oracle Enterprise Manager Configuration for Oracle Collaboration Suite*
- *Oracle Enterprise Manager Policy Reference Manual*
- *Oracle Enterprise Manager Metric Reference Manual*
- *Extending Oracle Enterprise Manager*
- *Oracle Enterprise Manager Command Line Interface*
- *Oracle SNMP Agent*

For the latest versions of these and other books, check the Oracle Technology Network at:

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

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.

Convention	Meaning	Example
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><DVD>/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>

What's New

This chapter describes new features in the Enterprise Manager 10g Release 2 (10.2) installer.

The new Enterprise Manager installer provides an installation that is almost completely automated. In this release, the Enterprise Manager installer also provides the following:

- Renders seamless multiple-Oracle home installations and configurations during a single session.
- Facilitates individual maintenance cycles for each of the top-level product components.

This is brought about by installing the database and the Oracle Management Server (OMS) in separate Oracle homes. In this release, the Enterprise Manager installer will perform a chain install, wherein it will install the OMS, database, and the agent in separate Oracle homes (`oms10g`, `db10g`, and `agent10g`).

- Facilitates a Grid Control upgrade from 10.1.x release patchsets to 10.2.
- Facilitates mass deployment of the Management Agent using the Agent Deploy application.
- Provides an out-of-box secure Enterprise Manager Grid Control environment.
- Provides automated startup scripts that help start the database, Management Service, listener, and the Management Agent during a machine reboot.
- Allows the user to resume the installation process from the point where it was aborted, through the built-in resumability feature of the installer.

Multiple Oracle Home Installations

The Enterprise Manager installer provides for a seamless installation experience by performing multiple Oracle home installations, depending on the type of installation that is selected.

A typical Oracle Enterprise Manager installation will create a separate Oracle home for:

- Oracle Management Service
- Oracle Database
- Oracle Management Agent

Note: The Oracle homes that are created as sub-directories by the installer will be placed under the *Parent Directory* that you specify. The Oracle homes will be created as *db10g*, *oms10g*, and *agent10g*.

Seamless Oracle Home Configurations

The Enterprise Manager installer performs seamless multiple Oracle home configurations during the installation process. The configuration tools that are run during installation will depend on the installation type that you have selected.

The following table lists all the configuration tools that are run during a typical Enterprise Manager installation (Install Enterprise Manager Using a New Database):

Product	Configuration Tools
Oracle Enterprise Manager Repository Database	<ul style="list-style-type: none">■ Oracle Net Configuration Assistant■ Oracle Database Configuration Assistant
Oracle Enterprise Manager Grid Console	<ul style="list-style-type: none">■ OC4j Configuration Assistant■ HTTP Server Configuration Assistant■ Java Configuration Assistant■ Web Cache Configuration Assistant■ Oracle iAS Instance Configuration Assistant■ Register DCM Plug-Ins with Enterprise Manager■ DCM Repository backups Assistant■ Enterprise Manager Technology Stack Upgrade■ Oracle Management Service Configuration
Oracle Management Agent	<ul style="list-style-type: none">■ Agent Configuration Assistant

Note: Depending on the Install Type you have chosen, any or all of the configuration tools listed in the table above will be run.

Running Root.sh

You are now required to run only one script `allroot.sh`, in this release of the installer, as compared to the three `root.sh` scripts (one for each Oracle home) that you had to run in the previous release.

Note: If Enterprise Manager is the first Oracle product that you are installing, you will also be prompted to execute `oraInstRoot.sh` along with `allroot.sh`.

Resuming an Enterprise Manager Grid Control Installation

In the event of an unexpected termination of the installation process, the Resumability feature of the Installer allows you to resume the installation process (the next time the Installer is invoked) from the point where the installation was aborted.

Out-of-Box Secure Grid Environment

The new Enterprise Manager 10g R2 installer provides a secure Grid Control environment out-of-box.

Automated Startup Scripts

In this release of Enterprise Manager, the startup scripts to run the database, Management Service, listener, and agent are automatically executed in case a machine reboots. The services that are automatically started depend on the installation type that you have chosen.

Installing	Automated Scripts Start the
Enterprise Manager Using New Database	Repository database, listener, Management Service, and the agent.
Enterprise Manager Using Existing Database	Management Service and agent.
Additional Management Service	Management Service and agent.
Additional Management Agent	Agent only.

Enhanced Installer Screens

The Enterprise Manager 10g R2 Installer's enhanced GUI provides for a more user-friendly installation experience.

Installation Location

After you select the appropriate installation option in the first screen (Specify Installation Type), you will be prompted to specify the Parent Directory in the Specify Installation Location screen, wherein the Oracle homes are created automatically.

Specify Configuration

The Specify Configuration screen for installing Enterprise Manager using an existing database has changed. The single Connect String value (comprising of host name, port, and SID) that you had to specify in the previous release has been changed to three input fields.

Language Selection

This page has been removed. You can now select the required languages by clicking Product Languages in the Installation Location screen.

Prefill Tablespace Location

The Specify Repository Database Configuration screen now includes the Prefill Tablespace Locations button. On clicking this button, the installer queries the database that you have specified, looks for the `SYSAUX` tablespace location, and automatically prefills that path in the appropriate tablespace location text boxes.

Note: If the tablespaces are stored in a raw device/ASM disk, then you must ensure the raw device/ASM disk is accessible to store the `SYSMAN` tablespaces.

Part I

Pre-Installation

The Pre-Installation part of this book contains information on the pre-installation requirements and certifications including hardware, software, browser, and target certifications.

Part I contains the following chapters:

- [Chapter 1, "Pre-Installation Requirements"](#)
- [Chapter 2, "Things to Know Before Installation"](#)

Pre-Installation Requirements

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.

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.

The following topics are covered in this chapter:

- [Planning Your Installation](#)
- [Enterprise Manager Components Overview](#)
- [Pre-Installation Considerations for Enterprise Manager](#)
- [Pre-Installation Requirements for Enterprise Manager](#)
 - [Enterprise Manager Hardware Requirements](#)
 - [Enterprise Manager Platform and Target Certification Requirements](#)
 - [Enterprise Manager Software Requirements](#)
- [Running the Prerequisite Checker in Standalone Mode](#)

Note: Ensure you also read the Enterprise Manager Grid Control Release Notes that accompany the product.

1.1 Planning Your Installation

The following sections will give you a better understanding of the Oracle Enterprise Manager Grid Control installation process and facilitate a successful installation.

- [Enterprise Manager Components Overview](#): The Enterprise Manager Components Overview section in this chapter briefly describes each Enterprise Manager component.
- [Pre-Installation Considerations for Enterprise Manager](#): This section provides information on the pre-installation requirements that facilitate successful installation of Enterprise Manager. You must ensure these requirements are met before starting the Enterprise Manager installation.
- [Installing Enterprise Manager](#): This chapter provides detailed information on how to use the Oracle Universal Installer to install Enterprise Manager.
- [Deploying the Management Agent](#): This chapter provides information on the various methods of mass-deploying the Management Agent.

- **Post-Installation Configuration Tasks:** This chapter describes the tasks that need to be completed after the installation.

1.2 Enterprise Manager Components Overview

Enterprise Manager is Oracle's single, integrated solution for administering and monitoring targets that are based on the Oracle technology stack. See [Section 1.4.2.5, "Certified Enterprise Manager Targets"](#) for a list of Oracle targets and components that Enterprise Manager can manage.

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

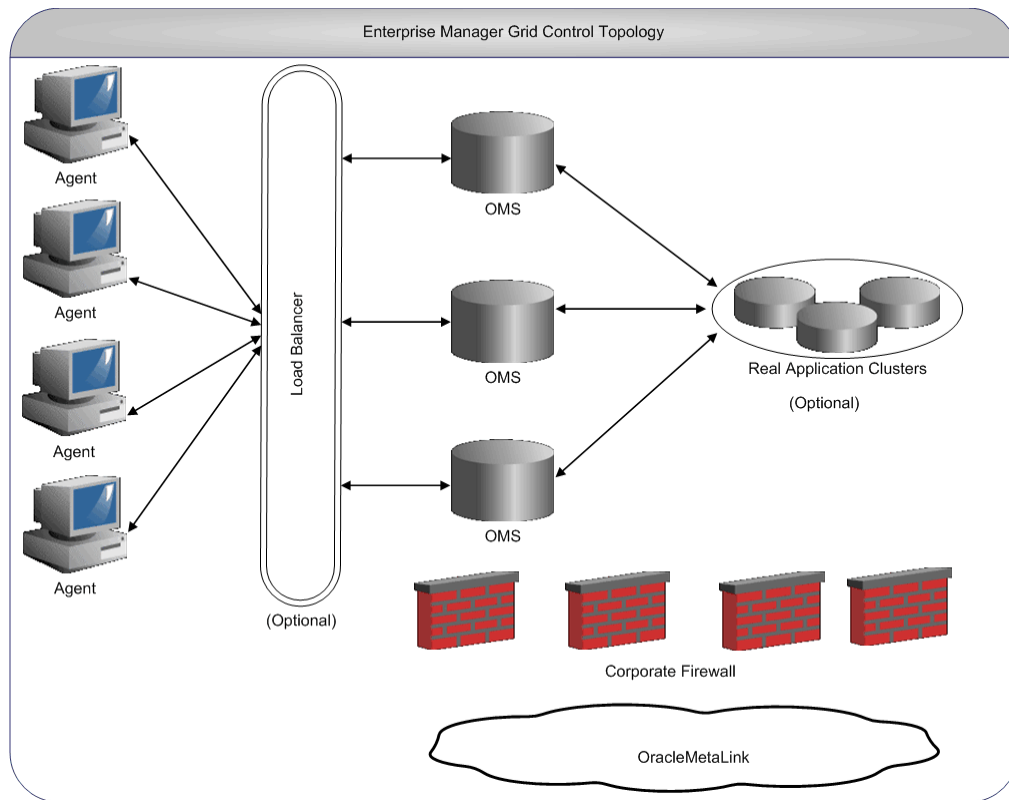
[Table 1–1](#) explains the different Enterprise Manager components and how they work together to manage your enterprise.

Table 1–1 Enterprise Manager Grid Control Components

Component	Definition
Grid Control Console	From the Grid Control console, 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, Collaboration Suite applications, and Web applications are easily managed from one central location (console).
Management Agent	The Oracle Management Agent is a process that is deployed on each monitored host. It 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.
Management Service	The Oracle Management Service is a J2EE Web application that renders the user interface for the Grid Control console. It works with all Management Agents to process monitoring and Jobs information, and uses the Management Repository as its data store.
Management Repository	The Oracle Management Repository consists of objects such as RDBMS jobs, packages, procedures, views, and two tablespaces in an Oracle Database that contain all available information about administrators, targets, and applications managed within Enterprise Manager. 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 the Grid Control console. Because data is stored in the Management Repository, it can be shared between any number of administrators accessing the Grid Control console.

1.2.1 Enterprise Manager - Topology

Figure 1–1 Typical Enterprise Manager Topology



1.3 Pre-Installation Considerations for Enterprise Manager

This section provides information about the Oracle Universal Installer and other concepts you should be aware of when you plan the installation.

- [Licensing Information](#)
- [Oracle Directory](#)
- [Multiple Oracle Home Support](#)

1.3.1 Licensing Information

Although the installation media in your media pack contain many Oracle components, you are permitted to use only those components for which you have purchased licenses. Oracle Support Services does not provide support for components for which licenses have not been purchased.

See Also: For more information on licensing, refer to *Oracle Enterprise Manager Licensing Information*.

1.3.2 Oracle Directory

If you choose to install Enterprise Manager Grid Control using a new database on a computer with no other Oracle software installed, Oracle Universal Installer creates an

Oracle base directory for you. If Oracle software is already installed, then one or more Oracle base directories already exist. In the latter case, Oracle Universal Installer offers you a choice of Oracle base directories into which to install Oracle Database.

You are not required to create an Oracle base directory before installation, but you can do so if desired. You can set the `ORACLE_BASE` environment directory to point to this directory, which the Oracle Universal Installer will recognize.

Note: You can choose to create a new Oracle base directory, even if other Oracle base directories exist on that system.

1.3.3 Multiple Oracle Home Support

Enterprise Manager is installed on multiple Oracle homes. This means that a typical Enterprise Manager Grid Control installation creates three Oracle homes in different Oracle home directories. For example, `oms10g`, `db10g`, and `agent10g`.

Note: You must ensure that you install this product into a new Oracle home directory. You cannot install products from one release of Enterprise Manager into an Oracle home directory of a different release. For example, you cannot install 10g R2 (10.2) software into an existing Oracle 9i home directory. If you attempt to install this release into an Oracle home directory that contains software from an earlier Oracle release, the installation will fail.

You can install this release more than once on the same system, as long as each installation is done in a separate Oracle home directory.

1.4 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](#)

1.4.1 Enterprise Manager Hardware Requirements

This section lists the hardware requirements for various Enterprise Manager deployment sizes.

1.4.1.1 Recommended CPU and Memory Allocation for Enterprise Manager Deployments

[Table 1–2](#) and [Table 1–3](#) approximate the host, CPU, and physical memory requirements for a first-time Enterprise Manager installation (typical scenario with 2 - 3 GHz machines), based on experiences with real-world Enterprise Manager deployments.

1.4.1.1.1 CPU and Memory allocation for Oracle Management Service (OMS)

Table 1–2 CPU and Memory Allocation for Oracle Management Service

Deployment Size	Host	CPU/Host	Physical Memory/Host	Total Recommended Space
Small (100 monitored targets)	1	1 (3 GHz)	2 GB	2 GB
Medium (1,000 monitored targets)	1	2 (3 GHz)	2 GB	Number of OMS x 5 GB
Large (10,000 monitored targets)	1	2 (3 GHz)	2 GB	Number of OMS x 10 GB

1.4.1.1.2 CPU and Memory Allocation for the Repository Database

Table 1–3 CPU and Memory Allocation for Repository Database

Deployment Size	Host	CPU/Host	Physical Memory/Host	Total Repository Storage
Small (100 monitored targets)	1 ¹	1 (3 GHz)	2 GB	10 GB
Medium (1,000 monitored targets)	1	2 (3 GHz)	4 GB	30 GB
Large (10,000 monitored targets)	2	4 (3 GHz)	6 GB	100 GB

¹ Share Host with the Oracle Management Service for small deployments.

ATTENTION: Oracle recommends that you allocate a minimum default size of 1 GB hard disk space for the MGMT_ECM_DEPOT_TS tablespace and allocate the rest of the recommended repository database space for the MGMT_TABLESPACE.

Oracle also recommends that you keep the auto-extend feature enabled for the tablespace datafiles.

Note that the space requirement increases as the number of monitored targets increase, along with the input/output performance demands on the storage devices.

1.4.1.2 Considering Resource Allocation

Carefully consider resource allocation when choosing the disk on which to install the Management Service 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 Management Service on the swap volume, a volume with a busy state (as per `iostat`) of 10% or more, or on a memory-constrained system. As with any data-intensive application, if your Management Repository is going to 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 resources can help alleviate potential problems (for instance, adding a second disk spindle dedicated to the Management Service on a system), understanding and accounting for resource allocation is the best way to achieve strategic setup and good performance.

1.4.2 Enterprise Manager Platform and Target Certification Requirements

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

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

- [Operating System Certifications](#)
- [Browser Certifications for the Enterprise Manager Console](#)
- [Certified Enterprise Manager Targets](#)

1.4.2.1 Operating System Certifications

The operating system platforms certified for Enterprise Manager Grid Control components are the following:

- Red Hat Enterprise Linux AS/ES 3.0
- Red Hat Enterprise Linux AS/ES 4.0
- SUSE Linux Enterprise Server 9.0

Note: All three Linux platforms are *Linux x86 32-bit* operating systems.

- Solaris 8
- Solaris 9
- Solaris 10

Note: All three Solaris platforms are SPARC 64-bit operating systems.

Important: The above-mentioned platforms are certified for the Management Agent that is packaged along with the Oracle Management Service.

If you are installing a standalone Management Agent or using the `Agentdownload` script for agent installation, refer to the *AgentDownload Install Readme* for more information on the certified platforms.

Refer to the Oracle Technology Network Website for the latest information on all supported platforms.

1.4.2.2 Required Packages

The system must be running the following (or later) package versions:

- For Red Hat Enterprise Linux 3.0:
 - glibc-2.2.4-31.7
 - make-3.79
 - binutils-2.11.90.0.8-12
 - gcc-2.96
 - openmotif21-2.1.30-11
- For Red Hat Enterprise Linux 4.0:
 - glibc-2.3.4-2.9
 - make-3.79
 - binutils-2.15.92.0.2-13
 - gcc-3.4.3-22.1
 - libaio-0.3.96
 - glibgc-common-2.3.4-2.9
 - setarch-1.6-1
 - pdksh-5.2.14-30
 - openmotif21-2.1.30-11
 - sysstat-5.0.5-1
 - gnome-libs-1.4.1.2.90-44.1
 - libstdc++-3.4.3-22.1
 - libstdc++devel-3.4.3-22.1
 - compat-libstdc++-296-2.96-132.7.2
 - compat-db-4.1.25-9
 - control-center-2.8.0-12
 - xscreensaver-4.18-5.rhel4.2
- For SUSE Linux Enterprise Server 9:
 - glibc-2.2.4-31.7
 - make-3.79
 - binutils-2.11.90.0.8-12
 - gcc-2.96
 - openmotif21-2.1.30-11

1.4.2.3 Required Kernel Parameters

The system must have at least the following recommended kernel parameters:

- Red Hat Enterprise Linux 3.0 and SUSE Linux Enterprise Server 9 require the following kernel parameters:
 - semmsl = 250

- semmns = 32000
- semopm = 100
- semmni = 128
- shmmax = 2147483648
- shmmni = 4096
- shmall = 2097152
- shmmin = 1
- shmseg = 10
- filemax = 65536
- Red Hat Enterprise Linux 4.0 requires the following kernel parameters:
 - semmsl = 250
 - semmsl2 = 250
 - semmns = 32000
 - semopm = 100
 - semmni = 128
 - shmmax = 536870912
 - shmmni = 4096
 - shmall = 2097152
 - filemax = 65536
 - ip_local_port_range = 1024 65000
 - rmem_default = 262144
 - rmem_max = 262144
 - wmem_default = 262144
 - wmem_max = 262144

To check your kernel parameter settings, run the commands listed in the following table.

Table 1–4 Execute Commands to Check Kernel parameter Settings

Parameter	Command
semmsl, semmns, semopm, semmni	# /sbin/sysctl -a grep sem ¹
shmall, shmmax, shmmni	# /sbin/sysctl -a grep shm
file-max	# /sbin/sysctl -a grep file-max
ip_local_port_range	# /sbin/sysctl -a grep ip_local_port_range
rmem_default	# /sbin/sysctl -a grep rmem_default
rmem_max	# /sbin/sysctl -a grep rmem_max
wmem_default	# /sbin/sysctl -a grep wmem_default
wmem_max	# /sbin/sysctl -a grep wmem_max

¹ This command displays the value of the four semaphore parameters in the order listed.

To change your kernel parameter settings, use any text editor to create or edit the `/etc/sysctl.conf` file to add or modify the necessary entries. You may need to reboot your system after changing kernel parameters.

Note: Include lines only for the kernel parameter values that you want to change. For the semaphore parameters (`kernel.sem`), you must specify all four values in order.

If the current value of any of your system's kernel parameters is higher than the recommended value, keep your current value.

For example, your `/etc/sysctl.conf` file may look like this:

```
kernel.shmall = 2097152
kernel.shmmax = 536870912
kernel.shmmni = 4096
kernel.sem = 250 32000 100 128
fs.file-max = 65536
net.ipv4.ip_local_port_range = 1024 65000
rmem_default = 262144
rmem_max = 262144
wmem_default = 262144
wmem_max = 262144
```

By specifying the values in the `/etc/sysctl.conf` file, they persist when you restart the system.

On SUSE systems only, enter the following command to ensure that the system reads the `/etc/sysctl.conf` file when it restarts:

```
# /sbin/chkconfig boot.sysctl on
```

1.4.2.4 Browser Certifications for the Enterprise Manager Console

The browser versions that are certified for viewing the Grid Control console are:

- Internet Explorer 6.0 (SP2)
- Netscape 7.2
- Mozilla 1.7
- Firefox 1.0.4
- Safari 1.2

Note: For Services monitoring, you can record and play back Web application transactions using the Transaction Recorder. The Transaction Recorder is only supported on Microsoft Internet Explorer 5.5 (Service Pack 1) and higher and is not supported on other browsers. Alternatively, if you do not have this requirement, you can configure Web transaction steps manually. Refer to the Enterprise Manager online help for details on creating Web transactions for monitoring.

1.4.2.5 Certified Enterprise Manager Targets

Table 1-5 identifies the Oracle targets and components that Enterprise Manager Grid Control can manage.

Table 1–5 Certified Oracle Targets

Supported Targets	Version
Oracle Application Server	9.0.4.2 and higher patchsets 10.1.2.0.0 (Phase 1) 10.1.0.2.0.1 (SEONE) 10.1.2.0.2 (Phase 2) 10.2.0.2.1 Patchset 10.1.3 (Standalone OC4J)
Oracle Database ¹ , Listener	8.1.7.4 9.0.1.5 9.2.0.7 and higher patchsets 10.1.0.4 and higher patchsets 10.2
Oracle Real Application Clusters Database	9.2.0.6 10.1.0.4 10.2
Oracle Collaboration Suite	9.0.4.2 and higher 10.1.1
Management Services and Repository ²	10.2
Management Agent ³	10.1.0.2 10.2
Enterprise Manager Website	10.2
Host	Linux x86 32-bit Red hat Enterprise Linux AS/ES 3.0 Oracle recommends that the target host on which you are installing the agent have a static IP address and not DHCP.

¹ Enterprise Edition, Standard Edition, Personal Edition

² The Management Service and Repository versions correspond to the version of the Grid Control installation and not the version in which the repository is created.

³ The Management Agent includes Beacon functionality.

1.4.3 Enterprise Manager Software Requirements

This section describes the software requirements for each Enterprise Manager component.

1.4.3.1 Management Repository Software Requirements

The embedded Oracle10g Database Release 1 (10.1.0.4), Enterprise Edition, is supported for Management Repository creation. Otherwise, you may only install the Management Repository in one of the following existing databases:

- Oracle 10g Database Release 1 (10.1.0.4 and higher), Enterprise Edition
- Oracle 10g Real Application Clusters Database Release 1 (10.1.0.4 and higher)
- Oracle 9i Database Release 2 (9.2.0.6 and higher), Enterprise Edition
- Oracle 9i Real Application Clusters Database Release 2 (9.2.0.6 and higher)

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.

Note: Refer to the Oracle Technology Network Website for the latest information on the certified repository platforms.

See Also: See [Appendix B, "Management Repository Database Settings"](#) for more information on the recommended database initialization parameters.

1.4.3.2 Management Service Software Requirements

The Management Service has no additional software requirements.

The Oracle Management Service is installed with and deployed on the 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. The Management Service is deployed on its own OC4J container in this application server instance.

1.4.4 Prerequisite Checks

The following table lists all the prerequisite checks that the installer performs for each installation type.

Table 1–6 Prerequisites Checks for Each Installation Type

Installation Type	Prerequisite	Checks
Installing Enterprise Manager Using New Database	oracle.sysman.top.em_seed	<ol style="list-style-type: none"> 1. Required Packages on the machine 2. Certified Versions (that is, whether the Oracle software is certified on the current Operating System) 3. Whether the required GLIBC is installed on the machine 4. Whether the machine has sufficient physical memory 5. Kernel parameters 6. Oracle home compatibility¹ 7. Oracle home space check 8. Checking host name 9. Whether Oracle home is empty
Installing Enterprise Manager Using Existing Database	oracle.sysman.top.oms	<ol style="list-style-type: none"> 1. Required Packages on the machine 2. Certified Versions (that is, whether the Oracle software is certified on the current Operating System) 3. Whether the required GLIBC is installed on the machine 4. Whether the machine has sufficient physical memory 5. Oracle home compatibility 6. Whether Oracle home is empty 7. Checking host name 8. Oracle home space check
Installing Additional Management Service	oracle.sysman.top.oms	<ol style="list-style-type: none"> 1. Required Packages on the machine 2. Certified Versions (that is, whether the Oracle software is certified on the current Operating System) 3. Whether the required GLIBC is installed on the machine 4. Whether the machine has sufficient physical memory 5. Oracle home compatibility 6. Whether Oracle home is empty 7. Oracle home space check 8. Checking host name²
Installing Additional Management Agent	oracle.top.agent	<ol style="list-style-type: none"> 1. Required Packages on the machine 2. Certified Versions (that is, whether the Oracle software is certified on the current Operating System) 3. Whether the required GLIBC is installed on the machine 4. The Targets monitored by the Agent Note that the Agent cannot monitor targets that have been installed by different users. 5. Oracle home compatibility 6. Checking host name 7. Oracle home space check

¹ Disallowed component = oracle.rsfc.oraclecore_rsf.

² The name of the host on which the installation is being performed should neither be localhost.localdomain nor an IP Address. It must be a valid host name. At the time of invoking the installer, you can pass ORACLE_HOSTNAME as an argument.

1.5 Running the Prerequisite Checker in Standalone Mode

You can run the prerequisite checker in standalone mode prior to starting the runInstaller. This helps you identify and resolve issues that might otherwise cause the installation to fail.

The following table lists the prerequisite checker that is run for each installation type followed by the command that you must execute to run these checks:

Table 1–7 Installation Type and the Corresponding Prerequisite Check

Installation Type	Prerequisite Check
Installing Enterprise Manager Using a New Database	oracle.sysman.top.em_seed
Installing Enterprise Manager Using an Existing Database	oracle.sysman.top.oms
Installing an Additional Management Service	oracle.sysman.top.oms
Installing an Additional Management Agent	oracle.sysman.top.agent

To run the prerequisite checker in standalone mode, execute the following command:

```
<DVD>/install/runInstaller -prereqchecker PREREQ_CONFIG_
LOCATION=<DVD>/rdbms/Disk1/stage/prereq -entryPoint <prerequisite check name>_Core
-prereqLogLoc <log location> -silent -waitForCompletion
```

Substitute the data in <angled brackets> with the appropriate prerequisite check name. For example, if you want to run the prerequisite check for the first installation type, execute the following command:

```
<DVD>/install/runInstaller -prereqchecker PREREQ_CONFIG_
LOCATION=<DVD>/rdbms/Disk1/stage/prereq -entryPoint oracle.sysman.top.em_seed_Core
-prereqLogLoc <log location> -silent -waitForCompletion
```

Things to Know Before Installation

This chapter provides information that helps you prepare better for an Enterprise Manager Grid Control installation. This chapter contains the following sections:

- [Extracting Software from the Zip Files](#)
- [Oracle Directory](#)
- [Installing in an Existing Oracle Home](#)
- [First-Time Installation of Oracle Enterprise Manager Grid Control](#)
- [Installing Additional Languages](#)
- [Passwords and Restrictions](#)
- [Why Do I Need to be Able to Log In as Root at Certain Times During Installation?](#)
- [Setting the Mount Point for the DVD-ROM](#)
- [Starting the Oracle Universal Installer](#)

2.1 Obtaining Software From the Oracle Technology Network

You can download the Enterprise Manager software from the Oracle Technology Network (OTN):

<http://www.oracle.com/technology/documentation>.

All OTN files have been archived using Info-ZIP's highly portable Zip utility. After downloading one or more of the archives, you will need the UnZip utility to extract the files. You must unzip the archive on the platform for which it was intended.

For example, if you download the file for the Linux Operating System version of Oracle Enterprise Manager, you must unzip the file on a Linux Operating System computer. If you unzip the file on a Windows computer, and then move the stage area to a Linux Operating System machine, the stage area files will be corrupted because Windows does not preserve the case sensitivity or the permission bits of Linux file names.

2.1.1 Extracting Software from the Zip Files

Verify that the file size of your downloaded file matches the file size displayed on OTN. Unzip each Zip file into a single directory.

If you plan to burn the files on a DVD-ROM, create a DVD-ROM from the contents of the directory that you created. Do not burn a DVD-ROM containing the Zip files itself; you need the unzipped contents of the Zip files to do the installation. When you burn

the files to DVD-ROM, the contents of the Zip files must be at the root of the DVD image.

2.2 Oracle Directory

The directories in which you install Oracle Enterprise Manager components are called the Oracle homes. During installation, you specify the full path to a directory that contains all the Oracle homes as sub-directories. This parent directory is called the Oracle Home Directory or Base directory.

If you choose to install Enterprise Manager Grid Control using a New Database on a computer with no other Oracle software installed, Oracle Universal Installer creates an Oracle base directory for you. If Oracle software is already installed, then one or more Oracle base directories already exist. In the latter case, Oracle Universal Installer offers you a choice of Oracle base directories into which to install the Oracle Database.

You are not required to create an Oracle base directory before installation, but you can do so if desired. You can set the ORACLE_BASE environment directory, which Oracle Universal Installer will recognize.

Note: You can choose to create a new Oracle base directory, even if other Oracle base directories exist on that system.

Names of Oracle homes must be 128 characters or fewer, and can contain only alphanumeric characters and underscores.

ATTENTION: Spaces are not allowed anywhere in the Oracle home directory path. The installer validates this. If you have spaces in the Oracle home directory path, the installation will fail.

2.3 Installing in an Existing Oracle Home

Generally, you cannot install Oracle Enterprise Manager in an existing Oracle home, unless the Oracle home is empty.

2.4 First-Time Installation of Oracle Enterprise Manager Grid Control

If Enterprise Manager Grid Control is the first Oracle product that you are installing on a machine, the installer prompts you to specify an inventory directory (also called the oraInventory directory). This inventory directory is used by the installer to place all the installer files and directories on the computer. The installer automatically sets up sub-directories for each Oracle product to contain the inventory data.

The inventory directory is separate from the Oracle home directory.

When you specify the Oracle Inventory Directory path, you must also select the appropriate Operating System group name that will own the Oracle Inventory Directories. The group that you select must have write permissions on the Oracle Inventory directories.

If you have a previous version of Enterprise Manager installed on the computer, the installer uses the existing inventory directory. Ensure that you have write permissions on that directory. The best way of ensuring this is to run the installer as the same operating system user who installed the existing version of Enterprise Manager Grid Control.

2.4.1 Installing Additional Languages

By default, the installer installs Oracle Enterprise Manager with text in English and in the operating system language. If you need additional languages, select the required Languages in the Select Languages page of the installer.

When you select additional languages to install, the installer installs text in the selected languages. It also installs fonts required to display the languages.

For some components, languages are installed only if you select them during installation. In this case, if you access the application in a language that is not available, it reverts to the server locale language.

For other components, available languages are installed regardless of what you select during installation. In this case, however, fonts are installed only for the languages that are explicitly selected. When you access the application, it uses text in your language because the language was installed. However, if you do not have the appropriate fonts to render the text, the text appears as square boxes. This usually applies to the Chinese, Japanese, and Korean languages.

2.5 Passwords and Restrictions

The installer prompts you to specify the passwords that are used to secure your entire Grid Control environment. This includes the Management Service and database repository passwords. One of the database passwords that you specify is the password required to access the application server (`ias_admin`). The `ias_admin` user is the administrative user for Oracle Application Server instances. To manage Oracle Application Server instances using Application Server Control, you must log in as `ias_admin`. Ensure the passwords you specify have all the required permissions.

Password Restrictions

The following restrictions apply to passwords:

- Passwords must be between 5 and 30 characters long.
- Passwords cannot be the same as the user name.
- Passwords must only include lowercase or uppercase alphanumeric characters.

Note: The `SYSMAN` password can include underscore (`_`), and hyphen (`-`) along with alphanumeric characters. Alpha characters can be lowercase or uppercase.

- Passwords cannot be Oracle reserved words. See [Appendix H, "Oracle Reserved Words"](#) for a complete list of reserved words.

Oracle recommends that the passwords that you specify are not simple or obvious words, such as `welcome`, `account`, `database`, or `user`.

2.6 Why Do I Need to be Able to Log In as Root at Certain Times During Installation?

At least once during installation, the installer prompts you to log in as the root user and run a script. You need to log in as `root` because the script edits files in the `/etc` directory.

2.6.1 Running root.sh During Installation

The installer prompts you to run the `root . sh` script in a separate window. This script creates files in the local bin directory (`/usr/local/bin`, by default).

2.7 Setting the Mount Point for the DVD-ROM

On most Linux systems, the disk mounts automatically when you insert it into the disk drive. To mount the first disk, follow these steps:

1. Insert Oracle Enterprise Manager disk 1 into the disk drive.
2. To verify that the disk mounted automatically, enter the following command:
 - Red Hat Enterprise Linux:

```
# ls /mnt/dvdrom
```
 - SUSE Linux Enterprise Server:

```
# ls /media/dvdrom
```
3. If the command in step 2 fails to display the contents of the disk, enter the following command:
 - Red Hat Enterprise Linux:

```
# mount -t nfs <host name>:/mnt/dvdrom
```
 - SUSE Linux Enterprise Server:

```
# mount -t nfs <host name>:/media/dvdrom
```

2.8 Starting the Oracle Universal Installer

If your computer does not mount DVDs automatically, you need to set the mount point manually.

1. DVD-ROM users: Insert the Oracle Enterprise Manager Grid Control DVD-ROM into the DVD-ROM drive.
2. Start the Oracle Universal Installer by executing the `runInstaller` script for Linux from the top directory of the DVD.

Alternatively, you can change the directory to the `ORACLE_BASE`, the root directory where you will install the Oracle home, then specify the full path to `<DVD>/runInstaller` in OUI.

DVD-ROM

```
prompt> cd
```

```
prompt> mount_point/10.2<DVD>/runInstaller
```

This launches Oracle Universal Installer through which you install Enterprise Manager Grid Control.

2.9 Enterprise Manager Configuration Plug-in (EMCP)

When you perform an Enterprise Manager installation, this installation does not include the Enterprise Manager Configuration Plug-in (EMCP) in the database Oracle

home. EMCP is part of the repository database Oracle home only when you perform a standalone database installation.

Part II

Enterprise Manager Installation

This part of the book provides information and step-by-step instructions on the various Enterprise Manager installation types. It also contains detailed information on all Management Agent deployment mechanisms.

Part 2 contains the following chapters:

- [Chapter 3, "Installing Enterprise Manager"](#)
- [Chapter 4, "Enterprise Manager Silent Installations"](#)
- [Chapter 5, "Deploying the Management Agent"](#)

Installing Enterprise Manager

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

- [Accessing the Installation Software](#)
- [Using Oracle Universal Installer](#)
- [Enterprise Manager Installation Types](#)
- [Deinstallation of Oracle Homes](#)

Note: No Enterprise Manager specific environment variables need to be set prior to installation. The `$ORACLE_HOME` and `$ORACLE_SID` variables should not be set; Oracle directories should not appear in the `PATH`.

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

3.1 Accessing the Installation Software

The Oracle Enterprise Manager Grid Control software is available on a DVD-ROM, or you can download it from the Oracle Technology Network (OTN) Web site. You can access and install Enterprise Manager Grid Control by using the following scenarios:

- [Installing From a Remote DVD Drive](#)
- [Installing on Remote Computers Using Remote Access Software](#)

3.1.1 Installing From a Remote DVD Drive

If the computer where you want to install Enterprise Manager does not have a DVD drive, you can perform the installation from a remote DVD drive. Complete the following steps:

3.1.1.1 Setting the Mount Point for the DVD-ROM

On most Linux systems, the disk mounts automatically when you insert it into the disk drive. To mount the disk, complete the following steps:

1. Insert the Oracle Enterprise Manager DVD into the disk drive.
2. To verify if the disk is automatically mounted, enter the following command:

- On Red Hat Enterprise Linux:

```
# ls /mnt/cdrom
```
 - On SUSE Linux Enterprise Server:

```
# ls /media/cdrom
```
3. If the command in step 2 fails to display the contents of the disk, enter the following command:
- On Red Hat Enterprise Linux:

```
# mount -t nfs <host name>:/mnt/<full path to the dvdrom>
```
 - On SUSE Linux Enterprise Server:

```
# mount -t nfs <host name>:/media/<full path to the dvdrom>
```

3.1.2 Installing on Remote Computers Using Remote Access Software

Consider a scenario where the remote computer has the hard drive and will run Enterprise Manager, but you do not have physical access to the computer. You can perform the installation on the remote computer, provided it is running remote access software such as VNC or Symantec pcAnywhere. You also need the remote access software running on your local computer.

You can install Enterprise Manager on the remote computer in one of two ways:

- If you have copied the contents of the Oracle Enterprise Manager Grid Control DVD to a hard drive, you can install from the hard drive.
- You can insert the DVD into a drive on your local computer, and install from the DVD.

3.1.2.1 Installing From a Hard Drive

If you have copied the contents of the Oracle Enterprise Manger DVD to a hard drive, you can install from the hard drive.

The steps that you need to complete are:

1. Make sure that the remote access software is installed and running on the remote and local computers.
2. Share the hard drive that contains the Oracle Enterprise Manager DVD.
3. On the remote computer, map a drive letter to the shared hard drive. You would use the remote access software to do this on the remote computer.
4. Through the remote access software, run Oracle Universal Installer on the remote computer. You can access Oracle Universal Installer from the shared hard drive.
5. For more information on running the installer, see [Section 3.2.2, "Starting the Installer"](#) for more information.

3.1.2.2 Installing From a Remote DVD Drive

You can insert the DVD into a drive on your local computer, and install from the DVD.

The steps that you need to complete are:

1. Make sure that the remote access software is installed and running on the remote and local computers.

2. On the local computer, share the DVD drive.
On the remote computer, map a drive letter to the shared DVD drive. You would use the remote access software to do this on the remote computer.
3. Through the remote access software, run Oracle Universal Installer on the remote computer. You access Oracle Universal Installer from the shared DVD drive.
4. For more information on running the installer, see [Section 3.2.2, "Starting the Installer"](#) for more information.

3.2 Using Oracle Universal Installer

The Enterprise Manager installation uses the Oracle Universal Installer, a Java-based graphical user interface application that enables you to install Oracle components from a DVD, multiple DVDs, or the Web.

See Also: For information on using Universal Installer to install Oracle software, refer to the *Oracle Universal Installer and OPatch User's Guide*.

3.2.1 Specifying a Temporary Directory on Linux

When you start Oracle Universal Installer (OUI), it automatically copies some executable files and link files into the default `/tmp` directory on the machine. If the machine is set to run `cron` jobs periodically, these jobs attempt to cleanup the default temporary directory, thereby deleting some files causing OUI to fail.

If there are any `cron` jobs that are automatically run on the machines to clean up the temporary directories, ensure you set the `TMP` or `TEMP` environment variable to a different location (than `/tmp`) that is secure on the hard drive (meaning a location on which the cleanup jobs are not run). This must be done before you execute `runInstaller`.

Note: Specifying an alternative temporary directory location is not mandatory, and is required only if any `cron` jobs are set on the Linux machines to clean up the `/tmp` directory.

3.2.2 Starting the Installer

Start the Oracle Universal Installer by executing the `runInstaller` script for Linux from the top directory of the DVD.

Alternatively, you can change the directory to the `Parent Directory`, the root directory where you will install the Oracle home, then specify the full path to `./runInstaller`.

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

```
$ ./<runInstaller or setup.exe> -responseFile <responsefile_location> <optional_
parameters> -silent
```

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

When you invoke the installer, the installation runs prerequisite checks on:

- Operating System Version
- Operating System Packages
- Operating System Patches
- User Credentials
- TEMP and SWAP space
- DISPLAY Colors
- Additional Patches
- Kernel version
- Oracle home is empty
- Oracle home space
- Physical memory

The list of prerequisite checks that must be executed can be viewed in the initialization parameters file located in the following directory of the product-specific installation:

```
<DVD>/install/oraparam.ini
```

If a prerequisite 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.

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

3.3 Enterprise Manager Installation Types

This section contains the following topics:

- [Installing Enterprise Manager 10g Grid Control Using a New Database](#)
- [Installing Enterprise Manager 10g Grid Control Using an Existing Database](#)
- [Installing an Additional Management Service](#)
- [Installing a Management Agent](#)

The following pre-defined installation options, described in [Table 3–1](#), determine which components will be installed on your system for Linux operating systems. During installation, you are prompted to choose one of the following options. Note that the hard disk space represents the *footprint* that the components of the installation consume, and the physical memory prerequisites refer to the initial RAM required for installation, and not the operating memory.

Table 3–1 Enterprise Manager Installation Options

Installation Option	Description	Hard Disk Space (Oracle Homes)	Physical Memory
Enterprise Manager 10g Grid Control Using a New Database	Installs Enterprise Manager Grid Control ¹ onto the host machine, creating the Management Repository on a new Enterprise Edition Oracle 10g Database Release 1 (10.1.0.4).	4.5 GB	1 GB

Table 3–1 (Cont.) Enterprise Manager Installation Options

Installation Option	Description	Hard Disk Space (Oracle Homes)	Physical Memory
Enterprise Manager 10g Grid Control Using an Existing Database	<p>Installs Enterprise Manager Grid Control onto the host machine, creating the Management Repository on a qualified existing database, which may be local to the host or remote. See Section 1.4.3.1, "Management Repository Software Requirements" for more information on supported repository versions.</p> <p><i>Note:</i> If the repository is on the same machine as the Management Service, allow 1 GB more memory than recommended.</p> <p>Oracle recommends installing Enterprise Manager on a separate disk from the Oracle Database containing the Management Repository.</p>	2.5 GB	512 MB
Additional Management Service	Installs the Management Repository onto the host machine. Allows you to specify an existing Management Repository, either local or remote.	2 GB	512 MB
Additional Management Agent	<p>Installs the Management Agent on the target machine you want to monitor with the Grid Control Console. The Management Service and Management Repository are not required on the same machine as the Management Agent, but must exist within the enterprise.</p> <p>The Management Agent may be installed on a cluster node. Oracle recommends that the target host on which you are installing the agent have a static IP address and not DHCP.</p>	400 MB	No minimum requirement

¹ Enterprise Manager Grid Control 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.

ATTENTION: When you perform an Enterprise Manager installation, this installation does not include Enterprise Manager Configuration Plug-in (EMCP) in the database Oracle home. EMCP is part of the repository database Oracle home only when you perform a standalone database installation.

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

See [Chapter 4, "Enterprise Manager Silent Installations"](#) for more information.

Installation Instructions

Start the Oracle Universal Installer by executing the `runInstaller` script in Linux (<DVD>/runInstaller).

Installation types are predefined component sets that determine which components to install. The Enterprise Manager 10g Grid Control installation involves four top-level components, each representing an install type. Select one of the installation types described below.

3.3.1 Installing Enterprise Manager 10g Grid Control Using a New Database

This is the default option that is selected when you run the Enterprise Manager Grid Control installer. Keep this selection if you want to install Enterprise Manager and all its dependent components on a single host. If you choose this installation option, you do not need an existing Enterprise Edition database, because one is created during the installation.

Note: The default port for the Listener is 1521 for the 10g R1 (10.1) Oracle Database provided with the full installation.

3.3.1.1 Permissions and Prerequisites

The installation should not be run by the root user.

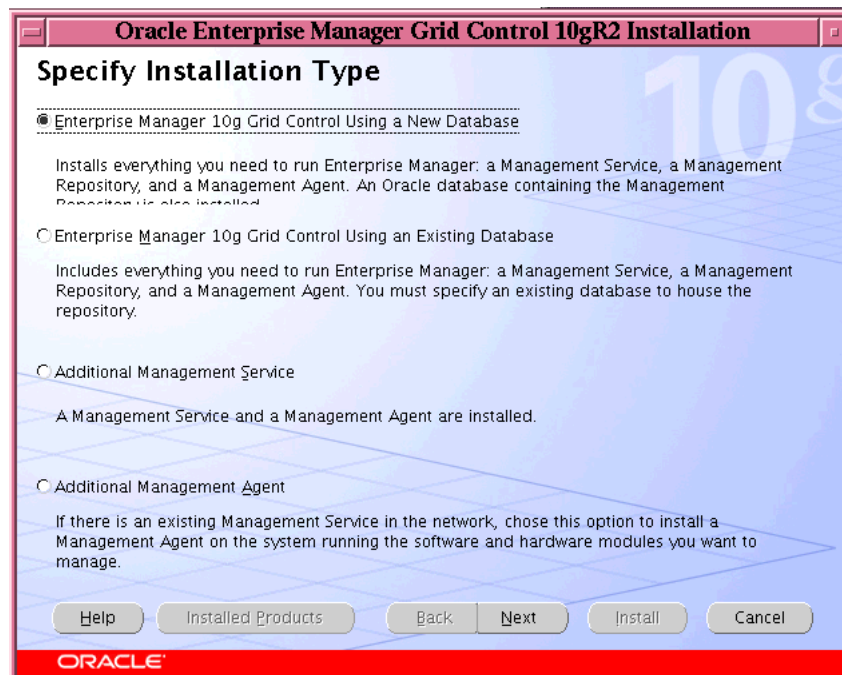
- Create a token object
- Lock pages in memory
- Log in as Administrator
- Create a Service

3.3.1.2 To Install Enterprise Manager Using a New Database

Complete the following steps to perform an Enterprise Manager installation using a new database.

1. Select the first option (Enterprise Manager 10g Grid Control Using a New Database). By default, this option is selected when you invoke the installer.

Figure 3–1 Specify Installation Type

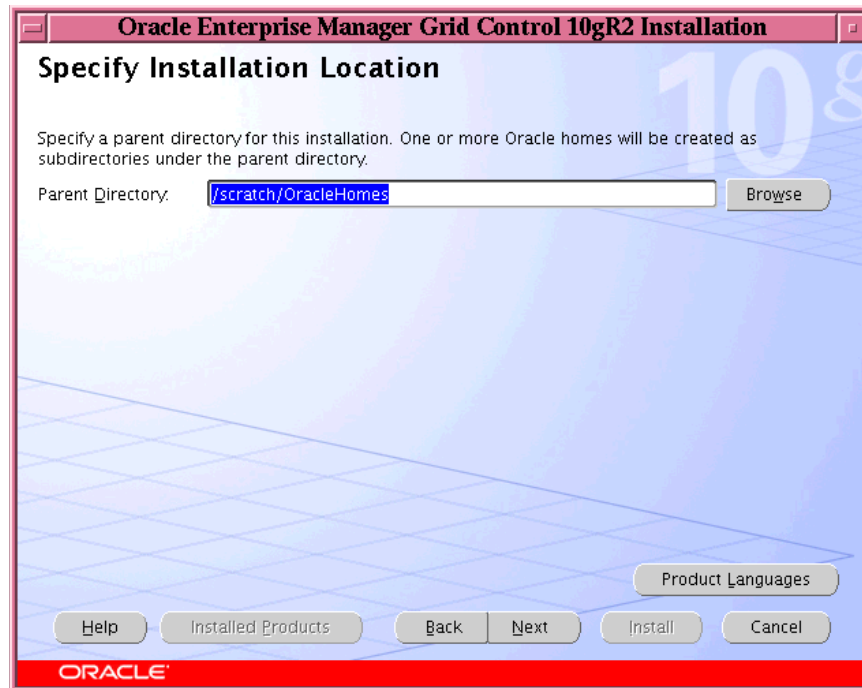


2. Click **Next**. In the Specify Installation Location page that appears, enter a parent directory (base directory), for example, `/scratch/OracleHomes`, for the new

installation. All the Oracle homes created during this installation are created as sub-directories under this parent directory. For example: *db10g*, *oms10g*, and *agent10g*.

Note: Ensure you do not use symbolic links to specify the Oracle home path.

Figure 3–2 Specify Installation Location



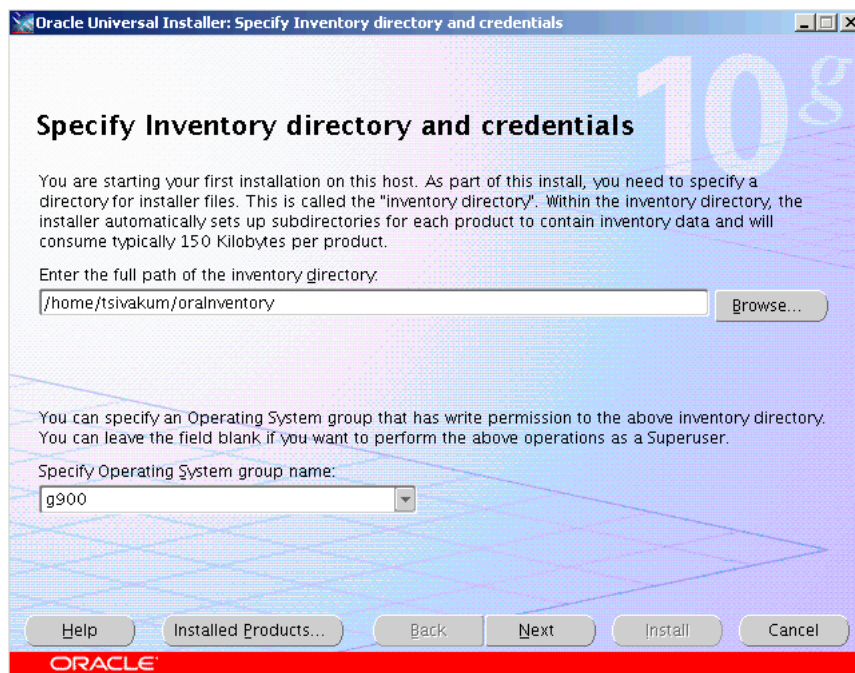
The installer by default installs the selected products in the English language. If you want to install the product in a different language, click **Product Languages**. The Language Selection page is displayed.

Figure 3–3 Language Selection

Choose the languages that you want to use to run Enterprise Manager.

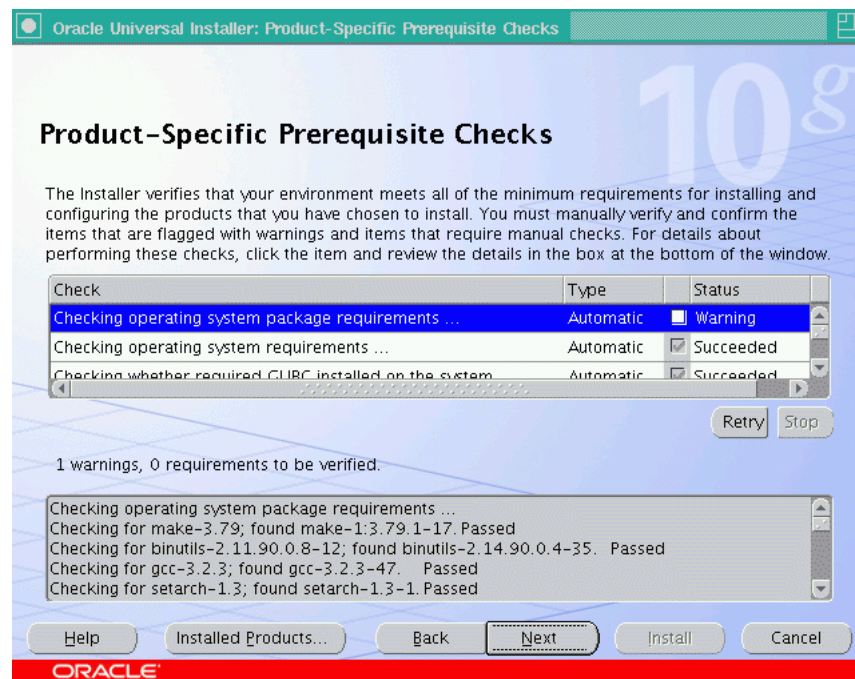
Note: The languages that you select here only change the language of Enterprise Manager, and not the language of the installation itself.

3. Click **Next**. The Specify Inventory Directory and Credentials page is displayed only if you are installing Grid Control for the first time.

Figure 3–4 Specify Inventory Directory and Credentials

- a. Specify the full path to the directory where the Oracle Universal Installer (OUI) should place inventory files and directories. For example, `oracle_base/oraInventory`.
Refer to the Enterprise Manager Online Help for more information on Oracle-recommended guidelines for naming the directories.
 - b. Select the appropriate Operating System group name that will own the Oracle Inventory Directories. The group that you select must have write permissions on the Oracle Inventory directories.
4. Click **Next**. The Product-Specific Prerequisite Checks page is displayed.

Figure 3–5 Product-Specific Prerequisite Checks



At this point, the installer runs some prerequisite checks to verify whether the environment meets the minimum requirements for a successful Enterprise Manager installation.

Early detection of problems with the system setup reduces the chances of you encountering problems during installation; for instance, problems with insufficient disk space, missing patches, inappropriate hardware, and so on.

This page displays the name, type, and status for all prerequisite checks designed for the installation. Automatic checks are run first, followed by optional and manual checks.

Depending on the status of the automatic checks, you must verify all warning and manual checks. At some point, if you have stopped the prerequisite check and want to re-run these checks, select the checks that you want to rerun and click **Retry**. As each check runs, a progress bar is shown, and test details (expected results, actual results, error messages, instructions) are displayed in the details section at the bottom of the page.

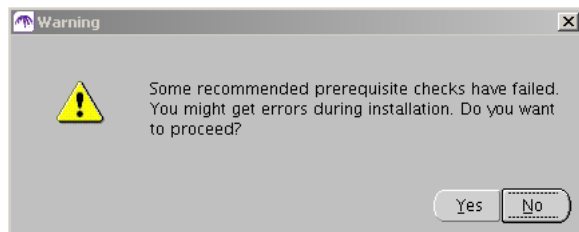
Note: You can also run these prerequisite checks in standalone mode, prior to starting the runInstaller. See [Section 1.5, "Running the Prerequisite Checker in Standalone Mode"](#) for more information.

- a. To stop all prerequisite checks, click **Stop**. At any point in time, click a prerequisite check to view its corresponding details, including the recommended user actions.

Note: You must manually verify and confirm all checks that were flagged with a warning, skipped (stopped by user), or failed.

- b. To continue with the installation without retrying, click **Next**.
An error message is displayed if some recommended prerequisite checks have failed.

Figure 3–6 Warning



- c. Click **No** to go back and rerun the prerequisite check. click **Yes** to ignore the message and continue with the installation.

Note: It is recommended that you retry checks that were flagged with warnings, failed, or were skipped (stopped by the user) before continuing with the installation.

5. The Specify Configuration page appears.

Figure 3–7 Specify Configuration

You must specify the configuration details for the new database that you are creating, and select the appropriate recipients of the OSDBA and OSOPER privileges.

Note: Your Management Repository Database may also require patches to be applied after successful installation. See [Section 1.4.2, "Enterprise Manager Platform and Target Certification Requirements"](#) for more information.

- a. Specify the new Database Name, and the Database File Location (location where the new database is going to reside).

Note: It is recommended that you specify a fully qualified database name (for example, `emrep.<domain_name>`), though appending the database name with the domain name is not mandatory.

- b. In the Group Specification section, select the OSDBA and OSOPER groups that you are a member of. These memberships are required to grant the SYSDBA and SYSOPER privileges that are, in turn, required to create the new database using the Operating System authentication.
6. Click **Next**. The Specify Optional Configuration page appears.

Figure 3–8 Specify Optional Configuration

As the name suggests, all the fields on this page are optional, and are disabled by default. Select the required check box to enable the corresponding fields.

- a. In the Configure Email Notification section, specify an appropriate e-mail address, and the corresponding SMTP server name. You will receive information on important developments and events in Grid Control, including critical alerts at this e-mail address.

The e-mail address that you specify should be associated with the SYSMAN user to receive notifications.

The SMTP Server is the name of the mail server (for example mail.acme.com). For Linux, the default SMTP server is the local host name. Use the fully-qualified host name (including domain).

Note: If you do not provide the e-mail notification information, this feature is not enabled upon installation. You may also choose to configure these settings through the Enterprise Manager console by clicking Notification Methods under Setup. Refer to the Enterprise Manager Online Help for more information.

- b. Specify the Oracle *MetaLink* credentials.

If you prefer, you can also enter this information through the Enterprise Manager console after installation by clicking **Patching Setup**, under Setup.

Note: Enterprise Manager uses these credentials to search for and download patches from <http://oracle.com/support/metalink/index.html>.

- c. Specify the Proxy Information if Enterprise Manager is using a proxy server for external access. The following table describes each of the fields under this section:

Table 3–2 Specify Proxy information - Input Fields

Input	Description
Proxy Server	Specify the proxy server host name. For example, www-fooproxy.here.com
Port	Specify the port at which the server is listening. For example, 80
Do Not Proxy For	Specify the URLs that do not need the proxy server to be accessed. You can specify multiple comma-separated values. For example, <code>.here.com</code> , <code>.us.mycompany.com</code> , <code>.uk.mycompany.com</code> , and so on. Note that you must always specify <i>fully-qualified host names</i> .
Proxy User and Password	These are optional fields. You must specify the username and password only if the proxy server has been configured to use these credentials for authentication.
Realm	This becomes a mandatory field only if the proxy server credentials have been configured using a realm, in which case you must specify an appropriate realm value. A realm is a string value assigned by the proxy server to indicate the secure space that requires authentication.
Test Proxy	Click this button to verify your proxy server settings.

Note: When you search for a patch, if the proxy properties (saved in the `sysman/config/emoms.properties` file) are not set, or are set incorrectly, you receive an error message indicating that Enterprise Manager cannot access the Oracle *MetaLink* Web site.

ATTENTION: If the proxy server requires user authentication before providing access, you must specify these credentials here or through the Patching Setup page under Setup in the Grid Control console.

7. Click **Next**. The Specify Security Options page is displayed.

Figure 3–9 Specify Security Options

You must specify the passwords that are used to secure your entire Grid Control environment. This page has two sections - Secure Management Server Password, and Repository Database Passwords.

- **Management Server Security:** The password that you specify here is used to secure the Oracle Management Service (OMS).

Select **Require Secure Communications for all agents** if you want the secure OMS to communicate only with Secure Agents. This is optional, though recommended.

For example, consider you have 10.1.x agents in the Grid and you have secured the OMS. Now, if you select the **Require Secure Communications** option, then all communication between the 10.2 OMS and 10.1.x agents fails (since these agents have not been secured).

Note: To secure an Agent, go to the Agent Oracle home command line of the particular target, and execute following command:

```
AGWNT_HOME/bin/emctl secure agent
```

- **Repository Database Passwords:** Specify the passwords for each of the following administrative database accounts.

Table 3–3 Repository Database Passwords

User Account	Applies To	Description
SYS	Repository Database	Super Administrator for the repository database.
SYSTEM	Repository Database	Administrator for the repository database.
DBSNMP	Repository Database	Monitoring user for the repository database.

Table 3–3 (Cont.) Repository Database Passwords

User Account	Applies To	Description
SYSMAN	Repository Database, Application Server, and Grid Control	<p>The default Grid Control Super Administrator and Owner of the repository database schema and the Grid Control application user.</p> <p>The default ias_admin password is the same as the password assigned to the SYSMAN account. This is required to access the Oracle application server (ias_admin). The ias_admin user is the administrative user for Oracle Application Server instances.</p>

You can use the same password for all four accounts, or specify a different password for each account. These passwords are used to secure the Management Repository database.

To specify a different password for each account, select Use different passwords for these accounts and specify the passwords for each account.

To specify the same password for all accounts, select Use the same password for all accounts and specify one password to be used for all database accounts.

Note: The SYS, SYSMAN, DBSNMP, and SYSTEM users are privileged database users. You must remember the passwords that you specify for them. For more information on password restrictions and recommendations, see the Oracle Database Administrator's Guide.

Password Restrictions and Recommendations

The following restrictions apply to passwords:

- Passwords must be between 5 and 30 characters long.
- Passwords cannot be the same as the user name.
- Passwords must include alphabets (lowercase/uppercase) and numbers only.

Note: The SYSMAN password can include underscores (_), and hypens (-) along with alphanumeric characters. Alpha characters can be uppercase or lowercase.

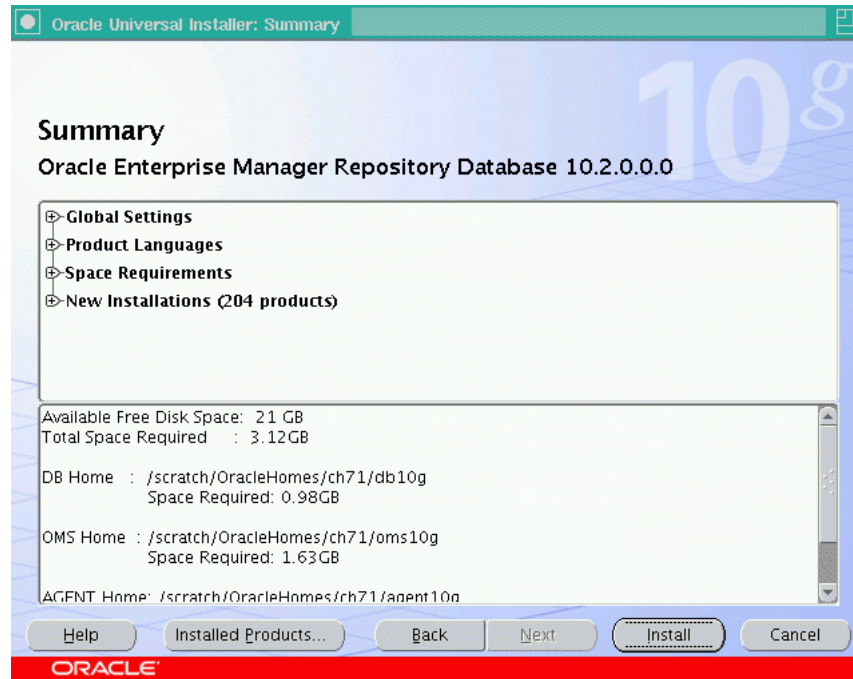
- Passwords cannot be Oracle reserved words. See [Appendix H, "Oracle Reserved Words"](#) for more information.

Note: Oracle recommends the passwords you specify:

1. Have at least one letter, one integer, and one punctuation mark (underscore).
 2. Are not simple or obvious words such as welcome, account, database, or user.
-

8. Click **Next**. The Summary page is displayed.

Figure 3–10 Summary

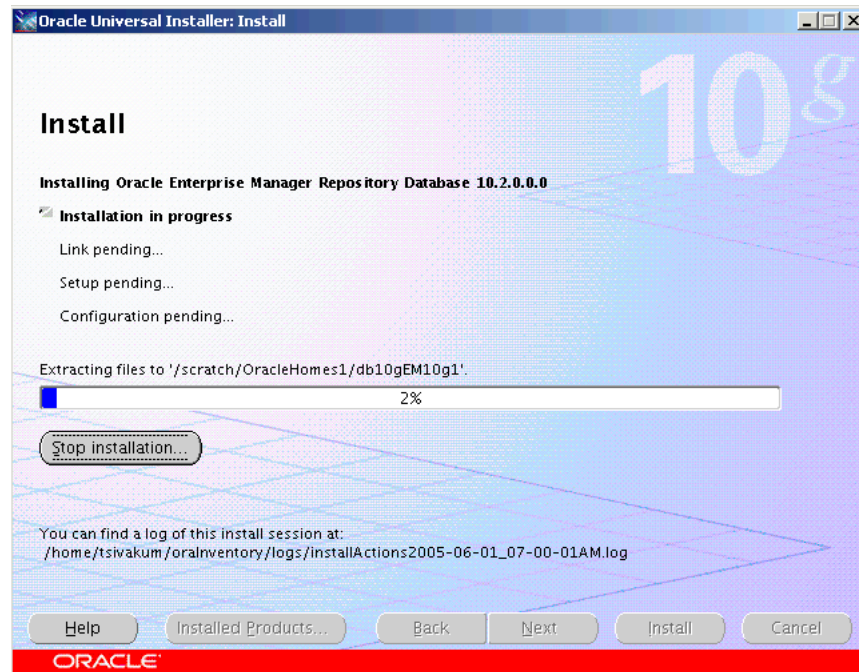


This page displays a summary of the options that you have selected during the installation process. Depending on the installation type, this page displays any or all of the following details:

- Global Settings
- Product Languages
- Space Requirements
- Installed Products

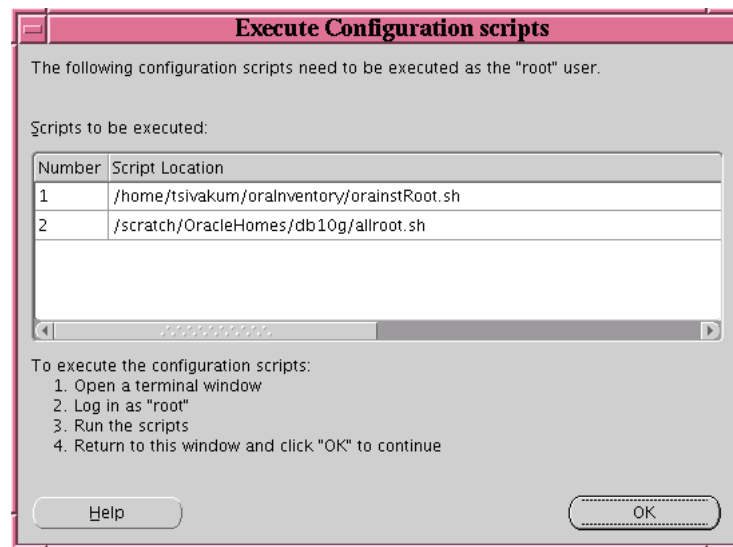
Verify the choices that you have made.

- a. Click **Install** to start the installation. The Install page that appears displays the installation progress bar.

Figure 3–11 Installation in Progress

Enterprise Manager Installer seamlessly installs all Grid Control components based on the installation type you selected.

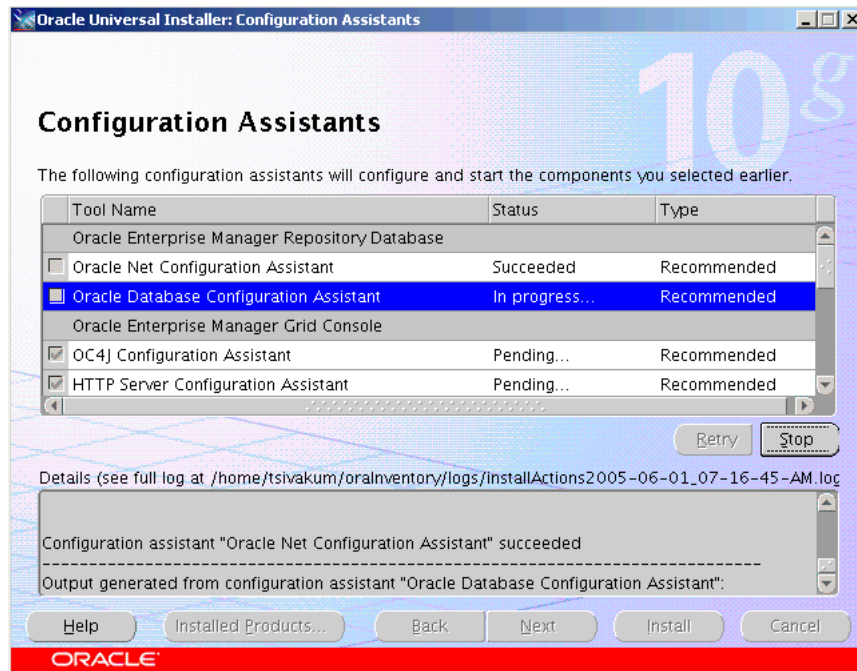
- b. During the installation, you are prompted to execute certain configuration scripts. These scripts and their locations are listed in the Execute Configuration Scripts dialog that is displayed (only for Linux).

Figure 3–12 Execute Configuration Scripts

Go to the terminal window, log in as `root`, and run these configuration scripts.

- c. Return to the above dialog box after executing the scripts, and click **OK** to continue the installation.
9. The Configuration Assistants page is displayed. At this point, the Installer starts running the recommended Configuration Assistants.

Figure 3–13 Configuration Assistants



This page displays the name, status, and the type of each configuration tool that Oracle recommends to be run before completing the installation.

The following table lists all the configuration tools that are run during a typical Enterprise Manager installation (Install Enterprise Manager Using a New Database):

Table 3–4 Enterprise Manager Configuration Tools

Product	Configuration Tool ¹
Oracle Repository Database	<ul style="list-style-type: none"> ■ Oracle Net Configuration Assistant ■ Oracle Database Configuration Assistant
Oracle Enterprise Manager Grid Console	<ul style="list-style-type: none"> ■ OC4j Configuration Assistant ■ HTTP Server Configuration Assistant ■ Java Configuration Assistant ■ Web Cache Configuration Assistant ■ Oracle iAS Instance Configuration Assistant ■ Register DCM Plug-Ins with Enterprise Manager ■ DCM Repository backups Assistant ■ Enterprise Manager Technology Stack Upgrade ■ Oracle Management Service Configuration
Oracle Management Agent	<ul style="list-style-type: none"> ■ Agent Configuration Assistant

¹ Depending on the installation type that you have selected, any or all the configuration tools listed in this table will be run.

Note: The individual log files for each configuration tool are available at the following directory:

ORACLE_HOME/cfgtoollogs/cfgfw

Besides the individual configuration logs, this directory also contains `cfmLogger_timestamp.log` (The timestamp depends on the local time and has a format such as `cfmLogger_2005_08_19_01-27-05-AM.log`.) This log file contains all the configuration tool logs.

- a. To stop running a configuration tool, select it and click **Stop**.
- b. To rerun a configuration tool, select it and click **Retry**.

Note: The installation is considered successful even if all the configuration tools fail, irrespective of their type (recommended/optional). However, failing to successfully run all the configuration tools results in an improperly configured product, which may not function. Refer to the Enterprise Manager Installation Online Help for more information.

Caution: In the event a particular configuration assistant fails, you can choose to rerun only that configuration assistant (in standalone mode). See [Appendix D, "Executing the runConfig Command Line Tool"](#) for more information.

10. After successfully running all the recommended configuration tools, the End of Installation page is displayed.

This page displays some important information about the products you have installed. This information is also available in the `<AGENT_HOME>/sysman/setupinfo.txt` file.

For example, it might contain information about the URLs for particular Web applications. If necessary, write this information down so that you can remember it.

3.3.2 Installing 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 are installing. Real Application Clusters databases must be on a shared disk.

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.

3.3.2.1 Prerequisites

- Ensure the installation is not run by the root user.
- Ensure the Password Verification option is disabled in the database. If the Password Verification is enabled, repository creation may fail.
- Ensure there is sufficient physical memory available for this installation type. See [Table 3–1](#) for more information on the recommended hard disk and memory requirements. See [Section 1.4.1.1, "Recommended CPU and Memory Allocation for Enterprise Manager Deployments"](#) for more information.
- The RDBMS version should be 9.2.0.6 and higher, or 10.1.0.4 and higher. Execute `select banner from v$version` to find out the current RDBMS version.
- The name of the host on which the installation is being performed should neither be `localhost.localdomain` nor an IP Address. It must be a valid host name. At the time of invoking the installer, you can pass `ORACLE_HOSTNAME` as an argument.

ATTENTION: Do not pass the argument as `ORACLE_HOSTNAME=<localhost.localdomain>` or `ORACLE_HOSTNAME=<IP address>`. You must pass the argument as `ORACLE_HOSTNAME=<valid host name>`.

Table 3–5 Initialization Parameter Values

Parameter	Value
<code>job_queue_processes</code>	10
<code>db_block_size</code>	8192
<code>remote_login_passwordfile</code>	EXCLUSIVE
<code>timed_statistics</code>	TRUE
<code>open_cursors</code>	300
<code>session_cached_cursors</code>	200
<code>shared_pool_size</code>	67108864
<code>dispatchers</code> ¹	NULL
<code>aq_tm_processes</code> ²	1
<code>compatible</code>	<currently installed Oracle RDBMS version> (default)
TEMP Space	50 MB (extending to 100 MB)

¹ If this parameter is present in the `inti.ora` file, it MUST be set to NULL. No other value must be used.

² If this parameter is not set, or is set to 0 (zero), the dequeued messages are not purged. Set this value to 1 or greater.

See [Section B.1, "Initialization Parameters"](#) for a detailed list of database initialization parameter settings based on the Enterprise Manager deployment size.

[Section 1.4.3, "Enterprise Manager Software Requirements"](#) includes information on the versions of the Oracle Database and Real Application Clusters Database that qualify for Management Repository creation.

See [Chapter 1, "Pre-Installation Requirements"](#) for more information on hardware and software requirements.

3.3.2.1.1 NLS_LANG Environment Variable

If your operating system is Linux, ensure the NLS_LANG environment variable is set with a value that is compatible with the operating system default locale setting and the Management Repository database character set. For information on the specific values for language, territory, or character set, refer to the Globalization Support Guide of the Oracle product that you are using.

A Typical Installation Scenario

If you choose to install Enterprise Manager using an existing database, you must provide the location of an existing database where the installer will create the repository. Here again, the database should be of version 9.2.0.6 and higher, or 10.1.0.4 and higher. If you have an earlier database version installed, you must first upgrade this database instance to the specified minimum version (9.2.0.6 and higher, or 10.1.0.4 and higher) and then proceed with the Enterprise Manager installation.

3.3.2.2 To Install Enterprise Manager Using Existing Database

Complete the following steps to install Enterprise Manager using an existing database:

1. Start the Oracle Universal Installer by running the `runInstaller` script in Linux (`<DVD>/runInstaller`) from the top directory of the DVD.
2. In the Specify Installation Type page, select the second option (Enterprise Manager 10g Grid Control Using an Existing Database). Click **Next**.

Figure 3–14 Specify Installation Type



3. The Specify Installation Location page appears.

- a. Specify the full path to the parent directory (base directory), for example, `/scratch/OracleHomes`. All the Oracle homes created during the installation are placed as sub-directories under this parent directory. For example: `oms10g`, and `agent10g`.

ATTENTION: Ensure you do not use symbolic links to specify the Oracle home path.

The installer by default installs the selected products in the English language.

- b. If you want to install the product in a different language, click **Product Languages**.

The Language Selection page is displayed. Make the required language selections here, and click **Next**. See [Figure 3-3, "Language Selection"](#) for details.

4. Click **Next**. The Specify Inventory Directory and Credentials page appears if Enterprise Manager is the first Oracle product that you are installing on the machine. See [Figure 3-4, "Specify Inventory Directory and Credentials"](#) for details.
5. Click **Next**. The Product Specific Prerequisites Check page appears.

This page displays the name, type, and status for all prerequisite checks designed for the installation. Automatic checks are run first, followed by optional and manual checks.

Depending on the status of the automatic checks, you must verify all warning and manual checks. At some point, if you have stopped the prerequisite check and want to re-run these checks, select the checks that you want to re-run and click **Retry**. As each check runs, a progress bar is shown, and test details (expected results, actual results, error messages, instructions) are displayed in the details section at the bottom of the page. See [Figure 3-5, "Product-Specific Prerequisite Checks"](#) for details.

Note: You can also run these prerequisite checks in standalone mode, prior to starting the `runInstaller`. See [Section 1.5, "Running the Prerequisite Checker in Standalone Mode"](#) for more information.

6. Click **Next**. The Specify Repository Database Configuration page appears.

Figure 3–15 Specify Repository Database Configuration

Specify the connection details for the existing database in which the Management Repository should be created. The Management Repository database can be created on the following database versions:

- Oracle 10g Database Release 1 (10.1.0.4 and higher), Enterprise Edition
 - Oracle 10g Real Application Clusters Database Release 1 (10.1.0.4 and higher)
 - Oracle 9i Database Release 2 (9.2.0.6 and higher), Enterprise Edition
 - Oracle 9i Real Application Clusters Database Release 2 (9.2.0.6 and higher)
- a. In the Database Connection Details section, specify a fully-qualified host name, repository Port number, SID (Oracle System Identifier) for the database instance, and the SYS Password.

The Oracle System Identifier (SID) identifies a specific Oracle database and distinguishes it from other databases on the computer.

Note: When selecting an existing cluster database for creating the Management Repository, you must replace the SID value with the Management Service name.

- b. Enter the password for the SYS user. This account is used to create the SYSMAN user, which is the primary owner of the Management Repository schema.
- c. In the Additional Tablespace section, specify the location for the following:
- *Management Tablespace Location:* The MGMT_TABLESPACE tablespace holds data for the Management Repository.

- *Configuration Data Tablespace Location:* The MGMT_ECM_DEPOT_TS tablespace holds Configuration Management data for the Management Repository.

For ASM (Automatic Storage Management) devices, the tablespace locations should be specified relative to the ASM disk group. For example:

```
+<DVD>/emrep/tablespace.dbf
```

For tuning/performance reasons, Oracle recommends placing Binary Large Objects (BLOBs) in their own tablespace. Since Enterprise Configuration Management data support BLOBs, the Management Repository requires two tablespaces: MGMT_TABLESPACE and MGMT_ECM_DEPOT_TS.

Specify the full path file locations for the above-mentioned tablespaces. The directories you specify for these tablespaces must already exist for repository creation to succeed. For raw devices, you must partition your disk before specifying its location. Note that raw device path names vary across volume managers. Make sure to use the right path format for your raw device locations.

If you do not have the complete path for the tablespaces, click **Prefill Tablespace Location**. The installer then queries the database you have specified. Look for the SYSAUX tablespace location, and prefill that path in the appropriate box.

Notes:

- The two tablespaces initially require 120 MB of disk space, with MGMT_TABLESPACE requiring 20 MB and MGMT_ECM_DEPOT_TS requiring about 100 MB. Ensure there is enough disk space available.
 - If you are selecting an existing cluster database for the new Management Repository, the management tablespace file locations must be on a shared device that is accessible to all instances that provide the database service.
-
-

ATTENTION: If the DBMS_SHARED_POOL package has not been installed at the time of the database creation, Oracle Universal Installer displays an error message and prompts you to execute this package before proceeding with the installation.

To check whether the DBMS_SHARED_POOL package has been installed, login to the database and execute the following query:

```
select object_name, object_type from all_objects  
where object_name = 'DBMS_SHARED_POOL'
```

To install the DBMS_SHARED_POOL package, execute the following scripts:

1. <DB_HOME>/rdbms/admin/dbmspool.sql
 2. <DB_HOME>/rdbms/admin/prvtpool.plb
-
-

7. Click **Next**. The Specify Optional Configuration page appears.

As the name suggests, all the fields on this page are optional, and are disabled, by default. Select the required check box to enable the corresponding fields.

- a. In the Configure Email Notification section, specify an appropriate e-mail address, and the corresponding SMTP server name in this section. You will receive information on important developments and events in Grid Control, including critical alerts, at this e-mail address.

The e-mail address that you specify should be associated with the SYSMAN user to receive notifications.

The SMTP Server is the name of the mail server (for example mail.acme.com). For Linux, the SMTP server must be the local host name. Use the fully-qualified host name (including domain).

Note: If you do not provide the e-mail notification information, this feature is not enabled upon installation. You may also choose to configure these settings through the Enterprise Manager console by clicking Notification Methods under Setup. Refer to the Enterprise Manager Online Help for more information.

- b. Specify the *MetaLink* credentials if you are going to use a proxy server to access *MetaLink*.

If you prefer, you may also enter this information through the Enterprise Manager console after installation by clicking **Patching Setup**, under Setup.

Note: Enterprise Manager uses the *MetaLink* credentials to search for and download patches from <http://oracle.com/support/metalink/index.html>.

- c. Specify the Proxy Information if Enterprise Manager is using a proxy server for external access. See [Table 3-2](#) for a description on each of the input fields in this section.

ATTENTION: If the proxy server requires user authentication before providing access, you must specify these credentials here, or through the Patching Setup page under Setup in the Grid Control console.

8. Click **Next**. The Specify Passwords page appears.

Figure 3–16 Specify Passwords

- a. Specify the Secure Management Service, and Repository Database passwords that are used to secure your entire Grid Control environment.
- b. Select Lock Secure Communications if you want the secure OMS to communicate only with Secure Agents. This is optional, though recommended.

For example, if you have 10g R1 (10.1.x) agents in the Grid environment, and you have secured the OMS and selected the Require Secure Communications option, then all communication between the 10g R2 (10.2) OMS and 10.1 agents fails (since these agents have not been secured).

To secure an agent, execute the following command from the agent Oracle home of that particular target:

```
emctl secure agent
```

See the section on [Password Restrictions and Recommendations](#) in this chapter for more information.

9. Click **Next**. The Summary page appears.

This page displays a summary of the options that you have selected during the installation process. Depending on the installation type, this page displays any or all of the following details:

- Global Settings
- Product Languages
- Space Requirements
- New Installations
- Installed Products

Verify the choices that you have made and click **Install** to start the installation. The Install page that appears displays the installation progress bar.

Enterprise Manager Installer seamlessly installs all Grid Control components based on the installation type you selected.

10. During the installation, you are prompted to execute certain configuration scripts. These scripts and their locations are listed in the Execute Configuration Scripts dialog that is displayed (only for Linux). Refer to [Figure 3–12](#).
 - a. To execute these scripts, go to the terminal window, log in as `root`, and run these configuration scripts.
 - b. Return to the Execute Configuration Scripts dialog box after executing the scripts, and click **OK** to continue the installation.
11. The Configuration Assistants page appears. At this point, the installer starts running the recommended Configuration Assistants.

Note: The OMS Configuration Assistant will create the repository. The repository creation log (`emca_repos_create<TimeStamp>.log` for Eg. `emca_repos_create05_13_33.log`) is available at the following directory:

```
OMS_HOME/sysman/log/
```

This page displays the name, status, and the type of each configuration tool that Oracle recommends to be run before completing the installation. Refer to [Table 3–4](#) to see the list of configuration tools that are run.

12. After successfully running all the recommended configuration tools, click **Next**. The End of Installation page appears.

This page tells you whether or not the installation was successful, and displays some important information that you must remember about the products you have installed. For example, it might contain information about the URLs for particular Web applications. If necessary, write this information down so that you can remember it.

3.3.2.2.1 Configuration Assistant

The Enterprise Manager Repository Configuration Assistant displays an error message if the `SYSMAN` user already exists in the database you specify for the Management Repository. This type of database installation cannot be used for a Management Repository.

If the Management Repository Configuration Assistant fails before completion, you can click **Retry**, which automatically cleans up the repository when the configuration tool is rerun. To manually clean up the repository, use the following command:

```
OMS_HOME/sysman/admin/emdrep/bin/RepManager
```

You may need to set the `LD_LIBRARY_PATH` to the Management Service's `ORACLE_HOME/lib` directory before running the script.

Refer to the *Oracle Enterprise Manager Advanced Configuration* for further instructions on how to drop the existing Repository from the database.

The listener for the existing database should be the same version as the highest database version on the host. Otherwise, Management Repository creation may fail.

3.3.3 Installing an Additional Management Service

Select this option if you need to add an additional Management Service to your environment. Note that setting credentials for Oracle *MetaLink* is not necessary for this installation type, as the Management Repository is not affected.

3.3.3.1 Prerequisites

Ensure the following prerequisites are met before starting the installation:

- Ensure the installation is not run by the root user.
- Ensure the hard disk and physical memory requirements are met. See [Table 3-1](#) for more information.
- Besides the RDBMS version, ensure the Repository version is 10.2.0.1.0.
- The name of the host on which the installation is being performed should neither be `localhost.localdomain` nor an IP Address. It must be a valid host name. At the time of invoking the installer, you can pass `ORACLE_HOSTNAME` as an argument.

ATTENTION: Do not pass the argument as `ORACLE_HOSTNAME=<localhost.localdomain>` or `ORACLE_HOSTNAME=<IP address>`. You must pass the argument as `ORACLE_HOSTNAME=<valid host name>`.

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

See [Appendix G, "Assigning Custom Ports"](#) for more information on assigning port numbers for Enterprise Manager components.

3.3.3.2 To Install an Additional Management Service

Complete the following steps to install an additional Management Service.

1. Start the Oracle Universal Installer by running the `runInstaller` script in Linux (`<DVD>/runInstaller`) from the top directory of the DVD.
2. In the Specify Installation Type page, select the third option (Additional Management Service).

Figure 3–17 Specify Installation Type



3. In the Specify Installation Location page, specify the full path to the parent directory (base directory), for example, `/scratch/OracleHomes`. The OMS home created during the installation is placed as a sub-directory under this parent directory. For example: `oms10g`.

Note: Ensure you do not use symbolic links to specify the Oracle home path.

The installer by default installs the selected products in the English language.

- a. If you want to install the product in a different language, click **Product Languages**.
 - b. The Language Selection page is displayed. Make the required language selections here. See [Figure 3–3, "Language Selection"](#) for details.
4. Click **Next**. The Product Specific Prerequisites Check page appears.

This page displays the name, type, and status for all prerequisite checks designed for the installation. Automatic checks are run first, followed by optional and manual checks.

Depending on the status of the automatic checks, you must verify all warning and manual checks. At some point, if you have stopped the prerequisite check and want to rerun these checks, select the checks that you want to rerun and click **Retry**. As each check runs, a progress bar is shown, and test details (expected results, actual results, error messages, instructions) are displayed in the details section at the bottom of the page. See [Figure 3–5, "Product-Specific Prerequisite Checks"](#) for more information.

Note: You can also run these prerequisite checks in standalone mode, prior to starting the runInstaller. For more information on running these prerequisite checks in standalone mode, see [Section 1.5, "Running the Prerequisite Checker in Standalone Mode"](#) for more information.

5. Click **Next**. The Specify Repository Database Configuration page appears.

Figure 3–18 Specify Repository Database Configuration

- a. You must configure the additional Management Service to establish the connections with the existing Management Repository.

Note: The existing Management Repository database must be one of the following versions:

- Oracle 10g Database Release 1 (10.1.0.4), Enterprise Edition
- Oracle 10g Real Application Clusters Database Release 1 (10.1.0.4)
- Oracle 9i Database Release 2 (9.2.0.6 and higher), Enterprise Edition
- Oracle9i Real Application Clusters Database Release 2 (9.2.0.6 and higher)

The Management Repository database may also require patches to be applied, prior to successful installation. See [Section 1.4.2, "Enterprise Manager Platform and Target Certification Requirements"](#) for more information.

- b. In the Repository Database Connection Details section, specify a fully-qualified host name on which the Management Repository database is installed, the repository port, and the SID (Oracle System Identifier) for the database instance.

The Oracle System Identifier (SID) identifies a specific Oracle database and distinguishes it from other databases on the computer.

Note: When selecting an existing cluster database for creating a Management Repository, you must replace the SID value with the Service name.

- c. Enter the password for the SYSMAN user (the default Super Administrator account for Enterprise Manager).
- d. In the Management Server Security section, specify the password used to secure the Oracle Management Service (OMS).
- e. Select Require Secure Communications for all agents if you want the secure OMS to communicate only with Secure Agents. This is optional, though recommended.

For example, if you have 10g R1 (10.1.x) agents in the Grid environment, and you have secured the OMS and selected the Require Secure Communications option, then all communication between the 10g R2 (10.2) OMS and 10.1 agents fails (since these agents have not been secured).

To secure an agent, execute the following command from the agent Oracle home of that particular target:

```
emctl secure agent <password>
```

See the section [Password Restrictions and Recommendations](#) in this chapter for more information.

Note: The password that you specify here must be the same as the password that you specified to secure the Management Service (OMS).

6. Click **Next**. The Specify Optional Configuration page appears.

Figure 3–19 Specify Optional Configuration

As the name suggests, all the fields on this page are optional, and are disabled, by default. Select the required check box to enable the corresponding fields.

- a. Select the **Configure Proxy** check box (optional) if Enterprise Manager is using a proxy server for external access. Specify the properties for the proxy server host name (enter a fully-qualified host name), port number, Do Not Proxy for list, and the Proxy user credentials. See [Table 3–2](#) for a description of the input fields.
- b. Specify an appropriate Realm value. This becomes a mandatory field only if the proxy server credentials have been configured using a Realm, in which case, you must specify an appropriate Realm value.

A Realm is a string value that is assigned by the proxy server to indicate the secure space that requires authentication.

7. Click **Next**. The Summary page appears.

This page displays a summary of the options that you have selected during the installation process. Depending on the installation type, this page displays any or all of the following details:

- Global Settings
- Product Languages
- Space Requirements
- New Installations

For more information on each of the above-listed details, see the Enterprise Manager Online Help.

Verify the choices that you have made and click **Install** to start the installation. Enterprise Manager Installer begins installing the selected Oracle product.

8. During the installation, you are prompted to execute certain configuration scripts. These scripts and their locations are listed in the Execute Configuration Scripts dialog that is displayed (only for Linux). Refer to [Figure 3-12](#).
 - a. To execute these scripts, go to the terminal window, log in as `root` and run these configuration scripts.
 - b. Return to the Execute Configuration Scripts dialog box after executing the scripts, and click **OK** to continue the installation.
9. The Configuration Assistants page appears. At this point, the installer starts running the recommended configuration tools.

This page displays the name, status, and the type of each configuration tool that Oracle recommends to be run before completing the installation. Refer to [Table 3-4](#) to see the list of configuration tools that are run.
10. After successfully running all the recommended configuration tools, click Next. The End of Installation page appears.

This page tells you whether or not the installation was successful and displays some important information that you must remember about the product you have installed. For example, it might contain information about the URLs for particular Web applications. If necessary, write this information down so that you can remember it.

3.3.4 Installing a 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.

You can install the Management Agent in the following ways:

- On each host computer, run Oracle Universal Installer from the Enterprise Manager DVD-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 Agent Deploy application to perform a fresh agent installation (standalone or cluster agent) or a shared agent installation.
- Use the `nfsagentinstall` script to install and deploy the shared Management Agent.
- Use the `agentDownload` script to install and deploy Management Agents to many managed hosts through HTTP or over the network.

See Also: See [Chapter 5, "Deploying the Management Agent"](#) for a full and detailed explanation on installing Management Agents using the `agentDownload` script and the `nfsagentinstall` script.

See [Appendix G, "Assigning Custom Ports"](#) for information on assigning custom port numbers for Enterprise Manager components.

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 same OS Group group that was used to install the Application Server. Otherwise, you cannot 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 sufficient 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.
-
-

3.3.4.1 Prerequisites

Ensure the Agent Oracle home must not contain any other Oracle software installation.

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

3.3.4.2 To Install an Additional Management Agent Using OUI

1. Start the Oracle Universal Installer by running the `runInstaller` script in Linux (`<DVD>/runInstaller`) from the top directory of the DVD.
2. In the Specify Installation Type page, select the fourth option (Additional Management Agent), and specify the parent directory path and installation name.

Figure 3–20 Specify Installation Type



3. In the Specify Installation Location page, specify the full path to the parent directory (base directory), for example, `/scratch/OracleHomes`. The agent home created during the installation is placed as a sub-directory under this parent directory. For example: `agent10g`.

Note: Ensure you do not use symbolic links to the Oracle home path.

The installer by default installs the selected products in the English language.

- a. If you want to install the product in a different language, click **Product Languages**.
 - b. The Language Selection page appears. Make the required language selections here, and click **Next**. See [Figure 3–3, "Language Selection"](#) for details.
4. The Product Specific Prerequisites Check page appears.

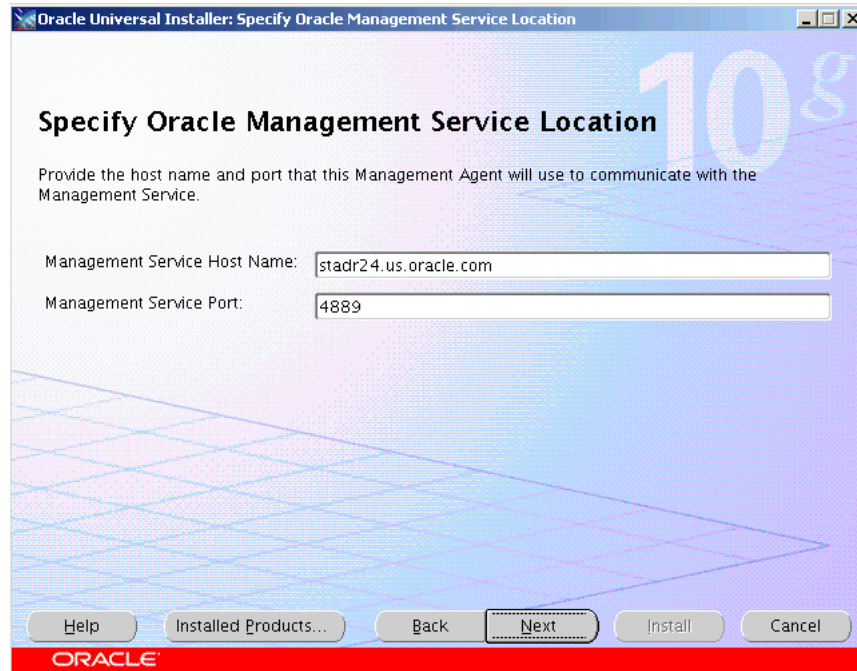
This page displays the name, type, and status for all prerequisite checks designed for the installation. Automatic checks are run first, followed by optional and manual checks.

Depending on the status of the automatic checks, you must verify all warning and manual checks. To do this, select the appropriate prerequisite status check box and click **Retry**. As each check runs, a progress bar is shown, and test details (expected results, actual results, error messages, instructions) are displayed in the details section at the bottom of the page. See [Figure 3–5, "Product-Specific Prerequisite Checks"](#) for more information.

Note: You can also run these prerequisite checks in standalone mode, prior to starting the runInstaller. For more information on running these prerequisite checks in standalone mode, see [Section 1.5, "Running the Prerequisite Checker in Standalone Mode"](#) for more information.

5. Click **Next**. The Specify Oracle Management Service Location page appears.

Figure 3–21 Specify Oracle Management Service Location



- a. Specify the Management Service host name. For example: `d1.sun1444.acme.com`. Use the fully-qualified host name (including domain).

ATTENTION: When specifying the host name, ensure you do not include the protocol (that is, `http://` or `https://`).

- b. Enter the port number for the Management Service. The default port is 4889 and the default secure port number is 1159.

However, even if you are specifying a secure Management Service, you must still enter the non-secure port number (4889) here. You must connect over HTTP to receive the certificate before you can connect over HTTPS.

Note: If your Management Service has been configured to use HTTPS, you are prompted to enter the Agent Registration password (used to secure the management Service environment). If you do not know the password, obtain it from the user who configured the Management Service for SSL.

6. Click **Next**. If the Management Service is found to be running in a secure mode, the Specify Agent Registration Password page appears. You must provide the correct password to enable communications between the new Management Agent and the SSL-enabled Management Service.

Figure 3–22 Specify Agent Registration Password



IMPORTANT: If you do not know the password and choose to leave the Password field blank, you must do the following after installation to enable communication between the agent and secure OMS:

- Find out the correct password for the secure OMS environment. If you do not know the password, obtain it from the user who configured the Management Service for SSL.
- In the <AGENT_HOME>/bin directory, execute the following command:

```
emctl secure agent <password>
```

where <password> is the Agent Registration Password.

7. Click **Next**. The Summary page appears.

This page displays a summary of the options that you have selected during the installation process. Depending on the installation type, this page displays any or all of the following details:

- Global Settings
- Product Languages
- Space Requirements

- New Installations

For more information on each of the above-listed details, see the Enterprise Manager Online Help.

Verify the choices that you have made and click **Install** to start the installation. Enterprise Manager Installer starts installing the selected Oracle product.

8. During the installation, you are prompted to execute certain configuration scripts. These scripts and their locations are listed in the Execute Configuration Scripts dialog that is displayed (only for Linux). [Figure 3–12, "Execute Configuration Scripts"](#) provides details on this page .
 - a. To execute these scripts, go to the terminal window, log in as `root`, and run these configuration scripts.
 - b. Return to the Execute Configuration Scripts dialog box after executing the scripts, and click **OK** to continue the installation.
9. The Configuration Assistants page appears. At this point, the installer starts running the recommended configuration tools.

This page displays the name, status, and the type of each configuration tool that Oracle recommends to be run before completing the installation. Refer to [Table 3–4](#) to see the list of configuration tools that are run.

See [Appendix D, "Executing the runConfig Command Line Tool"](#) for information on executing the runConfig tool.

10. After successfully running all the recommended configuration tools, click **Next**. The End of Installation page appears.

This page displays some important information about the products you have installed. This information is also available in the `<AGENT_HOME>/sysman/setupinfo.txt` file.

For example, it might contain information about the URLs for particular Web applications. If necessary, write this information down so that you can remember it.

3.4 Deinstallation of Oracle Homes

If you de-install the Enterprise Manager 10g ORACLE_HOME using Oracle Universal Installer, the ORACLE_HOME is de-registered from the central inventory and the `oratab` file. However, some files may remain in the ORACLE_HOME.

If the ORACLE_HOME has been successfully removed (verify this in OUI by clicking **Installed Products**), you can manually delete the files through the operating system.

The proper de-installation sequence is:

1. Stop Enterprise Manager by executing `/emctl stop em`.
2. Shut down the Management Service and repository database (if the database software is installed as a part of the Management Service ORACLE_HOME being de-installed).
3. Shut down the Oracle Database Listener.
4. Shut down the Management Agent in the Agent Oracle home using the `emctl stop agent` command.
5. Run the Database Configuration Assistant (DBCA) to delete the database before proceeding to de-install the Oracle home.

6. Run the Oracle Universal Installer and select the ORACLE_HOME to de-install. It is removed from the Central Inventory.
7. Remove stray files from the ORACLE_HOME using the appropriate operating system command.

Enterprise Manager Silent Installations

This chapter contains the following sections:

- [Performing Silent Installations](#)
- [Assigning Custom Ports \(Static Ports feature\)](#)

4.1 Performing Silent Installations

Enterprise Manager supports silent installations in which you can install components without displaying pages 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 using Oracle Universal Installer.

[Table 4–1](#) shows the response files made available for each installation type. The response files are available on the installation DVD-ROM at:

<DVD>/Response

Instantiate the appropriate response file and execute it as shown below:

```
./runInstaller -silent -responseFile=<absolute path of the response file>
-waitforcompletion
```

Table 4–1 Available Response Files for Silent Installation

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

See Also: See [Chapter 5, "Deploying the Management Agent"](#) for more information on performing silent installations of Management Agents using the agentDownload script.

Note: If you are executing a silent installation with `-noconfig` option, the installer prompts you to execute `allroot.sh` at the end of the installation in order to run the configuration assistants. You must run `root.sh` from the first Oracle home that was created during the installation (typically the database Oracle home), and then execute `runconfig.sh`.

If you are performing a chain installation, the command to run the config assistants with encapsulated xml is:

```
./runConfig.sh ORACLE_HOME=<database home path> ACTION=configure  
MODE=perform COMPONENT_XML={encap_emseed.1_0_0_0_0.xml}
```

See [Appendix D, "Executing the runConfig Command Line Tool"](#) for more information.

Caution: If you are using the `-noconfig` option in your installation, ensure you also pass `-silent` to invoke the installer. The `-noconfig` option must be executed only during silent installations.

4.1.1 Silent Installation of Enterprise Manager Using a New Database

To perform a silent installation of this type:

1. Copy the `<DVD>/response/em_with_new_db.rsp` file to a location on the local machine and modify the *Value Unspecified* entries accordingly.
2. Invoke the `runInstaller` by executing:

```
<DVD>/runInstaller -silent -responseFile <location>/em_with_new_db.rsp
```

The following message on the `root.sh` scripts is displayed:

```
WARNING:A new inventory has been created in this session. However, it has not  
yet been registered as the central inventory of this system.  
To register the new inventory please run the script '<User's Home  
Dir>/oraInventory/orainstRoot.sh' with root privileges.  
If you do not register the inventory, you may not be able to update or patch  
the products you installed.
```

```
The following configuration scripts need to be executed as the root user.
```

```
#!/bin/sh
```

```
#Root script to run
```

```
<User's Home Dir>/oraInventory/orainstRoot.sh
```

```
<Install Location>/db10g/allroot.sh
```

```
To execute the configuration scripts:
```

1. Open a terminal window
2. Log in as root
3. Run the scripts
4. Return to this window and click OK to continue

IMPORTANT: If this is the first time an Oracle product is being installed on the machine, the database listener targets will not be discovered, as the `root.sh` scripts have not been executed.

3. After the installation is complete, you must execute `orainstRoot.sh` and `allroot.sh` scripts as root.
4. To discover the Enterprise Manager targets, you can execute `<Install Location>/agent10g/bin/agentca`, or discover the targets from the Enterprise Manager console. See [Section A.1.4, "Invoking the Agent Configuration Assistant in Standalone Mode"](#) for more information on executing the Agent Configuration Assistant in standalone mode.

4.1.2 Silent Installation of Enterprise Manager Using an Existing Database

To perform a silent installation of this type:

1. Copy the `<DVD>/response/em_using_existing_db.rsp` file to a location on the local machine and modify the *Value Unspecified* entries accordingly.
2. Invoke the runInstaller by executing:

```
<DVD>/runInstaller -silent -responseFile <location>/em_using_existing_db.rsp
```

The following message on the **root.sh scripts** is displayed:

```
WARNING:A new inventory has been created in this session. However, it has not
yet been registered as the central inventory of this system.
To register the new inventory please run the script '<User's Home
Dir>/oraInventory/orainstRoot.sh' with root privileges.
If you do not register the inventory, you may not be able to update or patch
the products you installed.
The following configuration scripts need to be executed as the root user.
#!/bin/sh
#Root script to run
<User's Home Dir>/oraInventory/orainstRoot.sh
<Install Location>/oms10g/allroot.sh
To execute the configuration scripts:
  1. Open a terminal window
  2. Log in as root
  3. Run the scripts
  4. Return to this window and click OK to continue
```

4.1.3 Silent Installation of an Additional Management Service

To perform a silent installation of this type:

1. Copy the `<DVD>/response/additional_mgmt_service.rsp` file to a location on the local machine and modify the *Value Unspecified* entries accordingly.
2. Invoke the runInstaller by executing:

```
<DVD>/runInstaller -silent -responseFile <location>/additional_mgmt_service.rsp
```

The following message on the **root.sh scripts** is displayed:

```
WARNING:A new inventory has been created in this session. However, it has not
yet been registered as the central inventory of this system.
To register the new inventory please run the script '<User's Home
Dir>/oraInventory/orainstRoot.sh' with root privileges.
If you do not register the inventory, you may not be able to update or patch
the products you installed.
The following configuration scripts need to be executed as the root user.
#!/bin/sh
#Root script to run
<User's Home Dir>/oraInventory/orainstRoot.sh
```

```
<Install Location>/oms10g/allroot.sh  
To execute the configuration scripts:  
1. Open a terminal window  
2. Log in as root  
3. Run the scripts  
4. Return to this window and click OK to continue
```

4.1.4 Silent Installation of an Additional Management Agent

To perform a silent installation of this type:

1. Copy the `<DVD>/response/additional_agent.rsp` file to a location on the local machine and modify the *Value Unspecified* entries accordingly.
2. Invoke the `runInstaller` by executing:

```
<DVD>/runInstaller -silent -responseFile <location>/additional_agent.rsp
```

The following message on the **root.sh scripts** is displayed:

```
WARNING: A new inventory has been created in this session. However, it has not  
yet been registered as the central inventory of this system.  
To register the new inventory please run the script '<User's Home  
Dir>/oraInventory/orainstRoot.sh' with root privileges.  
If you do not register the inventory, you may not be able to update or patch  
the products you installed.  
The following configuration scripts need to be executed as the root user.  
#!/bin/sh  
#Root script to run  
<User's Home Dir>/oraInventory/orainstRoot.sh  
<Install Location>/agent10g/root.sh  
To execute the configuration scripts:  
1. Open a terminal window  
2. Log in as root  
3. Run the scripts  
4. Return to this window and click OK to continue
```

Caution: The agent you are installing is not secure by default. To secure the agent, you must execute the following command from the agent Oracle home:

```
AGENT_HOME/bin/emctl secure agent <password>
```

4.2 Assigning Custom Ports (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.

The `staticports.ini` file is available on the installation DVD-ROM at:

```
<DVD>/response/staticports.ini
```

To invoke `runInstaller` with the `staticports.ini` option, execute the following command:

```
./runInstaller -staticPortsIniFile <staticport.ini file name>
```

This file is typically called the `staticports.ini` file, but you can rename it anything appropriate. The [Section G.1, "Formats for the Staticports.ini File"](#) of [Appendix G, "Assigning Custom Ports"](#), 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 your operating system located at:

<http://otn.oracle.com/documentation/appserver10g.html>

Deploying the Management Agent

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. This chapter contains the following sections:

- [Installing the Management Agent Using Agent Deploy](#)
- [Sharing the Agent Oracle Home Using the nfsagentinstall Script](#)
- [Installing the Agent Using the agentDownload Script](#)
- [Installing the Agent on a Cluster](#)
- [Cloning the Management Agent](#)

5.1 Management Agent Deployment Options

You can deploy the Management Agent on remote hosts using any of the following installation mechanisms:

- **Agent Deploy Application**
Agent Deploy is a J2EE application that is used for mass deployment of Management Agents. See [Section 5.2, "Installing the Management Agent Using Agent Deploy"](#) for more information.
- **nfsagentinstall Script**
This installation type uses the `nfsagentinstall` script. In this method of the agent installation, the agent bits are located on a shared Net App Filer disk. All the other hosts then share these bits and run the agent processes on each host. See [Section 5.3, "Sharing the Agent Oracle Home Using the nfsagentinstall Script"](#) for more information.
- **agentDownload Script**
This installation type makes use of the `agentDownload` Script that is fully functional and self-documenting. If required, you can customize this script for installations on specific environments. See [Section 5.4, "Installing the Agent Using the agentDownload Script"](#) for more information.
- **Cluster Agent Installation**
This type of installation allows you to perform a standalone agent install on a selected cluster node, or perform a cluster agent installation on a selected cluster. See [Section 5.5, "Installing the Agent on a Cluster"](#) for more information.
- **Management Agent Cloning**

This type of installation allows you to clone an installed agent (also termed as the master agent) on multiple destination Oracle homes. See [Section 5.6, "Cloning the Management Agent"](#) for more information.

- Interactive Installation Using Oracle Universal Installer

This type of installation is appropriate for first-time Agent installations. You can perform this installation by invoking the Enterprise Manager Installer using Oracle Universal Installer (OUI). The Interactive type is typically a one-node installation. See [Section 3.3.4, "Installing a Management Agent"](#) for more information.

- Silent Installation

This type of installation is done using the appropriate response files. These response files must be edited to pre-fill the correct values for an uninterrupted installation. You can also use a wrapper script that will perform these tasks and also execute the `root.sh` script, making this type of installation a fully automated activity. See [Section 4, "Enterprise Manager Silent Installations"](#) for more information.

5.2 Installing the Management Agent Using Agent Deploy

You can perform a mass deployment of the Management Agent through the Web-based Agent Deploy application. This application is particularly useful when you want to perform remote installations.

Note: You can use the Agent Deploy application to mass-deploy the Management Agent from a remote site.

When you are required to perform a standalone installation of the Agent on a local machine, you can choose to either perform the installation using the Agent Deploy application, or use the `agentDownload` script. See the section [Section 5.4.1, "About agentDownload Script"](#), for more information.

IMPORTANT: Oracle recommends that you view the installation status output (`emctl status`) to ensure the installation was successful. You can view this log by executing the following command:

```
<AGENT_HOME>/bin/emctl status agent
```

See [Section A.6, "Management Agent Installation Fails"](#) to view a sample of the `emctl status` log and to troubleshoot possible errors that may occur during installation.

5.2.1 Agent Deploy Installation Prerequisites

Ensure the following prerequisites are met before proceeding with the agent installation.

Before you start using Agent Deploy to perform agent installations, ensure the following prerequisites are met:

- Set up SSH (Secure Shell) User Equivalence.
- Validate all command locations.

- Modify response file for Big IP host and port.
- Verify oraInventory permissions on remote hosts.
- User installing the agent is part of the same OS group that installed the Oracle Application Server and/or Oracle Collaboration Suite.

See [Appendix E, "Agent Deploy Application - Installation Prerequisites"](#) for more information.

Note: You can view the prerequisite checks and installation status from the **Status** page in the Agent Deploy application.

WARNING: Do not attempt to view the prerequisite check status while the prerequisite checks are still in progress. If you do so while the checks are still in progress, the application will display an error.

5.2.2 Accessing the Agent Deploy Application

To access Agent Deploy:

1. Log in to the Grid Control console and go to the Deployments page.
2. Click **Install Agent** under the Agent Installation section.
3. In the Agent Deploy home page that appears, select the appropriate installation option that you want to perform.

Note: If you want to view the status of an earlier installation/upgrade session, click **Agent Installation Status** in the Deployments page.

5.2.3 Agent Deploy Installation Types

Agent Deploy provides the following two options for deploying the Management Agent:

- [Fresh Installation of the Management Agent](#)
- [Installation Using a Shared Agent Home](#)

Note: You can view the installation status from the **Status** page in the Agent Deploy application.

WARNING: Do not attempt to view the installation status until the installation is complete. If you do so while the installation is still in progress, the application will display an error.

5.2.3.1 Fresh Installation of the Management Agent

This option helps you perform a fresh installation of the Management Agent. The Agent Deploy application runs a prerequisite checker to ensure the environment meets the requirements for this installation type. See [Section E.2, "Prerequisite Checks Executed by Agent Deploy"](#) for more information.

To perform a fresh Management Agent installation:

1. Select Fresh Install on the Agent Deploy application home page. The Installation Details page appears.
2. In the Source Software section, select an installation source directory. This directory can either be the default directory that exists within the Oracle Management Service (OMS), for example `<OMS_HOME>/sysman/agent_download/10.2.0.1.0/<platform>`, or any other location where the software is available.

See [Section 5.4.5, "Uploading Agent Installation Software for Different Platforms"](#) for more information on obtaining agent installables for different platforms.

To choose a location other than the default location from the OMS, select Another Location, and specify the full path to the software location that you want to use.

Note: Ensure that the path of the software location that you specify is accessible from all remote hosts.

The application does not copy the software to the remote hosts, but will only access the software from the specified location.

IMPORTANT: The additional parameters that you specify later in the installation process depend on the source software location that you select here.

if you select the default software location, you must specify additional parameters that are supported by the `agentDownload` script. See [Table F-1](#) for a list of parameters supported by this script.

If you select an alternative location, you must specify additional parameters that are supported by Oracle Universal Installer (OUI). See [Table F-2](#) for a list of parameters supported by OUI.

Figure 5-1 Source Software Section of the Installation Details Page

The screenshot shows the 'Source Software' section of the installation details page. It contains two radio button options for selecting the source directory:

- Default, from Management Server location. The staged software available at `<OMS_HOME>/sysman/agent_download/10.2.0.1.0/<platform>`
- Another Location This is the full path to the software location. Example: `<net>host1/shiphomes/agent/10.2/`

3. Select the appropriate platform on which you want to perform this installation.
4. In the Provide Host List text box, specify all the hosts (host names or IP addresses) on which you want to perform the Agent installation. Alternatively, click **Get Host Names From File** to browse and select the file that contains a list of all the required host names.

WARNING: Ensure you do not specify duplicate entries of the host list. If there are duplicate host entries in this list, the application hangs.

Also ensure that you use the same host names for which the SSH has been set.

Note: You can use either a comma (,), white space, or a new line as a separator when specifying multiple hosts.

IMPORTANT: The Agent Deploy application picks up only the values in the first column of the Host List file that you specify/select.

Ensure the host list format is appropriate, since the Agent Deploy application does not validate this format on the selected file.

A sample host list format is provided in [Table 5-1](#).

Table 5-1 Sample Host List Format

FullyQualified Host Name	Host Name	Host IP Address
host1.foo.com	host1	154.87.3.229
host2.foo.com	host2	154.87.3.109
host3.foo.com	host3	154.80.5.218

Figure 5-2 Hosts Section of the Installation Details Page

Hosts
The list of hosts, specified here, should be separated by comma, spaces or newline. You can use either the Name, or IP Address to specify Hosts.

Platform This list is determined by the staged software available on Management Server.

* Provide Host List Example: host1,host2,168.78.5.110, ...

Cluster Install All specified hosts must be in the same cluster. Regardless of what the cluster node list looks like, the application will install agent only on hosts specified.

Cluster Node List Provide corresponding node names for the hosts provided above. Example: node1,node2,node3, ...

Cluster Name Name of the cluster target to be appeared for monitoring in the console.

- Select **Cluster Install** if you want to install the Agent on a cluster.
- In the Cluster Node List text box, specify the cluster nodes. Alternatively, click **Populate Defaults** to populate this text box with all the host names that you had selected in step 3.
- In the Cluster Node List text box, specify the cluster nodes. Alternatively, click **Populate Defaults** to populate this text box with all the host names that you had selected in step 3.

Note: The node names that you specify here are the machine short names.

If you have set up the cluster over a vendor clusterware, the node names can be different from the machine names.

You can confirm the node names by executing `olsnodes` from the `<Oracle Clusterware home>` on one of the cluster nodes. If you are using a 9.2 Oracle Cluster version, confirm the node names by executing `lsnodes` from the cluster Oracle home.

See [Section 5.5.2.2, "Installing a Cluster Agent on Oracle Clusterware"](#) for more information.

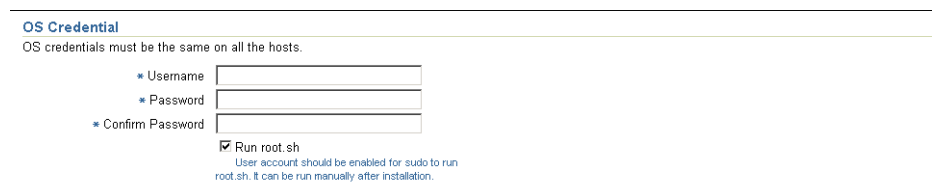
- d. In the Cluster Name text box, specify a unique cluster name. If you are extending a cluster, ensure you specify the existing cluster name here. The cluster name that you specify here identifies that cluster in the Grid Control console.

Note: When you select the cluster install option, Agent Deploy performs the agent installation on all the cluster nodes irrespective of the number of hosts you have selected. For example, if you choose to perform a cluster install on a cluster having 10 nodes, but specified only 5 nodes, Agent Deploy installs the agent on all 10 nodes that form that cluster.

If you are extending an existing cluster, ensure that the cluster name you specify is the same as the existing cluster. You must also ensure that you specify all the nodes of the existing cluster along with the new node on which you are installing the cluster agent.

5. In the OS Credentials section, specify the appropriate operating system user credentials. Select **Run root.sh** if you want Agent Deploy to execute this script.

Figure 5–3 OS Credential Section of the Installation Details Page



OS Credential
OS credentials must be the same on all the hosts.

* Username

* Password

* Confirm Password

Run root.sh
User account should be enabled for sudo to run root.sh. It can be run manually after installation.

Note: The `root.sh` script executes after the configuration assistants are run, and before executing post-install scripts (if any).

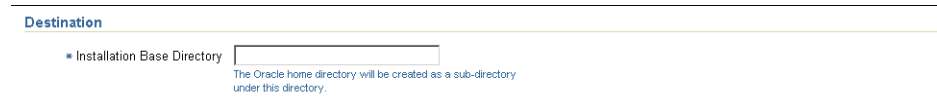
If you do not select this option here, you must manually run `root.sh` on each node.

Agent Deploy uses `sudo` to run this script. You must specify the *invoking user's password* here. You must also ensure that the `targetpw` is not set in the `/etc/sudoers` file.

Note: The OS credentials that you specify here must be the same for all the selected hosts.

- In the Destination section, specify the absolute path for the Installation Base Directory. This directory is created on all the specified hosts, and the Agent Oracle home directory is created as a sub-directory under this directory.

Figure 5–4 Destination Section of the Installation Details Page



Destination

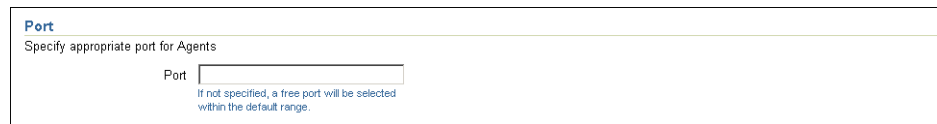
• Installation Base Directory

The Oracle home directory will be created as a sub-directory under this directory.

Note: Ensure you have write permissions on the installation Base Directory that you specify.

- Specify the port on which the Agent will communicate. The default port value is 3872.

Figure 5–5 Port Section of the Installation Details Page



Port

Specify appropriate port for Agents

Port

If not specified, a free port will be selected within the default range.

Note: If the port that you specify is not available, you are prompted to specify an alternative port. If you do not specify a port here, the Agent Deploy application automatically picks up a free port (3872 or in the range of 1830 - 1849).

- In the Additional Parameters text box, specify any additional parameters that you want to pass during installation.

Figure 5–6 Additional Parameters Section of the Installation Details Page



Additional Parameters

Additional parameter to agent installation can be provided here.

Additional Parameters

Example: -i ./home/orainst.loc

IMPORTANT: The additional parameters that you specify here depend on the software source location that you have selected.

- *Default Management Service Location:* If you have selected the default software source directory, the additional parameters that you specify must be supported by the `agentDownload` script, as the Agent Deploy application uses the `agentDownload.<platform>` script to perform the installation. See [Table F.1](#) for a list of all the parameters supported by the `agentDownload` script.
 - *Another Location:* If you have selected an alternative software location, the additional parameters that you specify must be supported by Oracle Universal Installer (OUI), as Agent Deploy then uses OUI to perform the installation. See [Table F.2](#) for a list of parameters supported by OUI.
-

Note: If the same parameters that you specify here are also specified independently (from the command-line option), the value of the parameters that you specify here take precedence over the other.

For example, if the installation base directory is specified independently, and `-b` option is specified here, the latter value (`-b`) is used in the installation.

The important parameters for Agent Installation are `-b`, `-c`, `-n` and optionally `-i`, `-p`, `-t`, `-d`, and `-z`.

9. In the *Management Service Security* section, specify the Management Service Registration Password if you want to secure communications between the Agent and OMS. Alternatively, the super administrator can approve the addition of new agents to Enterprise Manager after the installation is complete.

Figure 5–7 Management Server Security Section of the Installation Details Page

Management Server Security

If you want to secure communications to the Management Server, specify the registration password here, or get the approval of a super administrator to add new agents to Enterprise Manager after the installation is complete.

* Management Server Registration Password

* Confirm Password

Note: An unsecure agent cannot upload data to the secure OMS. Oracle also recommends for security reasons that you change the OMS password specified here after the installation is complete.

10. In the *Additional Scripts* section, specify any pre-install and/or post-install scripts that you want to execute.

Figure 5–8 Additional Scripts Section of the Installation Details Page

Additional Scripts
Optionally, you can choose to execute additional scripts before the installation is initiated, and after it is completed.

Pre-Installation Script File

Run as Superuser.
User should be enabled for sudo.

Post-Installation Script File

Run as Superuser.
User should be enabled for sudo.

Select Run as Superuser if you want to run these scripts as `root`.

Note: The pre/post installation scripts that you specify must be available on all the hosts. These files are not copied onto the hosts from the source software location during installation.

11. Click **Continue** to start the installation process. As part of this process, Agent Deploy performs some prerequisite checks before proceeding with the installation. When all the prerequisite checks are complete, the application displays the results. You can choose to either retry the prerequisite check on all those failed hosts, or ignore the result and proceed to install the Agent.

Note: After the installation and configuration phase, the Agent Deploy application checks for the existence of the Central Inventory (located at `/etc/oraInst.loc`). If this is the first Oracle product installation, Agent Deploy executes the following scripts:

1. `orainstRoot.sh` - This creates `oraInst.loc` that contains the central inventory.
2. `root.sh` - This runs all the scripts that must be executed as `root`.

If this is not the first Oracle product installation, Agent Deploy executes only `root.sh`.

5.2.3.1.1 Scenarios to Consider While Performing a Cluster Agent Install

Consider the following scenarios while performing cluster installation:

You are performing a fresh Agent installation on a cluster that does not have an Agent.

This is a scenario where you have an existing cluster (`cr1` with three nodes `n1`, `n2`, and `n3`) but without an Agent installation on any of the nodes. Here, if you specify only two nodes (`n1` and `n2`) for an agent install, Agent Deploy updates the inventory for these two nodes and the Agent is installed and running.

Now, you want to install the Agent on the third node (`n3`) and specify the cluster name as `cr1` and all three hosts and nodes (`n1`, `n2`, and `n3`) this time. Agent Deploy updates the `n1` and `n2` inventory to include `n3` and the Agent is installed.

IMPORTANT: In a scenario such as the one above, you must specify the same cluster name and include all the existing nodes of that cluster.

You are extending a cluster, but do not include all the existing nodes.

This is a scenario where you want to install an Agent on the node (n4) that is an extension of the existing cluster (cr1 with nodes n1, n2, and n3.) But during the Agent installation, you specify only the new node (n4) in the Cluster Node List text box. Agent Deploy installs the Agent on n4, but does not update the inventory of the other three nodes (n1, n2, and n3) to include n4.

To ensure that the inventory of all the nodes of an existing cluster are updated, you must specify all the hosts and nodes of that cluster along with the new node (n4 in this example.)

If you have specified just the one node and the existing cluster name (cr1), Agent Deploy still creates a new cluster with the same name.

If you have specified just the one node and did not specify a cluster name, Agent Deploy computes a default cluster name and create a new cluster.

You are installing the Agent on two clusters of the same name but with different nodes.

You have two clusters with the same name but with different nodes, for example crs (with n1, and n2) and crs (with n3 and n4), and you want both clusters to be managed by the same OMS. To distinguish the two clusters in the Grid Control console, you must do the following:

When you are installing the Agent on the first *crs* cluster (with nodes n1 and n2), enter a unique cluster name and perform the installation. Now, enter a different cluster name for the other *crs* cluster (with nodes n3 and n4) and perform the Agent installation.

Now, you can view these clusters in the Grid Control console under unique cluster names that you specified during agent installation.

5.2.3.2 Installation Using a Shared Agent Home

To deploy and install an Agent on multiple hosts using an existing Shared Agent Installation, you must have already performed a complete Enterprise Manager product installation (including the Agent). Another prerequisite when using this option is that the directory where the Agent is installed should be NFS-mounted, meaning the directory must be a shared location on all remote hosts.

The Agent Deploy application runs a prerequisite checker to ensure the environment meets the requirements for this installation type. See [Section E.2, "Prerequisite Checks Executed by Agent Deploy"](#) for more information.

ATTENTION: NFS agent deployment is not supported on a Cluster. If you want the agent to monitor a cluster and RAC, you must use the agent deployment with the cluster option, and not the NFS deployment method

Note: You can also perform a Shared Agent Oracle home installation using the `nfsagentinstall` script. See [Section 5.3, "Sharing the Agent Oracle Home Using the nfsagentinstall Script"](#) for more information.

5.2.3.3 Concepts and Prerequisites

The following sections briefly discuss the Shared Agent Home concepts, and also list the prerequisites that should be met before starting the installation.

5.2.3.3.1 EMSTATE Directory: This is a directory for storing configuration files such as `emd.properties`, `targets.xml`, log files, and so on, on each host. Every host that shares the Agent bits has its own STATE directory.

5.2.3.3.2 EMSTATE Directory Location:

- The EMSTATE directories of agents on different hosts should be local to the host instead of on the mounted drive for security reasons.
- Since the EMSTATE directory contains the targets pertaining to each host, it is highly recommended to have it on a local host.

5.2.3.3.3 EMSTATE Directory Space Requirements: The initial space required for EMSTATE directories is 1MB. Since all the upload files, collection files, and log files are stored in this directory, the size of the directory is bound to increase. Consequently, Oracle recommends that you allocate sufficient space for the STATE directories after taking these factors into account.

5.2.3.3.4 Packages and OS Patches Requirement: Currently, no packages are required by the agent to run on the shared hosts.

5.2.3.3.5 Operating System Credentials: When you are performing an agent installation using a shared Oracle home, ensure all the specified hosts have the same operating system credentials and file system structure.

5.2.3.3.6 Shared oraInventory

When performing a cluster agent installation using a shared agent Oracle home, ensure the `oraInventory` is shared (accessible by all remote hosts).

5.2.3.4 Performing the Installation

To perform a fresh Management Agent installation:

1. Select **Shared Agent Home** on the Agent Deploy application home page. The Installation Details page appears.
2. In the Hosts section:

Figure 5–9 Hosts Section of the Installation Details Page

The screenshot shows the 'Hosts' section of the installation details page. At the top, it says 'Hosts' and provides instructions: 'The list of hosts, specified here, should be separated by comma, spaces or newline. You can use either the Name, or IP Address to specify Hosts.' Below this, there is a 'Platform' dropdown menu currently set to 'Linux'. A note below the dropdown states: 'This list is determined by the staged software available on Management Server.' The main part of the form is a text box labeled '* Provide Host List' with a placeholder example: 'Example: host1,host2,168.78.5.118, ...'. At the bottom right of the text box area is a button labeled 'Get Host Names From File'.

- a. Select the appropriate Platform on which you want to perform this installation.
- b. In the Provide Host List text box, specify all the hosts (host names or IP addresses) on which you want to perform the Agent installation. Alternatively,

click **Get Host Names From File** to select the file that contains a list of all the required host names.

WARNING: Ensure you do not specify duplicate entries of the host list. If there are duplicate host entries in this list, the application hangs.

Also ensure that you use the same host names for which the SSH has been set.

Note: You can use comma (,) or just white space as a separator when specifying multiple host names.

ATTENTION: If the Installation Base Directory is shared among the hosts that you have specified in the host list, the installer is invoked from one of these hosts (typically, the first host in that list).

While the installation is performed on only one host, the application executes the configurations on all nodes in the list. That is, the pre-install, post-install, and collect logs are executed on all the nodes.

After the installation is complete, the Installation Status page displays the status of only this host (from which the installer was invoked). It may not necessarily list the status of all the hosts specified in the host list.

3. In the OS Credentials section:

Figure 5–10 OS Credentials Section of the Installation Details Page

OS Credential
OS credentials must be the same on all the hosts.

* Username

* Password

* Confirm Password

Run root.sh
User account should be enabled for sudo to run root.sh. It can be run manually after installation.

- a. Specify the appropriate operating system user credentials.
- b. Select Run root.sh if you want Agent Deploy to execute this script. Agent Deploy uses `sudo` to run this script. You must specify the invoking user's password here. You must also ensure that the `targetpw` is not set in the `/etc/sudoers` file.

IMPORTANT: If you do not want to execute the scripts as root during the installation, ensure you run these scripts manually before performing any other installation on that machine.

Note: The OS credentials that you specify here must be the same for all the selected hosts.

4. In the Destination section:

Figure 5–11 Destination Section of the Installation Details Page

Destination

* NFS Agent Location
The mounted master agent home location on remote node

* State Directory Location

- a. Specify the complete path to the NFS Agent Location. This is the shared directory location on the source host that must be visible (NFS-Mounted) from all remote hosts.
- b. Specify an appropriate State Directory Location. This is a directory for storing configuration files such as `emd.properties`, `targets.xml`, log files, and so on, on each host. Every host that shares the Agent has its own STATE directory.

5. In the Port section:

Figure 5–12 Port Section of the Installation Details Page

Port

Specify appropriate port for Agents

Port
If not specified, a free port will be selected within the default range.

This is a mandatory field. Specify the appropriate Port on which the Agent will communicate.

Note: If the Port that you specify is busy (not available), you are prompted to specify an alternative port. If you do not specify a Port value here, the installation will fail.

6. In the Management Service Security section:

Figure 5–13 Management Service Security Section of the Installation Details Page

Management Server Security

If you want to secure communications to the Management Server, specify the registration password here, or get the approval of a super administrator to add new agents to Enterprise Manager after the installation is complete.

* Management Server Registration Password

* Confirm Password

Specify the Management Service Registration Password if you want to secure communications between the Agent and OMS. Alternatively, the super administrator can approve the addition of new agents to Enterprise Manager after the installation is complete.

Note: An insecure agent cannot upload data to the OMS. Oracle also recommends for security reasons that you change the OMS password specified here after the installation is complete.

7. In the *Additional Scripts* section:

Figure 5–14 Additional Scripts Section of the Installation Details Page

Additional Scripts
 Optionally, you can choose to execute additional scripts before the installation is initiated, and after it is completed.

Pre-Installation Script File
 Run as Superuser.
User should be enabled for sudo.

Post-Installation Script File
 Run as Superuser.
User should be enabled for sudo.

- a. Specify any pre and/or post-installation scripts that you want to execute. These scripts are optional. If you do not want to customize your installation, leave these fields blank and continue.
- b. Click **Continue** to start the installation process.

IMPORTANT: If the shared agent is the first Oracle product that is installed on the host, you must execute the following command from the EMSTATE directory after completing the installation:

```
<EMSTATE Dir>/bin
./emctl control agent runCollection <Host name>:host Inventory
```

As part of this process, Agent Deploy performs some prerequisite checks before proceeding with the installation. When all the prerequisite checks are complete, the application displays the results. The results include the name, type, and status for all prerequisite checks designed for the installation.

Besides the successfully run prerequisite checks, the prerequisite checks can have one of the following two statuses:

- *Warning:* If there are warnings against certain prerequisite checks, you may choose to ignore these and continue with the installation (though this is not recommended).
- *Failed:* If there are failed prerequisite checks, you may still choose to ignore and continue with the installation. A recommended course of action is to fix the failed prerequisites before proceeding with the installation.

To fix the failed prerequisites, you can either click **Retry**, or go to the Fixup page of the application. The Fixup page displays the prerequisites that can be automatically fixed, and those that require manual fixes.

Note: You can view the status of all previous installation instances from the Status page in the Agent Deploy application. This page lists all agent installations that were performed using Agent Deploy. You can click on the corresponding Status link for each record to view the selected installation details, including user inputs provided during installation and the final status of that installation.

You can access the Status page either before starting the installation process, or after the installation is complete. You cannot access the Status page during an installation.

5.3 Sharing the Agent Oracle Home Using the nfsagentinstall Script

The Enterprise Manager 10.2 installer supports NFS-mounted agent installations where the agent bits are shared on a Net App Filer disk, and the other hosts share these bits to run the agent processes on each of the hosts. In this method of Agent deployment, the configuration files for each host are stored in the `STATE` directory.

IMPORTANT: Note that the agent Oracle home cannot be installed in an Oracle Cluster Shared File System (OCFS) drive, but is supported on an NAS (Network Attached Storage) drive.

Caution: You can perform only one nfsagent installation per host. Multiple nfsagent installations on the same host will fail.

5.3.1 Pre-Installation Considerations

Consider the following before starting the agent installation using the `nfsagentinstall` script.

5.3.1.1 User Credentials

The shared agent (`nfsagent`) can only be installed with the same user credentials that were used to perform the master agent installation.

5.3.1.2 If Agent is not the First Oracle Product Installation

If this shared agent installation is not the first Oracle product installation and your (user that has performed the master agent installation) home directory is shared, you must verify the `oraInst.loc` location under the `/etc` directory. If `oraInst.loc` and `inventory_loc` are located in the your home directory, you must change this entry point to a non-shared location.

The `oraInst.loc` entry should look like this:

```
inventory_loc=<any location other than the home directory>/oraInventory
inst_group=<group to which the user belongs>
```

5.3.2 Performing an NFS Agent Installation

To perform an agent installation using `nfsagentinstall` script:

1. Configure the shared drive on the host in such a way that only one host has read/write access to this shared location, while all the other hosts have only read access.

2. From the host that has read/write access, perform an agent installation in the shared Oracle home location. You can use any agent deployment method. This installation may be termed as the *master* agent installation.
3. Stop the Agent from the Oracle home.

Note: You must *not* start the master agent from the installed Oracle home.

4. Now, execute the `OH/sysman/install/nfsagentinstall` script on all the hosts that should share the agent bits, including the host on which you performed the master agent installation.
5. If this agent installation is the first Oracle product installation on the host, the `nfsagentinstall` script prompts you to execute the following script. You must execute this script manually.

```
<homedir>/oraInventory/orainstRoot.sh
```

The `nfsagentinstall` script also prompts you to execute the `<STATEDIR>/root.sh`. You must manually execute this command.

5.3.2.1 Usage of the nfsagentinstall Script

```
./nfsagentinstall -s <EMSTATE Directory location> -p <port number>
```

where,

- `<EMSTATE directory location>` is the full path where you want the state directory to be created by the script.
- `<port number>` is the port on which the agent runs.

IMPORTANT: If the `nfsagent` is the first Oracle product that is installed on the host, you must execute the following command from the EMSTATE directory after completing the installation:

```
<EMSTATE Dir>/bin  
./emctl control agent runCollection <Host name>:host Inventory
```

ATTENTION: Deployment of agent through the `nfsagent install` script is *not* supported on Clusters. If you want the agent to monitor a Cluster and/or RAC, you must use the agent deployment with cluster options.

5.3.3 Deinstalling the NFSAgent

If the `nfsagent` you want to deinstall is the first Oracle product installed on the host, you must check the `/etc/oraInst.loc` for the inventory location and perform the following steps to deinstall the agent.

1. Stop the agent using the following command:

```
<EMSTATE DIR>/bin/emctl stop agent
```

2. Execute `rm -rf <inventory_location>`

3. Execute `rm -rf <EMSTATE Dir>`

If the nfsagent you want to deinstall is not the first Oracle product installed on the host, then go to the master agent Oracle home (via the mounted path) and perform the following steps to deinstall the agent.

1. Stop the agent using the following command:

```
<EMSTATE DIR>/bin/emctl stop agent
```

2. Execute the following command from the master agent Oracle home:

```
<master agent home>/oui/bin/runInstaller -detachHome ORACLE_HOME=<master agent home>
```

3. Execute `rm -rf <EMSTATE Dir>`

5.4 Installing the Agent Using the agentDownload Script

This installation type makes use of the `agentDownload` script that is fully functional and self-documenting. 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.

5.4.1 About agentDownload Script

The `agentDownload` script uses *pull* technology. That is, 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 to install the Management Agent. Because the installation is scripted, it is possible to use a wrapper script, Linux `cron` job, `rdist`, or a combination of operating system features to fully automate this process for mass deployments.

Note: Use the `agentDownload` script to perform an Agent Installation on a Cluster environment. See [Section 5.4.4.1, "Cluster Installation"](#) for more information.

5.4.2 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.

- Provides useful install options via the command line (including the ability to control target autodiscovery, autostarting of the agent, and so on).
- Allows installation onto clustered environments.

5.4.3 Obtaining the agentDownload Script

The downloadable Agent software for the operating system of the OMS platform is available on the platform-specific CD from which the Oracle Management Service was installed, and from the following Oracle Technology Network Web site under Mass Agent Deployment:

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

See [Section 5.4.5, "Uploading Agent Installation Software for Different Platforms"](#) for more information on obtaining agent installables for different platforms.

5.4.4 Using the agentDownload Script

The `agentDownload` script is downloaded to a target node and executed to initiate a silent Oracle Universal Install session. The agent files are copied from the staging area in the OMS home to the target node via HTTP.

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

1. Install the Oracle Management Service.

Install the Management Service using the Oracle Universal Installer. See [Section 3.3.3, "Installing an Additional Management Service"](#) for more information. 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 Linux operating systems, the download stage can be found in:

`OMS_HOME/sysman/agent_download/<version>/linux`

- The `agentDownload` script is located at `OMS_HOME/sysman/agent_download/<version>/linux`

For example, for Enterprise Manager 10g R2, the `<version>` value in the above syntax will be 10.2.0.1.0

- The response file is located at `OMS_HOME/sysman/agent_download/<version>`

IMPORTANT: If the Management Service is using a load balancer, you must modify the `s_omsHost` and `s_omsPort` values in the `<OMS_HOME>/sysman/agent_download/<version>/agent_download.rsp` file to reflect the load balancer host and port before using the `agentDownload` script.

Note: For Enterprise Manager 10g R2, the <version> value in the above syntax will be 10.2.0.1.0.

- The readme file is available at `OMS_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 sever 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/10.2.0.1.0/<platform>
```

Note: Port 4889 is the default port for Grid Control. This 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`.

```
http://mgmthost27.acme.com:4889/agent_download/10.2.0.1.0/<platform>/agentDownload.OS
```

Where OS represents the operating system platform. For example, for Linux operating systems, the script is named `agentDownload.linux`.

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

Note: If you opt to download using a file-based protocol rather than HTTP, you need to modify the `$AgentDownload` URL variable to access the file system on the Management Server host instead of a URL.

The URL:

```
http://${OMSHost}:${httpPort}/agent_download/
```

is a Web alias for:

```
$OMS_HOME/sysman/agent_download/
```

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 base directory is specified at the command line. This will be the location of the Management Agent home on the target host. If the directory does not exist, it is created during the installation. If it exists, ensure it is empty. If the variable is not set, the script exits with an error.

Note: The base directory for the agent installation must be specified using the `-b` option. For example, if you specified the parent directory to be `agent_download` (`scratch/agent_download`), then the command to be specified is:

```
-b scratch/agent_download
```

The agent Oracle home (`agent10g`) is created as a sub-directory under this parent directory.

- The `jar` executable file is in the `PATH` environment variable. If the file is not found, the script exits with an error.
- The `wget` (or other file transfer mechanism) has been defined in the script. The script checks for the existence of `wget` in `/usr/local/bin/wget`, followed by `/usr/bin/wget`. If `wget` is not found in either of those locations, then it must be included in the `$PATH` or the script will exit with an error.
- The `$AGENT_INSTALL_PASSWORD` environment variable is set in the environment if the Management Agent is uploading to a secure Management Service.

ATTENTION: The agent that you are installing is not secure by default. If you want to secure the agent, you must specify the password using the `AGENT_INSTALL_PASSWORD` environment variable, or by executing the following command after the installation is complete:

```
<Agent_Home>/bin/emctl secure agent <password>
```

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 the 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 exits 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.

5.4.4.1 Cluster Installation

The `agentDownload` script can be used to install Management Agents onto clustered environments. In order to perform this type of installation, the following command-line options are used:

Table 5–2 Command-line Options for Cluster Installation

Options	Description
-c	This option is followed by a comma-separated list of the nodes in the cluster. It is possible to install a standalone agent that will still discover cluster targets by not specifying this option while still specifying the cluster name with the <code>-n</code> option.
-n	This option is followed by the name of the cluster. This option is required for <i>9i</i> clusters; for <i>10g</i> clusters, if this option is not specified, the default cluster name from the <code>targets.xml</code> file will be used.
-l	This option specifies that the install should be done just on the local node of the cluster.

For example, to use the `agentDownload` script to install a Management Agent on just the local node of a cluster that consists of nodes `host1`, `host2`, and `host3`, with cluster name `myCRS`, you must execute the following:

```
./agentDownload.linux -b /scratch/agentInstall -c "host1,host2,host3" -n myCRS -l
```

5.4.4.2 Script Details

The `agentDownload` script performs the following actions:

- Creates home directories for the Management Agent and Oracle Universal Installer if they do not exist, based on the `$ORACLE_HOME` path specified through the command line.
- Downloads the `agent_download.rsp` response file from the Management Service Web server.

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

- Downloads an Oracle Universal Installer JAR file for the target operating system from the Management Service Web server (for Linux only).
- 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 prerequisite check messages for operating system-specific patches during installation; prerequisite 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 DVD set.
- The agentDownload script creates a log file in \$ORACLE_HOME.
- At the end of a successful installation, the Agent starts 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:

```
./agentDownload.<platform> [-bcdhilmnoprstux]
```

Descriptions of the script options follow:

Table 5–3 AgentDownload Script Options

Option	Description
-b	Base directory of the Agent Oracle home.
-c	CLUSTER_NODES (to specify the cluster nodes) Note that there should not be any spaces between the comma-separated nodes list.
-d	Do not automatically discover targets during installation.
-h	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. (For advanced users only.)
-l	local (pass -local to runInstaller)
-n	Specify the cluster name.
-o	OLD_ORACLE_HOME during upgrade
-s	Installer stage directory: Points to an installer previously downloaded by the script. If defined, the local installer is launched and the jarred installer is not downloaded.
-t	Do not automatically start the agent at the end of the installation.
-u	Upgrade
-x	Debug output: Turns on shell debugging.

5.4.4.3 Customizing the agentDownload Script

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:

```
WGGET="/usr/local/bin/wget --dot-style=mega --verbose --tries=5"
InstallerDownloadCmd=$WGGET
# 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>

5.4.5 Uploading Agent Installation Software for Different Platforms

To obtain the agent download for other platforms, you must complete the following steps to make the Management Agent installable from the Management Service Oracle home:

1. Download the `Linux_Grid_Control_agent_download_10_2_0_1.cpio.gz` file from OTN.
2. Copy the downloaded file to the `<OMS_HOME>/sysman/agent_download/10.2.0.1.0` directory.

Note: Create the `<OMS_HOME>/sysman/agent_download/10.2.0.1.0` directory, if it does not exist.

3. Go to this directory by executing the following:

```
cd <OMS_HOME>/sysman/agent_download/10.2.0.1.0
```

4. Run `gunzip` by executing the following:

```
gunzip Linux_Grid_Control_agent_download_10_2_0_1.cpio.gz
```

5. Execute the following command to extract the archive:

```
cpio -idcmv < Linux_Grid_Control_agent_download_10_2_0_1.cpio
```

6. If the `agent_download.rsp` file does not exist in the `<OMS_HOME>/sysman/agent_download/10.2.0.1.0` directory, then do the following:

- a. Run the command `mv agent_download.rsp.bak agent_download.rsp`
- b. Edit `agent_download.rsp` and modify `s_OMSHost="REPLACE_WITH_OMS_HOST"` and `s_OMSPort="REPLACE_WITH_OMS_PORT"` with the correct OMSHost and OMSPort values. (Even if you are specifying a secure Management Service, you must still enter the non-secure port number here.) For example:

```
s_OMSHost="stadv26.us.oracle.com"
s_OMSPort="4889"
```

7. Edit the `<OMS_HOME>/sysman/agent_download/10.2.0.1.0/linux/agentDownload.linux` file and modify `OMSHost=REPLACE_WITH_OMS_HOST` and `httpPort=REPLACE_WITH_OMS_PORT` with the correct OMSHost and OMSPort. (Even if you are specifying a secure Management Service, you must still enter the non-secure port number here.) For example:

```
OMSHost=stadv26.us.oracle.com
```

httpPort=4889

5.5 Installing the Agent on a Cluster

In Enterprise Manager Grid Control 10g R2 (10.2), the agent installation is supported both on Oracle Clusterware as well as 9.2 clusters. The Management Agent can be installed as a standalone agent on each node of a cluster individually, or can be installed on multiple nodes in one single installation by choosing the cluster option.

IMPORTANT: The agent Oracle home cannot be installed in an Oracle Cluster Shared File System (OCFS) drive, but is supported on a NAS (Network Attached Storage) drive.

5.5.1 Installing the Agent on a 9.2 Cluster

You can choose to either install a standalone agent on each node individually, or perform a cluster installation of the agent. The following sections discuss the various deployment methods for both options.

5.5.1.1 Installing a Standalone Agent on a 9.2 Cluster Node

You can perform a standalone agent installation using the following deployment methods:

5.5.1.1.1 Standalone Agent Install Using the agentDownload Script

The agent can be installed by executing the `agentDownload` script on one node at a time using the correct arguments. If you want to discover the cluster targets, then you must set the `CLUSTER_NAME` environment variable prior to executing the `agentDownload` script, or pass the cluster name to the `agentDownload` script as `agentDownload -n <clustername>`.

```
agentDownload -n <clustername>
```

Note: If the `CLUSTER_NAME` environment variable is not set, the agent cannot discover any Cluster targets.

5.5.1.1.2 Standalone Agent Install Using the Agent Deploy Application

To perform a standalone agent install on a cluster node, you must select the appropriate node of that cluster. If you want to discover the cluster targets, you must specify the correct cluster name in the Cluster Name text box. See [Section 5.2.3.1, "Fresh Installation of the Management Agent"](#) for detailed instructions.

Note: Ensure the nodes that you select for the agent installation are part of the cluster that you have specified in the Cluster Name text box. Otherwise, the targets are not discovered.

5.5.1.1.3 Standalone Agent Install Using the Oracle Universal Installer

You can perform this installation by invoking the Enterprise Manager Installer using Oracle Universal Installer (OUI). The Interactive type is typically a one-node installation.

If the agent is installed as a standalone agent on a 9.2 cluster, then you can set the `CLUSTER_NAME` environment variable to the name of the cluster that you want to use for the cluster targets before invoking the `runInstaller`. If this variable is not set, the agent cannot discover any Cluster targets.

5.5.1.2 Installing a Cluster Agent on a 9.2 Cluster

You can perform a cluster agent installation using the following deployment methods:

5.5.1.2.1 Cluster Agent Install Using the agentDownload Script

You can perform a cluster agent installation through this script by using the `-c` option (for example, `-c "node1,node2, . . ."`). This option helps install the cluster agent on all the nodes that you specify here.

If you want to override the Cluster name that appears in `targets.xml`, then you must set the `CLUSTER_NAME` environment variable prior to executing the `agentDownload` script, or pass the cluster name to the `agentDownload` script as `agentDownload -n <clustername>`.

5.5.1.2.2 Cluster Agent Install Using the Agent Deploy Application

To perform a cluster agent installation using the Agent Deploy application, you must select the Cluster Install option and specify all the nodes of that cluster. If you want to discover the cluster targets, you must specify the correct cluster name in the Cluster Name text box. See [Section 5.2.3.1, "Fresh Installation of the Management Agent"](#) for detailed instructions.

5.5.1.2.3 Cluster Agent Install Using the Interactive Installer

To install an agent on a 9.2 cluster that is on multiple nodes at a time, you must pass the `CLUSTER_NODES` variable to the `run installer` as:

```
./runInstaller "CLUSTER_NODES={node1,node2, . . .}"
```

If the `CLUSTER_NODES` is not passed, the installer cannot detect the nodes and cannot perform the cluster install.

If you want to set the cluster name that appears in the `targets.xml`, you must set the `CLUSTER_NAME` environment variable before invoking the `runInstaller`. If this variable is not set, the agent uses the first node as the cluster name.

5.5.2 Installing the Agent on Oracle Clusterware

You can choose to either install a standalone agent on each Oracle Clusterware node individually, or perform a cluster installation of the agent. The following sections discuss the various deployment methods for both options.

5.5.2.1 Installing a Standalone Agent on Oracle Clusterware

You can perform a standalone agent installation on Oracle Clusterware using the following deployment methods:

5.5.2.1.1 Standalone Agent Install Using agentDownload Script

The agent can be installed by executing the `agentDownload` script on one node at a time using the correct arguments. If you want to override the cluster name to be used in `targets.xml`, you must set the `CLUSTER_NAME` environment variable prior to executing the `agentDownload` script, or pass the cluster name to the `agentDownload` script as `agentDownload -n <clustername>`.

```
agentDownload -n <clustername>
```

Note: If the `CLUSTER_NAME` environment variable is not set or passed, the agent uses the cluster name that was specified during the Oracle Clusterware installation.

5.5.2.1.2 Standalone Agent Install Using the Agent Deploy Application

To perform a standalone agent installation on a cluster node, you must select the Cluster Install option, and specify the appropriate cluster node names. The cluster name that you specify here overrides the corresponding value in the `targets.xml` file. See [Section 5.2.3.1, "Fresh Installation of the Management Agent"](#) for detailed instructions.

5.5.2.1.3 Standalone Agent Install Using the Interactive Installer

You can perform this installation by invoking the Enterprise Manager Installer using Oracle Universal Installer (OUI).

If you want to set the Cluster name that will appear in `targets.xml`, then you must set the `CLUSTER_NAME` environment variable before invoking the `runInstaller`. If this variable is not set, the agent uses the cluster name that was specified during the Oracle Clusterware installation.

5.5.2.2 Installing a Cluster Agent on Oracle Clusterware

You can perform a cluster agent installation using the following deployment methods:

5.5.2.2.1 Cluster Agent Install Using the agentDownload Script

You can perform a cluster agent installation through this script by using the `-c` option (for example, `-c node1, node2, . . .`). This option helps install the cluster agent on all the nodes that you specify here.

If you want to override the Cluster name that appears in `targets.xml`, then you must set the `CLUSTER_NAME` environment variable prior to executing the `agentDownload` script, or pass the cluster name to the `agentDownload` script as `agentDownload -n <clustername>`.

Note: If the `CLUSTER_NAME` variable is not set or passed, the agent uses the cluster name that was specified during the Oracle Clusterware installation.

5.5.2.2.2 Cluster Agent Install Using the Agent Deploy Application

To perform a cluster agent installation using the Agent Deploy application, you must select the Cluster Install option and specify all the nodes of that cluster. If you want to override the Cluster name that appears in `targets.xml`, you must specify the appropriate cluster name in the application. See [Section 5.2.3.1, "Fresh Installation of the Management Agent"](#) for detailed instructions.

5.5.2.2.3 Cluster Agent Install Using the Interactive Installer

When you execute the `runInstaller` script, it automatically detects all the cluster nodes. You can then choose the nodes on which you want to perform the cluster agent installation.

If you want to override the Cluster name that appears in `targets.xml`, you must set the `CLUSTER_NAME` environment variable before invoking the `runInstaller`. If this variable is not set, the agent uses the cluster name that was specified during the Oracle Clusterware installation.

5.6 Cloning the Management Agent

If you have a master agent installation, you can use this installed agent and clone it on multiple destination Oracle homes.

To clone a Management Agent:

1. Install the Agent on a host using any of the deployment methods discussed in this chapter.
2. Zip the agent Oracle home that you want to clone (for example, `agent.zip`).
3. Perform a file transfer (FTP) of this zipped Oracle home onto the destination host (for example, `ftp agent.zip`).
4. In the destination host, unzip the agent Oracle home.
5. Go to `$ORACLE_HOME/oui/bin/` and execute the following command:

```
./runInstaller -clone -forceClone ORACLE_HOME=<full path of Oracle home>  
ORACLE_HOME_NAME=<Oracle home name> -noconfig -silent
```

Note: The cloned agent is not in the secure mode by default. You must manually secure the agent by executing `<Oracle_Home>/bin/emctl secure agent`.

6. Execute the following script to run the Agent Configuration Assistant (`agentca`):

```
$ORACLE_HOME/bin/agentca -f
```

IMPORTANT: After the cloning process is complete, you must execute the `root.sh` script from the destination agent Oracle homes.

Part III

Post Installation Configuration

This part discusses the post-installation configurations that you must complete after successful installation. It also provides information on the out-of-box Enterprise Manager configurations, along with the instructions to customize your grid environment.

Part 3 contains the following chapters:

- [Chapter 6, "Post-Installation Configuration Tasks"](#)
- [Chapter 7, "Getting Started With Enterprise Manager"](#)

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 Installation Process](#)
- [Checking Database Settings](#)
- [Accessing the Oracle MetaLink Web Site](#)
- [Configuring Database and ASM Targets for Monitoring](#)
- [Agent Reconfiguration and Rediscovery](#)

6.1 Running root.sh to Complete the Installation Process

If you have performed any of the following silent installations, you must run the `allroot.sh` script to complete the installation:

- **Enterprise Manager Using New Database**
If you have selected this installation option, you must execute the `allroot.sh` script from the database oracle home (`db10g`). For example:

```
/scratch/OracleHomes/db10g/allroot.sh
```
- **Enterprise Manager Using Existing Database**
If you have selected this installation option, execute the `allroot.sh` script from the Management Service Oracle home (`oms10g`). For example:

```
/scratch/OracleHomes/oms10g/allroot.sh
```
- **Additional Management Service**
If you have selected this installation option, execute the `allroot.sh` script from the Management Service Oracle home (`oms10g`). For example:

```
/scratch/OracleHomes/oms10g/allroot.sh
```

Execute the `root.sh` script from the agent Oracle home if you have performed a silent installation of only the Management Agent.

This 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 are prompted to run `allroot.sh` or `root.sh` (depending on the installation type selected) 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.

6.2 Checking Database Settings

After the Management Repository has been created, you may need to set certain database parameters or settings after installation. See [Appendix B, "Management Repository Database Settings"](#) for more information on the initialization parameters and additional database settings.

6.3 Accessing the Oracle MetaLink Web Site

You can search Oracle *MetaLink* for Oracle software patches and patchsets, and download these patches/patchsets to an appropriate location in the Management Service Oracle home of Enterprise Manager.

To locate the required patches/patchsets in *MetaLink*:

1. Go to <http://metalink.oracle.com> and navigate to the Patches and Updates page.
2. Here, you can either perform a simple search with limited parameters, or click **Advanced Search** to perform a more granular search. On this page, you can search for updates based on the patch type (patches/patchsets), product name, platform, patch number, and so on.
3. Specify `emgrid` and click **Search**. The search results display all the patches/patchsets that match the parameters you have specified.
4. Select the appropriate patch/patchset and download it to the Management Service Oracle home location.

6.3.1 Accessing Management Packs

Oracle offers a number of management packs for the Oracle Database and Oracle Application Server. For example, management packs available with the Oracle 10g Enterprise Manager Release 2 include: Database Change Management Pack, Database Configuration Pack, Database Diagnostics Pack, and Database Tuning Pack.

Oracle Application Server supports the following packs: Application Server Configuration Pack and Application Server Diagnostics Pack.

Each pack has several premium features bundled as part of that pack.

The licensable targets (also called parent targets) that are granted access to the packs propagate that access to their dependent targets. For example, all packs that are granted to a database propagate to the host on which the database resides.

For example, if databases D1, D2, and D3 reside on host H1, and the user has access to the Database Tuning pack for database D1, then not only is the D1 database granted access to the Database Tuning pack, but the host H1 is granted access to this pack as well.

You can manage, that is grant and revoke, access to packs for various databases and application servers in your Enterprise Manager repository by using the Management Pack Access option available from the Setup page. This Management Pack Access functionality is only available for Super Administrators.

6.3.1.1 Impact of Management Packs on Targets

Whether a target has access to a pack or not has a very significant impact on the user experience. The corresponding links related to the target, which need the pack, are enabled or disabled accordingly.

To know what packs a page needs, as well as the links in that page, click **Show Management Pack Information** in the page footer.

When the access to a pack is removed from a target, all corresponding links which need this pack are disabled.

Identifying the Features that can be Accessed in Enterprise Manager

When one or more packs on a target monitored by Enterprise Manager are not licensed, access to premium functionality for that target is disabled.

For example, the Black Out button located on a Target home page (which you can use to move the target to the *blackout* state), is enabled only when either the Oracle Database Diagnostics Pack or the Oracle Application Server Diagnostics Pack is licensed for that target.

To determine the packs used by the current page and to know what packs need to be licensed for any link on that page to be enabled, click **Show Management Pack Information** in the footer of the Enterprise Manager Home page. Enterprise Manager displays this information for all pages you navigate to during that session.

For more information on working with Management Packs, refer to the Enterprise Manager online help.

6.3.2 Optional Configurations

You can perform the following configuration activities, if required.

6.3.2.1 Specifying the Oracle MetaLink Credentials

Enterprise Manager uses *MetaLink* credentials to search for and download *MetaLink* patches. If you did not specify your *MetaLink* 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 *MetaLink* user name and password in the fields provided.

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

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

<http://metalink.oracle.com>

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

6.3.2.2 Setting Up 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 *MetaLink*.

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 cover all hosts with those domains. 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 receive an error message indicating that Enterprise Manager cannot access the *MetaLink* Web site.

6.3.2.3 Setting Up 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 or setup.exe> oracle.sysman.top.agent:s_proxyHost="<value>"
oracle.sysman.top.agent:s_proxyPort="<value>"
```

6.4 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 [Section 7.3.6, "Unlock the DBSNMP User Account"](#) in the next chapter and proceed to [Section 7.3.7, "Set Monitoring Credentials"](#) for instructions.

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

1. [Unlock the DBSNMP User Account](#) (if necessary).
2. [Set Monitoring Credentials](#).

6.5 Agent Reconfiguration and Rediscovery

The Agent Configuration Assistant (`agentca`) script is used to reconfigure the agent and rediscover the targets on the machine. This script is useful when you want to rediscover a newly added target on the machine and/or to convert a standalone agent to a RAC Agent.

You can make use of the following options in the `agentca` script.

Table 6–1 Agent Configuration Assistant Script Options

Option	Description
-n	Specify the cluster name (CLUSTER_NAME).
-c	Specify a comma-separated cluster node list.
-t	Do not start the agent after reconfiguration or target rediscovery.
-d	To rediscover targets.
-f	To reconfigure agents.
-i	Specify the <code>oraInst.loc</code> (oracle inventory location). This is required when the Oracle home does not exist in the central inventory.
-h	To get information on all the available options.

IMPORTANT: You must specify either the `-f` or `-d` option when executing this script. Using one of these two options is mandatory.

CAUTION: Do not use the `agentca -f` option to reconfigure any upgraded agent (standalone and RAC).

6.5.1 Rediscover/Reconfigure Targets on Standalone Agents

An agent automatically discovers all targets that are installed before the agent installation. Typically, rediscovering of targets is performed when you have installed new targets after an agent installation.

To rediscover new targets, execute `agentca`. The usage is as follows:

```
<Agent_Home>/bin/agentca -d [ -t -i oraInstloc ]
```

6.5.2 Reconfiguring a Standalone Agent to a RAC Agent

Reconfiguration of a standalone agent occurs when you want to configure this agent (with standalone configurations) as a RAC agent.

To reconfigure a standalone agent as a RAC agent, you must execute the `agentca` script with the following options:

```
<Agent_Home>/bin/agentca -f -c "node1,node2..." [-t -i oraInstloc -n CLUSTER_NAME ]
```

Note: The `-c` option must comprise all the nodes (including the local machine) to update the inventory.

6.5.3 Reconfiguring an Existing RAC Agent

If you have added new nodes to an existing RAC, you can invoke the `agentca` script to automatically reconfigure the existing RAC agent. The `agentca` script updates the central inventory to add the new nodes information, and also discovers the new targets (if any).

When this script is executed, it takes a back-up of the EMSTATE directory on the local machine and creates a new EMSTATE directory.

IMPORTANT: Ensure you run this script on one node at a time.

To reconfigure an existing RAC agent, execute `agentca` as follows:

```
prompt> <Agent_Home>/bin/agentca -f -c "node1,node2,node3....." [-t -i  
oraInst.loc -n CLUSTER_NAME]
```

Note: The `-c` option must comprise all the nodes (including the local machine) to update the inventory.

6.5.4 Rediscovering Targets on a RAC Agent

You can rediscover the new targets that have been installed on RAC nodes by running the agent configuration assistant with the following options.

```
prompt> <Agent_Home>/bin/agentca -d -c "node1,node2,node3....." [-t -i  
oraInst.loc -n CLUSTER_NAME]
```

Note: The `-c` option must comprise all the nodes (including the local machine) to update the inventory.

IMPORTANT: Ensure you run this script on one node at a time.

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.

This chapter describes Enterprise Manager's out-of-box configuration, recommends the tasks to be performed 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 the Enterprise Manager Grid Control Console for the First Time](#)
- [Controlling the Management Repository, Service and Agent](#)

7.1 Enterprise Manager's Out-of-Box Configuration

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

- The 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.

7.1.1 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 the Grid Control Console 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*.

7.1.2 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 does 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.

7.1.3 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 are 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.

7.1.4 Automatic Discovery

The first time the Management Agent is started, most 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.

Note that you may need to manually discover some targets, such as Oracle Collaboration Suite targets, Web applications, clusters, and Beacons. The Grid Control Enterprise Manager Web Application is discovered automatically.

See Also: See [Section 1.4.2.5, "Certified Enterprise Manager Targets"](#) for a list of certified targets for Enterprise Manager Grid Control, .

Refer to *Managing Oracle Collaboration Suite* available on Oracle Technology Network, for instructions on discovering OCS targets.

For information on manual discovery, refer to Adding Targets to Be Monitored and Administered by Enterprise Manager in the Oracle Enterprise Manager online help.

7.1.4.1 Troubleshooting Issues Concerning 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[®] AS 9.0.2 or 9.0.3 instances. If the 9.0.2 or 9.0.3 Oracle[®] 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 Oracle9iAS installation may prevent the Management Agent from reading the file. This prevents the discovery of that Oracle9i 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, see [Section 6.4, "Configuring Database and ASM Targets for Monitoring"](#) for more information.

7.2 Using the Enterprise Manager Grid Control Console for the First Time

Enterprise Manager Grid Control provides a Web-based console for managing your entire enterprise.

The first column describes actions that you may want 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.

7.2.1 Enabling or Disabling the Licensed Functionality

Before you begin using Enterprise Manager Grid Control, you must first set the access levels according to your licensing agreement with Oracle. To do this, perform the following steps using a Super Administrator account, such as `SYSMAN`.

1. The first time you log in using `SYSMAN`, you are taken to the licensing setup page. Otherwise, to get to the licensing setup page, in the Grid Control console, click **Setup**, then **Management Pack Access**.
2. Select Grant Access or Remove Access for each pack, according to the terms of your licensing agreement.
3. Click **Apply** to save your changes. Once access is removed, the functionality associated with the selected pack is no longer available for any targets managed by Enterprise Manager Grid Control.

7.3 Controlling the Management Repository, Service and Agent

The Management Service and the Grid Control console 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 Enterprise Manager's directory structure, refer to the *Understanding the 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*.

7.3.1 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.

IMPORTANT: During a reboot of a machine, the Repository Database startup script runs automatically. You do not have to manually start the repository database in this release of Enterprise Manager.

See Also: For instructions on managing the repository database, such as how to drop the repository schema, refer to the *Maintaining and Troubleshooting the Enterprise 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*.

7.3.2 Starting and Stopping the Management Service

The relevant emctl commands for Linux are listed in the following table.

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

Note: To execute the opmnctl commands, you must be in the OMS_HOME/opmn/bin directory.

Table 7-1 Commands to Start and Stop Management Service

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
Stop all components of the Application Server, including the Management Service and WebCache	opmnctl stopall

IMPORTANT: During a reboot of a machine, the Management Service startup script runs automatically to start the OMS. You do not have to manually start the OMS in this release of Enterprise Manager.

See Also: For detailed instructions, refer to the Starting and Stopping Enterprise Manager Components section of the *Introduction to Enterprise Manager Advanced Configuration* chapter of *Oracle Enterprise Manager Advanced Configuration*. You can find this guide at:

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

7.3.3 Starting and Stopping the Management Agent

The relevant `emctl` commands for Linux 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.

Table 7–2 *Commands to Start and Stop Management Agent*

If you want to	Enter the following Command
Start the Management Agent	<code>emctl start agent</code>
Stop the Management Agent	<code>emctl stop agent</code>
Verify status of the Management Agent	<code>emctl status agent</code>

IMPORTANT: During a reboot of a machine, the agent startup script runs automatically to start the Management Agent. You do not have to manually start the agent in this release of Enterprise Manager.

See Also: For detailed instructions, refer to the Starting and Stopping Enterprise Manager Components section of the *Introduction to Enterprise Manager Advanced Configuration* chapter of *Oracle Enterprise Manager Advanced Configuration*. You can find this guide at:

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

7.3.4 Starting the Oracle Application Server Console

Oracle Application Server Control Console (iAS) is the Web-based management tool for Oracle Application Server and is used to monitor the Enterprise Manager targets.

After successful Enterprise Manager installation, you must manually start the iAS console before starting the Enterprise Manager console.

To start the iAS console, go to the OMS Oracle home and execute the `start iasconsole` command. The usage is as follows:

```
<OMS_Oracle_home> emctl start iasconsole
```

7.3.5 Accessing Enterprise Manager Grid Control

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

Use the following URL to log in to the Grid Control Console:

```
http://<oms\_hostname>.<domain>:<port>/em
```

or

`https://<oms_hostname>.<domain>:<port>/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 user name 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.

7.3.6 Unlock the DBSNMP User Account

To unlock the DBSNMP user account:

1. From the Grid Control console, navigate to the Database Home page and click **Administration** to display the list of administration functions.
2. Under Users and Privileges, 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** to confirm your choice.
4. Set the DBSNMP password as described in the [Section 7.3.7, "Set Monitoring Credentials"](#) section. Once the password is set, monitoring can begin.

7.3.7 Set 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](#)

7.3.7.1 Setting Monitoring Credentials for Database Targets

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

1. From the Grid Control console, 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 *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**.
-

7.3.7.2 Setting Monitoring Credentials for ASM Targets

To set the monitoring credentials for an ASM target:

1. From the Grid Control console, 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 without any Management Agent or collection errors. For more information, see *Specifying New Target Monitoring Credentials* in *Oracle Enterprise Manager Advanced Configuration*.

Part IV

Enterprise Manager Upgrade

This part provides the requirements and step-by-step instructions on the Enterprise Manager upgrade process.

Part 4 contains the following chapter:

- [Chapter 8, "Upgrading Enterprise Manager Grid Control"](#)

Upgrading Enterprise Manager Grid Control

Oracle recommends reading this to get a better understanding of the requirements for an Enterprise Manager upgrade.

Oracle Enterprise Manager Grid Control consists of three major components:

- Repository Database
- Management Service
- Management Agent

With the option of deploying the Grid Control environment across the enterprise and in any number of permutations, upgrading the entire environment becomes a very complex activity involving updating of software and configurations in different levels (tiers) located in different machines.

The Enterprise Manager Upgrade process aims at simplifying this entire operation and render it as seamless and error-free as possible.

The following topics are covered in this chapter:

- [Software Prerequisites](#)
- [Checks to be Performed Before Starting the Upgrade](#)
- [Upgrade Scenarios](#)
- [Upgrading Enterprise Manager](#)

8.1 Software Prerequisites

Grid Control 10.2 installer only upgrades the corresponding Enterprise Manager 10.1 components. The following table lists the supported component versions:

Table 8–1 Supported Component Versions that Correspond to the Install Type

Install Type	OMS Version	RDBMS Version
Enterprise Manager Using New Database	10.1 (with Application server 9.0.4)	9.0.1.5
Enterprise Manager Using Existing Database	10.1 (with Application server 9.0.4)	9.2.0.6 or higher
Additional Management Service	10.1 (with Application server 9.0.4)	containing the 10.1. OMS schema
Additional Agent	Not Applicable	Not Applicable

8.2 Checks to be Performed Before Starting the Upgrade

This section lists the checks that you must perform before starting any of the Enterprise Manager 10.2 upgrade scenarios discussed in the following sections.

8.2.1 Shutdown Enterprise Manager Before Upgrade

You must ensure that the existing Enterprise Manager processes are shut down before starting the upgrade process.

To shut down Enterprise Manager, execute the following commands:

```
<OMS Oracle_Home>/bin/emctl stop oms  
<OMS Oracle_Home>/bin/emctl stop em  
<OMS Oracle_Home>/opmn/bin/opmnctl stopall
```

These commands usually successfully shut down all Enterprise Manager processes that are running. However, there may be instances where some processes might still be left running. Such instances may cause the upgrade to fail. To avoid this, you must ensure the following processes are not running before attempting to start the upgrade process:

- OPMN
- DCM

8.2.2 Check for Symbolic Links

The `<Oracle_Home>/Apache/<component>` configuration files must be examined to ensure only hard links (and *no symbolic links*) were referenced.

As part of the Enterprise Manager 10g R2 (10.2) Upgrade from 10.1, the underlying Oracle iAS 9.0.4 stack is also upgraded. During this phase, the upgrade utility attempts to replace the 10g R1 Oracle home path that is referenced in these configuration files with the new Enterprise Manager 10g R2 ORACLE_HOME path.

If you have customized the Oracle iAS 9.0.4 stack using symbolic links to the Oracle home, then the configuration files may also contain these references as symbolic links, instead of the complete path of the Oracle home.

For example, `<Oracle_Home>/Apache/modplsql/conf/plsq.conf` contains references to the `plsql_module`. If this path is a symbolic link, you must modify this path to be a hard link.

8.2.3 Customizations and User Permissions

If there have been any mid-tier customizations files that cannot be accessed using the the upgrade user's credentials, ensure such customizations are removed or commented out before starting the upgrade. You can reapply these customizations after the upgrade is successfully completed.

8.2.4 Select an Agent that is Not Secure

During the upgrade process, if you have selected an agent that is not secure, you must decide whether or not to specify the Agent Registration password (that will secure this agent).

You can also choose not to specify the Agent Registration password. This leaves the upgraded agent insecure. The Installer displays an error message when the agent's

REPOSITORY_URL does not match with that of the OMS, indicating the agent is not bound to the OMS.

This can happen if multiple OMSs are grouped together via a load balancer, and the agent is using this load balancer to communicate with the OMSs.

You can also choose to secure the upgraded agent manually after the agent has been upgraded.

8.2.5 Shutdown Existing Database Listener

During the Oracle database upgrade process, ensure the existing database listener is shut down *just before* you execute `allroot.sh`.

ATTENTION: The database listener must be running during the upgrade process until the point where you are prompted to execute `allroot.sh`. If you shut down the listener before this point, the upgrade process fails.

In an Enterprise Manager 10g R1 (10.1) installation, the Install Enterprise Manager Using New Database installation type performs a 9.0.1.5 RDBMS installation along with the other Enterprise Manager products. When you upgrade Enterprise Manager 10.1 to 10.2, the RDBMS instance is upgraded to a 10.1.0.4 version before the Enterprise Manager migration configuration is performed.

To successfully migrate your existing Enterprise Manager to 10.2, the new 10.1.0.4 RDBMS listener has to be started. If during the upgrade, the 9.0.1.5 RDBMS listener is still running after you have executed `allroot.sh`, the new listener is not started successfully, resulting in an unsuccessful migration of Enterprise Manager.

8.3 Upgrade Scenarios

The following upgrade scenarios are discussed in this section:

- [Upgrading Oracle Management Service that is Installed Using a New Database](#)
- [Upgrading Oracle Management Service that is Installed Using an Existing Database](#)
- [Upgrading the Oracle Management Service](#)
- [Upgrading the Management Agent](#)

ATTENTION: During the upgrade process, you must ensure the monitoring agent is also upgraded along with the OMS and repository database.

8.3.1 Upgrading Oracle Management Service that is Installed Using a New Database

If the Enterprise Manager 10g R1 (10.1) was of this installation type, then the 10g R2 (10.2) installer performs an out-of-place upgrade of the 10.1 Management Service (OMS), the repository database, and the agent Oracle homes. During the upgrade, it creates a new Oracle home for the OMS, database, and agent. The upgrade assistants upgrade the datafiles and SYSMAN schema, and then configure the new Oracle homes.

8.3.2 Upgrading Oracle Management Service that is Installed Using an Existing Database

If the earlier Enterprise Manager installation was done using an existing database, the 10g R2 installer automatically checks the remote database version (must be 9.2.0.6 or higher). If the minimum database version requirement is met, the installer performs an upgrade of both the Management Service as well as the database Oracle homes.

Note: If the database version is lower than 9.2.0.6, this database is not upgraded as part of the Enterprise Manager upgrade process. You are required to upgrade the database separately.

IMPORTANT: If you are upgrading an Enterprise Manager target (for example, database) using an upgrade mechanism other than the Oracle Enterprise Manager Installer, ensure you manually modify the central inventory information by updating the `targets.xml` file of the monitoring agent to reflect the configuration parameters of the upgraded Oracle home. See [Section A.3.4, "Monitoring Agent Does Not Discover Upgraded Targets"](#) for more information.

8.3.3 Upgrading the Oracle Management Service

If the previous Enterprise Manager installation was for an additional Management Service, the 10g R2 installer checks the remote database (must be 9.2.0.6 or higher). If this minimum database version requirement is met, the installer performs the OMS upgrade.

If you are upgrading only the Management Service to 10g R2 (10.2) without upgrading the monitoring agent, you may encounter a metric collection error. To resolve this issue, you must upgrade the monitoring agent to 10g R2 as well.

Note: If the database version is lower than 9.2.0.6, this database is not upgraded as part of the Enterprise Manager upgrade process. You are required to upgrade the database separately.

ATTENTION: After successfully upgrading the 10g R1 (10.1.0.4) OMS to (10.2), the 10.1.0.4 agents that are uploading data to this OMS may show an incorrect OMS version when you execute `./emctl status agent`.

To resolve this issue, you must stop the 10.1.0.4 agents (`./emctl stop agent`) and restart them (`./emctl start agent`).

8.3.4 Upgrading the Management Agent

All Agent homes that need to be upgraded are detected and displayed in the Select Install or Upgrade page of the installer. You can select the agent homes that you want to upgrade and proceed with the process.

Note: The agent homes that are installed as part of the first two installation types are not upgraded automatically along with the OMS Oracle homes. You must select the agent home that you want to upgrade. This agent home can be independent of the Management Service home.

8.3.4.1 Upgrading 10.1.0.4 Agents That Monitor User-Defined Metrics

Since the Management Agent upgrade process is an out-of-place installation, upgrading an agent will create a new Oracle home directory. If you are using OS-based user-defined metrics that are referencing scripts located in an agent Oracle home, then such scripts will not be copied over during the upgrade process. Specifically, if a 10.1.0.4 agent is being upgraded to 10.2 agent version, any user-defined metric scripts that may have existed in the 10.1.0.4 agent Oracle home will not be copied into the new 10.2 agent Oracle home.

In order to ensure the user-defined metrics continue to work the same, you must manually copy all user-defined metrics scripts into another directory (outside any Oracle home), and then update the user-defined metric definitions to reflect the new script location.

For example, if the user-defined script is called `myScript.sh` and is located in the 10.1.0.4 agent Oracle home (for example, `/u1/oracle/sysman/admin/scripts` directory), copy this script over to a new directory (for example, `/u1/scripts`). Now, in the definition of the user-defined metric, you must change the command line from `/u1/oracle/sysman/admin/scripts/myScript.sh` to `/u1/scripts/myScript.sh`.

Note: Ensure you do not delete the original Oracle home (that is 10.1.0.4 Oracle home in the above-example) until you have changed the user-defined metric script location.

8.4 Upgrading Enterprise Manager

When you invoke Oracle Universal Installer to perform an upgrade, it automatically detects the existing Enterprise Manager installation type of the target Oracle homes and displays the components that need to be upgraded. You can select the component that you want to upgrade and proceed with the process.

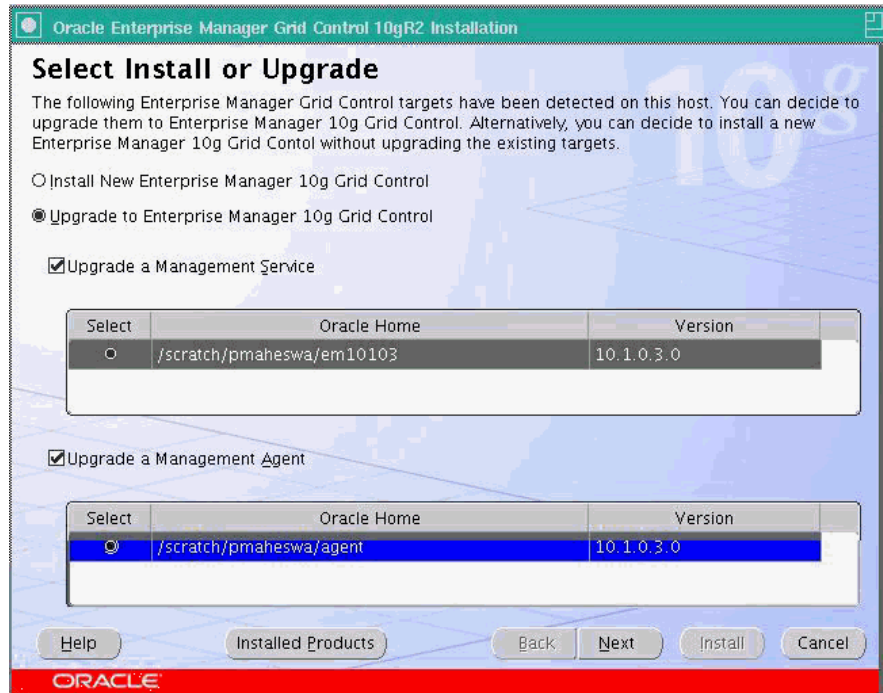
Caution: Oracle recommends that you perform a backup of the repository before starting the upgrade process.

Complete the instructions detailed below to perform the Enterprise Manager upgrade.

1. Start the Oracle Universal Installer by running the `runInstaller` script in Linux (go to the top-level folder in the contents copied from the DVD and execute `./runInstaller`) from the top directory of `Disk1`.
2. When you invoke Oracle Universal Installer, you will be presented with two choices:
 - a. Perform a New Enterprise Manager Installation
See [Section 3.3, "Enterprise Manager Installation Types"](#) for more information.

- b. Products Upgrade
 - Select this option to continue with the upgrade process.
- 3. Click **Products Upgrade**. The Select Install or Upgrade page appears.

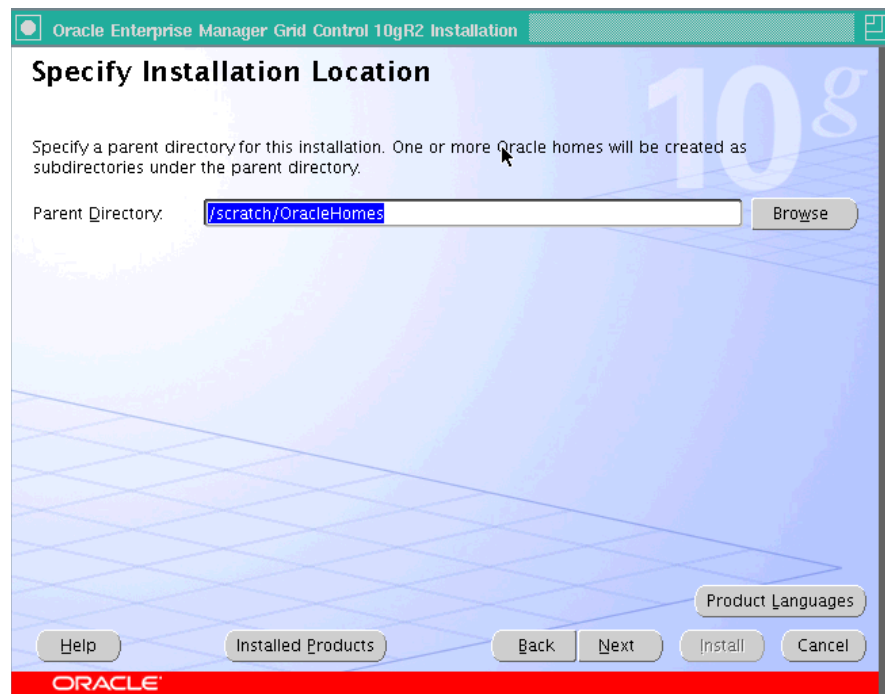
Figure 8–1 Select Install or Upgrade



- 4. The installer automatically detects the Grid Control components that require an upgrade and lists them in this page.
- 5. Here, you can choose to perform the following upgrades:
 - a. Management Service and the associated (monitoring) Management Agent
 - b. Only the Management Service
 - c. Only the Management Agent

IMPORTANT: If you are upgrading both Management Service and Agent, ensure the agent you have selected is the one that is communicating with selected Management Service.

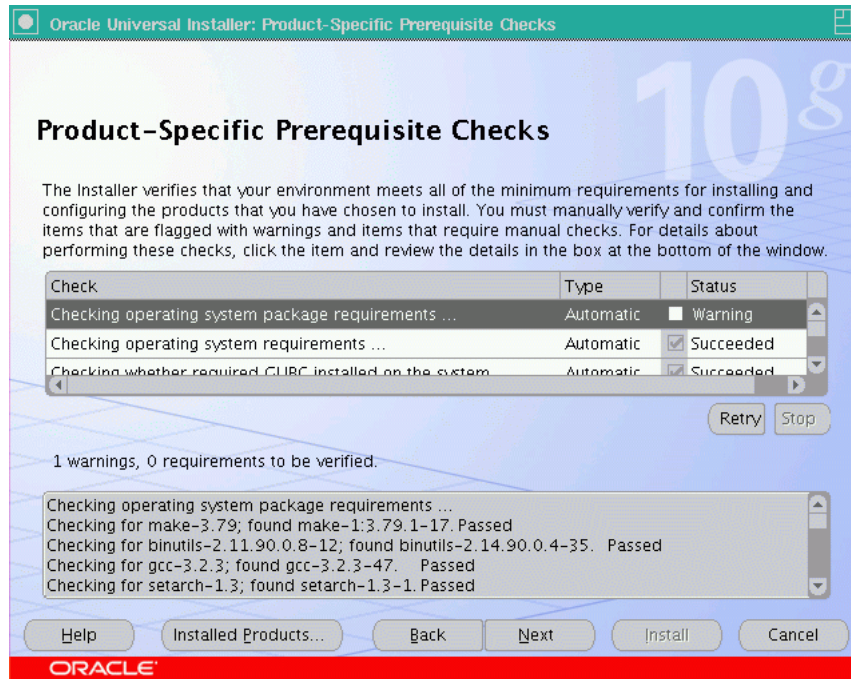
- 6. Select the Oracle homes that you want to upgrade and click **Next**. The Specify Installation Location page appears.

Figure 8–2 Specify Installation Location

Here, specify a parent directory (base directory), for example, `/scratch/OracleHomes`, for the new installation. Since the installer is going to perform an out-of-place¹ upgrade, all the Oracle homes created during the upgrade will be placed as sub-directories under this parent directory.

7. Click **Next**. The Product-Specific Prerequisite Checks page appears.

¹ Out-of-place upgrade refers to the process of installing the software in a new Oracle home. All the data and configuration files from an existing Oracle home are retrieved and migrated to the new Oracle home. After the upgrade is complete, the old Oracle home is discarded and the software can be started from the new Oracle home.

Figure 8–3 Product-Specific Prerequisite Checks

- a. At this point, the Installer runs some prerequisite checks to verify whether the environment meets the minimum requirements for a successful Enterprise Manager installation.

Early detection of problems with the system setup reduces the chances of you encountering problems during installation; for instance, problems with insufficient disk space, missing patches, inappropriate hardware, and so on.

This page displays the check name, type, and status for all prerequisite checks designed for the installation. Automatic checks are run first, followed by optional and manual checks.

Depending on the status of the automatic checks, you must verify all warning and manual checks. At some point, if you have stopped the prerequisite check and want to re-run these checks, select the checks that you want to re-run and click **Retry**. As each check runs, a progress bar is shown, and test details (expected results, actual results, error messages, instructions) are displayed in the details section, at the bottom of the page.

- b. To stop all prerequisite checks, click **Stop**. At any point of time, click a prerequisite check to view its corresponding details, including the recommended user actions.

Note: You must manually verify and confirm all checks that were flagged with a warning, skipped (stopped by user), or failed.

- c. To continue with the installation without retrying, click **Next**.
8. The Specify Configuration page appears.

Figure 8–4 Specify Configuration

Oracle Universal Installer: Specify Configuration

Specify Configuration

You have chosen to upgrade an existing Management Repository on an existing database for this Management Service installation. Please provide the SYS password to obtain configuration information from an existing repository.

Database Password

SYS Password:

Management Service Security

This password must be supplied by agents desiring Secure Communication with the Management Service.

Password: Confirm Password:

Help Installed Products... Back **Next** Install Cancel

ORACLE

- a. Here, you must specify the existing Database and Secure Management Service passwords. The Database Password (SYS) is required to access the configuration files of the existing database repository that is associated with the Management Service that you have selected for upgrade.
- b. In the Database password section, specify the SYS Password (the default Super Administrator account) for the existing database repository that is associated with the selected OMS.
- c. In the Management Service Security section, specify a password that will be used to secure the communications between the OMS and its agents.

Note: Management Service Security: This section is enabled only when the existing Management service that you are upgrading is not secure.

9. Click **Next**. If you are upgrading both Management Service and Agent, but only the existing Management Service is secure, then the Agent Registration Password page is displayed. Here, you must provide the correct password to enable communications between the secure Management Service and the Agent that you are upgrading.

Figure 8–5 Specify Agent Registration Password

IMPORTANT: If you do not know the password and choose to leave the Password field blank, you must do the following after installation, to enable communication between the agent and secure OMS:

1. Find out the correct password for the secure OMS environment. If you do not know the password, obtain it from the user who configured the Management Service for SSL.
2. In the Agent's <Oraclehome>/bin directory, execute the following command:

```
/emctl secure agent <password>
```

where <password> is the Agent Registration Password.

10. The Summary page appears. This page displays all the Oracle homes that will be created. Depending on the type of upgrade you have selected, this page will display all/any of the following details:
 - Global Settings
 - Product Languages
 - Space Requirements
 - New Installations
11. Verify the choices that you have made, and click **Install** to start the upgrade.

8.4.1 Upgrading Management Agent Using the Agent Deploy Application

Agent Deploy is a J2EE application that is used for mass deployment of Management Agents.

The Upgrade Agent option in this application will help you upgrade an existing Agent installation to a 10.2 Management Agent.

To upgrade Management Agent using Agent Deploy, follow the instructions documented below:

1. On the Agent Deploy application home page, click **Agent Upgrade** to perform the Management Agent upgrade.
2. In the Installation Details page that is displayed, specify the source agent information, destination hosts, OS Credentials, and base directory details that are required for the Management Agent Upgrade.

Note: While performing an agent upgrade, you must ensure that all the specified hosts have the same operating system credentials and file system structure.

3. In the Source Agent Information section, specify the full path to an existing Agent home location. This source Agent installation will be used to perform the upgrade.

Note: The path of the source agent should be the same on all the remote hosts.

4. Select the Platform on which you want to perform this installation.
5. In the Provide Host List text box, specify all the hosts (hostnames or IP addresses) on which you want to perform the Agent upgrade. Alternatively, click **Get Host Names From File** to select the file that contains a list of all the required hostnames.

Note: You can use a comma (,) or just white space as a separator when specifying multiple hosts.

6. In the OS Credentials section, specify the appropriate operating system user credentials. Select Run root.sh if you want Agent Deploy to execute this script. Agent Deploy will use sudo to run this script. You must specify the *invoking user's password* here. You must also ensure that the targetpw is not set in the /etc/sudoers file.
7. In the Destination section, specify the absolute path for the Installation Base Directory. This directory will be created on all the specified hosts, and the Agent Oracle home directory will be created as a sub-directory under this directory.
8. In the Additional Parameters text box, specify any additional parameters that you want to pass during installation.
9. In the Additional Scripts section, specify any pre and/or post-installation scripts that you want to execute.
10. Click **Continue** to start the installation process.

Click **Help**, in the Agent Deploy application for more information.

8.4.1.1 Possible Parameters that You Can Specify During Agent Upgrade

The important parameters for Agent Upgrade are `-o`, `-b` and optionally `-i`, `-t`.

The following table lists all the possible parameters that you can specify:

Table 8–2 Possible parameters that you can specify during Agent Upgrade

Parameters	Description
-t	Do NOT start the Agent after installation/upgrade. No value required.
-b	Install Base Dir location. For example, -b /home/OracleHomes/agent/
-d	Do not initiate automatic target discovery. No value required.
-i	Inventory pointer location file. For example, -i /etc/oraInst.loc
-o	Existing Agent home to upgrade. For example, -o /home/OracleHomes/oldAgent/
-p	File location for static port for Agent. For example, -p /home/config/staticports.ini

Note: If the parameters that you specify here are also specified independently through command-line options, the value of the parameters that you specify here will take precedence over the others. For example, if installation Base Dir has been specified independently, and the -b option is specified here, the value of the latter (-b) will be used during the upgrade.

8.4.2 Upgrading Management Agent Using agentDownload Script

To upgrade Management Agent using the agentDownload Script, follow the instructions documented below:

1. Invoke the agentDownload script using -u option.

The OLD_ORACLE_HOME that you want to upgrade should be specified either by passing the -o option, or setting the OLD_ORACLE_HOME Env Variable.

Invoke the agentdownload script using the following command:

```
./agentDownload.linux -u -o <OLD_ORACLE_HOME_PATH>
```

Note: The first two options (-u and -o) are mandatory. The -b option can be skipped if this has already been specified in the response files.

2. To construct the new Oracle home name, either pass the -b option, or specify these values for BASEDIR in the agent_download.rsp file.

Note: You can specify these options in the command line even though they are present in the response file. The command line options will have a higher precedence over the ones in response file.

3. During the upgrade, if you want to secure the Agent, specify the appropriate password using AGENT_INSTALL_PASSWORD environment variable.

You can use the following options to execute the agentDownload script:

Table 8–3 Options that you can use to execute the agentDownload script

Options	Description
-b	baseDirectory of the Agent Oracle home
-l	local (pass -local to runInstaller)
-n	Cluster name
-o	OLD_ORACLE_HOME during Upgrade
-u	Upgrade
-c	CLUSTER_NODES (to specify the cluster nodes)
-p	staticports.ini file
-s	Installer stage directory
-t	Do NOT start the Agent
-i	Inventory pointer location file
-d	Do NOT initiate automatic target discovery

Note: When performing an Agent upgrade using the agentDownload script, ensure you are using the agentDownload script from the Oracle home of the pointing Management Service (OMS).

For example, if you are upgrading Agent1 that is pointing to OMS A, then you must use the agentDownload script that is located in the OMS A Oracle home only.

ATTENTION: During the upgrade, if you want to secure the existing unsecured agent, you must specify the password using the AGENT_INSTALL_PASSWORD environment variable, or by executing the following command after the installation is complete:

```
<Agent_Home>/bin/emctl secure agent <password>
```

8.4.3 General System Installation Requirements for Real Application Clusters

Each node that is going to be part of your Real Application Clusters installation must meet the following hardware and software requirements. You will perform step-by-step tasks for hardware and software verification for the platform-specific pre-installation procedures.

8.4.3.1 Hardware Requirements for Real Application Clusters Setup

Each node in a cluster requires the following hardware:

- External shared disks for storing the Oracle Clusterware files.

Refer to the respective Real Application Clusters install guides for information on the disk configuration options that are available. Review these options before you decide which storage option to use in your Real Application Clusters environment.

- One private internet protocol (IP) address for each node to serve as the private interconnect. The following must be true for each private IP address:

- It must be separate from the public network
- It must be accessible on the same network interface on each node
- It must have a unique address on each node

The private interconnect is used for inter-node communication by both Oracle Clusterware and Real Application Clusters. If the private address is available from a network name server (DNS), then you can use that name. Otherwise, the private IP address must be available in each node's `/etc/hosts` file.

During Oracle Clusterware installation, the information you enter as the private IP address determines which private interconnects are used by Real Application Clusters database instances. They must all be in an up state, just as if their IP addresses were specified in the initialization parameter, `CLUSTER_INTERCONNECTS`. Real Application Clusters does not fail over between cluster interconnects; if one is down then the instances using them will not start.

Oracle recommends that you use a logical IP address that is available across all private networks, and that you take advantage of any available operating system-based failover mechanism by configuring it according to your third-party vendor's instructions for using their product to support failover.

- One public IP address for each node, to be used as the Virtual IP address for client connections and for connection failover.

This public Virtual IP address (VIP) must be associated with the same interface name on every node that is part of your cluster. In addition, the IP addresses that you use for all of the nodes that are part of a cluster must be from the same subnet. If you have a domain name server (DNS), then register the host names for the VIP with DNS. The Virtual IP address should not be in use at the time of the installation, because this is a Virtual IP address that Oracle manages.

- One public fixed hostname address for each node, typically assigned by the system administrator during operating system installation. If you have a DNS, then register both the fixed IP and the VIP address with DNS. If you do not have DNS, then you must make sure that both public IP addresses are in the node hostfile.

8.4.3.2 Software Requirements for Real Application Clusters Setup

Each node in a cluster requires a supported interconnect software protocol to support Cache Fusion, and to support Oracle Clusterware polling. Your interconnect must be certified by Oracle for your platform. You should also have a Web browser, both to enable Oracle Enterprise Manager, and to view online documentation. For Oracle Database 10g requirements, Oracle Clusterware provides the same functionality as third-party vendor clusterware. Using Oracle Clusterware also reduces installation and support complications. However, you may require third-party vendor clusterware if you use a non-ethernet interconnect, or if you have deployed clusterware-dependent applications on the same cluster where you deploy Real Application Clusters.

See [Appendix C, "Installing Enterprise Manager on Real Application Clusters"](#) for more information on the pre-installation tasks.

ATTENTION: If you are upgrading a 10.1.0.2 agent to 10.1.0.3 version, you must execute the following command before starting the upgraded agent:

```
emctl resetTZ agent
```

This command is required to correct the agent timezone.

This command will correct the agent side timezone, and specify an additional command to be run against the repository to correct the value there.

IMPORTANT: Before you change the timezone, check if there are any blackouts that are currently running or scheduled to run on any of the targets that are monitored by the upgraded agent. Do the following to check this:

1. In the Grid Control console, go to the All Targets page under Targets and locate the Agent in the list of targets. Click the agent name link. The Agent home page appears.
2. The list of targets monitored by the agent will be listed in the *Monitored Targets* section.
3. For each target in the list, click the target name to view the target home page.
4. Here, in the Related Links section, click **Blackouts** to check any blackouts that are currently running or may be scheduled to run in the future.
5. If such blackouts exist, you must stop all the blackouts that are running on all the targets monitored by this agent.
6. From the console, stop all the targets that are scheduled to run on any of these monitored targets.
7. Now, run the following command from the agent home to reset the timezone;

```
emctl resetTZ agent
```

8. After the timezone is reset, you can create new blackouts on the targets.
-
-

Part V

Appendixes

Part 5 contains the following appendixes:

- [Appendix A, "Troubleshooting Enterprise Manager"](#)
- [Appendix B, "Management Repository Database Settings"](#)
- [Appendix C, "Installing Enterprise Manager on Real Application Clusters"](#)
- [Appendix D, "Executing the runConfig Command Line Tool"](#)
- [Appendix E, "Agent Deploy Application - Installation Prerequisites"](#)
- [Appendix F, "Additional Parameters for Agent Deploy"](#)
- [Appendix G, "Assigning Custom Ports"](#)
- [Appendix H, "Oracle Reserved Words"](#)
- [Appendix I, "Enterprise Manager Java Console"](#)

Troubleshooting Enterprise Manager

This appendix describes solutions to common problems and scenarios that you might encounter when installing/upgrading Enterprise Manager.

A.1 Configuration Assistants Fail During Enterprise Manager Installation

During the installation, if any of the configuration assistants fail to run successfully, you can choose to run the configuration assistants in standalone mode.

A.1.1 Invoking the One-Off Patches Configuration Assistant in Standalone Mode

During the installation process, this configuration assistant is executed before the Management Service Configuration Assistant is run.

This configuration assistant applies the one-off patches that are required for a successful Enterprise Manager 10g R2 installation.

To run this configuration assistant in standalone mode, you must execute the following command from the Management Service Oracle home:

```
<OMS_HOME>/perl/bin/perl <OMS_HOME>/install/oneoffs/applyOneoffs.pl
```

A.1.2 Invoking the Database Configuration Assistant in Standalone Mode

To run the DBConfig Assistant, you must invoke the `runConfig.sh` as:

```
DB_Home/oui/bin/runConfig.sh ORACLE_HOME=<DB_HOME> ACTION=Configure MODE=Perform
```

A.1.3 Invoking the OMS Configuration Assistant in Standalone Mode

To run the OMSConfig Assistant, you must invoke the `runConfig.sh` as:

```
OMS_Home/oui/bin/runConfig.sh ORACLE_HOME=<OMS_HOME> ACTION=Configure  
MODE=Perform COMPONENT_XML={oracle.sysman.top.oms.10_2_0_1_0.xml}
```

A.1.4 Invoking the Agent Configuration Assistant in Standalone Mode

To run the AgentConfig Assistant, you must invoke the `runConfig.sh` as:

```
Agent_Home/oui/bin/runConfig.sh ORACLE_HOME=<AGENT_HOME> ACTION=Configure  
MODE=Perform COMPONENT_XML={oracle.sysman.top.agent.10_2_0_1_0.xml}
```

Note: While the above command can be used to execute the `agentca` script, Oracle recommends you to execute the following command to invoke the configuration assistant:

```
Agent_Home/bin/agentca -f
```

If you want to run the `agentca` script on a RAC, you must execute the following command on each of the cluster nodes:

```
Agent_Home/bin/agentca -f -c "node1,node2,node3,..."
```

See [Section 6.5, "Agent Reconfiguration and Rediscovery"](#) for more information.

A.1.5 Invoking the OC4J Configuration Assistant in Standalone Mode

If you want to deploy only the Rules Manager, execute the following commands:

```
/scratch/OracleHomes/oms10g/jdk/bin/java -Xmx512M  
-DemLocOverride=/scratch/OracleHomes/oms10g -classpath  
/scratch/OracleHomes/oms10g/dcm/lib/dcm.jar:/scratch/OracleHomes/oms10g/jlib/e  
mConfigInstall.jar:/scratch/OracleHomes/oms10g/lib/classes12.zip:/scratch/Orac  
leHomes/oms10g/lib/dms.jar:/scratch/OracleHomes/oms10g/j2ee/home/oc4j.jar:/scr  
atch/OracleHomes/oms10g/lib/xschema.jar:/scratch/OracleHomes/oms10g/lib/xmlpar  
serv2.jar:/scratch/OracleHomes/oms10g/opmn/lib/ons.jar:/scratch/OracleHomes/om  
s10g/dcm/lib/oc4j_deploy_tools.jar oracle.j2ee.tools.deploy.Oc4jDeploy  
-oraclehome /scratch/OracleHomes/oms10g -verbose -inifile  
/scratch/OracleHomes/oms10g/j2ee/deploy.master -redeploy
```

A.2 Enterprise Manager Upgrade/Recovery

The Enterprise Manager 10g R2 upgrade is an out-of-place upgrade¹, meaning that Enterprise Manager 10g R2 Oracle homes are separate from the old homes. If you decide to abort the upgrade and continue using the 10gR1 installation, you must perform the following steps.

A.2.1 Agent Recovery

Follow the instructions below to perform an agent recovery.

1. After exiting the Installer, you must open a new terminal and change the directory to the `<New_AgentHome>/bin`.
2. Execute the script `./upgrade_recover`.
3. You can then start the old agent and continue using it. If you want to remove the installed bits of the new agent home, use the Remove Productions function of the installer.

A.2.2 OMS Recovery

If the schema has been upgraded or the upgrade was incomplete, you must manually restore the database to the backup that was taken prior to executing the OMS upgrade.

¹ The upgrade process creates a new OMS home and a new database home. The Upgrade assistants upgrade the datafiles and SYSMAN schema, and then configure the new Oracle homes.

You can determine the status of the repository upgrade by looking into the log file at `<New_OMSHome>/sysman/log/emrepmgr.log.<proc_id>`. The last line of the log file provides the status of the upgrade. If the upgrade was completed without errors, it reads *Repository Upgrade Successful*. If not, the message *Repository Upgrade has errors...* is displayed.

Follow the instructions below to perform an OMS recovery:

Note: Before you attempt to restore the database, you must exit the Upgrade wizard. You must also ensure there are no OMS processes that are running. See [Section 8.2.1, "Shutdown Enterprise Manager Before Upgrade"](#) for more information on shutting down the Enterprise Manager processes.

ATTENTION: Ensure all OMS processes are completely shut down. If not, the system may become unstable after the upgrade.

1. Restore the database to the backup. See the Oracle Database Administrator's Guide for more information.
2. After the database is restored, start the database and listener to ensure successful restoration.
3. Open a new terminal window and change the directory to the `<New_OMSHome>/bin`.
4. Now, execute the `./upgrade_recover`.

Start the old OMS and continue to use it. If you want to remove the bits of the newly installed OMS home, use the Remove Productions function in the installer.

A.2.3 Recreating the Repository

If the Management Service configuration plug-in fails due to the repository creation failure, rerunning the configuration tool from the Oracle Universal Installer drops the repository and recreates it. However, if you want to manually drop the repository, complete the following steps:

A.2.3.1 Dropping the Repository

1. Stop the Management Service (`<OMS_HOME>/bin/emctl stop oms`) and Agent (`<AGENT_HOME>/bin/emctl stop agent`) before recreating the repository.
2. Set `ORACLE_HOME` to `OMS_OracleHome`
3. Execute `OMS_Home/sysman/admin/emdrep/RepManager <hostname> <port> <SID> -action drop -output_file <log_file>`

A.2.3.2 Creating the Repository

1. Set `ORACLE_HOME` to `OMS_OracleHome`
2. Execute `OMS_Home/sysman/admin/emdrep/RepManager <hostname> <port> <SID> -action create -output_file <log_file>`

IMPORTANT: After recreating the repository, you must run the following command on all the Management Service Oracle homes to reconfigure the emkey:

```
emctl config emkey -repos -force
```

This command overwrites the `emkey.ora` file with the newly generated emkey.

ATTENTION: While recreating the repository using `./Repmanager -action create`, you may encounter the following error message:

```
java.sql.SQLException: ORA-28000: the account is locked during recreation of repository.
```

Workaround

This error may occur if there are processes or multiple Management Services that are trying to connect to the database with incorrect SYSMAN credentials. If there are multiple login failures, the database becomes locked up and shuts down the monitoring agent.

You can resolve this issue by shutting down all the Management Services connected to the database, along with the monitoring agent.

A.2.4 Repository Creation Fails

When installing Enterprise Manager using an existing database, the repository creation fails.

This may happen if the Password Verification option in the database is enabled. To resolve this issue:

1. Disable the Password Verification option.
2. Create the repository using RepManager.
3. Enable the Password Verification option.

A.2.5 Collection Errors After Upgrade

If you upgrade only the Management Service to 10g R2 without upgrading the monitoring agent, you may encounter the following collection errors:

- Target Management Services and Repository
- Type OMS and Repository
- Metric Response
- Collection Timestamp <session_time_stamp>
- Error Type Collection Failure
- Message Target is in Broken State. Reason - Target deleted from agent

To resolve this issue, upgrade the agent monitoring the Management Service to 10g R2 as well.

A.3 The OMS Upgrade Stops

You may encounter problems during OMS upgrade where the upgrade process aborts due to the following reasons.

A.3.1 OMS Upgrade Stops at Oracle iAS Upgrade Assistant (iASUA) Failure

The installation dialog and the configuration framework log file (located at `<New_OracleHome>/cfgtoollogs/cfgfw/oracle.sysman.top.oms_#date.log`) lists SEVERE messages indicating the reason iASUA (the Oracle Application Server Upgrade Assistant) fails.

If the message displays *permission denied* on certain files, it means that the user running the installer may not have the correct privileges to run certain iAS configurations.

To resolve this issue, comment out the iAS configuration that contains these files and then retry the upgrade again. You can reapply the configurations after the upgrade is successfully completed.

A.3.2 OMS Configuration Stops at EMDeploy Failure

The most common reasons for EMDeploy to fail are if:

- All Enterprise Manager processes are not shut down completely.

To shut down Enterprise Manager, execute the following commands:

```
<Oracle_Home>/bin/emctl stop oms
<Oracle_Home>/bin/emctl stop em
<Oracle_Home>/opmn/bin/opmnctl stopall
```

See [Section 8.2.1, "Shutdown Enterprise Manager Before Upgrade"](#) for more information.

- Symbolic Links have been used instead of Hard Links

The `<Oracle_Home>/Apache/<component>` configuration files must be examined to ensure only hard links (and no symbolic links) were referenced. See [Section 8.2.2, "Check for Symbolic Links"](#) for more information.

After you have successfully resolved these issues, perform the redeploy steps manually and click **Retry** on the Upgrade wizard.

A.3.3 OMS Configuration Stops at Repository Schema Failure (RepManager)

The most common reason the repository schema configuration fails is when it is not able to connect to the listener. The configuration framework log file (`<New_OracleHome>/cfgtoollogs/cfgfw/oracle.sysman.top.oms_#date.log`) indicates the reason for the repository schema upgrade failure.

To resolve this issue, you must verify whether the listener connecting to the OMS is valid and active.

Also, if you have installed the OMS using the *Install Enterprise Manager Using New Database* installation type, ensure there are no symbolic links being referenced. After you have successfully established the listener connections, click **Retry** on the Upgrade wizard.

A.3.4 Monitoring Agent Does Not Discover Upgraded Targets

If you have upgraded an Enterprise Manager target (for example, database) independently (that is using a regular upgrade mechanism other than the Oracle Enterprise Manager Installer), the monitoring agent may fail to discover this upgraded target.

This can happen if you have specified a different Oracle home value for the upgraded target other than the one that was existing.

To resolve this issue, you must manually configure the `targets.xml` file of the monitoring agent to update the configuration details of the upgraded Oracle home information, or log in to the Enterprise Manager console, select the appropriate target, and modify its configuration parameters to reflect the upgraded target parameters.

A.3.5 CSA Collector is Not Discovered During Agent Upgrade

When a 10g R1 Management Service and its associated (monitoring) agent are upgraded at the same time, the agent upgrade does not discover the CSA Collector target.

To discover this target, you must run the agent configuration assistant (the `agentca` script) using the rediscovery option. See [Section 6.5.1, "Rediscover/Reconfigure Targets on Standalone Agents"](#) for more information.

A.4 Enterprise Manager Deployment Fails

Enterprise Manager deployment may fail due to the Rules Manager deployment failure.

To resolve this issue, redeploy Enterprise Manager by following these steps:

1. Move `OH/j2ee/deploy.master` to `OH/j2ee/deploy.master.bak`
2. Execute the `OH/bin/EMDeploy` script.
3. Restore the `OH/j2ee/deploy.master`. That is, execute `mv OH/j2ee/deploy.master.bak OH/j2ee/deploy.master`

A.4.1 To Execute the OC4J Configuration Assistant in Standalone Mode

If you want to deploy only the Rules Manager, execute the following commands:

```
/scratch/OracleHomes/oms10g/jdk/bin/java -Xmx512M
-DemLocOverride=/scratch/OracleHomes/oms10g -classpath
/scratch/OracleHomes/oms10g/dcm/lib/dcm.jar:/scratch/OracleHomes/oms10g/jlib/emConfigInstall.jar:/scratch/OracleHomes/oms10g/lib/classes12.zip:/scratch/OracleHomes/oms10g/lib/dms.jar:/scratch/OracleHomes/oms10g/j2ee/home/oc4j.jar:/scratch/OracleHomes/oms10g/lib/xschema.jar:/scratch/OracleHomes/oms10g/lib/xmlparserv2.jar:/scratch/OracleHomes/oms10g/opmn/lib/ons.jar:/scratch/OracleHomes/oms10g/dcm/lib/oc4j_deploy_tools.jar oracle.j2ee.tools.deploy.Oc4jDeploy
-oraclehome /scratch/OracleHomes/oms10g -verbose -inifile
/scratch/OracleHomes/oms10g/j2ee/deploy.master -redploy
```

A.5 Installation Fails With an Abnormal Termination

If there is a daily cron job that is running on the system where you are installing Grid Control which cleans up the `/tmp/` directory, the installation might fail with an abnormal termination and the `installActions.err` file will log the following error: `java.lang.UnsatisfiedLinkError: no nio in java.library.path.`

The workaround is to set the TMP and TEMP environment variables to a directory other than the default /tmp and execute the ./runInstaller.

A.6 Management Agent Installation Fails

If the Management Agent installation fails, look into the emctl status log to diagnose the reason for installation failure. You can view this log by executing the following command:

```
<AGENT_HOME>/bin/emctl status agent
```

A sample log file is shown below with some of the typical problem areas shown in bold. The resolution for these issues is described at the end of the sample log file.

```
Oracle Enterprise Manager 10g Release 10.2.0.0.0.
Copyright (c) 1996, 2005 Oracle Corporation. All rights reserved.
-----
Agent Version      : 10.2.0.0.0
OMS Version      : 10.2.0.0.0
Protocol Version   : 10.2.0.0.0
Agent Home         : /scratch/OracleHomes2/agent10g
Agent binaries    : /scratch/OracleHomes2/agent10g
Agent Process ID   : 9985
Parent Process ID : 29893
Agent URL         : https://stadv21.us.oracle.com:1831/emd/main/
Repository URL   : https://stadv21.us.oracle.com:1159/em/upload
Started at        : 2005-09-25 21:31:00
Started by user   : tthakur
Last Reload       : 2005-09-25 21:31:00
Last successful upload      : (none)
Last attempted upload      : (none)
Total Megabytes of XML files uploaded so far : 0.00
Number of XML files pending upload : 2434
Size of XML files pending upload (MB) : 21.31
Available disk space on upload filesystem : 17.78%
Last attempted heartbeat to OMS : 2005-09-26 02:40:40
Last successful heartbeat to OMS : unknown
-----
Agent is Running and Ready
```

A.6.1 Prerequisite Check Fails With Directories Not Empty Error During Retry

During an agent installation using Agent Deploy, the installation fails abruptly displaying the Failure page. On clicking Retry, the installation fails again at the Prerequisite Check phase with an error stating the directories are not empty.

This could be because Oracle Universal Installer (OUI) is still running though the SSH connection is closed on the remote host.

To resolve this issue, on the remote host, check if OUI is still running. Execute the following command to verify this:

```
ps -aef | grep -i ora
```

If OUI is still running, wait till OUI processes are complete and restart the SSH daemon. Now, you can click **Retry** to perform the installation.

A.6.2 Troubleshooting Typical installation Issues

This section lists the typical issues that can cause the agent installation to fail, along with their recommended resolutions.

A.6.2.1 Timezone Prerequisite Check Fails

The timezone prerequisite check (`timezone_check`) will fail if the TZ environment variable is not set on the SSH Daemon of the remote host.

To resolve this issue, you must set the TZ environment variable on the SSH Daemon of the remote host. See [Section E.1.1.2, "Setting Up the Timezone Variable on Remote Hosts"](#) for more information.

Alternatively, you do the following:

- If you are installing/upgrading the agent from the default software location, set the timezone environment variable by specifying the following in the Additional Parameters section of the Agent Deploy application:

```
-z <timezone>  
For example, -z PST8PDT
```

- If you are installing the agent from a non-default software location, you must specify the timezone environment variable using the following command:

```
s_timezone=<timezone>  
For example, s_timezone=PST8PDT
```

A.6.2.2 OMS Version is Not Displayed

If the OMS Version is not displayed in the log file, it could mean that the installed agent is not registered with any Management Service (OMS).

To resolve this issue, you must manually secure the Management Agent by executing the following command:

```
<AGENT_HOME>/bin/emctl secure agent <password>
```

A.6.2.3 Discrepancy Between Agent and Repository URL Protocols

If the agent installation is successful, the protocol for both agent and the repository URLs are the same. That is, both URLs start with the `https` protocol (meaning both are secure).

If the protocol for the agent URL is displayed as `http` instead of `https`, this means that the agent is not secure.

To resolve this issue, you must secure the agent manually by executing the following command:

```
<AGENT_HOME>/bin/emctl secure agent <password>
```

A.6.2.4 Last Successful Upload Does Not Have a Timestamp

If there is no timestamp against this parameter in the log (displays `Null`), it means that the agent is unable to upload any data.

To resolve this issue, you must execute the following command and check the log again:

```
<AGENT_HOME>/bin/emctl upload
```


A.6.2.5 The emctl status Log File is Empty

If the agent is not ready and running, the `emctl status` log displays only the copyright information. None of the parameters listed in the sample log are displayed.

The issue can occur due to any of the following reasons:

- Agent is not secure: To manually secure the agent, execute the following command:


```
<AGENT_HOME>/bin emctl secure agent <password>
```
- Agent is not running: Check if the agent is running. If not, you can start the agent manually by executing the following command:


```
<AGENT_HOME>/bin emctl start agent
```
- Agent port is not correct: Verify whether the agent is connecting to the correct port. To verify the port, look into the `sysman/config/emd.properties` file:

You must also ensure the following are correctly set in the `emd.properties` file:

 - a. `REPOSITORY_URL`: Verify this URL (<http://<hostname>:port/em/upload>). Here, ensure the host name and port are correct.
 - b. `emdWalletSrcURL`: verify if the host name and port are correct in this URL (<http://<hostname>:port/em/wallets/emd>).
 - c. `agentTZRegion`: Ensure the time zone that is configured is correct.

A.7 SSH User Equivalence Verification Fails During Agent Installation

The most common reasons for SSH User Equivalence Verification to fail are:

- The server settings in `/etc/ssh/sshd_config` file do not allow `ssh` for user `$USER`
- The server may have disabled the public key-based authentication
- The client public key on the server may be outdated
- You may not have passed the `-shared` option for shared remote users, or may have passed this option for non-shared remote users

Verify the server setting and rerun the script to set up SSH User Equivalence successfully.

A.7.1 Agent Deployment on Linux RAC 10.2 Cluster Fails

Agent deployment on a 10.2 RAC cluster may fail due to a lost SSH connection during the installation process.

This can happen if the `LoginGraceTime` value in the `sshd_config` file is 0 (zero). The zero value gives an indefinite time for SSH authentication.

To resolve this issue, modify the `LoginGraceTime` value in the `/etc/ssh/sshd_config` file to be a higher value. The default value is 120 seconds. This means that the server will disconnect after this time if you have not successfully logged in.

To resolve this issue, modify the `LoginGraceTime` value in the `/etc/ssh/sshd_config` file to be a higher value. If the value is set to 0 (zero), there is no definite time limit for authentication.

A.7.1.1 Agent Does Not Start Up After Upgrade

During an agent upgrade from 10.1.0.2 to 10.1.0.3, the agent may fail to start up after upgrade if the timezone that is configured for the upgraded agent is different from the originally configured agent.

You can correct this issue by changing the timezone. To do this, execute the following command from the upgraded agent home:

```
emctl resetTZ agent
```

This command will correct the agent side timezone, and specify an additional command to be run against the repository to correct the value there.

IMPORTANT: Before you change the timezone, check if there are any blackouts that are currently running or scheduled to run on any of the targets that are monitored by the upgraded agent. Do the following to check this:

1. In the Grid Control console, go to the All Targets page under Targets and locate the Agent in the list of targets. Click the agent name link. The Agent home page appears.
 2. The list of targets monitored by the agent will be listed in the *Monitored Targets* section.
 3. For each target in the list, click the target name to view the target home page.
 4. Here, in the Related Links section, click **Blackouts** to check any blackouts that are currently running or may be scheduled to run in the future.
 5. If such blackouts exist, you must stop all the blackouts that are running on all the targets monitored by this agent.
 6. From the console, stop all the targets that are scheduled to run on any of these monitored targets.
 7. Now, run the following command from the agent home to reset the timezone;

```
emctl resetTZ agent
```
 8. After the timezone is reset, you can create new blackouts on the targets.
-
-

A.7.1.2 Sample sshd_config File

A sample `sshd_config` file, which is a server-wide configuration file with all the variables is shown below.

```
#$OpenBSD: sshd_config,v 1.59 2002/09/25 11:17:16 markus Exp $

# This is the sshd server system-wide configuration file.  See
# sshd_config(5) for more information.

# This sshd was compiled with PATH=/usr/local/bin:/bin:/usr/bin

# The strategy used for options in the default sshd_config shipped with
# OpenSSH is to specify options with their default value where
# possible, but leave them commented.  Uncommented options change a
# default value.

#Port 22
#Protocol 2,1
#ListenAddress 0.0.0.0
```

```
#ListenAddress ::

# HostKey for protocol version 1
#HostKey /etc/ssh/ssh_host_key
# HostKeys for protocol version 2
#HostKey /etc/ssh/ssh_host_rsa_key
#HostKey /etc/ssh/ssh_host_dsa_key

# Lifetime and size of ephemeral version 1 server key
#KeyRegenerationInterval 3600
#ServerKeyBits 768

# Logging
#obsoletes QuietMode and FascistLogging
#SyslogFacility AUTH
SyslogFacility AUTHPRIV
#LogLevel INFO

# Authentication:

#LoginGraceTime 120
#PermitRootLogin yes
#StrictModes yes

#RSAAuthentication yes
#PubkeyAuthentication yes
#AuthorizedKeysFile.ssh/authorized_keys

# rhosts authentication should not be used
#RhostsAuthentication no
# Don't read the user's ~/.rhosts and ~/.shosts files
#IgnoreRhosts yes
# For this to work you will also need host keys in /etc/ssh/ssh_known_hosts
#RhostsRSAAuthentication no
# similar for protocol version 2
#HostbasedAuthentication no
# Change to yes if you don't trust ~/.ssh/known_hosts for
# RhostsRSAAuthentication and HostbasedAuthentication
#IgnoreUserKnownHosts no

# To disable tunneled clear text passwords, change to no here!
#PasswordAuthentication yes
#PermitEmptyPasswords no

# Change to no to disable s/key passwords
#ChallengeResponseAuthentication yes

# Kerberos options
#KerberosAuthentication no
#KerberosOrLocalPasswd yes
#KerberosTicketCleanup yes

#AFSTokenPassing no

# Kerberos TGT Passing only works with the AFS kaserver
#KerberosTgtPassing no

# Set this to 'yes' to enable PAM keyboard-interactive authentication
# Warning: enabling this may bypass the setting of 'PasswordAuthentication'
#PAMAuthenticationViaKbdInt no
```

```
#X11Forwarding no
X11Forwarding yes
#X11DisplayOffset 10
#X11UseLocalhost yes
#PrintMotd yes
#PrintLastLog yes
#KeepAlive yes
#UseLogin no
#UsePrivilegeSeparation yes
#PermitUserEnvironment no
#Compression yes

#MaxStartups 10
# no default banner path
#Banner /some/path
#VerifyReverseMapping no
#ShowPatchLevel no

# override default of no subsystems
Subsystemsftp/usr/libexec/openssh/sftp-server
```

A.8 Storage Data Has Metric Collection Errors

The following Enterprise Manager collection error message may appear from agents installed via silent or agentdownload install mechanisms:

```
snmhsutl.c:executable nmhs should have root suid enabled.
Perform the required root install actions (via root.sh script) to resolve this issue. It may
take up to 24 hours before the resolution is reflected.
```

A.9 Cannot Add Systems to Grid Environment from the Grid Control Console

You cannot add new targets to your grid environment if you do not have an agent already installed.

To install the agent from your Grid Control console:

1. Log in to the Grid Control console and go to the Deployments page.
2. Click **Install Agent** under the Agent Installation section.
3. In the Agent Deploy home page that appears, select the appropriate installation option that you want to perform. See [Section 5.2.1, "Agent Deploy Installation Prerequisites"](#) for more information.

A.10 Need More Help

If this appendix does not solve the problem you encountered, try these other sources:

- Oracle Enterprise Manager Release Notes, available on the Oracle Technology Network website (<http://www.oracle.com/technology/documentation>).
- OracleMetaLink (<http://metalink.oracle.com>).

If you do not find a solution for your problem, log a service request.

Management Repository Database Settings

The following topics are covered in this appendix:

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

B.1 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 a Server Parameter 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*.

B.1.1 Fixed Initialization Parameter Values

The following table lists the parameters and their fixed values that must be met for successful Management Repository database creation. These parameters are verified by Oracle Universal Installer prerequisite checks during installation.

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$opt ions` for this setting.

Table B-1 Fixed Initialization Parameter Values

Parameter	Value
job_queue_processes	10
db_block_size	8192
timed_statistics	TRUE

Table B-1 (Cont.) Fixed Initialization Parameter Values

Parameter	Value
open_cursors	300
session_cached_cursors	200
aq_tm_processes	1
compatible	<currently installed Oracle RDBMS version> (default)
undo_management	AUTO
undo_retention	10800
undo_tablespace	<any acceptable name>
processes	150
log_buffer	1048576
statistics_level	TYPICAL (Note that this value is specific only to 10g Enterprise Manager Repository Database versions and higher.)
TEMP Space	50 MB (extending to 100MB)
_b_tree_bitmap_plans	false (hidden parameter)

B.1.2 Variable Initialization Parameter Values

The variable parameter setting values are based on the size of the Enterprise Manager environment. For the sake of clarity, we have categorized the environment as Small, Medium, and Large based on the number of targets in the environment, where:

- Small = Approximately 100 monitored targets
- Medium = Approximately 1000 monitored targets
- Large = 10000 or more monitored targets

Table B-2 Variable Initialization parameter Values

Size	pga_aggregate_target	Redo logs ¹	db_cache_size (for 91 rep. DB)	shared_pool_size (for 91 rep. DB)	sga_target (for 10g rep. DB) ²
Small	256 MB	100 MB	384 MB (or more)	128 MB	512 MB (or more)
Medium	384 MB	512 MB	1024 MB (or more)	384 MB	1408 MB (or more)
Large	512 MB	1024 MB	2048 MB (or more)	512 MB	2560 MB (or more)

¹ One redo log group with four members each of the following size

² This new setting replaces settings for db_cache_size and shared_pool_size from 9i.

B.2 Other Database Settings

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

B.2.1 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*.

B.2.2 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.

B.2.3 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.

Installing Enterprise Manager on Real Application Clusters

This appendix discusses installing Enterprise Manager Grid Control in a Real Application Clusters environment

C.1 Pre-Installation Tasks

Before installation, consider the following sections.

C.1.1 Configure Oracle Cluster Synchronization Services (CSS)

The first time you install Oracle Enterprise Manager on a system, Oracle Universal Installer configures and starts a single-node version of the Oracle Cluster Synchronization Services (CSS) service. The CSS service is required to enable synchronization between an Automatic Storage Management (ASM) instance and the database instances that rely on it for database file storage. It is configured and started even if you do not choose Automatic Storage Management as a storage mechanism for database files.

Since it must be running before any Automatic Storage Management instance or database instance is started, Oracle Universal Installer configures it to start automatically when the system starts.

For Oracle Real Application Clusters installations, the CSS service is installed with Oracle Cluster Ready Services (CRS) in a separate Oracle home directory (also called the CRS home directory). For single-node installations, the CSS service is installed in and runs from the same Oracle home as the Oracle Database. For this reason, you must use caution when removing Oracle Database software from the system. Before you remove an Oracle home directory that contains an Oracle Database, you must either delete the CSS service configuration, or if necessary, reconfigure the CSS service to run from another Oracle home directory.

If you plan to have more than one Oracle Database installation on a single system and you want to use Automatic Storage Management for database file storage, Oracle recommends that you run the CSS service and the Automatic Storage Management instance from the same Oracle home directory and use different Oracle home directories for the database instances.

Note: If you plan to have more than one Oracle Database installation on a single system and you want to use Automatic Storage Management (ASM) for database file storage, Oracle recommends that you run the CSS service and the Automatic Storage Management instance from the same Oracle home directory and use different Oracle home directories for the database instances.

C.1.2 Certification for Agents on Real Application Clusters (RAC)

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

C.1.3 Additional Software Requirements for Agent Installation on Clusters

If the Enterprise Manager installation is on a Cluster, you must install Oracle Clusterware (formerly called CRS) or Vendor Clusterware separately, besides fulfilling all the other Oracle software requirements (see [Section 1.4.3, "Enterprise Manager Software Requirements"](#) for more information). Oracle Clusterware/Vendor Clusterware is not available on the Oracle Enterprise Manager Grid Control 10g Release 2 (10.2) installation media.

C.1.3.1 Oracle Clusterware/Vendor Clusterware

Oracle Cluster Ready Services (CRS) consist of key subcomponents required by Oracle Real Application Clusters installations. It performs workload management and a component restart. For example, when an instance supporting a particular service fails, Cluster Ready Services restarts the service on the next available instance that you have configured for that service.

You must install Cluster Ready Services before installing Oracle Real Application Clusters. The software is available on the Cluster Ready Services installation media.

See Also: For more information, refer to the *Oracle Enterprise Manager Licensing Information*. This guide is available on the Oracle Database Installation media.

C.1.4 Pre-Installation Tasks for Real Application Clusters on Linux

Before you install and use Oracle Real Application clusters, you must configure secure shell (SSH) for the Oracle user on all cluster nodes. The Installer uses the `ssh` and `scp` commands during installation to run remote commands on and copy files to the other cluster nodes. You must configure SSH so that these commands do not prompt for a password.

Note: If SSH is not available, the Installer attempts to use `rsh` and `rcp` instead. However, these services are disabled by default, in most Linux machines.

To configure SSH, complete the following steps on each cluster node:

1. Log in as the oracle user.

2. If necessary, create the `.ssh` directory in the Oracle user's home directory and set the correct permissions on it:

```
$ mkdir ~/.ssh
$ chmod 755 ~/.ssh
```

3. Enter the following commands to generate an RSA key for version 2 of the SSH protocol:

```
$ /usr/bin/ssh-keygen -t rsa
```

At the prompts:

- Accept the default location for the key file.
- Enter and confirm a pass phrase that is different from the Oracle user's password.

This command writes the public key to the `~/.ssh/id_dsa.pub` file and the private key to the `~/.ssh/id_dsa` file. Never distribute the private key to anyone.

4. Enter the following commands to generate a DSA key for version 2 of the SSH protocol:

```
$ /usr/bin/ssh-keygen -t dsa
```

At the prompts:

- Accept the default location for the key file.
- Enter and confirm a pass phrase that is different from the Oracle user's password.

This command writes the public key to the `~/.ssh/id_dsa.pub` file and the private key to the `~/.ssh/id_dsa` file. Never distribute the private key to anyone.

5. Copy the contents of the `~/.ssh/id_rsa.pub` and `~/.ssh/id_dsa.pub` files to the `~/.ssh/authorized_keys` file on this node and to the same file on all other cluster nodes.

Note: The `~/.ssh/authorized_keys` file on every node must contain the contents from all of the `~/.ssh/id_rsa.pub` and `~/.ssh/id_dsa.pub` files that you generated on all cluster nodes.

6. Change the permissions on the `~/.ssh/authorized_keys` file on all cluster nodes:

```
$ chmod 644 ~/.ssh/authorized_keys
```

At this point, if you use `ssh` to log in to or run a command on another node, you are prompted for the pass phrase that you specified when you created the DSA key.

To enable the Installer to use the `ssh` and `scp` commands without being prompted for a pass phrase, follow these steps:

1. On the system where you want to run the Installer, log in as the Oracle user.
2. Enter the following commands:

```
$ exec /usr/bin/ssh-agent $SHELL
```

```
$ /usr/bin/ssh-add
```

3. At the prompts, enter the pass phrase for each key that you generated.

If you have configured SSH correctly, you can now use the `ssh` or `scp` commands without being prompted for a password or a pass phrase.

4. To test the SSH configuration, enter the following commands from the same terminal session, testing the configuration of each cluster node:

```
$ ssh nodename1 date
$ ssh nodename2 date
.
.
```

These commands should display the date set on each node. If any node prompts for a password or pass phrase, verify that the `~/.ssh/authorized_keys` file on that node contains the correct public keys.

5. To ensure that X11 forwarding will not cause the installation to fail, create a user-level SSH client configuration file for the Oracle software owner user, as follows:
 - a. Using any text editor, edit to create the `~oracle/.ssh/config` file.
 - b. Ensure the `ForwardX11` attribute is set to `no`, for example:

```
Host *
    ForwardX11 no
```

6. You must run the Installer from this session or remember to repeat steps 2 and 3 before you start the Installer from a different terminal session.

Some of the other pre-installation tasks are listed below:

- Configure SSH on all nodes
- Oracle Clusterware/Vendor Clusterware must be running

For more detailed information on these pre-installation tasks that you must perform before a RAC Install, see the Oracle Real Application Clusters Installation and Configuration Guide.

Executing the runConfig Command Line Tool

The Command Line tool is typically used to run any of the failed configuration tools of your product(s) under an Oracle home.

The usage to execute the runConfig tool is:

```
./runConfig.sh OPTION1=value1 OPTION2=value2 ...
```

where OPTION1, OPTION2, and so on, can be the options discussed in the following section.

D.1 Options You Can Specify to Execute runConfig

D.1.1 ORACLE_HOME

This is the absolute location of the Oracle home. All products/top-level components under this Oracle home that have been installed using OUI 10.2 installer are eligible for the **ACTION**. Products installed using an OUI that is earlier to 10.2 are not eligible for this **ACTION**.

D.1.2 ACTION

This is a mandatory option. This option can have values such as **configure/clone/addnode/addlanguage/deconfigure/patchsetConfigure**.

D.1.3 MODE

This is optional, and can have values such as **perform/showStatus/listTools**. For example, if the value is **perform**, then that **ACTION** is performed.

If **MODE** is absent, the **MODE** option will assume a default value of **listTools**.

If the value is **showStatus**, the status of the last-perform **ACTION** is displayed to the user.

Examples

```
Tool1 - Optional    - Failed
Tool2 - Recommended - Succeeded
Tool3 - Optional    - Succeeded
```

If the value of **MODE** is **listTools**, a list of recommended/optional/other tools for the specified **ACTION** are displayed.

Example

```
Recommended Tools (1): Tool2
Optional Tools (2): Tool1, Tool3
Other Tools (0):
```

D.1.4 COMPONENT_XML

This is optional. You can specify a comma-separated list of Aggregate XML names from the `OH/inventory/ContentsXML/ConfigXML/` and only these XMLs and the dependees of these XMLs will be configured. If there are two components with the same name in the `ORACLE_HOME`, the one that is of a later version is considered for ACTION.

D.1.5 RESPONSE_FILE

This is optional. This is the absolute location of the response file that is used to overwrite some existing parameters. `ComponentID|variable = value`, pairs are to be specified in this file per line per variable as:

```
oracle.assistants.server|var1=true
oracle.network.client|var2=orcl
```

Example

```
RESPONSE_FILE=/scratch/rspfile.properties
```

Note: Secure variables are not stored in the instance aggregate xml files and hence while running runConfig, if any of the configuration tools that you want to run use secure variables, such as passwords, you must supply the value of these secure variables using the `RESPONSE_FILE` option of runConfig. Otherwise, the tools with secure variables as arguments fail.

D.1.6 INV_PTR_LOC

This is optional. This is the full path of `oraInst.loc`.

The `oraInst.loc` file contains `inventory_loc=<location of central inventory>`

```
inst_group=<>
```

Example

```
INV_PTR_LOC=<absolute path of oraInst.loc>
```

D.1.7 RERUN

This is optional. Possible values are **true** and **false**. RERUN has a default value of **false**. This means that only failed tools or those tools that were skipped are executed. All those tools that were successfully executed are skipped during the rerun.

`RERUN=true` will execute all the tools afresh, including the tools that completed successful runs.

D.1.8 Typical Usage of the runConfig.sh

```
./runConfig.sh ORACLE_HOME=<path of database home> ACTION=configure
MODE=perform COMPONENT_XML={encap_emseed.1_0_0_0.xml}
```

D.1.9 runConfig Log Files

The log files for `runConfig configActions<timestamp>.log/.err` are generated under `ORACLE_HOME/cfgtoollogs/oui/`.

D.2 Executing the configToolFailedCommands Script

During the installation, if any of the configuration assistants fail to run successfully, a `configToolFailedCommands` script is created in the respective Oracle home directories. If you want to rerun the failed config tools, you can either execute the `runConfig` tool, or navigate to the `configToolFailedCommands` script under the corresponding Oracle home location, and execute this script.

Usage: `./configToolFailedCommands`

Agent Deploy Application - Installation Prerequisites

Ensure the prerequisites discussed in this section are met before proceeding with the installation using Agent Deploy. This appendix contains the following sections:

- [Prerequisites](#)
- [Prerequisite Checks Executed by Agent Deploy](#)
- [Troubleshooting Failed Prerequisite Checks](#)

E.1 Prerequisites

The following prerequisites must be met before proceeding with the installation:

- SSH (Secure Shell) User Equivalence is set up
- Validate All Command Locations
- Modify Response File for Big IP Host and Port
- Verify `oraInventory` permissions on remote hosts
- Verify if user installing the agent is same as the user that installed Oracle Application Server and/or Oracle Collaboration Suite.

E.1.1 Set Up SSH (Secure Shell) User Equivalence

You must set up SSH (Secure Shell) prior to deploying the Management Agent using the Agent Deploy application. This is required as the Agent Deploy application uses SSH and SCP as modes of communication between nodes. Setting up the user equivalence helps avoid SSH authentication calls during future Agent Deploy operations.

IMPORTANT: The SSH User Equivalence must always be set between the target hosts and the OMS, and never among the target hosts.

In order to set up SSH, you must execute the `sshUserSetup.sh` script that is available at the following location:

`OMS_HOME/sysman/prov/resources/scripts`

E.1.1.1 sshUserSetup.sh

Usage of this script is as follows:

```
sshUserSetup.sh -hosts "<hostlist>" -user <user name> [-verify] [-confirm]
[-shared]
```

For example, `sshUserSetup.sh -hosts "host1 host2" -user sjohn`

Description

This script is used to set up SSH user equivalence from the host on which it is run to the specified remote hosts. After this script is run, you can use SSH to execute commands on the remote hosts, or copy files between the local host and the remote hosts without being prompted for passwords or confirmations.

The list of remote hosts and their user names are specified as command line parameters to the script.

- *-shared*

In case you have the home directory NFS mounted or shared across the remote hosts, the script should be used with `-shared` option.

To determine Whether an Oracle Home Directory is Shared or Not Shared, consider a scenario where you want to determine whether the Oracle home directory of *user1* is shared across hosts A, B, and C or not.

You can determine this by following the instruction below:

1. On host A, touch `~user1/checkSharedHome.tmp`.
2. On hosts B and C, execute `ls -al ~user1/checkSharedHome.tmp`.

If the file is present on hosts B and C in the `~user1` directory and is identical on all nodes, it means that the user's home directory is shared.

3. On host A, `rm -f ~user1/checkSharedHome.tmp`.

Note: In the event that you accidentally pass the `-shared` option for non-shared homes or vice versa, the SSH equivalence is only set up for a subset of the hosts. You will have to rerun the setup script with the correct option to rectify this issue.

- *-verify*

The `-verify` option allows you to verify whether SSH has been set up. In this case, the script does not set up SSH, but only checks whether *SSH user equivalence* has been set up from the local host to the remote hosts. It then runs the `date` command on each remote host using SSH. In case you are prompted for a password or see a warning message for a particular host, it means the SSH user equivalence has not been set up correctly for that host.

In case the `-verify` option is not specified, the script sets up SSH and then does the verification as well.

- *-confirm*

The `-confirm` option allows you to set up SSH User Equivalence with a forced change in the permissions on remote hosts. This means that the script will not prompt you to confirm the change in permissions, if you execute the script passing the `-confirm` option.

- *-help*

Use this option to view the Readme file for the `sshUserSetup.sh` script. The usage is as follows:

```
sshUserSetup.sh -help
```

The following examples provides usage of the above-mentioned options:

```
Local host = Z
Remote Hosts = A, B, and C
Local user = sjohn
Remote users = foo (non-shared)
aime (shared)
./sshUserSetup.sh -user foo -hosts "A B C" -confirm
```

Example E-1 Set up SSH User Equivalence and Verifies the Setup

```
sshUserSetup.sh -hosts "A B C" -user foo
```

This script sets up user equivalence from:

- Z to A
- Z to B
- Z to C

Example E-2 Setup SSH User Equivalence and verifies the Setup Without a Confirmation Prompt

```
sshUserSetup.sh -hosts "A B C" -user foo -confirm
```

This sets up SSH between the local host and A, B, C. It also verifies the setup. However, due to the usage of the `-confirm` option, it assumes that users are aware of the changes that would be made on the systems and will not ask for any confirmation.

Example E-3 Verifies Existing SSH User Equivalence Setup

```
./sshUserSetup.sh -hosts "A B C" -user foo -verify
```

Since the `-verify` option is specified, the script does not set up SSH setup, but only verifies the existing setup.

E.1.1.2 Setting Up the Timezone Variable on Remote Hosts

This section lists the steps you must follow to set up the timezone environment variable on remote hosts.

To verify if the timezone environment variable (TZ) is accessible by the SSH server on the remote hosts, execute the following command from the OMS host:

```
ssh -l <user_name> -n <remote_node> 'echo $TZ'
```

If this command does not return the TZ environment variable value, you must set the TZ variable and ensure this is accessible by the SSH server. You can set the TZ environment variable on remote hosts in the following ways:

E.1.1.2.1 Set the TZ variable and Restart the SSH Daemon

If the shell being used is `bash`, add the following line to the `.bashrc` file in the home directory of the user (being used) for `ssh` access:

```
export TZ=<your machine's timezone>
```

If you are using a C shell, then add the following line to the `.cshrc` file in that directory:

```
setenv TZ <your machine's timezone>
```

1. Depending on the shell that is present on the host, set the TZ variable by executing the following command:

For a CSH Shell, specify:

```
setenv TZ PST8PDT
```

2. Restart the SSH Daemon by executing:

```
sudo /etc/init.d/sshd restart
```

3. Now, execute the following command from the OMS home to verify if the SSH server can access the TZ variable.

```
ssh -l <user_name> -n <node_name> 'echo $TZ'
```

E.1.1.2.2 Set the TZ Variable in the "Shell rc" File

The timezone variable must be set in the rc file of the shell that the host is using.

For example, if the host is using a bash shell, go to the user's home directory (`$HOME`) and add the following to the `~/ .bashrc` file to set the TZ variable:

```
TZ=PST8PDT; export TZ
```

If the host is using a csh shell, go to `$HOME` and add the following to the `~/ .cshrc` file:

```
setenv TZ PST8PDT
```

Now, execute the following command from the OMS home to verify if the SSH server can access the TZ variable.

```
ssh -l <user_name> -n <node_name> 'echo $TZ'
```

Note: If `sshd` is not setup on remote box for TZ, you can pass this variable in the Additional Parameters text box using the `-z` option for default software source location (for install or upgrade) and the `s_timezone=<timezone>` option for a non-default software location.

Note that this will perform the installation of agents on all remote nodes with the same timezone value that you specify in the Additional Parameters text box. See [Appendix E, "Additional Parameters for Agent Deploy"](#) for more information.

E.1.2 Validate All Command Locations

The properties files located at `<omshome>/sysman/prov/resources/` comprises the default locations of commands that are required for successful execution of certain APIs, for example, the `ping` executable.

Such command locations can vary between machines and/or platforms. Ensure you run the `Validatepaths` script to verify whether the command locations in the

properties file are correct. This script provides a list of commands that are not found in the default locations.

Run the following command to execute this script:

```
./validatePaths -dirloc oms/sysman/prov/resources/
```

In the above example (of the ping executable); if the executable is present in /usr/sbin/ping, which is not the default location, you must specify this value in the userpaths.properties file by specifying PING_PATH=/usr/sbin/ping.

The properties files that are loaded by the Agent Deploy application are listed below:

- *platforminfo.properties*

Contains a list of files that need to be loaded for each platform. These files specify the paths for the commands. For example, /bin/ping.

- Paths.properties
- sPaths.properties
- ssPaths.properties
- userPaths.properties
- ssPaths_sol.properties (for Solaris only)

IMPORTANT: The files that comprise each properties file are loaded in the ascending order of their precedence. This means that values you specify in the last file that is loaded will override the values for the same property in the previous files.

For example, the *platforminfo.properties* file comprises *paths.properties*, *spaths.properties*, *ssPaths.properties*, and *userPaths.properties*.

If the default location for the ping executable in *sPaths.properties* file is *usr/bin/ping*, and you specified an alternative location in the *ssPaths.properties* file as *usr/sbin/ping*, the value in the latter file takes precedence over the others.

- *userPaths.properties*

This file lists all the variables that are used to specify the command paths. You must uncomment the variables that you want to use, and specify appropriate values.

Note: If you want to include other command variables, you can either choose to specify these variables in any of these *s*Paths.properties*/*userPaths.properties* files, or create another properties file and specify its name in *platforminfo.properties*.

Ensure these files are part of the *platforminfo.properties* file. If they are not, Agent Deploy ignores the paths to the executables that you have specified in these files and attempt to run the executables from their default locations.

- *system.properties*

This file contains properties that help you control the behavior and performance of the application. For example:

– *oracle.system.prov.threadpoolsize*

Number of threads that get created in the application and work in parallel to execute commands on remote hosts. The default threadpool size value that is set for Agent Deploy is 32. You can specify an appropriate value for the threadpool size in this property.

For example `oracle.sysman.prov.threadpoolsize=128`.

– *oracle.sysman.prov.threadpoolmaxsize*

Number of threads can increase dynamically depending on the workload.

The default value used in the application is 256

(`oracle.sysman.prov.threadpoolmaxsize=256`). You can specify an appropriate maximum value for the threadpool size in this property.

■ *ignoreMessages.txt*

If there are error messages displayed in the error stream that you know can be ignored in the setup, you can update these messages in the `ignoreMessages.txt` file.

Generally, if the error stream contains data when you execute any command, it is assumed that the command failed. But the data in the error stream may not always correspond to the error. So, to ignore such error messages, you must add these messages (including the banner) to the `ignoreMessages.txt` file.

Consider the following example:

When you run `/usr.local/bin/sudo` on a remote machine, it writes the following messages on to the error stream:

Administrator. It usually boils down to these two things:

#1) Respect the privacy of others.

#2) Think before you type.

Password:

This essentially, is just a warning to the user and does not constitute the failure of the executed command.

Such error messages can be added to the `ignore_Message.txt` file.

Note: The dataformat for these files mandates only one property per line. You must specify the property values in the format:
`variable=value`.

E.1.2.1 Location of Properties File

You can view the following properties files at `<OMS_HOME>/sysman/prov/resources/`:

- `platformInfo.properties`
- `Paths.properties`
- `sPaths.properties`
- `ssPaths_sol.properties`
- `userPaths.properties`
- `system.properties`

- ignoreMessages.txt

E.1.2.2 Location of Installation Logs

The following prerequisite check and installation logs are available at these locations:

- `<OMS_HOME>/sysman/prov/agentpush/<TIMESTAMP>/prereqs`
 1. Connectivity logs: The following logs are available at


```
$OMS_
HOME/sysman/prov/agentpush/<time-stamp>/prereqs/local:
```

 - prereq<time_stamp>.log
 - prereq<time_stamp>.out
 - prereq<time_stamp>.err
 2. Prereq Logs: The following prerequisite logs for <node 1> will be available at


```
$OMS_
HOME/sysman/prov/agentpush/<time-stamp>/prereqs/<node1>:
```

 - prereq<time_stamp>.log
 - prereq<time_stamp>.out
 - prereq<time_stamp>.err

Note: The time-stamp in the log-files of prereq/install/upgrade may not be the same as the time-stamp in the `$OMS_HOME/sysman/prov/agentpush/<time-stamp>/`. These timestamps can differ considerably from the OMS host because these logs are generated in remote nodes and are collected back to OMS after the agent installation/upgrade.

- `<OMS_HOME>/sysman/prov/agentpush/logs/`
 1. `EMAgentPush<TIMESTAMP>.log`: Agent Deploy application logs.
 2. `remoteInterfaces<TIMESTAMP>.log`: Logs of the remote interfaces layer.
- `<OMS_HOME>/sysman/prov/agentpush/<TIMESTAMP>/logs/<HOSTNAME>/`
 1. `install.log/.err`: Log/error of the fresh agent install/fresh cluster agent install.
 2. `upgrade.log/.err`: Log/error of the upgrade operation using Agent Deploy.
 3. `nfsinstall.log/err`: Log/error of the agent installation using the Shared Agent Home option in Agent Deploy.
 4. `clusterUpgrade.log/err`: Log/error of the cluster upgrade operation using Agent Deploy.
 5. `sharedClusterUpgradeConfig.log/err`: Log/error of the config operation in case of upgrade on a shared cluster.
 6. `config.log/err`: Log/error of the configuration of shared cluster in case of an agent installation on shared cluster.
 7. `preinstallscript.log/.err`: Log/error of the running of pre-install script, if specified.

8. `rootsh.log/.err`: Log/error of running of `root.sh`.
9. `postinstallscript.log/.err`: Log/error of running of post-install script, if specified.
10. `installActions<timestamp>.log`,
`oraInstall<timestamp>.err/.out`: Logs of Oracle Universal Installer.
11. `agentStatus.log`: Status of agent after running `emctl status agent` from the agent home.

E.1.3 Modify Response File for Big IP Host and Port

If the Management Service is using a load balancer, you must modify the `s_omsHost` and `s_OMSPort` values in the `<omshome>/sysman/agent_download/10.2.0.1.0/agent_download.rsp` file to reflect the load balancer host and port before using the Agent Deploy application.

E.1.4 Verify oraInventory Permissions on Remote Hosts

Ensure you (or the user performing the agent installation) have read, write, and execute permissions to `oraInventory` on all remote hosts. If you do not have these permissions on the default inventory (typically at `/etc/oraInst.loc`) on any remote host, you can specify the path to an alternative inventory location by using the `-i <location>` option in the Additional Parameters section.

Note: If this is the first installation on a remote host, the Oracle Universal Installer automatically creates the `oraInventory` in the user's home directory with read, write, and execute permissions for that user, as well as the OS group that the user belongs to.

E.1.5 Verify User Credentials

Ensure the user installing the agent is the same as the user that has installed Oracle Oracle Application Server and/or Oracle Collaboration Suite. You must also ensure the user has SUDO privileges that are required to execute the `root.sh` script.

You can either select the Run `Root.sh` option in Agent Deploy that will automatically execute the `root.sh` at the end of the installation, or choose not to select this option, but manually execute this script at the end of the installation.

This script must be run after the installation is complete in order to discover all the targets.

E.2 Prerequisite Checks Executed by Agent Deploy

The Agent Deploy application runs a local prerequisite check (on the machine running the Management Service) and remote prerequisite checks on all the remote hosts before proceeding with the installation process.

E.2.1 Prerequisite Checks Executed on the Local Host

[Table E-1](#) lists the connectivity prerequisite checks that are run on the local (Oracle Management Service) host.

Table E-1 Connectivity Prerequisite Check

Check to ensure whether	Description
Nodes are alive	Verifies whether the remote nodes are accessible.
SSH Server is up	Verifies whether there is an SSH Server Daemon running on all remote hosts, since the installation process will require SSH.
SSH User Equivalence is set	Verifies whether the user name specified in the installation details page has the SSH User Equivalence on all the remote hosts.
Installation directory is writable on the remote hosts	Verifies whether the installation base directory that you have specified is writable.

E.2.2 Prerequisite Checks Executed on Remote Hosts

Table E-2 lists the prerequisite checks that are executed by Agent Deploy for each installation type.

Table E-2 Prerequisite Checks for a Fresh Installation of Management Agent

Prerequisite Check for	Description	Fresh Install	Shared Agent Install	Upgrade
Certified Versions	Checks if the operating system on remote hosts is certified.	Yes	Yes	Yes
Packages	Checks if the minimum required packages are available on remote hosts	Yes	No	Yes
Disk Space	Checks if the minimum required disk space is available.	Yes	No	Yes
Agent Targets	Checks for targets on remote hosts that cannot be monitored by the agent. Targets that have been installed by another user cannot be monitored by the agent that you are going to install.	Yes	Yes	Yes
Port	Determines if the specified port is available. If you have not specified a value, this check looks for a free port within the 1830 - 1849 range or 3872 and assign it.	Yes	Yes	Yes
Oracle Home Location	Verifies whether the specified Oracle home (<install_base_dir/agent10g>) is empty.	Yes	Yes	Yes
Existing Agent Installations	Checks for any existing agent installations on the remote hosts.	Yes	No	No
Write Permissions for Base Directory	Checks if the installation base directory on all remote hosts have write permissions.	Yes	No	No

Table E-2 (Cont.) Prerequisite Checks for a Fresh Installation of Management Agent

Prerequisite Check for	Description	Fresh Install	Shared Agent Install	Upgrade
Inventory Check	Checks if the user credentials that you have specified have write permissions on the central inventory of each remote host.	Yes	Yes	Yes
Upgrade Agent Existence Check	Determines the existence of an agent (10.1) that can be upgraded on the remote hosts.	No	No	Yes
Write Permissions for Upgrade Agent	Checks if the installation base directory on all remote hosts have write permissions.	No	No	Yes
NFS Agent Existence Check	Checks for any existing agent installations on the remote hosts.	No	Yes	No
Write Permissions for NFS Agent	Checks whether the installation base directory, EMSTATE directory, and the NFS location are writable from all the remote hosts.	No	Yes	No
Time Zone ENV Check	Checks if the Timezone (TZ) environmental variable is set on the remote hosts.	Yes	Yes	Yes
Software Existence Check	Ensures the alternative software that you have specified is valid. Note: This check is executed only if you have selected a non-default (Another Location) software location for the agent installation.	Yes		

E.3 Troubleshooting Failed Prerequisite Checks

This section details the possible errors that you may encounter when the prerequisite checks are executed, and the appropriate user actions to be taken to resolve the errors.

E.3.1 Prerequisite Check Errors and Resolutions on Local Host

Table E-3 lists the most common reasons for prerequisite check failures, and the corresponding user actions to be performed to resolve them.

Table E-3 Prerequisite Check Errors and Resolutions on Local Host

Prerequisite Check	Reason for Failure	User Action ¹
Nodes are alive	Nodes are not accessible.	<ul style="list-style-type: none"> Ensure all the nodes are active. Remove the nodes that are not accessible from the nodes list.
SSH Server is up	SSH Daemon on one or more nodes is not up.	<ul style="list-style-type: none"> Try to start the SSH Daemon on the failed nodes. Remove the failed nodes from the node list.
SSH User Equivalence is set	SSH User Equivalence is not set up from the local host to the failed nodes for the specified user credentials.	<ul style="list-style-type: none"> Set up the User Equivalence for the specified user credentials between the Management Service and remote hosts using the <code>sshUserSetup.sh</code> script. See Section E.1.1, "Set Up SSH (Secure Shell) User Equivalence" for more information. Remove the failed nodes from the nodes list.
Installation directory is writable on the remote hosts	Installation base directory that you have specified is not writable, or cannot be created on the failed nodes.	<ul style="list-style-type: none"> Include write permissions on the failed nodes by executing the following command on the failed hosts from the local (OMS) host: <pre>[ssh -l <user> <host> "chmod +w -R <dir>"]</pre> Remove failed nodes from the nodes list.

¹ Where there are multiple user actions listed, you can choose to perform the action that is most appropriate.

E.3.2 Prerequisite Check Errors and Resolutions on Remote Hosts

[Table E-4](#) lists the most common reasons for prerequisite check failures on remote hosts, and the corresponding user actions to be performed to resolve them.

Table E-4 Reasons for Prerequisite Check Failure and Corresponding User Actions

Prerequisite Check	Reason for Failure	User Action ¹
Certified Versions	The failed host may have an operating system or version that is not certified to deploy the agent on that machine.	<ul style="list-style-type: none"> Exit the current installation and retry the agent installation without the failed hosts. Upgrade the failed node to an operating system or version that is certified before proceeding with the installation.
Packages	The failed hosts may not comprise the recommended minimum packages required to deploy the agent.	Click Fix and Retry in the Prorate Details page. Agent Deploy performs an automatic packages fix using YUM or RPMs. During the process, it returns to the Installation Details page and prompts you to specify valid/alternative values where required, and then reruns the prerequisite checks.
Disk Space	This check may fail if the required minimum disk space for the installation is not found on the remote hosts.	<ul style="list-style-type: none"> Increase the disk space on the failed hosts. Remove the failed nodes from the nodes list.
Agent Targets	The failed nodes may have some targets that were installed by a different user, and hence cannot be monitored by the agent.	<ul style="list-style-type: none"> Remove the targets that cannot be monitored from the failed hosts. Continue with the installation since the failure message is only a warning (though not recommended).

Table E-4 (Cont.) Reasons for Prerequisite Check Failure and Corresponding User

Prerequisite Check	Reason for Failure	User Action ¹
Port	<ul style="list-style-type: none"> ■ The specified port is not valid, or is not available. ■ You have not specified any port and there is no available port in the default range. 	<ul style="list-style-type: none"> ■ Ensure the specified port is not blocked on the failed hosts. ■ In the Installation Details page, leave the Port value blank. ■ If the default ports are either blocked or not available, remove the failed nodes from the nodes list.
Oracle Home Location	The <install_base_dir>/agent10g already exists and is not empty.	<ul style="list-style-type: none"> ■ Clean up the <install_base_dir>/agent10g directory. ■ Specify an alternative installation base directory. ■ Remove the failed nodes from the nodes list.
Existing Agent Installations	An agent already exists on the failed remote hosts that is registered with the central inventory.	<ul style="list-style-type: none"> ■ Uninstall the existing agent and retry the prerequisite checks. ■ Continue with the installation since the failure message is only a warning (though not recommended).
Write Permissions for Base Directory	The installation base directory is not writable.	<ul style="list-style-type: none"> ■ Include write permissions on the failed nodes by executing the following command on the failed hosts from the local (OMS) host: [ssh -l <user> <host> "chmod +w -R <dir>"] ■ Remove failed nodes from the nodes list.
Inventory Check	The specified user credential does not have write permissions on the central inventory.	<p>Change the central inventory permission settings to render the central inventory and its sub-directories writable. Complete the following steps to resolve this issue:</p> <ol style="list-style-type: none"> 1. Log in to the local host (machine running the Oracle Management Service). 2. Change the directory to: <HOME>/sysman/prov/agentpush/resources/fixup 3. For each failed host, run the following script: ./fixOraInvPermissions.sh <install user> <install group> <failed host name> <inventory location>. <p>As this script must be run as root (using sudo) on the failed remote host, you are prompted to specify the sudo password.</p>
Upgrade Agent Existence Check	An Oracle Management Agent of version 10.1 is not present in the remote hosts on which you want to perform the agent upgrade.	Exit the upgrade process.
Write Permissions for Upgrade Agent	The installation base directory is not writable.	<ul style="list-style-type: none"> ■ Include write permissions on the failed nodes by executing the following command on the failed hosts from the local (OMS) host: [ssh -l <user> <host> "chmod +w -R <dir>"] ■ Remove failed nodes from the nodes list.

Table E-4 (Cont.) Reasons for Prerequisite Check Failure and Corresponding User

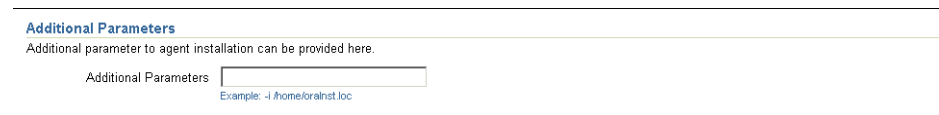
Prerequisite Check	Reason for Failure	User Action¹
NFS Agent Existence Check	An agent already exists on the remote hosts that is registered with the central inventory.	<ul style="list-style-type: none"> ■ Uninstall the existing agent and retry the prerequisite checks. ■ Continue with the installation since the failure message is only a warning (though not recommended).
Write Permissions for NFS Agent	<ul style="list-style-type: none"> ■ The installation base directory is not writable. ■ The NFS location is not accessible. ■ The EMSTATE directory is not writable. 	<ul style="list-style-type: none"> ■ Include write permissions on the failed nodes by executing the following command on the failed hosts from the local (OMS) host: [ssh -l <user> <host> "chmod +w -R <dir>"] ■ Remove failed nodes from the nodes list.
Time Zone ENV Check	The TZ environment variable is not set on the remote hosts.	<p>Recommended</p> <ul style="list-style-type: none"> ■ Specify the time zone in the Additional Parameters section (using the -z option) of the Installation Details page. <p>Optional</p> <ul style="list-style-type: none"> ■ Set the TZ environment variable. Shut down and restart SSH on all remote hosts. ■ Update with the TZ environment variable on all remote hosts.
Software Existence Check	The alternative software location that you have specified is not valid.	<ul style="list-style-type: none"> ■ Revert to the default software source location. ■ Change the alternative software location to a valid location (having ./stage/product.xml).

¹ Where there are multiple user actions listed, you can choose to perform the action that is most appropriate.

Additional Parameters for Agent Deploy

The additional parameters that you specify during the agent installation using Agent deploy depend on the source software location that you have selected.

Figure F–1 Additional Parameters Section of the Installation Details Page



If you select the default software source location, you must specify additional parameters that are supported by the agent Down Load script. See [Table F–1](#) for a list of parameters supported by this script.

If you select an alternative location, you must specify additional parameters that are supported by Oracle Universal Installer (OUI). See [Table F–2](#) for a list of parameters supported by OUI.

Note: If the same parameters that you specify here are also specified independently (from the command-line option), the value of the parameters that you specify here take precedence over the other.

For example, if the installation base directory is specified independently, and `-b` option is specified here, the latter value (`-b`) is used in the installation.

F.1 Additional Parameters Supported by agentDownload Script

The following table lists the possible parameters that you can specify if you select the default (Management Service) location:

Table F–1 Parameters Supported by agentDownload Script

Parameters	Description
-t	Do not start the agent after installation/upgrade. No value required.
-c	Cluster node list. Used during installation only. Nodes should be specified in double-quotes, separated by commas. For example, <code>-c "node1, node2, node3"</code>
-b	Installation base directory location. For example, <code>-b /home/OracleHomes/agent/</code>

Table F-1 (Cont.) Parameters Supported by agentDownload Script

Parameters	Description
-d	Do not initiate automatic target discovery. No value required.
-i	Inventory pointer location file, for example, <code>-i/etc/oraInst.loc</code>
-n	Cluster name, for example, <code>-n CLUSTER1</code>
-p	File location for static port for agent. For example, <code>-p /home/config/staticports.ini</code> The template file for the <code>-p</code> option is given below: <pre># staticports.ini Template File # This file is a template for specifying port numbers at installation time. # To specify a port number, uncomment the appropriate line (remove #) and # replace "port_num" with the desired port number. # You can then launch Oracle Universal Installer with special options to use this file. # Please refer to Enterprise Manager Grid Control 10gR2 Installation Guide for instructions. # Enterprise Manager #Enterprise Manager Central Agent Port=port_num</pre>
-z	Specify the timezone environment variable value (<code>-z <timezone></code>). For example, <code>-z PST8PDT</code> .

Note: If you use the `-z` option to specify the timezone, but the Agent Deploy application discovers a TZ environment variable already set on the remote host, this TZ value will take precedence over the `-z` value that you specify.

You can verify whether the TZ environment variable has been set on the remote host by executing the following command:

```
ssh -l <user_name> -n <remote_node> 'echo $TZ'
```

where, `<user name >` is the ID that you are using for the agent installation, and `<remote host>` is the host on which you want to install the agent.

If you are installing the agent from a non-default software location, you must specify the timezone environment variable using the following command:

```
s_timezone=<timezone>
For example, s_timezone=PST8PDT
```

F.2 Additional Parameters Supported by Oracle Universal Installer

The following table lists the possible parameters that you can specify if you select an alternative software source (non-default) location:

Table F-2 Parameters Supported by Oracle Universal Installer

Parameter	Description
-clusterware oracle.crs, <crs version>	Version of the installed Oracle Clusterware.
-crslocation <path>	Used only for cluster installs, specifies the path to the CRS home location. Specifying this overrides CRS information obtained from the central inventory.
-invPtrLoc <full path of oraInst.loc>	Linux only. To point to a different inventory location. The oraInst.loc file contains: inventory_loc=<location of central inventory> inst_group=<group of the user that is installing the agent>
-jreLoc <location>	Path where the Java Runtime Environment is installed. OUI cannot be run without this.
-logLevel <level>	To filter log messages that have a lesser priority level than <level>. Valid options are: severe, warning, info, config, fine, finer, finest, basic, general, detailed, trace. The use of basic, general, detailed, and trace is deprecated.
-paramFile <location of file>	Specify location of oraparam.ini file to be used by the Oracle Universal Installer.
-responseFile <Path>	Specifies the response file and path to use.
-sourceLoc <location of products.xml>	Specifies the software source location.
-cfs	Indicates that the Oracle home specified is on the cluster file system (shared). This is mandatory when '-local' is specified so that the Oracle Universal Installer can register the home appropriately into the inventory.
-debug	Gets the debug information from OUI.
-executeSysPrereqs	Executes system pre-requisite checks and exits.
-force	Allows silent mode installation into a non-empty directory.
-help	Displays the usage of all the above options.
-ignoreSysPrereqs	Ignores the results of the system pre-requisite checks.
-local	Performs the operation on the local node irrespective of the cluster nodes specified.
-printmemory	Logs debug information for memory usage.
-printtime	Logs debug information for time usage.
-updateNodeList	Updates the node list for this home in the OUI inventory.

F.2.1 Command Line Variable Usage During Silent Installation

The command line variables are specified using the <name=value> format.

For example,

```
[ session: | compName: | compName:version: ]variableName=" valueOfVariable"
```

Session/Installer variables are specified using the [session:] varName=value format.

For example:

```
session:ORACLE_HOME_NAME="OraHome"  
ORACLE_HOME_NAME="OraHome"
```

Note: The lookup order is `session:varName`, and then just the `varName`. The session prefix is used to avoid ambiguity.

Component variables are specified using
`[compInternalName: [Version:]] varName`

For example:

```
oracle.comp1:1.0.1:varName="VarValue"
```

```
oracle.comp1:varName="VarValue"
```

Note: The lookup order is
`compInternalName:Version:varName`, the
`compInternalName:varName`, and then just the `varName`.

See [Section 4.1.4, "Silent Installation of an Additional Management Agent"](#) for more information.

Assigning Custom Ports

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 [Section G.1, "Formats for 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 your operating system located at:

<http://otn.oracle.com/documentation/appserver10g.html>

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.

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

```
/runInstaller -staticPortsIniFile <staticport.ini file name>
```

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 assigns default ports for all components, and it does this without displaying any warning.

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

```
<DVD>/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 cannot 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 does 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.

G.1 Formats for 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 Agent Port=port_num
#Enterprise Manager Central Console Port=port_num
#Enterprise Manager Central Console Secure Port=port_num

# J2EE and Web Cache

#Oracle HTTP Server Listen port=port_num
#Oracle HTTP Server Listen (SSL) port=port_num
#Oracle HTTP Server Diagnostic 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

#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
#Log Loader port=port_num
```

Note: After having specified appropriate port values, ensure you remove the comment (#) for those properties before saving the file. The values are not considered otherwise.

G.2 Error Conditions that 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 a port is already being used by a component or any other application, do not specify that port (used port) in the `staticports.ini` file.
- If you have specified the same port for more than one component, the installation will display an error after the prerequisite checks phase. You must rectify this error before proceeding with the installation.
- 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 does not find the file. The installer continues without displaying a warning and it assigns 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 the middle tier but you are installing the infrastructure), the installer does not give a warning. It continues and assigns default ports to all components.

Oracle Reserved Words

This appendix provides a complete list of Oracle reserved words.

H.1 List of Oracle Reserved Words

In addition to the following reserved words, Oracle also uses system-generated names beginning with *SYS_* for implicitly generated schema objects and sub-objects. Oracle discourages you from using this prefix in the names you explicitly provide to your schema objects and sub-objects to avoid possible conflicts in name resolution.

Table H-1 List of Oracle Reserved Words

Oracle Reserved Words and Keywords

ACCESS	ACCOUNT	ACTIVATE
ADD	ADMIN	ADVISE
AFTER	ALL	ALL_ROWS
ALLOCATE	ALTER	ANALYZE
AND	ANY	ARCHIVE
ARCHIVELOG	ARRAY	AS
ASC	AT	AUDIT
AUTHENTICATED	AUTHORIZATION	AUTOEXTEND
AUTOMATIC	BACKUP	BECOME
BEFORE	BEGIN	BETWEEN
BFILE	BITMAP	BLOB
BLOCK	BODY	BY
CACHE	CACHE_INSTANCES	CANCEL
CASCADE	CAST	CFILE
CHAINED	CHANGE	CHAR
CHAR_CS	CHARACTER	CHECK
CHECKPOINT	CHOOSE	CHUNK
CLEAR	CLOB	CLONE
CLOSE	CLOSE_CACHED_OPEN_CURSORS	CLUSTER
COALESCE	COLUMN	COLUMNS

Table H-1 (Cont.) List of Oracle Reserved Words

Oracle Reserved Words and Keywords		
COMMENT	COMMIT	COMMITTED
COMPATIBILITY	COMPILE	COMPLETE
COMPOSITE_LIMIT	COMPRESS	COMPUTE
CONNECT	CONNECT_TIME	CONSTRAINT
CONSTRAINTS	CONTENTS	CONTINUE
CONTROLFILE	CONVERT	COST
CPU_PER_CALL	CPU_PER_SESSION	CREATE
CURRENT	CURRENT_SCHEMA	CURREN
T_USER	CURSOR	CYCLE
DANGLING	DATABASE	DATAFILE
DATAFILES	DATAOBJNO	DATE
DBA	DBHIGH	DBLOW
DBMAC	DEALLOCATE	DEBUG
DEC	DECIMAL	DECLARE
DEFAULT	DEFERRABLE	DEFERRED
DEGREE	DELETE	DEREF
DESC	DIRECTORY	DISABLE
DISCONNECT	DISMOUNT	DISTINCT
DISTRIBUTED	DML	DOUBLE
DROP	DUMP	EACH
ELSE	ENABLE	END
ENFORCE	ENTRY	ESCAPE
EXCEPT	EXCEPTIONS	EXCHANGE
EXCLUDING	EXCLUSIVE	EXECUTE
EXISTS	EXPIRE	EXPLAIN
EXTENT	EXTENTS	EXTERNALLY
FAILED_LOGIN_ ATTEMPTS	FALSE	FAST
FILE	FIRST_ROWS	FLAGGER
FLOAT	FLOB	FLUSH
FOR	FORCE	FOREIGN
FREELIST	FREELISTS	FROM
FULL	FUNCTION	GLOBAL
GLOBALLY	GLOBAL_NAME	GRANT
GROUP	GROUPS	HASH
HASHKEYS	HAVING	HEADER
HEAP	IDENTIFIED	IDGENERATORS

Table H-1 (Cont.) List of Oracle Reserved Words

Oracle Reserved Words and Keywords		
IDLE_TIME	IF	IMMEDIATE
IN	INCLUDING	INCREMENT
INDEX	INDEXED	INDEXES
INDICATOR	IND_PARTITION	INITIAL
INITIALLY	INITRANS	INSERT
INSTANCE	INSTANCES	INSTEAD
INT	INTEGER	INTERMEDIATE
INTERSECT	INTO	IS
ISOLATION	ISOLATION_LEVEL	KEEP
KEY	KILL	LABEL
LAYER	LESS	LEVEL
LIBRARY	LIKE	LIMIT
LINK	LIST	LOB
LOCAL	LOCK	LOCKED
LOG	LOGFILE	LOGGING
LOGICAL_READS_PER_CALL	LOGICAL_READS_PER_SESSION	LONG
MANAGE	MASTER	MAX
MAXARCHLOGS	MAXDATAFILES	MAXEXTENTS
MAXINSTANCES	MAXLOGFILES	MAXLOGHISTORY
MAXLOGMEMBERS	MAXSIZE	MAXTRANS
MAXVALUE	MIN	MEMBER
MINIMUM	MINEXTENTS	MINUS
MINVALUE	MLSLABEL	MLS_LABEL_FORMAT
MODE	MODIFY	MOUNT
MOVE	MTS_DISPATCHERS	MULTISET
NATIONAL	NCHAR	NCHAR_CS
NCLOB	NEEDED	NESTED
NETWORK	NEW	NEXT
NOARCHIVELOG	NOAUDIT	NOCACHE
NOCOMPRESS	NOCYCLE	NOFORCE
NOLOGGING	NOMAXVALUE	NOMINVALUE
NONE	NOORDER	NOOVERRIDE
NOPARALLEL	NOPARALLEL	NOREVERSE
NORMAL	NOSORT	NOT
NOTHING	NOWAIT	NULL
NUMBER	NUMERIC	NVARCHAR2

Table H-1 (Cont.) List of Oracle Reserved Words

Oracle Reserved Words and Keywords		
OBJECT	OBJNO	OBJNO_REUSE
OF	OFF	OFFLINE
OID	OIDINDEX	OLD
ON	ONLINE	ONLY
OPCODE	OPEN	OPTIMAL
OPTIMIZER_GOAL	OPTION	OR
ORDER	ORGANIZATION	OSLABEL
OVERFLOW	OWN	PACKAGE
PARALLEL	PARTITION	PASSWORD
PASSWORD_GRACE_TIME	PASSWORD_LIFE_TIME	PASSWORD_LOCK_TIME
PASSWORD_REUSE_MAX	PASSWORD_REUSE_TIME	PASSWORD_VERIFY_FUNCTION
PCTFREE	PCTINCREASE	PCTTHRESHOLD
PCTUSED	PCTVERSION	PERCENT
PERMANENT	PLAN	PLSQL_DEBUG
POST_TRANSACTION	PRECISION	PRESERVE
PRIMARY	PRIOR	PRIVATE
PRIVATE_SGA	PRIVILEGE	PRIVILEGES
PROCEDURE	PROFILE	PUBLIC
PURGE	QUEUE	QUOTA
RANGE	RAW	RBA
READ	READUP	REAL
REBUILD	RECOVER	RECOVERABLE
RECOVERY	REF	REFERENCES
REFERENCING	REFRESH	RENAME
REPLACE	RESET	RESETLOGS
RESIZE	RESOURCE	RESTRICTED
RETURN	RETURNING	REUSE
REVERSE	REVOKE	ROLE
ROLES	ROLLBACK	ROW
ROWID	ROWNUM	ROWS
RULE	SAMPLE	SAVEPOINT
SB4	SCAN_INSTANCES	SCHEMA
SCN	SCOPE	SD_ALL
SD_INHIBIT	SD_SHOW	SEGMENT
SEG_BLOCK	SEG_FILE	SELECT
SEQUENCE	SERIALIZABLE	SESSION

Table H-1 (Cont.) List of Oracle Reserved Words

Oracle Reserved Words and Keywords		
SESSION_CACHED_CURSORS	SESSIONS_PER_USER	SET
SHARE	SHARED	SHARED_POOL
SHRINK	SIZE	SKIP
SKIP_UNUSABLE_INDEXES	SMALLINT	SNAPSHOT
SOME	SORT	SPECIFICATION
SPLIT	SQL_TRACE	STANDBY
START	STATEMENT_ID	STATISTICS
STOP	STORAGE	STORE
STRUCTURE	SUCCESSFUL	SWITCH
SYS_OP_ENFORCE_NOT_NULL\$	SYS_OP_NTCTMG\$	SYNONYM
SYSDATE	SYSDBA	SYSOPER
SYSTEM	TABLE	TABLES
TABLESPACE	TABLESPACE_NO	TABNO
TEMPORARY	THAN	THE
THEN	THREAD	TIMESTAMP
TIME	TO	TOplevel
TRACE	TRACING	TRANSACTION
TRANSITIONAL	TRIGGER	TRIGGERS
TRUE	TRUNCATE	TX
TYPE	UB2	UBA
UID	UNARCHIVED	UNDO
UNION	UNIQUE	UNLIMITED
UNLOCK	UNRECOVERABLE	UNTIL
UNUSABLE	UNUSED	UPDATABLE
UPDATE	USAGE	USE
USER	USING	VALIDATE
VALIDATION	VALUE	VALUES
VARCHAR	VARCHAR2	VARYING
VIEW	WHEN	WHENEVER
WHERE	WITH	WITHOUT
WORK	WRITE	WRITEDOWN
WRITEUP	XID	YEAR
ZONE		

Enterprise Manager Java Console

In addition to using Oracle Enterprise Manager Database Control or Grid Control to manage an Oracle Database 10g database, you can also use the Oracle Enterprise Manager Java Console to manage databases from this release or previous releases. The Java Console is installed by the Administrator installation type.

Note: Oracle recommends that you use Grid Control or Database Control rather than the Java Console when possible. All Java Console functionality will be migrated to Grid Control in future releases. The Java Console will no longer be available once functionality migration is complete.

I.1 Running Enterprise Manager Java Console

To start the Java Console, follow these steps:

1. Set the ORACLE_HOME environment variable to specify the Oracle home directory where you installed the Oracle Client.
2. Depending on your platform, set the shared library path environment variable for your system to include the following directories:
3. Enter the following command to start the Java Console:

```
$ $ORACLE_HOME/bin/oemapp console
```

Or

```
$ $ORACLE_HOME/bin/oemapp dbastudio
```

Table I-1 Required Environment Variable Setting

AIX	LIBPATH	\$ORACLE_HOME/lib32:\$ORACLE_HOME/lib: \$LIBPATH
HP-UX	SHLIB_PATH	\$ORACLE_HOME/lib32:\$ORACLE_HOME/lib: \$SHLIB_PATH
Linux	LD_LIBRARY_PATH	\$ORACLE_HOME/lib:\$LD_LIBRARY_PATH
Solaris	LD_LIBRARY_PATH	\$ORACLE_HOME/lib32:\$ORACLE_HOME/lib: \$LD_LIBRARY_PATH
Tru64 UNIX	LD_LIBRARY_PATH	\$ORACLE_HOME/lib:\$LD_LIBRARY_PATH

I.2 Configuring Change Manager

The Change Manager application is the Oracle Change Management Pack central interface. Change Manager gives you direct or indirect access to all of the Oracle Change Management Pack operations (in cases where Change Manager cannot directly perform an operation, such as capturing or comparing object definitions, Change Manager starts the application that performs that operation). All change management information is stored in the standalone repository.

When connected to the standalone repository:

- Change Manager provides access to the Oracle Change Management Pack objects in the standalone repository. Because the standalone repository contains only objects that you created, the Change Manager navigator tree displays only your Change Management Pack objects.
- You have full access to your objects, but no access to any other objects.
- Other Change Management Pack applications started from Change Manager also run standalone.
- You cannot submit change plan scripts as jobs using the Oracle Enterprise Manager job system, but you can execute scripts interactively.

The first time Change Manager is accessed, you are prompted to create a database user who will own the standalone repository schema, or you are prompted to specify a user name and password if you have already created the user.

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 user name and password, and the standalone application automatically creates the standalone repository for you.

If you do not want to be prompted with the standalone Repository Login dialog every time you start your Change Manager, select the Save password and automatically log into the repository next time option to save the credentials for future use.

I.2.1 Creating a Standalone Repository

Before creating a standalone repository:

1. Make sure the database used for the repository is supported.
2. Create a tablespace for the standalone repository.
3. Create a database user for the standalone repository.

I.2.1.1 Database Version Requirements for the Standalone Repository

The following database releases are supported for the standalone repository:

- Enterprise Edition or Standard Edition Release 10.1.x
- Enterprise Edition or Standard Edition Release 9.2.x
- Enterprise Edition or Standard Edition Release 9.0.1.x

You must ensure that the database in which the repository will be placed has object support. If it does not, repository creation fails. Either select 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 10.1.x, 9.2.x, 9.0.1.x, and 8.1.7.x.

I.2.1.2 Create a Tablespace for the Standalone Repository

Create a tablespace with the following attributes:

- Type: Permanent
- Storage attributes: for Extent Management, use Locally managed
- 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. Then, follow the procedure described in this section:

1. Start the Oracle Enterprise Manager Java Console.

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

```
oemapp console
```
2. Click the + next to Databases to display the list of databases.
3. Double-click the database node in the Navigator and connect to the database as a user with the NORMAL privileges.
4. Choose **Create** from the Object menu. The Create Object List dialog appears.
5. Expand the database node in the Create Object List dialog and select **Tablespace**, then click **Create**. The Create Tablespace property sheet appears.
6. In the Create Tablespace Property Sheet's General page,
 - Enter the name of the new tablespace, OEM_REPOSITORY.
 - 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. The datafile is called OEM_REPOSITORY.dbf or OEM_REPOSITORY.ora depending on the version of the database.
8. Right-click the + next to OEM_REPOSITORY.dbf and choose **Edit**. The Create Datafile property sheet appears.
9. In the Create Datafile's General page, select the **Reuse Existing File** box.

10. In the Create Datafile's Storage page, fill the appropriate attributes:
 - a. Select the **Automatically extend datafile when full** (AUTOEXTEND) option so that the datafile automatically increases 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.
11. Click **OK** in the Create Datafile property sheet.
12. In the Create Tablespace Property Sheet's Storage page, select the Locally Managed option as the method of space management.
13. Click **Create** in the Create Tablespace Property Sheet.

1.2.1.3 Create a Database user for Standalone Repository

A standalone repository is owned by a database user. A database user, in other words, a 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 below:

1. Start the standalone Console.
2. Click the + next to Databases to display the list of databases.
3. Double-click the database node in the Navigator and connect to the database as a user with the NORMAL role.
4. Choose **Create** from the Object menu. The Create Object List dialog appears.
5. Expand the database node in the Create Object List dialog and select **User**, then click **Create**. The Create User property sheet appears.
6. 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.
7. In the Role page, grant the CONNECT and SELECT_CATALOG_ROLE to the repository user.
8. In the System Privileges page, grant the CREATE PROCEDURE, CREATE TRIGGER, CREATE TYPE, EXECUTE ANY PROCEDURE, EXECUTE ANY TYPE, SELECT ANY DICTIONARY (for 9i), and SELECT ANY TABLE roles to the repository user.
9. In the Quota page, specify unlimited for OEM_REPOSITORY and TEMP.
10. Click **Create** in the Create User property sheet.

Once you have a tablespace and a repository user, start a standalone application that 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 close the dialog since you have already created the user.

Supply the user's user name and password for the repository login and click **OK**. The standalone application automatically creates the standalone repository for you.

I.3 Starting Change Manager

You can start the Change Manager application in any of the following ways:

- From the Oracle Enterprise Manager Java Console, use any of these methods:
 - Select a database in the navigator panel, click the right mouse button, point to the Related Tools menu option, then click **Change Manager**.
 - On the Tools menu, point to Change Management Pack, then click **Change Manager**.
 - Click the Change Management Pack drawer, then click the **Change Manager** icon.
- Set the default to the ORACLE_HOME/bin directory (where ORACLE_HOME is the directory in which Oracle Enterprise Manager is installed), then enter the following in lowercase characters at the command line prompt:

```
oemapp ocm
```

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