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Preface

Oracle Enterprise Manager Grid Control Basic Installation Guide provides an overview of Enterprise Manager Grid Control and explains how you can install Enterprise Manager 11g Grid Control Release 1 (11.1.0.1.0), an additional Oracle Management Service (OMS), or an Oracle Management Agent (Management Agent). This guide also explains how you can upgrade Enterprise Manager 10g Grid Control Release 4 (10.2.0.4.0) or higher to Enterprise Manager 11g Grid Control Release 1 (11.1.0.1.0).

This preface contains the following topics:

- Intended Audience
- Purpose of the Document
- Documentation Accessibility
- Related Documents
- Conventions

Intended Audience

Oracle Enterprise Manager Grid Control Basic Installation Guide is meant for system administrators and others who want to do the following:

- Install Enterprise Manager 11g Grid Control Release 1 (11.1.0.1.0), an additional OMS, or a standalone Management Agent.
- Upgrade Enterprise Manager 10g Grid Control Release 4 (10.2.0.4.0) or higher to Enterprise Manager 11g Grid Control Release 1 (11.1.0.1.0).

Purpose of the Document

This section explains why and when you must use the Oracle Enterprise Manager Grid Control Basic Installation Guide, and clarifies what falls outside the scope of this guide. In particular, this section covers:

- What Can this Guide Be Used for?
- What Is Excluded from this Guide?

What Can this Guide Be Used for?

Oracle Enterprise Manager Grid Control Basic Installation Guide can be used for:

- Installing Enterprise Manager 11g Grid Control Release 1 (11.1.0.1.0) in graphical mode.
Installing an additional Oracle Management Service 11g Release 1 (11.1.0.1.0) in graphical mode.

■ Installing Oracle Management Agent 11g Release 1 (11.1.0.1.0) in graphical mode.

■ Upgrading Enterprise Manager 10g Grid Control Release 4 (10.2.0.4.0) or higher to Enterprise Manager 11g Grid Control Release 1 (11.1.0.1.0), in graphical mode.

For information about the different operating systems for which Enterprise Manager 11g Grid Control has been released, refer to My Oracle Support note 412431.1.

What Is Excluded from this Guide?
Oracle Enterprise Manager Grid Control Basic Installation Guide does NOT cover procedures for the following. The procedures are documented in Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide.

■ Installing the following in graphical mode:
  – Oracle Management Agent 11g Release 1 (11.1.0.1.0) on a cluster using Agent Deployment Wizard
  – Oracle Management Agent 11g Release 1 (11.1.0.1.0) with a shared Oracle home from a mounted location using Shared Agent Deployment Wizard
  – Enterprise Manager 11g Grid Control Release 1 (11.1.0.1.0) software only so that you can configure it later
  – Additional Oracle Management Service 11g Release 1 (11.1.0.1.0) software only so that you can configure it later

■ Cloning Oracle Management Agent 11g Release 1 (11.1.0.1.0) in graphical and silent mode.

■ Installing the following in silent mode:
  – Enterprise Manager 11g Grid Control Release 1 (11.1.0.1.0)
  – Additional Oracle Management Service 11g Release 1 (11.1.0.1.0)
  – Oracle Management Agent 11g Release 1 (11.1.0.1.0)
  – Enterprise Manager 11g Grid Control Release 1 (11.1.0.1.0) software only so that you can configure it later
  – Oracle Management Service 11g Release 1 (11.1.0.1.0) software only so that you can configure it later for additional Oracle Management Services
  – Oracle Management Agent 11g Release 1 (11.1.0.1.0) on a cluster
  – Oracle Management Agent 11g Release 1 (11.1.0.1.0) with a shared Oracle home from a mounted location
  – Oracle Management Agent 11g Release 1 (11.1.0.1.0) using agentDownload script

■ Upgrading Enterprise Manager 10g Grid Control Release 4 (10.2.0.4.0) or higher to Enterprise Manager 11g Grid Control Release 1 (11.1.0.1.0) in silent mode.

■ Upgrading Oracle Management Agent 10g Release 4 (10.2.0.4.0) or higher to Oracle Management Agent 11g Release 1 (11.1.0.1.0) in graphical and silent mode.

■ Deinstalling Enterprise Manager 11g Grid Control Release 1 (11.1.0.1.0) or Oracle Management Agent 11g Release 1 (11.1.0.1.0).
Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible to all users, including users that are disabled. 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 http://www.oracle.com/accessibility/.

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.

Accessibility of Links to External Web Sites in Documentation

This documentation may contain links to Web sites of other companies or organizations that Oracle does not own or control. Oracle neither evaluates nor makes any representations regarding the accessibility of these Web sites.

Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit http://www.oracle.com/support/contact.html or visit http://www.oracle.com/accessibility/support.html if you are hearing impaired.

Related Documents

For more information, see the following books in the Enterprise Manager Grid Control documentation library:

- Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide
- Oracle Enterprise Manager Administration Guide
- Oracle Enterprise Manager Administrator’s Guide for Software and Server Provisioning and Patching

For the latest releases of these and other Oracle documentation, check the Oracle Technology Network at the following URL:

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

Grid Control also provides extensive online Help. Click Help at the top of any Grid Control page to display the online help window.

Conventions

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.
*Italic* | Italic typeface indicates book titles or emphasis. | Oracle Database Concepts
*Lowercase monospace* | Lowercase monospace typeface indicates executables, file names, directory names, commands, and sample user-supplied elements. Such elements include computer names and database names, net service names, and connect identifiers, as well as user-supplied database objects and structures, column names, packages and classes, user names and roles, program units, and parameter values. | Enter sqlplus to open SQL*Plus. The password is specified in theiminal file. Back up the datafiles and control files in the `/<DVD>/oracle/dbs` directory. The `department_id`, `department_name`, and `location_id` columns are in the `hr.departments` table. Set the `QUERY_REWRITE_ENABLED` initialization parameter to `TRUE`. Connect as oe user. The `JRepUtil` class implements these methods.
This chapter provides an overview of Enterprise Manager Grid Control and helps you understand its architecture and the various core components that are integrated within the product.

This chapter contains the following sections:

- Overview of Enterprise Manager Grid Control
- Enterprise Manager Grid Control Architecture

1.1 Overview of Enterprise Manager Grid Control

Enterprise Manager Grid Control is a system management software that delivers centralized monitoring, administration, and life cycle management functionality for the complete IT infrastructure, including systems running Oracle and non-Oracle technologies. Your infrastructure may comprise multiple Oracle Databases, Oracle WebLogic Managed Servers, Web applications deployed on these servers, hosts running these targets, and so on. You can, of course, use the individual product consoles to monitor the status of each of these targets, but it becomes cumbersome to shuttle between multiple console windows and track the performance of each of these targets using so many windows.

Enterprise Manager Grid Control offers a solution that allows you to monitor and manage the complete Oracle IT infrastructure from a single console. Enterprise Manager Grid Control also offers support for monitoring certain non-Oracle products, for example, IBM WebSphere Application Server, Microsoft SQL Server, Juniper Networks NetScreen Firewall, and so on.

With a broad set of end-to-end monitoring, administration, configuration management, provisioning, and security capabilities, Enterprise Manager Grid Control reduces the cost and complexity of managing such grid computing environments. Robust service-level management functionality within Enterprise Manager Grid Control dramatically improves service levels through rich transaction and end-user performance monitoring and deep diagnostics for multi-tier Internet applications.

For more information about Enterprise Manager Grid Control, visit our Web site access the following URL:

http://www.oracle.com/enterprise_manager/index.html

1.2 Enterprise Manager Grid Control Architecture

Although Enterprise Manager Grid Control is viewed as a single entity, technically, it is built with the following software components:
Oracle Management Agent (Management Agent)

Management Agent is an integral software component that is deployed on each monitored host. It is responsible for monitoring all the targets running on those hosts, communicating that information to the middle-tier Oracle Management Service, and managing and maintaining the hosts and its targets.

Oracle Management Service (OMS)

OMS is a J2EE Web application that orchestrates with Management Agents to discover targets, monitor and manage them, and store the collected information in a repository for future reference and analysis. OMS also renders the user interface for the Enterprise Manager Grid Control console. OMS is deployed to the Oracle Middleware home, which is the parent directory that has the Oracle WebLogic Server home, the Web tier instance files, and, optionally, one or more Oracle homes.

Oracle Management Repository (Management Repository)

Management Repository is the storage location where all the information collected by the Management Agent gets stored. It consists of objects such as database jobs, packages, procedures, views, and tablespaces. Technically, OMS 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 OMS and displayed in the Enterprise Manager Grid Control console. Since data is stored in the Management Repository, it can be shared between any number of administrators accessing Enterprise Manager Grid Control.

At the time of installation, the Management Repository is configured in your existing Oracle Database.

Enterprise Manager Grid Control Console

Enterprise Manager Grid Control Console is the user interface you see after you install Enterprise Manager Grid Control. With the help of the 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, and so on, are easily managed from one central location.

The following illustrates the Enterprise Manager Grid Control architecture:
After installing Enterprise Manager Grid Control, what you see is the Enterprise Manager Grid Control Console, the user interface that displays information about the health of the monitored targets. However, internally, OMS orchestrates with Management Agents to discover targets, monitor and manage them, and store the collected information in a repository for future reference and analysis.
This part describes how you can install Enterprise Manager Grid Control and Oracle Management Agent in graphical mode (GUI).

In particular, this part has the following chapters:

- Chapter 2, "Installing Enterprise Manager System"
- Chapter 3, "Adding Additional Oracle Management Service"
- Chapter 4, "Installing Oracle Management Agent Using Agent Deployment Wizard"
Installing Enterprise Manager System

This chapter describes how you can install a complete Enterprise Manager system using an existing, certified Oracle Database and Oracle WebLogic Server. In particular, this section covers the following:

- Overview
- Before You Begin
- Prerequisites
- Installation Procedure
- After You Install

2.1 Overview

The first installation type, Install a new Enterprise Manager system, offered by the installer enables you to install a complete Enterprise Manager system while utilizing an existing, certified Oracle Database to store Oracle Management Repository (Management Repository).

The existing, certified Oracle Database must be one of the databases listed in My Oracle Support note 412431.1.

Table 2-1 describes the installation process and the software components that are installed or configured for this installation type.

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Installation of Oracle Management Service 11g Release 1</th>
</tr>
</thead>
</table>
| Creates an Oracle home in the Oracle Middleware Home location, and installs the Oracle Management Service (OMS) software binaries in the new home.  
Oracle Middleware Home consists of the Oracle WebLogic Server home, and, optionally, one or more Oracle homes.  
If the Oracle Middleware Home is /u01/app/Oracle/Middleware, then the Oracle home for OMS is /u01/app/Oracle/Middleware/oms11g |

<table>
<thead>
<tr>
<th>Step 2</th>
<th>Installation of Oracle Management Agent 11g Release 1</th>
</tr>
</thead>
</table>
| Creates an Oracle home in the Oracle Middleware Home location, and installs the Oracle Management Agent (Management Agent) software binaries in the new home  
If the Oracle Middleware Home is /u01/app/Oracle/Middleware, then the Oracle home for Management Agent is /u01/app/Oracle/Middleware/agent11g |
Step 3 Installation of Oracle Web Tier 11g Release 1
Creates an Oracle home in the Oracle Middleware Home location, and installs
the Web tier software binaries in the new home.
If the Oracle Middleware Home is `/u01/app/Oracle/Middleware`, then the
Oracle home for Web tier is `/u01/app/Oracle/Middleware/Oracle_WT`

Step 4 Installation of Oracle Common Directory
Creates a common directory in the Oracle Middleware Home location for
storing configuration files.
If the Oracle Middleware Home is `/u01/app/Oracle/Middleware`, then the
common directory is `/u01/app/Oracle/Middleware/oracle_common`

Step 5 Configuration of Oracle Management Service Instance Base Location
Creates an instance home for Enterprise Manager Grid Control in the parent
directory of the Oracle Middleware Home for storing all OMS-related
configuration files. By default, the instance home is `gc_inst`. You can,
however, edit this and specify a custom name.
If the Oracle Middleware Home is `/u01/app/Oracle/Middleware` and if
you choose to retain the default instance home name, then the instance home
location is `/u01/app/Oracle/gc_inst`
If the parent directory of the Oracle Middleware Home does not have write
permission, then the OMS Instance Base is created in the Oracle Middleware
Home.

Step 6 Configuration of Core Components
Runs the Configuration Assistants to perform the following:
1. Applying OMS-Related One-Off Patches: (Optional) Applies one-off
   patches to the Oracle home of the OMS (`oms11g`).
2. Configuring SYSMAN Schema and MDS Schema: In the specified
   existing, certified Oracle Database, configures the SYSMAN schema and
   Metadata (MDS) schema, and creates these data files `mgmt.dbf`, `mgmt_ecm_depot1.dbf`, `mgmt_ad4j.dbf`
3. Configuring OMS: Configures the OMS and the independent instance
   where Enterprise Manager Grid Control is deployed.
4. Add-on OMS Side Configuration: Configures the Virtualization Add-On
   detected in the Oracle home of the OMS (`oms11g`).
5. Configures OCM (If Required): If you have chosen to configure Oracle
   Configuration Manager (OCM), then configures it in the Oracle home of
   the OMS (`oms11g`) and Oracle home of the Web tier (`Oracle_WT`).
6. Applying Agent-Related One-Off Patches: (Optional) Applies one-off
   patches to the Oracle home of the Management Agent (`agent11g`).
7. Configuring Management Agent: Configures the Management Agent to
   enable monitoring of targets, collection of information, and so on.
8. Configures OCM (If Required): If you have chosen to configure Oracle
   Configuration Manager (OCM), then configures it in the Oracle home of
   the Management Agent (`agent11g`).
9. Configures System Monitoring Plug-Ins: Configures the System
   Monitoring Plug-Ins detected in the Oracle home of the Management
   Agent (`agent11g`).

<table>
<thead>
<tr>
<th>Table 2–1 (Cont.) Installation Process for Installing Enterprise Manager System</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 3</strong> Installation of Oracle Web Tier 11g Release 1</td>
</tr>
<tr>
<td>Creates an Oracle home in the Oracle Middleware Home location, and installs the Web tier software binaries in the new home.</td>
</tr>
<tr>
<td>If the Oracle Middleware Home is <code>/u01/app/Oracle/Middleware</code>, then the Oracle home for Web tier is <code>/u01/app/Oracle/Middleware/Oracle_WT</code>.</td>
</tr>
<tr>
<td><strong>Step 4</strong> Installation of Oracle Common Directory</td>
</tr>
<tr>
<td>Creates a common directory in the Oracle Middleware Home location for storing configuration files.</td>
</tr>
<tr>
<td>If the Oracle Middleware Home is <code>/u01/app/Oracle/Middleware</code>, then the common directory is <code>/u01/app/Oracle/Middleware/oracle_common</code>.</td>
</tr>
<tr>
<td><strong>Step 5</strong> Configuration of Oracle Management Service Instance Base Location</td>
</tr>
<tr>
<td>Creates an instance home for Enterprise Manager Grid Control in the parent directory of the Oracle Middleware Home for storing all OMS-related configuration files. By default, the instance home is <code>gc_inst</code>. You can, however, edit this and specify a custom name.</td>
</tr>
<tr>
<td>If the Oracle Middleware Home is <code>/u01/app/Oracle/Middleware</code> and if you choose to retain the default instance home name, then the instance home location is <code>/u01/app/Oracle/gc_inst</code>.</td>
</tr>
<tr>
<td>If the parent directory of the Oracle Middleware Home does not have write permission, then the OMS Instance Base is created in the Oracle Middleware Home.</td>
</tr>
<tr>
<td><strong>Step 6</strong> Configuration of Core Components</td>
</tr>
<tr>
<td>Runs the Configuration Assistants to perform the following:</td>
</tr>
<tr>
<td>1. Applying OMS-Related One-Off Patches: (Optional) Applies one-off patches to the Oracle home of the OMS (<code>oms11g</code>).</td>
</tr>
<tr>
<td>2. Configuring SYSMAN Schema and MDS Schema: In the specified existing, certified Oracle Database, configures the SYSMAN schema and Metadata (MDS) schema, and creates these data files <code>mgmt.dbf</code>, <code>mgmt_ecm_depot1.dbf</code>, <code>mgmt_ad4j.dbf</code>.</td>
</tr>
<tr>
<td>3. Configuring OMS: Configures the OMS and the independent instance where Enterprise Manager Grid Control is deployed.</td>
</tr>
<tr>
<td>4. Add-on OMS Side Configuration: Configures the Virtualization Add-On detected in the Oracle home of the OMS (<code>oms11g</code>).</td>
</tr>
<tr>
<td>5. Configures OCM (If Required): If you have chosen to configure Oracle Configuration Manager (OCM), then configures it in the Oracle home of the OMS (<code>oms11g</code>) and Oracle home of the Web tier (<code>Oracle_WT</code>).</td>
</tr>
<tr>
<td>6. Applying Agent-Related One-Off Patches: (Optional) Applies one-off patches to the Oracle home of the Management Agent (<code>agent11g</code>).</td>
</tr>
<tr>
<td>7. Configuring Management Agent: Configures the Management Agent to enable monitoring of targets, collection of information, and so on.</td>
</tr>
<tr>
<td>8. Configures OCM (If Required): If you have chosen to configure Oracle Configuration Manager (OCM), then configures it in the Oracle home of the Management Agent (<code>agent11g</code>).</td>
</tr>
<tr>
<td>9. Configures System Monitoring Plug-Ins: Configures the System Monitoring Plug-Ins detected in the Oracle home of the Management Agent (<code>agent11g</code>).</td>
</tr>
</tbody>
</table>
Before You Begin

2.2 Before You Begin

Before you begin, keep these points in mind:

- This installation type only supports installation of Enterprise Manager Grid Control locally on the server where the installer is invoked, and does not support installing on multiple or remote hosts.

- Oracle recommends installing Enterprise Manager Grid Control on a dedicated Oracle WebLogic Server instance. You must not install Enterprise Manager Grid Control on an Oracle WebLogic Server instance that already has Oracle SOA Suite 11.1.1.2.0 installed. Enterprise Manager Grid Control and Oracle SOA Suite cannot co-exist because the `ORACLE_COMMON` property is used by both the Enterprise Manager Administration Server and the SOA Suite Administration Server. If you still want to use the same Oracle WebLogic Server instance, then deinstall Oracle SOA Suite and remove the `ORACLE_COMMON` value from the Oracle WebLogic Server.

- For information about the default ports that are assigned and the possibility of using custom ports instead of default ports, see the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:
  http://www.oracle.com/technology/documentation/oem.html

- While installing on hosts having multiple IP addresses, the host name is derived from the `ORACLE_HOSTNAME` variable that is passed while invoking the installer. For example:
  ```
  ./runInstaller ORACLE_HOSTNAME=host1.foo.com
  ```

  **Note:** Before passing this variable with the installer, ensure that you set the `ORACLE_HOSTNAME` environment variable.

- No environment variable specific to Enterprise Manager Grid Control needs 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.

- Oracle offers code fixes for a product based on the Oracle Lifetime Support Policy. When the license period expires for a particular product, the support for code fixes offered by Oracle also ends. For more information, see the Oracle Lifetime Support Policy available at:

  When determining supportability and certification combinations for an Enterprise Manager Grid Control installation, you must consider Enterprise Manager Grid Control’s framework components as well as the targets monitored by Enterprise Manager Grid Control. Oracle recommends keeping your Grid Control components and targets updated to the latest certified versions in order to receive code fixes without having to purchase an Extended Support license. For
Prerequisites

information about the certified combinations of Enterprise Manager Grid Control components and monitored targets, see My Oracle Support note 412431.1.

- For accessing the Enterprise Manager Grid Control console, ensure that you use only certified browsers as mentioned in My Oracle Support note 412431.1.

2.3 Prerequisites

Before installing a complete Enterprise Manager system, ensure that you meet the following prerequisites. If you want, you can print out this section and write ‘Yes’ or ‘No’ against each prerequisite. This will help you to track the prerequisites you have met and the prerequisites you have not met.

Table 2-2 Prerequisites for Installing Enterprise Manager System

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware Requirements</td>
<td>Ensure that you meet the hard disk space and physical memory requirements as described in Appendix A, “Meeting Hardware Requirements”.</td>
<td></td>
</tr>
<tr>
<td>Operating System Requirements</td>
<td>Ensure that you install Enterprise Manager Grid Control only on certified operating systems as mentioned in My Oracle Support note 412431.1.</td>
<td></td>
</tr>
<tr>
<td>Package Requirements</td>
<td>Ensure that you install all the operating system-specific packages as described in Appendix B, “Meeting Package and Library Requirements”.</td>
<td></td>
</tr>
<tr>
<td>Operating System Groups and Users</td>
<td>Ensure that you create the required operating system groups and users as described in Appendix C, “Creating Operating System Groups and Users Requirements”.</td>
<td></td>
</tr>
<tr>
<td>Unique Host Name and Static IP</td>
<td>Ensure that you check the network configuration to verify that the host on which you are installing resolves to a unique host name and a static IP address that are visible to other hosts in the network. Note: You must use only a static IP address. If you use a dynamic IP address, the installation will fail.</td>
<td></td>
</tr>
<tr>
<td>Temporary Directory Space</td>
<td>Ensure that you allocate 400 MB of space for a temporary directory where the executables can be copied. For example, /tmp on UNIX hosts and %temp on Microsoft Windows hosts.</td>
<td></td>
</tr>
<tr>
<td>Central Inventory Requirements</td>
<td>Ensure that you allocate 100 MB of space for the central inventory directory. Also ensure that the central inventory directory is not on a shared file system. If it is already on a shared file system, then switch over to a non-shared file system by following the instructions outlined in My Oracle Support note 1092645.1.</td>
<td></td>
</tr>
</tbody>
</table>
| UMASK Value Requirements           | Ensure that you set the default file mode creation mask (umask) to 022 in the shell startup file. For example:
  - Bash Shell
    $ . ~/.bash_profile
  - Bourne or Korn Shell
    $ . ~/.profile
  - C Shell
    % source ~/.login |        |
## Prerequisites

### Installing Enterprise Manager System

**File Descriptor Requirements**

Ensure that you set the file descriptor to a minimum of 4096.

To verify the current value set to the file descriptors, run the following command:

```
/bin/sh -c "ulimit -n"
```

If the current value is not 4096, then as a root user, update the `/etc/security/limits.conf` file with the following entries:

- `<UID>` soft nofile 4096
- `<UID>` hard nofile 4096

**JDK Requirements**

Ensure that you have the following version of JDK installed on the host where you are planning to install Enterprise Manager Grid control.

- **Linux Platform (32/64 Bit):** SUN JDK 1.6_18
- **Solaris Platform:** SUN JDK 1.6_18
- **HP-UX Platform:** JDK 6.0.05+
- **AIX Platform:** JDK 1.6.0.586+
- **Microsoft Windows Platform (64 Bit):** SUN JDK 1.6_18

Download the JDK version for your platform from the platform vendor’s Web site. For example, download SUN JDK 1.6_18 for Linux platforms from Oracle Web site. Similarly, download the JDK for other platforms from other vendors’ trusted Web sites.

You can also refer to My Oracle Support note 1063587.1 for an example on installing JDK 1.6_18 on Linux x86_64 platform.

If you already have a JDK installed, then verify its version by navigating to the `<jdk>/bin` directory and running the following command. The output of this query should give you the complete version number.

```
java -fullversion
```

*Note:* JROCKIT is not supported.

---

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>File Descriptor Requirements</td>
<td>Ensure that you set the file descriptor to a minimum of 4096.</td>
</tr>
<tr>
<td></td>
<td>To verify the current value set to the file descriptors, run the following</td>
</tr>
<tr>
<td></td>
<td>command:</td>
</tr>
<tr>
<td></td>
<td><code>/bin/sh -c &quot;ulimit -n&quot;</code></td>
</tr>
<tr>
<td></td>
<td>If the current value is not 4096, then as a root user, update the</td>
</tr>
<tr>
<td></td>
<td><code>/etc/security/limits.conf</code> file with the following entries:</td>
</tr>
<tr>
<td></td>
<td><code>&lt;UID&gt;</code> soft nofile 4096</td>
</tr>
<tr>
<td></td>
<td><code>&lt;UID&gt;</code> hard nofile 4096</td>
</tr>
<tr>
<td>JDK Requirements</td>
<td>Ensure that you have the following version of JDK installed on the host</td>
</tr>
<tr>
<td></td>
<td>where you are planning to install Enterprise Manager Grid control.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Linux Platform (32/64 Bit):</strong> SUN JDK 1.6_18</td>
</tr>
<tr>
<td></td>
<td>- <strong>Solaris Platform:</strong> SUN JDK 1.6_18</td>
</tr>
<tr>
<td></td>
<td>- <strong>HP-UX Platform:</strong> JDK 6.0.05+</td>
</tr>
<tr>
<td></td>
<td>- <strong>AIX Platform:</strong> JDK 1.6.0.586+</td>
</tr>
<tr>
<td></td>
<td>- <strong>Microsoft Windows Platform (64 Bit):</strong> SUN JDK 1.6_18</td>
</tr>
<tr>
<td></td>
<td>Download the JDK version for your platform from the platform vendor’s Web</td>
</tr>
<tr>
<td></td>
<td>site. For example, download SUN JDK 1.6_18 for Linux platforms from Oracle</td>
</tr>
<tr>
<td></td>
<td>Web site. Similarly, download the JDK for other platforms from other</td>
</tr>
<tr>
<td></td>
<td>vendors’ trusted Web sites.</td>
</tr>
<tr>
<td></td>
<td>You can also refer to My Oracle Support note 1063587.1 for an example on</td>
</tr>
<tr>
<td></td>
<td>installing JDK 1.6_18 on Linux x86_64 platform.</td>
</tr>
<tr>
<td></td>
<td>If you already have a JDK installed, then verify its version by navigating</td>
</tr>
<tr>
<td></td>
<td>to the <code>&lt;jdk&gt;/bin</code> directory and running the following command. The output</td>
</tr>
<tr>
<td></td>
<td>of this query should give you the complete version number.</td>
</tr>
<tr>
<td></td>
<td><code>java -fullversion</code></td>
</tr>
<tr>
<td></td>
<td><em>Note:</em> JROCKIT is not supported.</td>
</tr>
</tbody>
</table>
Prerequisites

Oracle WebLogic Server Requirements
- Ensure that Oracle WebLogic Server 10.3.2 (Oracle Fusion Middleware 11g Release 1 Patch Set 1) is already installed on the host where you plan to install Enterprise Manager Grid Control.
- Ensure that the installation was a typical installation, and even if it was a custom installation, ensure that components chosen for custom installation were the same as the ones associated with a typical installation.
- Ensure that the installation was under the Middleware Home directory. For example, /scratch/aime/Oracle/Middleware/wlserver_10.3.
- Ensure that no other Oracle Fusion Middleware products or components are installed in the Middleware Home directory where Oracle WebLogic Server 10.3.2 is installed.
- Enterprise Manager Grid Control will create a new domain in this Oracle WebLogic Server, and not use any of the existing domains.

For information on installing Oracle WebLogic Server, see My Oracle Support note 1063762.1. For more information, downloads, demos, access the following URL:

Oracle WebLogic Server Patch Requirements
Ensure that you apply patch ID WDJ7 on Oracle WebLogic Server using the Oracle Smart Update utility. This patch fixes bugs 8990616, 9100465, and 9221722.

For information on applying this patch, see My Oracle Support note 1072763.1.

For information on Oracle Smart Update utility, see Oracle Smart Update Installing Patches and Maintenance Packs documentation available at:

Existing Database Version Requirements
Ensure that the existing, certified Oracle Database is one of the databases listed in My Oracle Support note 412431.1. The database can reside either on the host where you are installing the product or on a remote host.

(Optional) If you are installing using Oracle Database 11g Release 1 (11.1.0.7.0), then ensure that you apply the patch for bug# 9066130.

(Optional) If you are installing using Oracle Database 11g Release 2 (11.2.0.1.0), then ensure that you apply the patch for bug# 9002336 and 9067282.

Note: For information about these patches and their availability for different platforms, see My Oracle Support note 1073066.1.

Existing Database Not to Be in QUIESCE Mode
Ensure that existing, certified Oracle Database is not in QUIESCE mode. To verify this, run the following SQL in the database:
select active_state from v$instance;

Table 2-2 (Cont.) Prerequisites for Installing Enterprise Manager System

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Yes/No</th>
</tr>
</thead>
</table>
| Oracle WebLogic Server Requirements| • Ensure that Oracle WebLogic Server 10.3.2 (Oracle Fusion Middleware 11g Release 1 Patch Set 1) is already installed on the host where you plan to install Enterprise Manager Grid Control.  
• Ensure that the installation was a typical installation, and even if it was a custom installation, ensure that components chosen for custom installation were the same as the ones associated with a typical installation.  
• Ensure that the installation was under the Middleware Home directory. For example, /scratch/aime/Oracle/Middleware/wlserver_10.3.  
• Ensure that no other Oracle Fusion Middleware products or components are installed in the Middleware Home directory where Oracle WebLogic Server 10.3.2 is installed.  
• Enterprise Manager Grid Control will create a new domain in this Oracle WebLogic Server, and not use any of the existing domains.  
For information on installing Oracle WebLogic Server, see My Oracle Support note 1063762.1. For more information, downloads, demos, access the following URL: http://www.oracle.com/technology/products/weblogic/index.html |        |
| Oracle WebLogic Server Patch Requirements | Ensure that you apply patch ID WDJ7 on Oracle WebLogic Server using the Oracle Smart Update utility. This patch fixes bugs 8990616, 9100465, and 9221722.  
For information on applying this patch, see My Oracle Support note 1072763.1.  
For information on Oracle Smart Update utility, see Oracle Smart Update Installing Patches and Maintenance Packs documentation available at: http://www.oracle.com/technology/products/weblogic/index.html |        |
| Existing Database Version Requirements | Ensure that the existing, certified Oracle Database is one of the databases listed in My Oracle Support note 412431.1. The database can reside either on the host where you are installing the product or on a remote host.  
(Optional) If you are installing using Oracle Database 11g Release 1 (11.1.0.7.0), then ensure that you apply the patch for bug# 9066130.  
(Optional) If you are installing using Oracle Database 11g Release 2 (11.2.0.1.0), then ensure that you apply the patch for bug# 9002336 and 9067282.  
Note: For information about these patches and their availability for different platforms, see My Oracle Support note 1073066.1. |        |
| Existing Database Not to Be in QUIESCE Mode | Ensure that existing, certified Oracle Database is not in QUIESCE mode. To verify this, run the following SQL in the database: select active_state from v$instance; |        |
Prerequisites

Installing Enterprise Manager System 2-7

Table 2–2 (Cont.) Prerequisites for Installing Enterprise Manager System

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Database Not to Have Database Control</td>
<td>If you are upgrading, then ignore this prerequisite. Ensure that your existing, certified Oracle Database does NOT have Database Control SYSMAN schema. If it has, that is, if your existing database is configured with Database Control, then deconfigure it. 1. Verify whether your database has Database Control SYSMAN schema. To do so, log in to the database as SYS user and run the following query: <code>SELECT COUNT(*) FROM ALL_USERS WHERE USERNAME='SYSMAN'</code>. If the result of this query is 1, then the database has this schema, so deconfigure it. 2. Before deconfiguring the Database Control, set the environment variable <code>ORACLE_HOME</code> to the Oracle home of the database, and <code>ORACLE_SID</code> to the SID of the database. For example, in bash shell, you can set them in the following way: <code>export ORACLE_HOME=/u01/app/oracle/product/11.2.0/dbhome_1</code> <code>export ORACLE_SID=orcl</code> 3. Deconfigure the Database Control. To deconfigure Database Control for a standalone database, run the following command from the Oracle home of the database as the user who installed the database. If the command hangs, then restart the database and rerun the command. <code>$&lt;ORACLE_HOME&gt;/bin/emca -deconfig dbcontrol db -repos drop -SYS_PWD &lt;sys password&gt; -SYSMAN_PWD &lt;sysman password&gt;</code> To deconfigure Database Control for a Real Application Cluster (RAC) database, run the following command from the Oracle home of the database as the user who installed the database. If the command hangs, then restart the database and rerun the command. <code>$&lt;ORACLE_HOME&gt;/bin/emca -deconfig dbcontrol db -repos drop -cluster -SYS_PWD &lt;sys password&gt; -SYSMAN_PWD &lt;sysman password&gt;</code></td>
<td></td>
</tr>
</tbody>
</table>
Prerequisites

Existing Database Not to Have SYSMAN and SYSMAN_MDS Schema

(If you are upgrading, then ignore this prerequisite)

Ensure that your existing, certified Oracle Database does NOT have Enterprise Manager Grid Control SYSMAN schema and Metadata (MDS) schema.

1. Verify whether your database has Enterprise Manager Grid Control SYSMAN schema and MDS schema.

   To do so, log in to the database as SYS user and run the following query:
   ```sql
   SELECT COUNT(*) FROM ALL_USERS WHERE USERNAME IN ('SYSMAN', 'SYSMAN_MDS');
   ```

   If the result of this query is 1, then the database has these schemas, so drop them.

2. Before dropping the schema, set the environment variable `LD_LIBRARY_PATH` to the `ORACLE_HOME/lib` directory of the OMS. Also set the `ORACLE_HOME` to the Oracle home of the OMS.

3. Drop the schema by running the following command from the Oracle home of the OMS.

   ```bash
   $<ORACLE_HOME>/sysman/admin/emdrep/bin/RepManager <repository_database_host> <repository_database_port> <repository_database_sid> -action dropall -dbUser <repository_database_user> -dbPassword <repository_database_password> -dbRole <repository_database_user_role> -mwHome <middleware_home> -mwOraHome <oms_oracle_home> -oracleHome <oms_oracle_home>
   ```

   If you are dropping the schemas that belong to a 10g Release 2 (10.2.x.x) Management Repository, then run previous command without these arguments:

   ```bash
   -mwHome <middleware_home> -mwOraHome <middleware_ora_home> -oracleHome <oracle_home>
   ```

   Note:
   - For Microsoft Windows, invoke `RepManager.bat`.
   - `RepManager 11.1` supports `-action dropall` (drops SYSMAN as well as SYSMAN_MDS) and `-action drop` (drops only SYSMAN)
   - `RepManager 10.2.0.5` supports `-action drop` (drops only SYSMAN)

4. After dropping the schema, manually delete the database files `mgmt.dbf` and `mgmt_ecm_depot1.dbf`.

   You can find these files by running the following command as SYS:

   ```sql
   SELECT FILE_NAME FROM DBA_DATA_FILES WHERE UPPER(TABLESPACE_NAME) LIKE 'MGMT%';
   ```

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Database Not to Have SYSMAN and SYSMAN_MDS Schema</td>
<td>(If you are upgrading, then ignore this prerequisite) Ensure that your existing, certified Oracle Database does NOT have Enterprise Manager Grid Control SYSMAN schema and Metadata (MDS) schema.</td>
<td>Yes</td>
</tr>
<tr>
<td>1. Verify whether your database has Enterprise Manager Grid Control SYSMAN schema and MDS schema.</td>
<td>To do so, log in to the database as SYS user and run the following query: <code>SELECT COUNT(*) FROM ALL_USERS WHERE USERNAME IN ('SYSMAN', 'SYSMAN_MDS');</code> If the result of this query is 1, then the database has these schemas, so drop them.</td>
<td>Yes</td>
</tr>
<tr>
<td>2. Before dropping the schema, set the environment variable <code>LD_LIBRARY_PATH</code> to the <code>ORACLE_HOME/lib</code> directory of the OMS. Also set the <code>ORACLE_HOME</code> to the Oracle home of the OMS.</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>3. Drop the schema by running the following command from the Oracle home of the OMS.</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>4. After dropping the schema, manually delete the database files <code>mgmt.dbf</code> and <code>mgmt_ecm_depot1.dbf</code>.</td>
<td>You can find these files by running the following command as SYS: <code>SELECT FILE_NAME FROM DBA_DATA_FILES WHERE UPPER(TABLESPACE_NAME) LIKE 'MGMT%';</code></td>
<td>Yes</td>
</tr>
</tbody>
</table>

Table 2–2 (Cont.) Prerequisites for Installing Enterprise Manager System

2–8 Oracle Enterprise Manager Grid Control Basic Installation Guide
Prerequisites

Installing Enterprise Manager System

Database Initialization Parameters

Ensure that you have correctly set the database initialization parameters for the existing, certified Oracle Database so that the Management Repository can be created. For information about setting the parameters, see Section 2.3.1, “Setting Database Initialization Parameters”.

Fine-Grained Access Control Requirements

Ensure that the fine-grained access control option is set to TRUE in the existing, certified Oracle Database so that the Management Repository can be created. To verify this, run the following command:

```
select value from v$option where parameter = 'Fine-grained access control';
```

UNDO Tablespace Size Requirements

Ensure that the UNDO tablespace has a minimum space of 200 MB. To verify this, run the following query:

```
SELECT SUM(DECODE(autoextensible,'YES',200*1024*1024+1,bytes)) total
FROM dba_data_files f, dba_tablespaces s
WHERE s.contents = 'UNDO'
AND s.tablespace_name = f.tablespace_name;
```

Note: The result of this query is in bytes. If the minimum space is less than 200 MB, then set it to 200 MB by running the following command:

```
alter database datafile <location datafile> resize 200M;
```

UNDO Tablespace and Temporary Tablespace Settings Requirements

Ensure that the UNDO tablespace and the TEMP tablespace are autoextensible in the existing, certified Oracle Database. To verify this, run the following command:

```
select count(*) from dba_temp_files where tablespace_name='TEMP' and AUTOEXTENSIBLE <> 'YES';
select count(*) from dba_data_files where tablespace_name='UNDOTBS' and AUTOEXTENSIBLE <> 'YES';
```

If the result of the query is 0, then the tablespace is autoextensible. If the result is not 0, then refer to Oracle Database Administrator’s Guide available in the following location to make the tablespace autoextensible.

http://www.oracle.com/technology/documentation/database.html

Archive Logging Settings Requirements

(Recommended) Ensure that you turn on archive logging in the existing, certified Oracle Database for any environment where continuity of data is important. To verify this, run the following command:

```
select log_mode from v$database;
```

Table 2–2 (Cont.) Prerequisites for Installing Enterprise Manager System

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Database Initialization Parameters Requirements</td>
<td>Ensure that you have correctly set the database initialization parameters for the existing, certified Oracle Database so that the Management Repository can be created. For information about setting the parameters, see Section 2.3.1, “Setting Database Initialization Parameters”</td>
<td></td>
</tr>
<tr>
<td>Fine-Grained Access Control Requirements</td>
<td>Ensure that the fine-grained access control option is set to TRUE in the existing, certified Oracle Database so that the Management Repository can be created. To verify this, run the following command: select value from v$option where parameter = 'Fine-grained access control';</td>
<td></td>
</tr>
<tr>
<td>UNDO Tablespace Size Requirements</td>
<td>Ensure that the UNDO tablespace has a minimum space of 200 MB. To verify this, run the following query: SELECT SUM(DECODE(autoextensible,'YES',200<em>1024</em>1024+1,bytes)) total FROM dba_data_files f, dba_tablespaces s WHERE s.contents = 'UNDO' AND s.tablespace_name = f.tablespace_name; Note: The result of this query is in bytes. If the minimum space is less than 200 MB, then set it to 200 MB by running the following command: alter database datafile &lt;location datafile&gt; resize 200M;</td>
<td></td>
</tr>
<tr>
<td>UNDO Tablespace and Temporary Tablespace Settings Requirements</td>
<td>Ensure that the UNDO tablespace and the TEMP tablespace are autoextensible in the existing, certified Oracle Database. To verify this, run the following command: select count(<em>) from dba_temp_files where tablespace_name='TEMP' and AUTOEXTENSIBLE &lt;&gt; 'YES'; select count(</em>) from dba_data_files where tablespace_name='UNDOTBS' and AUTOEXTENSIBLE &lt;&gt; 'YES'; If the result of the query is 0, then the tablespace is autoextensible. If the result is not 0, then refer to Oracle Database Administrator’s Guide available in the following location to make the tablespace autoextensible. <a href="http://www.oracle.com/technology/documentation/database.html">http://www.oracle.com/technology/documentation/database.html</a></td>
<td></td>
</tr>
<tr>
<td>Archive Logging Settings Requirements</td>
<td>(Recommended) Ensure that you turn on archive logging in the existing, certified Oracle Database for any environment where continuity of data is important. To verify this, run the following command: select log_mode from v$database;</td>
<td></td>
</tr>
</tbody>
</table>
## Prerequisites

### Tablespace-Related Hard Disk Space Requirements

Ensure that you allocate a minimum of 1 GB hard disk space for the following tablespaces:
- Management Tablespace (`mgmt.dbf`)
- Configuration Data Tablespace (`mgmt_ecm_depot1.dbf`)
- JVM Diagnostics Data Tablespace (`mgmt_ad4j.dbf`)

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

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

### Host File Requirements

Ensure that the host name specified in the `/etc/hosts` file is unique, and ensure that it maps to the correct IP address of that host. Otherwise, the installation can fail on the product-specific prerequisite check page.

The recommended format of the `/etc/hosts` file is `<ip> <fully_qualified_host_name> <short_host_name>`. For example:

```
141.81.5.71 host1.foo.com host1
```

IPv6 entries are supported in the file for fresh installations of 11g Release 1 (11.1). However, they are not supported for upgrade from 10g Release 4 (10.2.0.4) or higher to 11g Release 1 (11.1).

According to RFC 952, the following are the assumptions:

- A "name" (Net, Host, Gateway, or Domain name) is a text string, up to 24 characters drawn from the alphabet (A-Z), digits (0-9), minus sign (-), and period (.).
- Periods are only allowed when they serve to delimit components of "domain style names". No blank or space characters are permitted as part of a name. No distinction is made between upper and lower case. The first character must be an alpha character.
- Also, if DNS server is configured in your environment, then you should be able to use DNS to resolve the name of the host on which you want to install the OMS.

For example, all these commands must return the same output:

```
nsllookup host1
nsllookup host1.foo.com
nsllookup 141.81.5.71
```

---

### Table 2–2 (Cont.) Prerequisites for Installing Enterprise Manager System

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Yes/No</th>
</tr>
</thead>
</table>
| Tablespace-Related Hard Disk Space Requirements | Ensure that you allocate a minimum of 1 GB hard disk space for the following tablespaces:  
- Management Tablespace (`mgmt.dbf`)  
- Configuration Data Tablespace (`mgmt_ecm_depot1.dbf`)  
- JVM Diagnostics Data Tablespace (`mgmt_ad4j.dbf`) | | |
| Host File Requirements | Ensure that the host name specified in the `/etc/hosts` file is unique, and ensure that it maps to the correct IP address of that host. Otherwise, the installation can fail on the product-specific prerequisite check page. The recommended format of the `/etc/hosts` file is `<ip> <fully_qualified_host_name> <short_host_name>`. For example, `141.81.5.71 host1.foo.com host1`. IPv6 entries are supported in the file for fresh installations of 11g Release 1 (11.1). However, they are not supported for upgrade from 10g Release 4 (10.2.0.4) or higher to 11g Release 1 (11.1). According to RFC 952, the following are the assumptions: A "name" (Net, Host, Gateway, or Domain name) is a text string, up to 24 characters drawn from the alphabet (A-Z), digits (0-9), minus sign (-), and period (.). Periods are only allowed when they serve to delimit components of "domain style names". No blank or space characters are permitted as part of a name. No distinction is made between upper and lower case. The first character must be an alpha character. Also, if DNS server is configured in your environment, then you should be able to use DNS to resolve the name of the host on which you want to install the OMS. For example, all these commands must return the same output: `nsllookup host1` `nsllookup host1.foo.com` `nsllookup 141.81.5.71` | | |
Prerequisites

2.3.1 Setting Database Initialization Parameters

As one of the prerequisites, ensure that you set the initialization parameters as described in Table 2–3 and Table 2–4 for your existing, certified Oracle Database so that the Management Repository can be created. For information on how you can set these initialization parameters, see My Oracle Support note 1073647.1.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Yes/No</th>
</tr>
</thead>
</table>
| Installing User Requirements     | Ensure that you meet the following requirements:  
  - (For UNIX only) The installation must NOT be run by a root user.  
  - (For Microsoft Windows only) User must be part of the ORA-DBA group and have administrator permissions.  
  - (For Microsoft Windows only) User must belong to the DBA group, and have permissions to perform the following: Act as part of the operating system, Create a token object, Log on as a batch job, and Adjust memory quotas for a process.  
  
  To verify whether the agent user has these rights, from the Start menu, click Settings and then select Control Panel. From the Control Panel window, select Administrative Tools, and from the Administrative Tools window, select Local Security Settings. In the Local Security Settings window, from the tree structure, expand Local Policies, and then expand User Rights Assignment. |       |
| Permission Requirements          | Ensure that you are able to access and write in the following locations:  
  - Oracle Middleware Home location  
  - Oracle Management Service Instance Base location  
  
  For more information about these locations, see the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at: http://www.oracle.com/technology/documentation/oem.html  
  
  Ensure that you have write permission on the temporary directory where the executables will be copied. For example, /tmp or c:\Temp. |       |
| Proximity Requirements           | Ensure that the host on which the OMS is being installed and the host on which the Management Repository is being configured are located in close proximity to each other. Ideally, the round trip network latency between the two should be less than 1 millisecond. |       |
| Firewall Requirements            | If you have a firewall in your environment, then see the chapter on configuring Enterprise Manager for firewalls in the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at: http://www.oracle.com/technology/documentation/oem.html |       |
| Internet Connection Requirements | Oracle recommends that the host from where you are running the installer have a connection to the Internet so that the configuration information can be automatically collected and uploaded to My Oracle Support. |       |

Table 2–2 (Cont.) Prerequisites for Installing Enterprise Manager System

Installing Enterprise Manager System 2-11
### Prerequisites

**Important:** After you set the parameters, restart the database.

#### Table 2–3 Setting Fixed Initialization Parameters

<table>
<thead>
<tr>
<th>Fixed Initialization Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>cluster_database</td>
<td>TRUE</td>
</tr>
<tr>
<td>(Only for Oracle RAC Database)</td>
<td></td>
</tr>
<tr>
<td>compatible</td>
<td>10.2.0.1.0 or higher</td>
</tr>
<tr>
<td>max_commit_propogation_delay</td>
<td>0</td>
</tr>
<tr>
<td>(Only for Oracle RAC Database)</td>
<td></td>
</tr>
<tr>
<td>remote_login_passwordfile</td>
<td>SHARED or EXCLUSIVE</td>
</tr>
<tr>
<td>statistics_level</td>
<td>TYPICAL</td>
</tr>
<tr>
<td>timed_statistics</td>
<td>TRUE</td>
</tr>
<tr>
<td>undo_management</td>
<td>AUTO</td>
</tr>
<tr>
<td>workarea_size_policy</td>
<td>AUTO</td>
</tr>
</tbody>
</table>

#### Table 2–4 Setting Variable Initialization Parameters

<table>
<thead>
<tr>
<th>Variable Initialization Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>db_block_size</td>
<td>8192 or greater</td>
</tr>
<tr>
<td>job_queue_processes</td>
<td>(For Installation) 10 or greater (For Upgrade) If you are upgrading Enterprise Manager 10g Grid Control Release 4 (10.2.0.4) or higher, then ensure that you set the value to 0 before upgrading. And after upgrading, reset it to the original value that existed before upgrading the product.</td>
</tr>
<tr>
<td>log_buffer</td>
<td>10485760 or greater</td>
</tr>
<tr>
<td>open_cursors</td>
<td>300 or greater</td>
</tr>
<tr>
<td>processes</td>
<td>500 or greater</td>
</tr>
<tr>
<td>session_cached_cursors</td>
<td>200 or greater</td>
</tr>
</tbody>
</table>
2.4 Installation Procedure

To install a complete Enterprise Manager system, follow these steps:

1. Invoke the installer by running the following command:

   ```
   <Software_Location>/runInstaller
   ```

   In this command, `<Software_Location>` is either `<DVD>` or `<Software_Downloaded_Location>`.

   **Note:**
   - For Microsoft Windows operating systems, run `setup.exe` instead of `runInstaller`.
   - In Microsoft Windows, if the path to the software download location contains a subdirectory name with two or more words and a space between each of the words, then ensure that the parent directory of such a subdirectory does not contain a file whose name matches with the first word of that subdirectory.
     
     For example, if the software is downloaded to `C:\Documents and Settings`, then before you invoke `setup.exe`, ensure that there are no files titled `Documents` (for example, shortcut files such as `C:\Documents`) in the `C:\` drive.
   - If you are planning to have multiple OMSes, then Oracle strongly recommends you to configure a shared file system loader so that a common location is maintained to store all the metric data files uploaded by the Management Agents. If you configure the central directory now, then all subsequent additional OMS installations, which connect to the same Oracle Database, will automatically be mapped to this central directory.
     
     To configure a shared file system loader, invoke the installer using the following command. Ensure that the location you specify is accessible and writable by all the OMSes.
     ```
     ./runInstaller SHARED_RECEIVE_DIRECTORY_LOCATION=<absolute_path_to_central_directory>
     ```
   - After the installation ends successfully, the OMS and the Management Agent start automatically. If you do not want them to start automatically, then invoke the installer using the following command:
     ```
     ./runInstaller START_OMS=false b_startAgent=false
     ```
     However, if you pass the `START_OMS=false` argument, the installation does not configure the EMCLI tool, and as a result, none of the EMCLI commands will work. Therefore, after the installation ends, you must manually configure the EMCLI tool in the `$<ORACLE_HOME>/bin` directory. To do so, refer to the Oracle Enterprise Manager Command Line Interface available at:
     ```
     http://www.oracle.com/technology/documentation/oem.htm
     ```
   - By default, `GCDomain` is the default name used for creating the WebLogic Domain.
     
     To override this, invoke the installer using the following command and specify a unique custom WebLogic Domain name:
     ```
     ./runInstaller WLS_DOMAIN_NAME=<Custom_Domain_Name>
     ```
2. Specify My Oracle Support Details

(Optional) On the My Oracle Support Details screen, specify your My Oracle Support credentials to enable Oracle Configuration Manager. If you do not want to enable Oracle Configuration Manager now, go to Step (3).

If the host from where you are running the installation wizard does not have a connection to the Internet, then specify only the e-mail address and leave the other fields blank. After you complete the installation, manually collect the configuration information and upload it to My Oracle Support.

Note: For information about manually collecting the configuration information and uploading it to My Oracle Support, refer to the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:

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

3. Click Next.
4. Check for Updates
On the Check for Updates screen, select one of the following sources from where the software updates can be automatically downloaded and installed while the installation of Enterprise Manager Grid Control is in progress. If you do not want to apply them now, then select **Skip Software Updates**.

**Note:** If you choose to skip installing the software updates during installation by not providing the My Oracle Support credentials, you can always register the credentials later using the Enterprise Manager Grid Control console and view the recommended security patches. To do so, log in to Enterprise Manager Grid Control, and click **Preferences** from the top-right corner of the screen. On the General page, from the left menu bar, click **Preferred Credentials**. On the Preferred Credentials page, from the My Oracle Support Preferred Credentials section, click **Set Credentials**. On the My Oracle Support Preferred Credentials page, specify the credentials and click **Apply**.

- Select **Download and install updates from My Oracle Support** if you want the installer to connect to My Oracle Support and automatically download the updates from there. Specify the My Oracle Support account username and password to connect to the site.

  If a connection from your network to the Internet requires you to connect through a proxy, then select **Proxy Settings** and provide the proxy connection details. To test the connection, click **Test Connection**.

  **Note:** After specifying the **My Oracle Support** details, when you click **Next**, the installation wizard connects to My Oracle Support and checks for new software updates. The installer displays the new software updates that are found. If you want to install them, click **Download Updates**. If you do not want to install them, click **Skip Updates**.

- **(Recommended) Select Install updates from a staging location** if the software updates are already downloaded and available in an accessible location. You can either specify the location or click **Browse** to search the host and select the...
Installation Procedure

location. Ensure that the location you specify or select leads to the Updates directory where the software updates are available.

For example, if the software updates are available in
/scratch/OracleHomes/Updates, then specify
/scratch/OracleHomes/Updates.

Note: For more information about software updates, and how you can manually download them, see the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:
http://www.oracle.com/technology/documentation/oem.html

For information about the auto update feature and to know what patches are available in auto update, see My Oracle Support notes 1101208.1 and 1099123.1.

5. Click Next.
If you specified the My Oracle Support details in Step (4), the installer connects to My Oracle Support and checks for new software updates. The installer displays the new software updates that are found. If you want to install them, click Download Updates. If you do not want to install them, click Skip Updates.

Similarly, if any patches (including one-off patches) were found, then the installer displays the Product Updates screen. On the Product Updates screen, select Apply Software Updates and click Next if you want to apply all the patches. Otherwise, deselect that option and click Next.

6. Select Installation Type

On the Select Installation Type screen, select Install a new Enterprise Manager system.

7. Click Next.
If Enterprise Manager Grid Control is the first Oracle product you are installing on the host that is running on UNIX operating system, then the Oracle Inventory screen appears. For details, see step (8). Otherwise, the Check Prerequisites screen appears. For details, see step (10).
If Enterprise Manager Grid Control is the first Oracle product you are installing on the host that is running on Microsoft Windows operating system, then the Oracle Inventory screen does not appear. On Microsoft Windows, the following is the default inventory directory:

<system drive>\Program Files\Oracle\Inventory

8. Specify Inventory Details

On the Oracle Inventory screen, do the following:

a. Specify the full path to a directory where the inventory files and directories can be placed.

**Note:** the central inventory location you specify must NOT be on a shared file system. If it is already on a shared file system, then switch over to a non-shared file system by following the instructions outlined in My Oracle Support note 1092645.1

**Note:** If this is the first Oracle product on the host, then the default central inventory location is /home/<user_name>/oraInventory. However, if you already have some Oracle products on the host, then the central inventory location can be found in the oraInst.loc file. The oraInst.loc file is located in the /etc directory for Linux and AIX, and in the /var/opt/oracle directory for Solaris, HP-UX, and Tru64.

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.

**Note:** You will see this screen only if this turns out to be your first ever installation of an Oracle product on the host.
9. Click Next.
10. Check for Prerequisites

On the Check Prerequisites screen, check the status of the prerequisite checks run by the installation wizard is shown.

The prerequisite checks can result in either Warning, Failed, or Succeeded status. If all the prerequisite checks succeed, then click Next to proceed to the next screen. However, if some checks result in Warning or Failed status, then do the following:

- For the prerequisite checks with Failed status and Warning status, investigate and correct the problems before you proceed with the installation. You can also update the prerequisites with the latest software updates, if they have been released by Oracle, and rerun them. To understand how you can manually download the software updates to update the prerequisites, see Step (4).

- After you correct the problems in your environment, you can return to this screen and click Check Again to check the prerequisites once again.

- If you prefer to ignore all these checks and proceed, then select Ignore All. However, ignoring the prerequisite checks with Failed and Warning status might result in an unsuccessful installation, and therefore, Oracle recommends you to correct the problem and then proceed only after all the checks succeed.

11. Click Next.
12. Specify Installation Locations
On the Specify Install Locations screen, provide the information required for installing the core components of Enterprise Manager Grid Control and for storing the configuration files.

- **For Oracle Middleware Home Location**, validate and accept the default middleware location, or select or specify another middleware location, which is present on the host where you are installing the product. Ensure that the middleware location has *write* permission to create the Oracle home for OMS and the Oracle home for Management Agent.

  For example, if you accept the default location `/u01/app/Oracle/Middleware`, then the Oracle home for OMS is created as `/u01/app/Oracle/Middleware/oms11g`, and the Oracle home for Management Agent is created as `/u01/app/Oracle/Middleware/agent11g`.

  **Note:** Ensure that the Middleware Home you accept, select, or specify here is used only for Enterprise Manager Grid Control. Ensure that no other Oracle Fusion Middleware products or components are installed in the same Middleware Home that is designated for Enterprise Manager Grid Control.

- **For OMS Instance Base Location**, validate and accept the default instance base location, or specify another instance base location, which is present on the host where you are installing the product and has *write* permission to store the configuration files of OMS.

  By default, the instance base is under the parent directory of the Oracle Middleware Home. And, by default, the instance home name is `gc_inst`. You can, however, edit this and specify a custom name.

  For example, if the Oracle Middleware Home is `/u01/app/Oracle/Middleware` and if you choose to retain the default instance home name, then the instance home location is `/u01/app/Oracle/gc_inst`.
If the parent directory of the Oracle Middleware Home does not have write permission, then the instance base is created in the Oracle Middleware Home itself.

**Note:** For information about Oracle Middleware Home and OMS Instance Base Location, see the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at: [http://www.oracle.com/technology/documentation/oem.html](http://www.oracle.com/technology/documentation/oem.html)

13. Click Next.

14. Create WebLogic Server Domain

On the Create WebLogic Server Domain screen, specify the WebLogic credentials and the Node Manager credentials.

By default, the WebLogic Domain name is GCDomain, and the Node Manager name is nodemanager. These are non-editable fields. The installer uses this information for creating Oracle WebLogic Domain and other associated components such as the admin server, the managed server, and the node manager. A Node Manager enables you to start, shut down, or restart an Oracle WebLogic Server instance remotely, and is recommended for applications with high availability requirements.

15. Click Next.

16. Connect to Oracle Database
On the Connect to Oracle Database screen, specify the fully-qualified name of the host where the existing database resides, the database’s listener port and its service name or system ID (SID), and the SYS user account’s password. The installer uses this information to connect to the existing, certified Oracle Database where the Management Repository can be configured.

17. Click Next.

**Note:** If you are connecting to an Oracle RAC database, and if you have specified the virtual IP address of one of its nodes, then the installation wizard prompts you with a Connection String dialog and requests you to update the connection string with information about the other nodes that are part of the cluster. Update the connection string and click OK. If you want to test the connection, click Test Connection.

18. Configure Oracle Management Repository
On the Configure Oracle Management Repository screen, do the following:

a. For **SYSMAN Password**, specify a password for creating the SYSMAN user account. The SYSMAN user account is used for creating the SYSMAN schema, which holds most of the relational data used in managing Enterprise Manager Grid Control. SYSMAN is also the super administrator for Enterprise Manager Grid Control.

   Ensure that your password contains at least 8 characters without any spaces, begins with a letter, and includes at least one numeric value, one lowercase letter, and one uppercase letter.

b. For **Management Tablespace**, specify the full path to the location where the data file for management tablespace (`mgmt.dbf`) can be stored. The installer uses this information for storing data about the monitored targets, their metrics, and so on. Ensure that the specified path leads up to the file name.

   For example, `/u01/oracle/prod/oradata/mgmt.dbf`

c. For **Configuration Data Tablespace**, specify the full path to the location where the data file for configuration data tablespace (`mgmt_ecm_depot1.dbf`) can be stored. This is required for storing configuration information collected from the monitored targets. Ensure that the specified path leads up to the file name.

   For example, `/u01/oracle/prod/oradata/mgmt_ecm_depot1.dbf`

d. For **JVM Diagnostics Data Tablespace**, specify the full path to a location where the data file for JVM diagnostics data tablespace (`mgmt_ad4j.dbf`) can be stored. Ensure that the specified path leads up to the file name. Enterprise Manager Grid Control requires this data file to store JVM-related monitoring data.

   For example, `/u01/oracle/prod/oradata/mgmt_ad4j.dbf`
19. Click Next.

20. Secure Oracle Management Service

On the Secure Oracle Management Service screen, do the following:

a. For Registration Password, specify a password that can be used for authenticating new Management Agents that join the Enterprise Manager Grid Control system, and for permitting only secure Management Agents to communicate with the OMS, which is in locked state, via HTTPS protocol.

b. Select Allow only secure agents to communicate with the OMS if you want to further enhance the security of communication between the OMS and the Management Agents.

OMS always runs in a secure mode, and can further have a locked or an unlocked state. In an unlocked state, the Management Agents that are secure and the Management Agents that are not secure communicate with the OMS using HTTP and HTTPS protocols, respectively. However, in a locked state, only secure Management Agents communicate with the OMS using HTTPS protocol.

Select this option to turn the OMS to a locked state.

c. Select Allow only secure access to the console if you want to secure the access and allow users to access the Enterprise Manager Grid Control console only using HTTPS protocol.

21. Click Next.
22. **Customize Ports**

On the Customize Ports screen, customize the ports to be used for various components, and click Next.

If staticports.ini file is passed during installation, then by default, the ports defined in the staticports.ini file are displayed. Otherwise, the first available port from the recommended range is displayed.

**Note:** For information about the default ports that are assigned and the possibility of using custom ports instead of default ports, see the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at: [http://www.oracle.com/technology/documentation/oem.html](http://www.oracle.com/technology/documentation/oem.html)

You can choose to retain the default port or customize it. To customize the ports, edit the port value in the Port column of the table, and specify a free custom port as recommended in the Recommended Port Range column.

23. Click Next.

24. Review
On the Review screen, review the details you provided for the selected installation type.

- If you want to change the details, click Back repeatedly until you reach the screen where you want to make the changes.
- After you verify the details, if you are satisfied, click Install to begin the installation process.

25. Once the software binaries are copied, you are prompted to run the allroot.sh script, and the orainstRoot.sh script if this is the first Oracle product installation on the host. Open another window, log in as root, and manually run the scripts.

If you are installing on Microsoft Windows operating system, then you will not be prompted to run this script. You will directly reach the Configuration Assistants screen as described in Step (26).

26. On the Configuration Assistants screen, you should see the Configuration Assistants run for this installation type. If you see any failed Configuration Assistants and if you want to rerun them, then after rectifying the issues, select the failed ones and click Retry. If you prefer to rerun them later in standalone mode, then click Cancel to exit the installer.

Note: If the Configuration Assistants fail, then review the relevant log files, resolve the issues, and rerun the Configuration Assistants as described in the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:

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

You can also refer to the Master Note for Enterprise Manager Grid Control Installation and Upgrade available in the same location. Once you access the URL, click the Release Notes tab, and from the Master Support Notes section, click HTML.
27. On the End of Installation screen, you should see information pertaining to the installation of Enterprise Manager. Review the information and click Close to exit the installation wizard.

For more information about this installation, refer to the following file available in the Oracle home of the OMS:

$<ORACLE_HOME>/install/setupinfo.txt

2.5 After You Install

After you install, do the following:

1. Verify the installation:
   a. Navigate to the Oracle home of the OMS and run the following command to see a message that confirms that OMS is up and running.
      
      $<ORACLE_HOME>/bin/emctl status oms
   
   b. Navigate to the Oracle home of the Management Agent and run the following command to see a message that confirms that the Management Agent is up and running.
      
      $<ORACLE_HOME>/bin/emctl status agent
   
   c. Navigate to the Oracle home of the Management Agent and run the following command to see a message that confirms that EMD upload completed successfully.
      
      $<ORACLE_HOME>/bin/emctl upload

   **Note:** By default, you can access Enterprise Manager Grid Control only using the HTTPS protocol. If you want to use the HTTP protocol, then unlock it by running the following command from the Oracle home of the OMS:

   `emctl secure unlock -console`

2. To use a secure protocol (HTTPS) to connect to the Enterprise Manager Administration Server, do the following:
   
   a. Specify additional SSL arguments in the environment. To do so, set JAVA_OPTIONS to append the appropriate SSL arguments to use before invoking the ocmrepeaterctl script.
      
      For information about these JAVA options, access these URLs:

      [http://download.oracle.com/docs/cd/E12840_01/wls/docs103/client/security.html#wp1077561](http://download.oracle.com/docs/cd/E12840_01/wls/docs103/client/security.html#wp1077561)
      [http://download-llnw.oracle.com/docs/cd/E12840_01/wls/docs103/config_scripting/using_WLST.html#wp1093943](http://download-llnw.oracle.com/docs/cd/E12840_01/wls/docs103/config_scripting/using_WLST.html#wp1093943)

      Depending on whether a Demo or a Custom Trust certificate is used by the SSL realm, the SSL arguments will include the following:

      ```
      [-Dweblogic.security.TrustKeyStore=DemoTrust
      [-Dweblogic.security.JavaStandardTrustKeystorePassPhrase=password ]
      ```

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After You Install

Installing Enterprise Manager System

b. Ensure that HTTP tunneling is enabled in the Administration Server. To verify this, log in to Oracle WebLogic Server Administration Console, and do the following:
   (i) From the Domain Structure panel on the left side of the Home page, expand Environment and click Servers.
   (ii) On the Summary of Servers page, from the Servers table, click the Admin Server.
   (iii) On the Settings for <Admin_Server> page, click the Protocols tab, and then click the HTTP subtab.
   (iv) On the HTTP page, select Enable Tunneling, and click Save.

3. Configure the Oracle Database and Oracle Automatic Storage Management (Oracle ASM) target for monitoring as described in Appendix G, “Configuring Database and ASM Targets for Monitoring”.

4. Configure your proxy server as described in Appendix H, “Setting Up Proxy Configuration for Oracle Management Service”.

5. For accessing the Enterprise Manager Grid Control console, ensure that you use only certified browsers as mentioned in My Oracle Support note 412431.1.

6. (Optional) If you had not configured a shared file system loader while installing a complete Enterprise Manager system, and if you want to configure a shared location for it now, then run the following command from the Oracle home of the OMS:

   $<ORACLE_HOME>/bin/emctl config oms loader -shared yes -dir <Loader_Directory>

   For example,

   $<ORACLE_HOME>/bin/emctl config oms loader -shared yes -dir /share/recv

7. (Optional) If you want to connect to another Management Repository, then shut down the OMS, run the following command, and then restart the OMS:

   emctl config oms -store_repos_details (-repos_host <host> -repos_port <port> -repos_sid <sid> | -repos_conndesc <connect descriptor>) -repos_user <username> [-repos_pwd <pwd>] [-no_check_db]
8. (Optional) If you want to change the SYSMAN password, then shut down the OMS, run the following command, and then restart the OMS.

   emctl config oms -change_repos_pwd

9. (Optional) If you want to discover the newly installed targets, if you want to convert the standalone Management Agent to a cluster-based Management Agent, if you want to discover the targets on the new nodes of the cluster, or if you want to reconfigure the cluster-based Management Agent, you must run the agentca script to reconfigure and discover all new targets. For information about the agentca script and to know how you can reconfigure the Management Agent and discover all new targets, see Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:

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

10. (Optional) If you want to enable the Request Monitoring feature for tracing transaction requests in WLS, you need JVM Diagnostics as well as Application Dependency and Performance (ADP) managers and agents configured against the target to be monitored.

    For information about installing JVM Diagnostics and enabling the Request Monitoring feature, refer to the Oracle Enterprise Manager Administration Guide.

    For information about enabling the ADP feature in Enterprise Manager Grid Control, refer to the Oracle Enterprise Manager Getting Started with Management Pack Plus for SOA.

    Both these guides are available at:

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

Note: On Linux, you need to double escape the connect descriptor using single and double quotes. However, on Microsoft Windows, you need not.

For example, on Linux:

   emctl config oms -store_repos_details -repos_host myreposhost.mydomain.com -repos_port 12345 -repos_sid mydb -repos_conndesc "'(DESCRIPTION=(ADDRESS=(PROTOCOL=TCP)(HOST=myreposhost.mydomain.com)(PORT=12345))(CONNECT_DATA=(SID=mydb)))'" -repos_user sysman

For example, on Microsoft Windows:

   emctl config oms -store_repos_details -repos_host myreposhost.mydomain.com -repos_port 12345 -repos_sid mydb -repos_conndesc (DESCRIPTION=(ADDRESS=(PROTOCOL=TCP)(HOST=myreposhost.mydomain.com)(PORT=12345))(CONNECT_DATA=(SID=mydb))) -repos_user sysman
Adding Additional Oracle Management Service

This chapter describes how you can install an additional Oracle Management Service (OMS) to your existing Enterprise Manager Grid Control environment. In particular, this chapter covers the following:

- Overview
- Before You Begin
- Prerequisites
- Installation Procedure

**Note:** If the first OMS, which was installed as part of the complete Enterprise Manager system installation, has add-ons installed, then do NOT follow the instructions outlined in this chapter. Instead, follow the instructions outlined for installing only the OMS software and configuring it later in the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:

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

### 3.1 Overview

The second installation type, *Add an additional Management Service*, offered by the installer enables you to install an additional OMS to your existing Enterprise Manager Grid Control environment. This option is appropriate when you already have Enterprise Manager Grid Control with a certified Oracle Management Repository, and when you want to have another OMS for the following reasons:

- When you want to balance the load on the existing OMS
- When your existing OMS is running out of CPU or RAM resources

However, note that you can have multiple OMSes, and still connect to just one Oracle Management Repository (Management Repository).

Table 3–1 describes the installation process and the software components that are installed or configured for this installation type.
Table 3–1 Installation Process for Adding an Additional Oracle Management Service

<table>
<thead>
<tr>
<th>Step</th>
<th>Installation of Oracle Management Service 11g Release 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Creates an Oracle home in the Oracle Middleware Home location, and installs the OMS software binaries in the new home.</td>
</tr>
<tr>
<td></td>
<td>Oracle Middleware Home consists of the Oracle WebLogic Server home, and, optionally, one or more Oracle homes.</td>
</tr>
<tr>
<td></td>
<td>If the Oracle Middleware Home is /u01/app/Oracle/Middleware, then the Oracle home for OMS is /u01/app/Oracle/Middleware/oms11g</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step</th>
<th>Installation of Oracle Management Agent 11g Release 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Creates an Oracle home in the Oracle Middleware Home location, and installs the Oracle Management Agent (Management Agent) software binaries in the new home.</td>
</tr>
<tr>
<td></td>
<td>If the Oracle Middleware Home is /u01/app/Oracle/Middleware, then the Oracle home for Management Agent is /u01/app/Oracle/Middleware/agent11g</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step</th>
<th>Installation of Oracle Web Tier 11g Release 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Creates an Oracle home in the Oracle Middleware Home location, and installs the Web tier software binaries in the new home.</td>
</tr>
<tr>
<td></td>
<td>If the Oracle Middleware Home is /u01/app/Oracle/Middleware, then the Oracle home for Web tier is /u01/app/Oracle/Middleware/Oracle_WT</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step</th>
<th>Installation of Oracle Common Directory</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Creates a common directory in the Oracle Middleware Home location for storing configuration files.</td>
</tr>
<tr>
<td></td>
<td>If the Oracle Middleware Home is /u01/app/Oracle/Middleware, then the common directory is /u01/app/Oracle/Middleware/oracle_common.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step</th>
<th>Configuration of Oracle Management Service Instance Base Location</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Creates an instance home for Enterprise Manager Grid Control in the parent directory of the Oracle Middleware Home for storing all OMS-related configuration files. By default, the instance home is gc_inst. You can, however, edit this and specify a custom name.</td>
</tr>
<tr>
<td></td>
<td>If the Oracle Middleware Home is /u01/app/Oracle/Middleware and if you choose to retain the default instance home name, then the instance home location is /u01/app/Oracle/gc_inst.</td>
</tr>
<tr>
<td></td>
<td>If the parent directory of the Oracle Middleware Home does not have write permission, then the OMS Instance Base is created in the Oracle Middleware Home.</td>
</tr>
</tbody>
</table>
Before You Begin

Adding Additional Oracle Management Service

3.2 Before You Begin

Before you begin, keep these points in mind:

- Oracle Management Service 11g Release 1 is supported only with Enterprise Manager 11g Grid Control Release 1.
  - If you are installing an additional Oracle Management Service 11g Release 1 to an existing Enterprise Manager 11g Grid Control environment, then follow the installation steps outlined in this chapter.
  - If you are installing an additional Oracle Management Service 11g Release 1 to an existing Enterprise Manager 10g Grid Control Release 2 (10.2.X.X) environment, then first upgrade Enterprise Manager 10g Grid Control to Enterprise Manager 11g Grid Control, and then install the additional Oracle Management Service 11g.

- You can install add-ons to this additional OMS only if the first OMS, which was installed as part of the complete Enterprise Manager system installation, has add-ons installed. And if your first OMS has add-ons installed, then do NOT follow the instructions outlined in this chapter. Instead, follow the instructions outlined for installing only the OMS software and configuring it later in the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:
  http://www.oracle.com/technology/documentation/oem.html

<table>
<thead>
<tr>
<th>Step 6</th>
<th>Configuration of Core Components</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Runs the Configuration Assistant tools to perform the following:</td>
</tr>
<tr>
<td>1.</td>
<td>Applying OMS-Related One-Off Patches: (Optional) Applies one-off patches to the Oracle home of the OMS (oms11g).</td>
</tr>
<tr>
<td>2.</td>
<td>Configuring OMS: Configures the OMS and the independent instance where Enterprise Manager Grid Control is deployed.</td>
</tr>
<tr>
<td>3.</td>
<td>Add-on OMS Side Configuration: Configures the Virtualization Add-On detected in the Oracle home of the OMS (oms11g).</td>
</tr>
<tr>
<td>4.</td>
<td>Configures OCM (if Required): If you have chosen to configure Oracle Configuration Manager (OCM), then configures it in the Oracle home of the OMS (oms11g) and Oracle home of the Web tier (Oracle_WT).</td>
</tr>
<tr>
<td>5.</td>
<td>Applying Agent-Related One-Off Patches: (Optional) Applies one-off patches to the Oracle home of the Management Agent (agent11g).</td>
</tr>
<tr>
<td>6.</td>
<td>Configuring Management Agent: Configures the Management Agent to enable monitoring of targets, collection of information, and so on.</td>
</tr>
<tr>
<td>7.</td>
<td>Configures OCM (if Required): If you have chosen to configure Oracle Configuration Manager (OCM), then configures it in the Oracle home of the Management Agent (agent11g).</td>
</tr>
<tr>
<td>8.</td>
<td>Configures System Monitoring Plug-Ins: Configures the System Monitoring Plug-Ins detected in the Oracle home of the Management Agent (agent11g).</td>
</tr>
</tbody>
</table>

Note: The installation process takes approximately 15 to 20 minutes to complete. The duration includes the time taken for running the prerequisite checks, placing the software binaries, creating the Oracle homes, and running the Configuration Assistants for configuring the core components.
■ This installation type only supports installation of OMS locally on the server where the installer is invoked, and does not support installing on multiple or remote hosts.

■ You cannot install more than one OMS on a host.

■ For information about the default ports that are assigned and the possibility of using custom ports instead of default ports, see the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:
  http://www.oracle.com/technology/documentation/oem.html

■ While installing on hosts having multiple IP addresses, the host name is derived from the ORACLE_HOSTNAME variable that is passed while invoking the installer.
  For example:
  ./runInstaller ORACLE_HOSTNAME=host1.foo.com

  **Note:** Before passing this variable with the installer, ensure that you set the ORACLE_HOSTNAME environment variable.

■ No environment variable specific to Enterprise Manager Grid Control needs 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.

■ The presence or absence of EMKEY in the Management Repository does not matter, and the installation will proceed either way without any issues.

■ Oracle offers code fixes for a product based on the Oracle Lifetime Support Policy. When the license period expires for a particular product, the support for code fixes offered by Oracle also ends. For more information, see the Oracle Lifetime Support Policy available at:

When determining supportability and certification combinations for an Enterprise Manager Grid Control installation, you must consider Enterprise Manager Grid Control’s framework components as well as the targets monitored by Enterprise Manager Grid Control. Oracle recommends keeping your Grid Control components and targets updated to the latest certified versions in order to receive code fixes without having to purchase an Extended Support license. For information about the certified combinations of Enterprise Manager Grid Control components and monitored targets, see My Oracle Support note 412431.1.

■ For accessing the Enterprise Manager Grid Control console, ensure that you use only certified browsers as mentioned in My Oracle Support note 412431.1.

### 3.3 Prerequisites

Before adding an additional OMS, ensure that you meet the following prerequisites.

If you want, you can print out this section and write ‘Yes’ or ‘No’ against each prerequisite. This will help you to track the prerequisites you have met and the prerequisites you have not met.
## Prerequisites

Adding Additional Oracle Management Service

### Table 3–2 Prerequisites for Adding an Additional Oracle Management Service

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hardware Requirements</strong></td>
<td>Ensure that you meet the hard disk space and physical memory requirements as described in Appendix A, &quot;Meeting Hardware Requirements&quot;.</td>
<td></td>
</tr>
<tr>
<td><strong>Operating System Requirements</strong></td>
<td>Ensure that you install OMS only on certified operating systems as mentioned in My Oracle Support note 412431.1.</td>
<td></td>
</tr>
<tr>
<td><strong>Package Requirements</strong></td>
<td>Ensure that you install all the operating system-specific packages as described in Appendix B, &quot;Meeting Package and Library Requirements&quot;.</td>
<td></td>
</tr>
<tr>
<td><strong>Operating System Groups and Users Requirements</strong></td>
<td>Ensure that you create the required operating system groups and users as described in Appendix C, &quot;Creating Operating System Groups and Users Requirements&quot;.</td>
<td></td>
</tr>
<tr>
<td><strong>Unique Host Name and Static IP Address Requirements</strong></td>
<td>Ensure that you check the network configuration to verify that the host on which you are installing resolves to a unique host name and a static IP address that are visible to other hosts in the network. Note: You must use only a static IP address. If you use a dynamic IP address, the installation will fail.</td>
<td></td>
</tr>
<tr>
<td><strong>File Descriptor Requirements</strong></td>
<td>Ensure that you set the file descriptors to a minimum of 4096. To verify the current value set to the file descriptors, run the following command: <code>/bin/sh -c &quot;ulimit -n&quot;</code> If the current value is not 4096, then as a root user, update the <code>/etc/security/limits.conf</code> file with the following entries: <code>&lt;UID&gt; soft nofile 4096</code> <code>&lt;UID&gt; hardnofile 4096</code></td>
<td></td>
</tr>
<tr>
<td><strong>Temporary Directory Space Requirements</strong></td>
<td>Ensure that you allocate 400 MB of space for a temporary directory where the executables can be copied. For example, <code>/tmp</code> on UNIX hosts and <code>c:\Temp</code> on Microsoft Windows hosts.</td>
<td></td>
</tr>
<tr>
<td><strong>Central Inventory Requirements</strong></td>
<td>Ensure that you allocate 100 MB of space for the central inventory directory. Also ensure that the central inventory directory is not on a shared file system If it is already on a shared file system, then switch over to a non-shared file system by following the instructions outlined in My Oracle Support note 1099245.1</td>
<td></td>
</tr>
</tbody>
</table>
| **UMASK Value Requirements**         | Ensure that you set the default file mode creation mask (umask) to 022 in the shell startup file. For example:  
  ■ Bash Shell  
  $ . ~/.bash_profile  
  ■ Bourne or Korn Shell  
  $ . ~/.profile  
  ■ C Shell  
  % source ~/.login |        |
Shared File System Loader Location Requirements

If you have configured shared file system loader on the first OMS, ensure that the shared location is accessible and writable from the host where you are about to install an additional OMS.

If you have not configured the shared filesystem loader on the first OMS, and want to configure it now, then do the following:

- Run the following command from the Oracle Home of the first OMS:
  
  ```
  $<ORACLE_HOME>/bin/emctl config oms loader -shared yes -dir <Loader_Directory>
  ```
  
  For example,
  ```
  $<ORACLE_HOME>/bin/emctl config oms loader -shared yes -dir /share/recv
  ```
  
  Note: If you already have additional OMSes, then run the same command on the hosts where those additional OMSes are running and specify the same shared location.

- Ensure that the shared location is accessible and writable from the host where you are about to install an additional OMS. To verify this, run the following command:

  On the first OMS, use a text editor to create a test file in the shared location, one for each additional OMS:
  ```
  $ echo "test" > <oms name>.test
  ```
  For example,
  ```
  $ echo "test" > oms1.test
  ```
  On the additional OMS host, verify that the above file is visible in the shared location and can be read and deleted:
  ```
  $ cat <oms name>.test
  $ rm <oms name>.test
  ```
  For example,
  ```
  $ cat oms1.test
  $ rm oms1.test
  ```

---

**Table 3-2 (Cont.) Prerequisites for Adding an Additional Oracle Management Service**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shared File System Loader Location Requirements</td>
<td>If you have configured shared file system loader on the first OMS, ensure that the shared location is accessible and writable from the host where you are about to install an additional OMS. If you have not configured the shared filesystem loader on the first OMS, and want to configure it now, then do the following: Run the following command from the Oracle Home of the first OMS: &lt;br&gt;<code>&lt;ORACLE_HOME&gt;/bin/emctl config oms loader -shared yes -dir &lt;Loader_Directory&gt;`&lt;br&gt;For example,&lt;br&gt;</code>&lt;ORACLE_HOME&gt;/bin/emctl config oms loader -shared yes -dir /share/recv<code>&lt;br&gt;Note: If you already have additional OMSes, then run the same command on the hosts where those additional OMSes are running and specify the same shared location. Ensure that the shared location is accessible and writable from the host where you are about to install an additional OMS. To verify this, run the following command: On the first OMS, use a text editor to create a test file in the shared location, one for each additional OMS: &lt;br&gt;</code>$ echo &quot;test&quot; &gt; &lt;oms name&gt;.test<code>&lt;br&gt;For example, &lt;br&gt;</code>$ echo &quot;test&quot; &gt; oms1.test<code>&lt;br&gt;On the additional OMS host, verify that the above file is visible in the shared location and can be read and deleted: &lt;br&gt;</code>$ cat &lt;oms name&gt;.test<code>&lt;br&gt;</code>$ rm &lt;oms name&gt;.test<code>&lt;br&gt;For example, &lt;br&gt;</code>$ cat oms1.test<code>&lt;br&gt;</code>$ rm oms1.test```</td>
<td></td>
</tr>
</tbody>
</table>
Prerequisites

Adding Additional Oracle Management Service

Table 3–2 (Cont.) Prerequisites for Adding an Additional Oracle Management Service

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>JDK Requirements</td>
<td>Ensure that you have the following version of JDK installed on the host where you are planning to install Enterprise Manager Grid control.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Linux Platform (32/64 Bit): SUN JDK 1.6_18</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Solaris Platform: SUN JDK 1.6_18</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• HP-UX Platform: JDK 6.0.05+</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• AIX Platform: JDK 1.6.0 SR6+</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Microsoft Windows Platform (64 Bit): SUN JDK 1.6_18</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Download the JDK version for your platform from the platform vendor’s Web site. For example, download SUN JDK 1.6_18 for Linux platforms from Oracle Web site. Similarly, download the JDK for other platforms from other vendors’ trusted Web sites.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>You can also refer to My Oracle Support note 1063587.1 for an example on installing JDK 1.6_18 on Linux x86_64 platform.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>If you already have a JDK installed, then verify its version by navigating to the &lt;jdk&gt;/bin directory and running the following command. The output of this query should give you the complete version number. java -fullversion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Note: JROCKIT is not supported.</td>
<td></td>
</tr>
<tr>
<td>Oracle WebLogic Server Requirements</td>
<td>Ensure that Oracle WebLogic Server 10.3.2 (Oracle Fusion Middleware 12g Release 1 Patch Set 1) is already installed on the host where you plan to install Enterprise Manager Grid Control.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Ensure that the installation was a typical installation, and even if it was a custom installation, ensure that components chosen for custom installation were the same as the ones associated with a typical installation.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Ensure that the installation was under the Middleware Home directory. For example, /scratch/aime/Oracle/Middleware/wlserver_10.3.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Ensure that no other Oracle Fusion Middleware products or components are installed in the Middleware Home directory where Oracle WebLogic Server 10.3.2 is installed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enterprise Manager Grid Control will create a new domain in this Oracle WebLogic Server, and not use any of the existing domains.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>For information on installing Oracle WebLogic Server, see My Oracle Support note 1063762.1. For more information, downloads, demos, access the following URL. <a href="http://www.oracle.com/technology/products/weblogic/index.html">http://www.oracle.com/technology/products/weblogic/index.html</a></td>
<td></td>
</tr>
</tbody>
</table>

Table 3–2 (Cont.) Prerequisites for Adding an Additional Oracle Management Service
Prerequisites

Oracle WebLogic Server Patch Requirements
Ensure that you apply patch ID WDJ7 on Oracle WebLogic Server using the Oracle Smart Update utility. This patch fixes bugs 8990616, 9100465, and 9221722.
For information on applying this patch, see My Oracle Support note 1072763.1.
For information on Oracle Smart Update utility, see Oracle Smart Update Installing Patches and Maintenance Packs documentation available at:

Existing Database Version Requirements
Ensure that the existing, certified Oracle Database is one of the databases listed in My Oracle Support note 412431.1. The database can reside either on the host where you are installing the product or on a remote host.

Existing Database Configuration Requirements
Ensure that Oracle Management Repository 11g Release 1 is already configured in your existing, certified Oracle Database.

Existing Database and Listener Status Requirements
Ensure that your existing, certified Oracle Database and the listener are running.

Installing User Requirements
Ensure that you meet the following requirements:
■ (For UNIX only) The installation must NOT be run by a root user.
■ (For Microsoft Windows only) User must be part of the ORA-DBA group and have administrator permissions.
■ (For Microsoft Windows only) User must belong to the DBA group, and have permissions to perform the following: Act as part of the operating system, Create a token object, Log on as a batch job, and Adjust memory quotas for a process.
To verify whether the agent user has these rights, from the Start menu, click Settings and then select Control Panel. From the Control Panel window, select Administrative Tools, and from the Administrative Tools window, select Local Security Settings. In the Local Security Settings window, from the tree structure, expand Local Policies, and then expand User Rights Assignment.

Permission Requirements
Ensure that you are able to access and write in the following locations:
■ Oracle Middleware Home location
■ Oracle Management Service Instance Base location
For more information about these locations, see the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:
http://www.oracle.com/technology/documentation/oem.html
Ensure that you have write permission on the temporary directory where the executables will be copied. For example, /tmp or c:\Temp.

Table 3–2 (Cont.) Prerequisites for Adding an Additional Oracle Management Service

<table>
<thead>
<tr>
<th>Requirement Description</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Oracle WebLogic Server Patch Requirements</td>
<td>Ensure that you apply patch ID WDJ7 on Oracle WebLogic Server using the Oracle Smart Update utility. This patch fixes bugs 8990616, 9100465, and 9221722. For information on applying this patch, see My Oracle Support note 1072763.1. For information on Oracle Smart Update utility, see Oracle Smart Update Installing Patches and Maintenance Packs documentation available at: <a href="http://www.oracle.com/technology/products/weblogic/index.html">http://www.oracle.com/technology/products/weblogic/index.html</a></td>
</tr>
<tr>
<td>Existing Database Version Requirements</td>
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</tr>
<tr>
<td>Existing Database Configuration Requirements</td>
<td>Ensure that Oracle Management Repository 11g Release 1 is already configured in your existing, certified Oracle Database.</td>
</tr>
<tr>
<td>Existing Database and Listener Status Requirements</td>
<td>Ensure that your existing, certified Oracle Database and the listener are running.</td>
</tr>
<tr>
<td>Installing User Requirements</td>
<td>Ensure that you meet the following requirements:  ■ (For UNIX only) The installation must NOT be run by a root user.  ■ (For Microsoft Windows only) User must be part of the ORA-DBA group and have administrator permissions.  ■ (For Microsoft Windows only) User must belong to the DBA group, and have permissions to perform the following: Act as part of the operating system, Create a token object, Log on as a batch job, and Adjust memory quotas for a process.  To verify whether the agent user has these rights, from the Start menu, click Settings and then select Control Panel. From the Control Panel window, select Administrative Tools, and from the Administrative Tools window, select Local Security Settings. In the Local Security Settings window, from the tree structure, expand Local Policies, and then expand User Rights Assignment.</td>
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<td>Permission Requirements</td>
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</tr>
</tbody>
</table>

3-8 Oracle Enterprise Manager Grid Control Basic Installation Guide
### Prerequisites

#### Host File Requirements
Ensure that the host names and the IP addresses are properly configured in the `/etc/hosts` file. For example, for installing a Management Agent on a host, ensure that the host name specified in the `/etc/hosts` file is unique, and ensure that it maps to the correct IP address of that host. Otherwise, the installation can fail on the product-specific prerequisite check page.

The recommended format of the `/etc/hosts` file is `<ip> <fully_qualified_host_name> <short_host_name>`. For example,

```
141.81.5.71 host1.foo.com host1
```

IPv6 entries are supported in the file for fresh installations of 11g Release 1 (11.1). However, they are not supported for upgrade from 10g Release 4 (10.2.0.4) or higher to 11g Release 1 (11.1).

According to RFC 952, the following are the assumptions:

- A "name" (Net, Host, Gateway, or Domain name) is a text string up to 24 characters drawn from the alphabet (A-Z), digits (0-9), minus sign (-), and period (.).
- Note that periods are only allowed when they serve to delimit components of "domain style names".
- No blank or space characters are permitted as part of a name.
- No distinction is made between upper and lower case.
- The first character must be an alpha character.

Also, if DNS server is configured in your environment, then you should be able to use DNS to resolve the name of the host on which you want to install the OMS. For example, all these commands must return the same output:

```
nsllookup host1
nsllookup host1.foo.com
nsllookup 141.81.5.71
```

#### Proximity Requirements
Ensure that the host on which the OMS is being installed and the host on which the Management Repository is being configured are located in close proximity to each other. Ideally, the round trip network latency between the two should be less than 1 millisecond.

#### Firewall Requirements
If you have a firewall in your environment, then see the chapter on configuring Enterprise Manager for firewalls in the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:

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

#### Internet Connection Requirements
Oracle recommends that the host from where you are running the installation wizard have a connection to the Internet so that the configuration information can be automatically collected and uploaded to My Oracle Support.

---

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Host File Requirements</strong></td>
<td>Ensure that the host names and the IP addresses are properly configured in the <code>/etc/hosts</code> file. For example, for installing a Management Agent on a host, ensure that the host name specified in the <code>/etc/hosts</code> file is unique, and ensure that it maps to the correct IP address of that host. Otherwise, the installation can fail on the product-specific prerequisite check page. The recommended format of the <code>/etc/hosts</code> file is <code>&lt;ip&gt; &lt;fully_qualified_host_name&gt; &lt;short_host_name&gt;</code>. For example, <code>141.81.5.71 host1.foo.com host1</code>. IPv6 entries are supported in the file for fresh installations of 11g Release 1 (11.1). However, they are not supported for upgrade from 10g Release 4 (10.2.0.4) or higher to 11g Release 1 (11.1). According to RFC 952, the following are the assumptions: A &quot;name&quot; (Net, Host, Gateway, or Domain name) is a text string up to 24 characters drawn from the alphabet (A-Z), digits (0-9), minus sign (-), and period (.). Note that periods are only allowed when they serve to delimit components of &quot;domain style names&quot;. No blank or space characters are permitted as part of a name. No distinction is made between upper and lower case. The first character must be an alpha character. Also, if DNS server is configured in your environment, then you should be able to use DNS to resolve the name of the host on which you want to install the OMS. For example, all these commands must return the same output: <code>nsllookup host1</code> <code>nsllookup host1.foo.com</code> <code>nsllookup 141.81.5.71</code>.</td>
<td></td>
</tr>
<tr>
<td><strong>Proximity Requirements</strong></td>
<td>Ensure that the host on which the OMS is being installed and the host on which the Management Repository is being configured are located in close proximity to each other. Ideally, the round trip network latency between the two should be less than 1 millisecond.</td>
<td></td>
</tr>
<tr>
<td><strong>Firewall Requirements</strong></td>
<td>If you have a firewall in your environment, then see the chapter on configuring Enterprise Manager for firewalls in the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at: <a href="http://www.oracle.com/technology/documentation/oem.html">http://www.oracle.com/technology/documentation/oem.html</a></td>
<td></td>
</tr>
<tr>
<td><strong>Internet Connection Requirements</strong></td>
<td>Oracle recommends that the host from where you are running the installation wizard have a connection to the Internet so that the configuration information can be automatically collected and uploaded to My Oracle Support.</td>
<td></td>
</tr>
</tbody>
</table>
3.4 Installation Procedure

To add an additional OMS, follow these steps:

1. Invoke the installer by running the following command:

   `<Software_Location>/runInstaller`

   In this command, `<Software_Location>` is either `<DVD>` or `<Software_Downloaded_Location>`.

   **Note:**
   - For Microsoft Windows operating systems, run `setup.exe` instead of `runInstaller`.
   - In Microsoft Windows, if the path to the software download location contains a subdirectory name with two or more words and a space between each of the words, then ensure that the parent directory of such a subdirectory does not contain a file whose name matches with the first word of that subdirectory. For example, if the software is downloaded to `C:\Documents and Settings`, then before you invoke `setup.exe`, ensure that there are no files titled Documents (for example, shortcut files such as `C:\Documents`) in the `C:\` drive.
   - After the installation ends successfully, the OMS and the Management Agent start automatically. If you do not want them to start automatically, then invoke the installer using the following command:

     `./runInstaller START_OMS=false b_startAgent=false`

     However, if you pass the `START_OMS=false` argument, the installation does not configure the EMCLI tool, and as a result, none of the EMCLI commands will work. Therefore, after the installation ends, you must manually configure the EMCLI tool in the `$<ORACLE_HOME>/bin` directory. To do so, refer to the Oracle Enterprise Manager Command Line Interface available at:


2. Specify My Oracle Support Details
Installation Procedure

Adding Additional Oracle Management Service

(Optional) On the My Oracle Support Details screen, specify your My Oracle Support credentials to enable Oracle Configuration Manager. If you do not want to enable Oracle Configuration Manager now, go to Step (3).

If the host from where you are running the installation wizard does not have a connection to the Internet, then specify only the e-mail address and leave the other fields blank. After you complete the installation, manually collect the configuration information and upload it to My Oracle Support.

Note: For information about manually collecting the configuration information and uploading it to My Oracle Support, refer to the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:

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

3. Click Next.

4. Check for Updates
On the Check for Updates screen, select one of the following sources from where the software updates can be automatically downloaded and installed while the installation of Enterprise Manager Grid Control is in progress. If you do not want to apply them now, then select **Skip Software Updates**.

**Note:** If you choose to skip installing the software updates during installation by not providing the My Oracle Support credentials, you can always register the credentials later using the Enterprise Manager Grid Control console and view the recommended security patches. To do so, log in to Enterprise Manager Grid Control, and click Preferences from the top-right corner of the screen. On the General page, from the left menu bar, click Preferred Credentials. On the Preferred Credentials page, from the My Oracle Support Preferred Credentials section, click Set Credentials. On the My Oracle Support Preferred Credentials page, specify the credentials and click Apply.

- Select Download and install updates from My Oracle Support if you want the installer to connect to My Oracle Support and automatically download the updates from there. Specify the My Oracle Support account user name and password to connect to the site.

  If a connection from your network to the Internet requires you to connect through a proxy, then select **Proxy Settings** and provide the proxy connection details. To test the connection, click Test Connection.

  **Note:** After specifying the My Oracle Support details, when you click Next, the installation wizard connects to My Oracle Support and checks for new software updates. The installer displays the new software updates that are found. If you want to install them, click Download Updates. If you do not want to install them, click Skip Updates.

- (Recommended) Select Install updates from a staging location if the software updates are already downloaded and available in an accessible location. You can either specify the location or click Browse to search the host and select the
Adding Additional Oracle Management Service

3-13

5. Click Next.

If you specified the My Oracle Support details in Step (4), the installer connects to My Oracle Support and checks for new software updates. The installer displays the new software updates that are found. If you want to install them, click Download Updates. If you do not want to install them, click Skip Updates.

Similarly, if any patches (including one-off patches) were found, then the installer displays the Product Updates screen. On the Product Updates screen, select Apply Software Updates and click Next if you want to apply all the patches. Otherwise, deselect that option and click Next.

6. Select Installation Type

On the Select Installation Type screen, select Add an additional Management Service.
7. Click Next.

If Enterprise Manager Grid Control is the first Oracle product you are installing on the host that is running on UNIX operating system, then the Oracle Inventory screen appears. For details, see step (8). Otherwise, the Check Prerequisites screen appears. For details, see step (10).

If Enterprise Manager Grid Control is the first Oracle product you are installing on the host that is running on Microsoft Windows operating system, then the Oracle Inventory screen does not appear. On Microsoft Windows, the following is the default inventory directory:

```
<system drive>\Program Files\Oracle\Inventory
```

8. Specify Inventory Details

On the Oracle Inventory screen, do the following:

a. Specify the full path to a directory where the inventory files and directories can be placed.

**Note:** the central inventory location you specify must NOT be on a shared file system. If it is already on a shared file system, then switch over to a non-shared file system by following the instructions outlined in My Oracle Support note 1092645.1

**Note:** If this is the first Oracle product on the host, then the default inventory location is `/home/<user_name>/oraInventory`. However, if you already have some Oracle products on the host, then the inventory location can be found in the `oraInst.loc` file. The `oraInst.loc` file is located in the `/etc` directory for Linux and AIX, and in the `/var/opt/oracle` directory for Solaris, HP-UX, and Tru64.
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.

**Note:** You will see this screen only if this turns out to be your first ever installation of an Oracle product on the host.

9. Click Next.

10. Check for Prerequisites

   On the Check Prerequisites screen, check the status of the prerequisite checks run by the installation wizard is shown.

   The prerequisite checks can result in either **Warning**, **Failed**, or **Succeeded** status. If all the prerequisite checks succeed, then click **Next** to proceed to the next screen. However, if some checks result in **Warning** or **Failed** status, then do the following:

   - For the prerequisite checks with **Failed** status and **Warning** status, investigate and correct the problems before you proceed with the installation. You can also update the prerequisites with the latest software updates, if they have been released by Oracle, and rerun them. To understand how you can manually download the software updates to update the prerequisites, see Step (4).

   - After you correct the problems in your environment, you can return to this screen and click **Check Again** to check the prerequisites once again.

   - If you prefer to ignore all these checks and proceed, then select **Ignore All**. However, ignoring the prerequisite checks with **Failed** status and **Warning** status might result in an unsuccessful installation, and therefore, Oracle recommends you to correct the problem and then proceed only after all the checks succeed.

11. Click Next.

12. Connect to Oracle Database
On the Connect to Oracle Database screen, specify the fully-qualified name of the host where the existing database resides, the database’s listener port and its system ID (SID), and the SYSMAN user account’s password.

The installer uses this information to connect to the existing, certified Oracle Database where the Management Repository can be configured.

13. Click Next.

14. Specify Installation Locations

On the Specify Install Locations screen, provide the information required for installing the core components of Enterprise Manager Grid Control and storing the configuration files.

- For **Oracle Middleware Home Location**, validate and accept the default middleware location, or select another middleware location, which is present on the host where you are installing the product.

Ensure that the middleware location has `write` permission to create the Oracle home for OMS and the Oracle home for Management Agent. For example, if you accept the default location `/u01/app/Oracle/Middleware`, then the
Oracle home for OMS is created as /u01/app/Oracle/Middleware/oms11g, and the Oracle home for Management Agent is created as /u01/app/Oracle/Middleware/agent11g.

Note: Ensure that the Middleware Home you accept, select, or specify here is used only for Oracle Management Service. Ensure that no other Oracle Fusion Middleware products or components are installed in the same Middleware Home that is designated for Oracle Management Service.

For OMS Instance Base Location, validate and accept the default instance base location, or specify another instance base location, which is present on the host where you installing the product and has write permission to store the configuration files of OMS.

By default, the instance base is under the parent directory of the Oracle Middleware Home. And, by default, the instance home name is gc_inst. You can, however, edit this and specify a custom name.

For example, if the Oracle Middleware Home is /u01/app/Oracle/Middleware and if you choose to retain the default instance home name, then the instance home location is /u01/app/Oracle/gc_inst.

If the parent directory of the Oracle Middleware Home does not have write permission, then the instance base is created in the Oracle Middleware Home itself.

Note: For information about Oracle Middleware Home and OMS Instance Base Location, see the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at: http://www.oracle.com/technology/documentation/oem.html

15. Click Next.
16. Create WebLogic Server Domain
On the Create WebLogic Server Domain screen, specify the Admin Server Host Name, the Admin Server Port, and the WebLogic credentials. The Admin Server is the server that was created when you installed the first Oracle Management Service 11g Release 1.

The installation wizard displays default values for these fields. You can either accept it or change it with custom values.

17. Click Next.

18. Secure Oracle Management Service

On the Secure Oracle Management Service screen, do the following:

a. For Registration Password, specify a password that can be used for authenticating new Management Agents that join the Enterprise Manager Grid Control system, and for permitting only secure Management Agents to communicate with the OMS, which is in locked state, via HTTPS protocol.
b. Select **Allow only secure agents to communicate with the OMS** if you want to further enhance the security of communication between the OMS and the Management Agents.

OMS always runs in a secure mode, and can further have a **locked** or an **unlocked** state. In an unlocked state, the Management Agents that are secure and the Management Agents that are not unsecure communicate with the OMS using HTTP and HTTPS protocols, respectively. However, in a locked state, only secure Management Agents communicate with the OMS using HTTPS protocol.

Select this option to turn the OMS to a locked state.

c. Select **Allow only secure access to the console** if you want to secure the access and allow users to access the Enterprise Manager Grid Control console only using HTTPS protocol.

19. Click **Next**.

20. **Customize Ports**

On the Customize Ports screen, customize the ports to be used for various components, and click **Next**.

If staticports.ini file is passed during installation, then by default, the ports defined in the staticports.ini file are displayed. Otherwise, the first available port from the recommended range is displayed.

**Note:** For information about the default ports that are assigned and the possibility of using custom ports instead of default ports, see the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:

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

You can choose to retain the default port or customize it. To customize the ports, edit the port value in the **Port** column of the table, and specify a free custom port as recommended in the **Recommended Port Range** column.
21. Click Next.

22. Review

On the Review screen, review the details you provided for the selected installation type.

- If you want to change the details, click Back repeatedly until you reach the screen where you want to make the changes.
- After you verify the details, if you are satisfied, click Install to begin the installation process.

23. Once the software binaries are copied, you are prompted to run the allroot.sh script, and the oraInstRoot.sh script if this is the first Oracle product installation on the host. Open another window, log in as root, and manually run the scripts.

If you are installing on Microsoft Windows operating system, then you will not be prompted to run this script. You will directly reach the Configuration Assistants screen as described in Step (24).

24. On the Configuration Assistants screen, you should see the Configuration Assistants run for this installation type. If you see any failed Configuration Assistants and if you want to rerun them, then select the failed ones and click Retry. If you prefer to rerun them later in standalone mode, then click Cancel to exit the installer.
After You Install

3.5 After You Install

After you install, do the following:

1. Verify the installation:
   a. Navigate to the Oracle home of the OMS and run the following command to see a message that confirms that OMS is up and running.
      
      $<ORACLE_HOME>/bin/emctl status oms

   b. Navigate to the Oracle home of the Management Agent and run the following command to see a message that confirms that the Management Agent is up and running.

      $<ORACLE_HOME>/bin/emctl status agent

   c. Navigate to the Oracle home of the Management Agent and run the following command to see a message that confirms that EMD upload completed successfully.

      $<ORACLE_HOME>/bin/emctl upload

   **Note:** By default, you can access Enterprise Manager Grid Control only using the HTTPS protocol. If you want to use the HTTP protocol, then unlock it by running the following command from the Oracle home of the OMS:

      emctl secure unlock -console

2. To use a secure protocol (HTTPS) to connect to the Enterprise Manager Administration Server, do the following:
   a. Specify additional SSL arguments in the environment. To do so, set JAVA_OPTS to append the appropriate SSL arguments to use before invoking the ocmrepeaterctl script.

   **Note:** If the Configuration Assistants fail, then review the relevant log files, resolve the issues, and rerun the Configuration Assistants as described in the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:

   http://www.oracle.com/technology/documentation/oem.htm

   You can also refer to the Master Note for Enterprise Manager Grid Control Installation and Upgrade available in the same location. Once you access the URL, click the Release Notes tab, and from the Master Support Notes section, click HTML.

25. On the End of Installation screen, you should see information pertaining to the installation of an additional OMS. Review the information and click Close to exit the installation wizard.

   For more information about this installation, refer to the following file available in the Oracle home of the OMS:

   $<ORACLE_HOME>/install/setupinfo.txt

   **Note:** If the Configuration Assistants fail, then review the relevant log files, resolve the issues, and rerun the Configuration Assistants as described in the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:

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

   You can also refer to the Master Note for Enterprise Manager Grid Control Installation and Upgrade available in the same location. Once you access the URL, click the Release Notes tab, and from the Master Support Notes section, click HTML.
After You Install

For information about these JAVA options, access these URLs:

http://download.oracle.com/docs/cd/E12840_01/wls/docs103/client/security.html#wp1077561

http://download-llnw.oracle.com/docs/cd/E12840_01/wls/docs103/config_scripting/using_WLST.html#wp1093943

Depending on whether a Demo or a Custom Trust certificate is used by the
SSL realm, the SSL arguments will include the following:

b. Ensure that HTTP tunneling is enabled in the Administration Server. To verify
this, log in to Oracle WebLogic Server Administration Console, and do the
following:

(i) From the Domain Structure panel on the left side of the Home page, expand Environment and click Servers.

(ii) On the Summary of Servers page, from the Servers table, click the Admin Server.

(iii) On the Settings for <Admin_Server> page, click the Protocols tab, and then click the HTTP subtab.

(iv) On the HTTP page, select Enable Tunneling, and click Save.

3. Refresh the Oracle WebLogic Server Domain, which hosts the Enterprise Manager application, so that the configuration changes made to the domain as a result of adding an additional OMS are reflected in the Grid Control console. To refresh the Oracle WebLogic Server Domain, follow these steps:

a. In Enterprise Manager Grid Control, navigate to the Home page for the Oracle WebLogic Server Domain that hosts the Enterprise Manager application. In most cases, the following is the direct URL to the Home page: If your domain name is not GCDomain, then replace that string with your domain name:

[protocol]://[host]:[port]/em/faces/as/as/domainHome?target=/secFarm_GCDomain/GCDomain&type=weblogic_domain

b. From the WebLogic Domain menu, click Refresh WebLogic Domain.

c. On the Refresh WebLogic Domain page, click Continue.
After You Install

4. Configure the Oracle Database and Oracle Automatic Storage Management (Oracle ASM) target for monitoring as described in Appendix G, "Configuring Database and ASM Targets for Monitoring".

5. Configure your proxy server as described in Appendix H, "Setting Up Proxy Configuration for Oracle Management Service".

6. For accessing the Enterprise Manager Grid Control console, ensure that you use only certified browsers as mentioned in My Oracle Support note 412431.1.

7. To view details related to the Management Repository, run the following command, as emoms.properties file is no longer supported.

```
emctl config oms -list_repos_details
```

8. (Optional) If you want to connect to another Management Repository, then shut down the OMS, run the following command, and then restart the OMS.

```
emctl config oms -store_repos_details -repos_host <host> -repos_port <port> -repos_sid <sid> -repos_conndesc <connect descriptor> -repos_user <username> [-repos_pwd <pwd>] [-no_check_db]
```

**Note:** This submits a WebLogic Domain Refresh job, which captures the domain configuration changes and reflects them in the Enterprise Manager Grid Control console. The job repeats itself once a day, and therefore, if you add any more additional OMSes or remove OMSes from your Enterprise Manager system in the future, this job automatically captures the configuration changes to the Oracle WebLogic Server Domain. You do NOT have to repeat this procedure every time you add an additional OMS.

**Note:** On Linux, you need to double escape the connect descriptor using single and double quotes. However, on Microsoft Windows, you need not.

For example, on Linux:

```
emctl config oms -store_repos_details -repos_host myreposhost.mydomain.com -repos_port 12345 -repos_sid mydb -repos_conndesc "'(DESCRIPTION=(ADDRESS=(PROTOCOL=TCP)(HOST=myreposhost.mydomain.com)(PORT=12345))(CONNECT_DATA=(SID=mydb)))'" -repos_user sysman
```

For example, on Microsoft Windows:

```
emctl config oms -store_repos_details -repos_host myreposhost.mydomain.com -repos_port 12345 -repos_sid mydb -repos_conndesc 'DESCRIP'TION=(ADDRESS=(PROTOCOL=TCP)(HOST=myreposhost.mydomain.com)(PORT=12345))(CONNECT_DATA=(SID=mydb)))' -repos_user sysman
```

9. (Optional) If you want to change the SYSMAN password, then shut down the OMS, run the following command, and then restart the OMS.
emctl config oms -change_repos_pwd

10. (Optional) If you want to discover the newly installed targets, if you want to convert the standalone Management Agent to a cluster-based Management Agent, if you want to discover the targets on the new nodes of the cluster, or if you want to reconfigure the cluster-based Management Agent, you must run the agentca script to reconfigure and discover all new targets. For information about the agentca script and to know how you can reconfigure the Management Agent and discover all new targets, see Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:

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

11. (Optional) If you want to enable the Request Monitoring feature for tracing transaction requests in WLS, you need JVM Diagnostics as well as Application Dependency and Performance (ADP) managers and agents configured against the target to be monitored.

For information about installing JVM Diagnostics and enabling the Request Monitoring feature, refer to the Oracle Enterprise Manager Administration Guide.

For information about enabling the ADP feature in Enterprise Manager Grid Control, refer to the Oracle Enterprise Manager Getting Started with Management Pack Plus for SOA.

Both these guides are available at:

http://www.oracle.com/technology/documentation/oem.html
This chapter describes how you can install Oracle Management Agent (Management Agent) using the Agent Deployment Wizard. In particular, this chapter covers the following:

- Overview
- Before You Begin
- Prerequisites
- Installation Procedure
- After You Install

**Note:** If you have a cluster-based environment, then Oracle strongly recommends you to install the Management Agent using the Agent Deployment Wizard as described in the *Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide* available at: [http://www.oracle.com/technology/documentation/oem.html](http://www.oracle.com/technology/documentation/oem.html)

### 4.1 Overview

Agent Deployment Wizard, as the name suggests, is an application that enables you to install Management Agents. Agent Deployment Wizard is built into Enterprise Manager Grid Control, and it offers GUI-rich, interactive screens that guide you through the entire installation process.

Although the Agent Deployment Wizard can be used for installing one, single Management Agent, the wizard is best suited for installing multiple Management Agents, as a mass deployment, and is particularly useful when you want to perform remote installations across your organization.

The Agent Deployment Wizard gives you the flexibility to specify multiple hosts on which the Management Agent needs to be installed. This helps you when you want to install the Management Agent on several hosts, in one attempt.

The wizard connects to Oracle Management Service (OMS) where the Management Agent software is located and copies all the required files and scripts from there to the specified hosts, and then runs them to install a Management Agent.

The connectivity between OMS and the specified hosts is established using SSH protocol. For Linux operating systems, it is assumed that SSH daemon runs on the...
destination hosts by default. However, for Microsoft Windows operating systems, in
order to facilitate communication on SSH protocol, you have to install the Cygwin
suite. For information about installing Cygwin suite, see Appendix D, "Setting Up SSH
Connectivity".

4.2 Before You Begin

Before you begin, keep these points in mind:

- If you want to view the status of an installation session that was previously run,
then click Agent Installation Status on the Deployments page. However, do not
  attempt to view the installation status until the installation is complete. If you
do, you will see an error.
- On Microsoft Windows, do not open the agentpush.properties file using
  Microsoft Word software. Open it using other text editors such as VIM or
  Notepad.
- For accessing the Enterprise Manager Grid Control console, ensure that you use
  only certified browsers as mentioned in My Oracle Support note 412431.1.

4.3 Prerequisites

Before installing the Management Agent, ensure that you meet the following
prerequisites.

If you want, you can print out this section and write ‘Yes’ or ‘No’ against each
prerequisite. This will help you to track the prerequisites you have met and the
prerequisites you have not met.

Table 4–1 Prerequisites for Installing Oracle Management Agent Using Agent
Deployment Wizard

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware Requirements</td>
<td>Ensure that you meet the hard disk space and physical memory requirements as described in Appendix A, “Meeting Hardware Requirements”.</td>
<td></td>
</tr>
<tr>
<td>Operating System Requirements</td>
<td>Ensure that you install the Management Agent only on certified operating systems as mentioned in My Oracle Support note 412431.1.</td>
<td></td>
</tr>
<tr>
<td>Package Requirements</td>
<td>Ensure that you install all the operating system-specific packages as described in Appendix B, “Meeting Package and Library Requirements”.</td>
<td></td>
</tr>
<tr>
<td>User and Operating System Group Requirement</td>
<td>Ensure that the destination host where you want to install the Management Agent has the appropriate users and operating system groups created. For information about creating operating system groups and users, see Appendix C, “Creating Operating System Groups and Users Requirements”.</td>
<td></td>
</tr>
<tr>
<td>Temporary Directory Space Requirements</td>
<td>Ensure that you allocate 400 MB of space for a temporary directory where the executables can be copied. For example, /tmp on UNIX hosts and c:\temp on Microsoft Windows hosts.</td>
<td></td>
</tr>
</tbody>
</table>
Central Inventory Requirements

- Ensure that you allocate 100 MB of space for the central inventory directory.
- Also ensure that the central inventory directory is not on a shared file system. If it is already on a shared file system, then switch over to a non-shared file system by following the instructions outlined in My Oracle Support note 1092645.1

Installation Base Directory Requirements

- Ensure that the installation base directory you specify is empty and has write permission.

Software Availability Requirements

- If you want to install Oracle Management Agent 10g, then ensure that you download that Management Agent software.
- If you want to install Oracle Management Agent 11g Release 1 for an operating system that is different from the one on which the Oracle Management Service 11g Release 1 is running, then ensure that you download the Management Agent software for that operating system.

Accessibility Requirements

- If there are multiple OMSes in your environment and if you have staged the Management Agent software in a non-default location (not on the OMS host), then ensure that the non-default location is accessible by all the OMSes.

Path Validation Requirements

- Validate the path to all command locations. For more information, see Appendix E, "Validating Command Locations".

<table>
<thead>
<tr>
<th>Requirement</th>
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<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Inventory Requirements</td>
<td>Ensure that you allocate 100 MB of space for the central inventory directory. Also ensure that the central inventory directory is not on a shared file system. If it is already on a shared file system, then switch over to a non-shared file system by following the instructions outlined in My Oracle Support note 1092645.1</td>
<td></td>
</tr>
<tr>
<td>Installation Base Directory Requirements</td>
<td>Ensure that the installation base directory you specify is empty and has write permission.</td>
<td></td>
</tr>
<tr>
<td>Software Availability Requirements</td>
<td>If you want to install Oracle Management Agent 10g, then ensure that you download that Management Agent software. If you want to install Oracle Management Agent 11g Release 1 for an operating system that is different from the one on which the Oracle Management Service 11g Release 1 is running, then ensure that you download the Management Agent software for that operating system.</td>
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</tr>
<tr>
<td>Accessibility Requirements</td>
<td>If there are multiple OMSes in your environment and if you have staged the Management Agent software in a non-default location (not on the OMS host), then ensure that the non-default location is accessible by all the OMSes.</td>
<td></td>
</tr>
<tr>
<td>Path Validation Requirements</td>
<td>Validate the path to all command locations. For more information, see Appendix E, &quot;Validating Command Locations&quot;.</td>
<td></td>
</tr>
</tbody>
</table>
Prerequisites

Ensure that the host names and the IP addresses are properly configured in the `/etc/hosts` file. For example, for installing a Management Agent on a host, ensure that the host name specified in the `/etc/hosts` file is unique, and ensure that it maps to the correct IP address of that host. Otherwise, the installation can fail on the product-specific prerequisite check page.

The recommended format of the `/etc/hosts` file is `<ip> <fully_qualified_host_name> <short_host_name>`. For example:

```
141.81.5.71 host1.foo.com host1
```

IPv6 entries are supported in the file for fresh installations of 11g Release 1 (11.1). However, they are not supported for upgrade from 10g Release 4 (10.2.0.4) or higher to 11g Release 1 (11.1).

According to RFC 952, the following are the assumptions: A "name" (Net, Host, Gateway, or Domain name) is a text string up to 24 characters drawn from the alphabet (A-Z), digits (0-9), minus sign (-), and period (.). Note that periods are only allowed when they serve to delimit components of "domain style names". No blank or space characters are permitted as part of a name. No distinction is made between upper and lower case. The first character must be an alpha character.

Also, if DNS server is configured in your environment, then you should be able to use DNS to resolve the name of the host on which you want to install the OMS. For example, all these commands must return the same output:

```
nsl lookup host1
nsl lookup host1.foo.com
nsl lookup 141.81.5.71
```

If the destination host and the host on which OMS is running belong to different network domains, then ensure that you update the `/etc/hosts` file on the destination host to add a line with the IP address of that host, the fully-qualified name of that host, and the short name of the host.

For example, if the fully-qualified host name is `mypc.cn.company.com` and the short name is `mypc`, then add the following line in the `/etc/hosts` file:

```
12.123.123.12 mypc.cn.company.com mypc
```

Ensure that the preinstallation and postinstallation scripts that you want to run along with the installation are available on all the destination hosts.

---

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host File Requirements</td>
<td>Ensure that the host names and the IP addresses are properly configured in the <code>/etc/hosts</code> file. For example, for installing a Management Agent on a host, ensure that the host name specified in the <code>/etc/hosts</code> file is unique, and ensure that it maps to the correct IP address of that host. Otherwise, the installation can fail on the product-specific prerequisite check page. The recommended format of the <code>/etc/hosts</code> file is <code>&lt;ip&gt; &lt;fully_qualified_host_name&gt; &lt;short_host_name&gt;</code>. For example, 141.81.5.71 host1.foo.com host1. IPv6 entries are supported in the file for fresh installations of 11g Release 1 (11.1). However, they are not supported for upgrade from 10g Release 4 (10.2.0.4) or higher to 11g Release 1 (11.1). According to RFC 952, the following are the assumptions: A &quot;name&quot; (Net, Host, Gateway, or Domain name) is a text string up to 24 characters drawn from the alphabet (A-Z), digits (0-9), minus sign (-), and period (.). Note that periods are only allowed when they serve to delimit components of &quot;domain style names&quot;. No blank or space characters are permitted as part of a name. No distinction is made between upper and lower case. The first character must be an alpha character. Also, if DNS server is configured in your environment, then you should be able to use DNS to resolve the name of the host on which you want to install the OMS. For example, all these commands must return the same output: nsl lookup host1 nsl lookup host1.foo.com nsl lookup 141.81.5.71.</td>
<td></td>
</tr>
<tr>
<td><code>/etc/hosts</code> File Requirements</td>
<td>If the destination host and the host on which OMS is running belong to different network domains, then ensure that you update the <code>/etc/hosts</code> file on the destination host to add a line with the IP address of that host, the fully-qualified name of that host, and the short name of the host. For example, if the fully-qualified host name is <code>mypc.cn.company.com</code> and the short name is <code>mypc</code>, then add the following line in the <code>/etc/hosts</code> file: 12.123.123.12 mypc.cn.company.com mypc.</td>
<td></td>
</tr>
<tr>
<td>Preinstallation/Postinstallation Scripts Requirements</td>
<td>Ensure that the preinstallation and postinstallation scripts that you want to run along with the installation are available on all the destination hosts.</td>
<td></td>
</tr>
</tbody>
</table>
Prerequisites

Installing Oracle Management Agent Using Agent Deployment Wizard

4-5

Installing User Requirements

If the central inventory owner and the user installing the Management Agent are different, then ensure that they are part of the same group.

Also ensure that the inventory owner and the group to which the owner belongs have read and write permissions on the inventory directory.

For example, if the inventory owner is abc and user installing the Management Agent is xyz, then ensure that abc and xyz belong to the same group, and they have read and write access to the inventory.

Permission Requirements

- Ensure that you have read, write, and execute permissions on 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, then you can specify the path to an alternative inventory location by using one of the following options in the Additional Parameters section of the Agent Deployment Wizard:
  - On the Installation Details page, if you select Default, from Management Server location, which means the software is on the OMS host, then use the -i <location> option.
  - On the Installation Details page, if you select Another Location, which means the software is in any other location other than the OMS host, then use the -invPtrLoc option.
- Ensure that you have write permission on the Installation Base Directory.
- Ensure that you have write permission on the Installation Base Directory and the temporary directory where the executables will be copied. For example, /tmp or c:\Temp.

SUDO Privilege Requirement

Ensure that you have SUDO privileges to run root.sh and /bin/sh (UNIX operating systems only). The Agent Deployment Wizard uses SUDO to run the root.sh script. You must specify the invoking user’s password here.

To verify whether you have SUDO privileges to run these files, access the /etc/sudoers file and check whether you have a similar entry as shown below. If you do not see a similar entry, then add one.

```
<user> <hostname>=PASSWD:
/home/em/agent11010/root.sh, /bin/sh
```

If you do not have SUDO privileges and if you do NOT want to run root.sh and /bin/sh yourself at the time of installation, then request your Administrator who has SUDO privileges to manually run the scripts after the installation ends. To understand how and where the scripts need to be run from, see Section 4.5, "After You Install".

Table 4-1 (Cont.) Prerequisites for Installing Oracle Management Agent Using Agent Deployment Wizard

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installing User Requirements</td>
<td>If the central inventory owner and the user installing the Management Agent are different, then ensure that they are part of the same group. Also ensure that the inventory owner and the group to which the owner belongs have read and write permissions on the inventory directory. For example, if the inventory owner is abc and user installing the Management Agent is xyz, then ensure that abc and xyz belong to the same group, and they have read and write access to the inventory.</td>
<td></td>
</tr>
</tbody>
</table>
| Permission Requirements | - Ensure that you have read, write, and execute permissions on 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, then you can specify the path to an alternative inventory location by using one of the following options in the Additional Parameters section of the Agent Deployment Wizard:
  - On the Installation Details page, if you select Default, from Management Server location, which means the software is on the OMS host, then use the -i <location> option.
  - On the Installation Details page, if you select Another Location, which means the software is in any other location other than the OMS host, then use the -invPtrLoc option.
- Ensure that you have write permission on the Installation Base Directory.
- Ensure that you have write permission on the Installation Base Directory and the temporary directory where the executables will be copied. For example, /tmp or c:\Temp. |        |
| SUDO Privilege Requirement | Ensure that you have SUDO privileges to run root.sh and /bin/sh (UNIX operating systems only). The Agent Deployment Wizard uses SUDO to run the root.sh script. You must specify the invoking user’s password here. To verify whether you have SUDO privileges to run these files, access the /etc/sudoers file and check whether you have a similar entry as shown below. If you do not see a similar entry, then add one.

```
<user> <hostname>=PASSWD:
/home/em/agent11010/root.sh, /bin/sh
```

If you do not have SUDO privileges and if you do NOT want to run root.sh and /bin/sh yourself at the time of installation, then request your Administrator who has SUDO privileges to manually run the scripts after the installation ends. To understand how and where the scripts need to be run from, see Section 4.5, "After You Install". |        |
## Prerequisites

**SUDOERS File Configuration Requirements**
Ensure that you configure /etc/sudoers file so that while running a command using SUDO, you are always prompted for a password. If /etc/sudoers file is configured in such a way that SUDO never prompts for a password, then a directory with the host password as the title gets created in the invoking users home directory.

**Default SSH Port Requirements**
Ensure that the SSH daemon is running on the default port (that is, 22) on all the destination hosts. If the port is a non-default port, that is, any port other than 22, then update the `SSH_PORT` property in the following file that is present in the OMS Instance Base:

```
<INSTANCE_HOME>/sysman/prov/resources/Paths.properties
```

**PubkeyAuthentication Parameter Requirements**
Ensure that the `PubkeyAuthentication` parameter is enabled in the `sshd_config` file. To verify the value of this parameter, run the following command:

```
grep PubkeyAuthentication <SSH_INSTALL_LOCATION>/sshd_config
```

For example,

```
grep PubkeyAuthentication /etc/ssh/sshd_config
```

The result of this command must be `Yes`. If the result is `No`, then edit the `sshd_config` file, set the `PubkeyAuthentication` value to `Yes`, and restart the SSH daemon.

**PATH Environment Variable Requirements**
On the host where OMS is running and on the host where you want to install the Management Agent, ensure the following:
- (For Microsoft Windows) Ensure that the cygwin software location appears before other software locations in the `PATH` environment variable. After making it the first entry, restart the SSH daemon (sshd) on both the hosts.
- (For UNIX) Ensure that the SCP binaries (for example, `/usr/local/bin/scp`) are in the `PATH` environment variable.

**SSH Setup Requirements (For Microsoft Windows)**
(For Microsoft Windows) If you are installing the Management Agent on a Microsoft Windows-based operating system, then ensure that you set up the SSH connectivity between the host running OMS and the host where the Management Agent needs to be installed, as described in Appendix D, “Setting Up SSH Connectivity”.

### Table 4-1 (Cont.) Prerequisites for Installing Oracle Management Agent Using Agent Deployment Wizard

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUDOERS File Configuration Requirements</td>
<td>Ensure that you configure /etc/sudoers file so that while running a command using SUDO, you are always prompted for a password. If /etc/sudoers file is configured in such a way that SUDO never prompts for a password, then a directory with the host password as the title gets created in the invoking users home directory.</td>
<td></td>
</tr>
<tr>
<td>Default SSH Port Requirements</td>
<td>Ensure that the SSH daemon is running on the default port (that is, 22) on all the destination hosts. If the port is a non-default port, that is, any port other than 22, then update the <code>SSH_PORT</code> property in the following file that is present in the OMS Instance Base: <code>&lt;INSTANCE_HOME&gt;/sysman/prov/resources/Paths.properties</code></td>
<td></td>
</tr>
</tbody>
</table>
| PubkeyAuthentication Parameter Requirements | Ensure that the `PubkeyAuthentication` parameter is enabled in the `sshd_config` file. To verify the value of this parameter, run the following command:
```
grep PubkeyAuthentication <SSH_INSTALL_LOCATION>/sshd_config
```
For example,
```
grep PubkeyAuthentication /etc/ssh/sshd_config
```
The result of this command must be `Yes`. If the result is `No`, then edit the `sshd_config` file, set the `PubkeyAuthentication` value to `Yes`, and restart the SSH daemon. | |
| PATH Environment Variable Requirements | On the host where OMS is running and on the host where you want to install the Management Agent, ensure the following:
- (For Microsoft Windows) Ensure that the cygwin software location appears before other software locations in the `PATH` environment variable. After making it the first entry, restart the SSH daemon (sshd) on both the hosts.
- (For UNIX) Ensure that the SCP binaries (for example, `/usr/local/bin/scp`) are in the `PATH` environment variable. | |
| SSH Setup Requirements (For Microsoft Windows) | (For Microsoft Windows) If you are installing the Management Agent on a Microsoft Windows-based operating system, then ensure that you set up the SSH connectivity between the host running OMS and the host where the Management Agent needs to be installed, as described in Appendix D, “Setting Up SSH Connectivity”. | |
4.4 Installation Procedure

To install a Management Agent, follow these steps:

1. In Grid Control, click Deployments.
2. On the Deployments page, from the Agent Installation section, click Install Agent.
3. On the following page, click Fresh Install.
4. On the Installation Details page, in the Source Software section, do the following:

Table 4–1 (Cont.) Prerequisites for Installing Oracle Management Agent Using Agent Deployment Wizard

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Yes/No</th>
</tr>
</thead>
</table>
| Agent User Account Permissions and Rights (For Microsoft Windows) | (For Microsoft Windows) If you are installing the Management Agent on a Microsoft Windows-based operating system, then ensure that the agent user account has permissions and rights to perform the following:
  - Act as part of the operating system.
  - Increase quotas.
  - Replace process level token.
  - Log in as a batch job.
To verify whether the agent user has these rights, follow these steps:
1. Launch the Local Security Settings. From the Start menu, click Settings and then select Control Panel. From the Control Panel window, select Administrative Tools, and from the Administrative Tools window, select Local Security Settings.
2. In the Local Security Settings window, from the tree structure, expand Local Policies, and then expand User Rights Assignment. |
| Permissions for cmd.exe (For Microsoft Windows) | (For Microsoft Windows) If you are installing the Management Agent on a Microsoft Windows-based operating system, then ensure that you grant the Cmd.exe program Read and Execute permissions for the user account that the batch job runs under. This is a restriction from Microsoft. For more information on this restriction and to understand how you can grant these permissions, access the following URL to Microsoft Web site:
http://support.microsoft.com/kb/867466/en-us |
Installation Procedure

a. Select Default, from Management Server location if the Management Agent software is available in the default directory that exists within the OMS. For example, `<OMS_HOME>/sysman/agent_download/<version>/<platform>`

b. Select Another Location if the Management Agent software is available in a non-default or custom location. Specify the full path to that location, and ensure that the path you specify leads up to the `product.xml` file. Also ensure that this location (shared or non-shared) is accessible from all the remote hosts and you have read permission on it. For example, `/shared/products/shiphomes/linux/agent/stage/products.xml`.

5. In the Version section, select the version of the Management Agent that you want to install. The values available in this list depend on the software staged on the OMS host.

<table>
<thead>
<tr>
<th>Version</th>
<th>Select the agent source software version.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LL31D04</td>
<td>Only if the version of the agent software available on Management Server.</td>
</tr>
</tbody>
</table>

6. In the Hosts section, do the following:

   a. From the Platform list, select the operating system on which you want to install the Management Agent.

   b. For Provide Host List, specify the host names or IP addresses of the hosts on which you want to install the Management Agent. You can use a comma (,) or a white space as a separator when specifying multiple hosts.

```
+ Provide Host List
    host1, host2, ip1, ip2
```

Alternatively, if you already have a list maintained in a file, then click Get Host Names From File and select that file. The recommended format of the `/etc/hosts file is <ip> <fully_qualified_host_name> <short_host_name>.

For example,

```
141.81.5.71 host1.foo.com host1
```

   c. Select Allow local hostname to override provided hostname if the host names specified in Provide Host List are virtual host names and not physical host names.
For example, if a host name is mypc.server.com but the virtual name given to it is host1, then you can specify host1 in the Provide Host List test box, but select this check box to indicate that the specified host name is a virtual host name. The application internally interprets the virtual host name specified and maps to its real, physical host name in the network.

7. In the OS Credentials section, do the following:
   
   a. Specify the appropriate operating system user credentials. The operating system credentials you specify here must be the same for all the selected hosts.
   
   b. Select Run root.sh (for UNIX) if you want the application to run this script. The script runs after the configuration assistants are run and before the postinstallation scripts (if any) are run.

   To run this script, you must have SUDO privileges. If you do not have SUDO privileges and if you do NOT want to run the script yourself at the time of installation, then deselect this option now. After the installation ends, request your Administrator who has SUDO privileges to manually run the scripts as described in Section 4.5, "After You Install".

8. In the Destination section, specify the full path to the Installation Base Directory. This directory is created on all the specified hosts, and the Oracle home of the Management Agent is created as a subdirectory under this directory.

9. In the Port section, specify the port on which the Management Agent will communicate. The default port is 3872. Ensure that the port you specify is not busy, otherwise the prerequisite check fails.

   If you are not sure, leave this field blank. The application automatically picks up the first available free port within the range of 1830 - 1849.

10. In the Load Balancer Host and Port section, specify the name of the host and port where the Server Load Balancer is set up so that communication between the
Management Agent and the host running the Server Load Balancer can be enabled. This is required only if you are deploying the Management Agent in an environment that has multiple OMSes managed by a Server Load Balancer.

11. In the Additional Parameters section, specify any additional parameters that you want to pass during installation.

The additional parameters you specify here depend on the software source location that you have selected in Step (4).

- If you selected Default, from Management Server location, then specify the additional parameters listed in Table F–1.
- If you selected Another Location, then specify the additional parameters listed in Table F–2.

Oracle recommends you to specify only those parameters that you want to run in addition to the general parameters you have already provided on this page for installation. For example, in Step (8), you are specifying the installation base directory. Therefore, for Additional Parameters, try to avoid specifying the installation base directory again. If you still do so, then the value you specified in Step (8) will be ignored and the value you specified here will be used instead.

And note that if you are specifying more than one parameter, then separate them with a white space. For example, -i /etc/oraInst.loc -p /home/config/staticports.ini.

12. In the Management Server Security section, specify a password that can be used for authenticating new Management Agents that join the Enterprise Manager Grid Control system, and for permitting only secure Management Agents to communicate with the OMS, which is in locked state, via HTTPS protocol.
13. In the Additional Scripts section, do the following:
   
a. Specify any preinstallation and/or postinstallation scripts that you want to run. The preinstallation and/or postinstallation scripts that you specify must be available on all the hosts. These files are not copied onto the hosts from the software source location during installation.

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

14. Click Continue.

15. On the My Oracle Support Details page, do the following:
   
   ■ If the host where the Management Agent is being installed has a direct connection to the Internet, then specify an e-mail address and My Oracle Support password.

   An e-mail address is required so that security updates and install updates can be sent. You can specify any e-mail address, but Oracle recommends you to specify the My Oracle Support user name. For example, john.mathew@xyz.com.

   ■ If the host where the Management Agent is being installed has an indirect connection to the Internet, that is, through a proxy server, then specify an e-mail address and My Oracle Support password, and then in the Connection Details section, specify the proxy server details.

   **Note:** You can change the proxy server settings any time after the installation or patching process ends. To do so, run the configCCR command from the ccr/bin directory within the Oracle home of the Management Agent.

   ■ If the host where the Management Agent is being installed does not have a direct or indirect connection to the Internet, then specify the e-mail address and leave the other fields blank.

   In this case, after you complete the installation process, manually collect the configuration information and upload it to My Oracle Support.
Installation Procedure

4.4.1 Manually Collecting and Uploading Configuration Information to My Oracle Support

To manually collect the configuration information, follow these steps:

1. On the host where the Management Agent is being installed, navigate to the following location. Here, `<ORACLE_HOME>` is the Oracle home of the Management Agent you installed:

   `$<ORACLE_HOME>/ccr/bin`

2. Collect configuration information by running the following command:

   `$<ORACLE_HOME>/ccr/bin/emCCR collect`

**Note:** If you see any errors on this page, then check whether you (the user installing the Management Agent) have `write` permission on `crontab`. If you do not, then create an entry for your user account in the `cron.allow` file.

For information about Oracle Configuration Manager, see the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:

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

To understand how you can manually collect and upload configuration information, see the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:

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

16. Click Continue.

As part of this process, the Agent Deployment Wizard performs some prerequisite checks before proceeding with the installation. When all the prerequisite checks are complete, the wizard 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 Management Agent.

**Note:** If you see the following error messages on the Prerequisite Details page, ignore them and click Continue to proceed with the installation:

- Some or all Agent home locations (Install base dir/agent10g or Install Base Dir/agent11g) provided are not empty directories
- The Agent Oracle Home (InstallBaseDir/agent10g or InstallBaseDir/agent11g), is already registered with the inventory
- An agent home exists in the hosts

**Note:** If the installation fails, then review the log files described in the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:

http://www.oracle.com/technology/documentation/oem.html
For Oracle Configuration Manager 10.2.7 and higher, the collected configuration information is stored in the `<ORACLE_HOME>/ccr/hosts/<hostname>/state/upload/ocmconfig.jar` file. For lower versions of Oracle Configuration Manager, the collected configuration information is stored in the `<ORACLE_HOME>/ccr/state/upload/ocmconfig.jar` file. When you run the same command next time, the ocmconfig.jar file gets overwritten with fresh data. Therefore, at any point, you will see only one ocmconfig.jar file.

3. Upload the ocmconfig.jar file to a Service Request on My Oracle Support at the following URL:
   http://metalink.oracle.com/

### 4.5 After You Install

After you install the Management Agent, follow these steps:

1. Verify the installation:
   a. Navigate to the Oracle home of the Management Agent and run the following command to see a message that confirms that the Management Agent is up and running:
      ```
      $<ORACLE_HOME>/bin/emctl status agent
      ```
   
   **Note:** If the status of the Management Agent is down for some reason, then manually start the Management Agent by running the following command from its Oracle home:
   ```
   $<ORACLE_HOME>/bin/emctl start agent
   ```

2. (Only for UNIX Operating Systems) If you had NOT selected Run Root.sh in the OS Credentials section of the Deployment Inputs page as described in Step (7), then manually run the following scripts as a root user from each of the hosts where the installation was done. If you do not have SUDO privileges, then request your Administrator who has the privileges to run these scripts.
   a. If this is the first Oracle product you just installed on the host, then run the oraInstRoot.sh script from the inventory location specified in the oraInst.loc file that is available in the Oracle home of the Management Agent.
      For example, if the inventory location specified in the oraInst.loc file is `$HOME/orainventory`, then run the following command:
      ```
      $<ORACLE_HOME>/bin/oraInstRoot.sh
      ```
      **Note:** (For UNIX operating systems) Before running the emctl command to start the Management Agent, ensure that the environment variable NLS_LANG is set with a value that is compatible with the operating system default locale setting and the character set of the Oracle Database, which houses the Management Repository.
After You Install

$HOME/oraInventory/oraInstRoot.sh

If you are not a root user, then use SUDO to change to a root user. For example, run the following command:

/usr/local/bin/sudo $HOME/oraInventory/oraInstRoot.sh

- Run the root.sh script from the Oracle home of the Management Agent:

  $<ORACLE_HOME>/root.sh

  If you are not a root user, then use SUDO to change to a root user. For example, run the following command:

  /usr/local/bin/sudo /scratch/OracleHomes//root.sh

3. If you have not secured the communications between the Management Agent and the OMS, then secure it by running the following command from the Oracle home of the Management Agent:

  $<ORACLE_HOME>/bin/emctl secure agent

**Note:** Even after securing the Management Agent, some data might still be transferred over the network without being encrypted.

4. (Optional) If you want to discover the newly installed targets, if you want to convert the standalone Management Agent to a cluster-based Management Agent, if you want to discover the targets on the new nodes of the cluster, or if you want to reconfigure the cluster-based Management Agent, you must run the agentca script to reconfigure and discover all new targets. For information about the agentca script and to know how you can reconfigure the Management Agent and discovering all new targets, see Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:

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

5. (Optional) If you want to enable the Request Monitoring feature for tracing transaction requests in WLS, you need JVM Diagnostics as well as Application Dependency and Performance (ADP) managers and agents configured against the target to be monitored.

For information about installing JVM Diagnostics and enabling the Request Monitoring feature, refer to the Oracle Enterprise Manager Administration Guide.

For information about enabling the ADP feature in Enterprise Manager Grid Control, refer to the Oracle Enterprise Manager Getting Started with Management Pack Plus for SOA.

Both these guides are available at:

  http://www.oracle.com/technology/documentation/oem.html
This part describes how you can upgrade Enterprise Manager 10g Grid Control Release 4 (10.2.0.4) or higher to Enterprise Manager 11g Grid Control Release 1 (11.1.0.1.0), and how you can upgrade an additional Oracle Management Service 10g Release 4 (10.2.0.4.0) or higher to Oracle Management Service 11g Release 1 (11.1.0.1.0), in graphical mode.

In particular, this part has the following chapters:

- Chapter 5, “Upgrading to Enterprise Manager 11g”
With the option of deploying Enterprise Manager Grid Control 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 hosts. The Enterprise Manager Grid Control upgrade process aims at simplifying this entire operation and rendering it as seamless and error-free as possible.

This chapter describes how you can upgrade Enterprise Manager 10g Grid Control Release 4 (10.2.0.4) or higher to Enterprise Manager 11g Grid Control Release 1 (11.1.0.1.0), and how you can upgrade an additional Oracle Management Service 10g Release 4 (10.2.0.4.0) or higher to Oracle Management Service 11g Release 1 (11.1.0.1.0). In particular, this chapter covers the following:

- Overview
- Prerequisites
- Upgrade Procedure
- After You Upgrade

Note: If Enterprise Manager 10g Grid Control Release 4 (10.2.0.4) or higher has add-ons installed, then do NOT follow the instructions outlined in this chapter. Instead, follow the instructions outlined for upgrading Enterprise Manager Grid Control with add-ons installed in the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide.

And if you want to upgrade standalone Management Agents, then see the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide.

The Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide is available at:

http://www.oracle.com/technology/documentation/oem.html
5.1 Overview

The third installation type, Upgrade to Enterprise Manager 11g, offered by the installer enables you to upgrade Enterprise Manager 10g Grid Control Release 4 (10.2.0.4) or higher to Enterprise Manager 11g Grid Control Release 1 (11.1.0.1.0), and enables you to upgrade an additional Oracle Management Service 10g Release 4 (10.2.0.4.0) or higher to Oracle Management Service 11g Release 1 (11.1.0.1.0). This is an out-of-place upgrade where the Oracle homes of the previous release are left intact and new Oracle homes for 11g Release 1 are created.

The upgrade process does the following:

- Upgrades Oracle Management Service 10g Release 4 (10.2.0.4.0) or higher
- Upgrades Oracle Management Agent 10g Release 4 (10.2.0.4.0) or higher that was installed by default with Oracle Management Service 10g Release 4 (10.2.0.4.0)
- Upgrades Oracle Management Repository 10g Release 4 (10.2.0.4.0) or higher
- Installs Oracle Web Tier 11g Release 1

Note: If you have Enterprise Manager 10g Grid Control Release 1 (10.1) or Enterprise Manager 10g Grid Control Release 3 (10.2.0.3) or lower, then you must first upgrade or patch them to Enterprise Manager 10g Grid Control Release 4 (10.2.0.4) or higher, before upgrading them directly to Enterprise Manager 11g Grid Control Release 1 (11.1.0.1.0). For information about upgrading or patching them to Enterprise Manager 10g Grid Control Release 4 (10.2.0.4) or higher, see My Oracle Support note 1076420.1.

After upgrading or patching them to Enterprise Manager 10g Grid Control Release 4 (10.2.0.4) or higher, follow the instructions outlined in this chapter to upgrade them to Enterprise Manager 11g Grid Control Release 1 (11.1.0.1.0).

Note: If you have multiple OMSes connecting to one Management Repository, stop all the OMSes and upgrade the first OMS using the installer. When you upgrade the first OMS, the installer also upgrades the Management Repository, and since the other OMSes connect to the same Management Repository, they must also be stopped.

Stopping the Management Agents is not mandatory, and as a result, there may be an increase in the number of Agent-related log files. However, this is harmless and can be ignored.

Once that OMS is upgraded, invoke the installer again, and select and upgrade all other OMSes, which connect to the same Management Repository, so that they are upgraded simultaneously. Ensure that Oracle WebLogic Server 10.3.2 (Oracle Fusion Middleware 11g Release 1 Patch Set 1) is installed on every host where the OMS is being upgraded. For information on installing Oracle WebLogic Server, see My Oracle Support note 1063762.1.
This upgrade process does NOT do the following:

- Does NOT upgrade any additional Oracle Management Agent 10g Release 4 (10.2.0.4.0) or higher that was NOT installed by default with Oracle Management Service 10g Release 4 (10.2.0.4.0) or higher.
  
  To upgrade such Management Agents, use the Agent Upgrade Wizard available in the Enterprise Manager Grid Control console. For information about using the Agent Upgrade Wizard to upgrade standalone Management Agents, see the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:
  
  http://www.oracle.com/technology/documentation/oem.html

- Does NOT upgrade your existing Oracle Database where the Management Repository is configured.
  
  To upgrade such databases, use the database upgrade tool. For more information, on the upgrade tool, see the Oracle Database Upgrade Guide available at:
  
  http://www.oracle.com/technology/documentation/database.html

- Does NOT patch one version of Enterprise Manager Grid Control to another. For example, it does not patch Enterprise Manager 10g Grid Control Release 4 (10.2.0.4.0) to Enterprise Manager 10g Grid Control Release 5 (10.2.0.5.0).

5.2 Prerequisites

Before upgrading to Enterprise Manager 11g, ensure that you meet the following prerequisites. If you want, you can print out this section and write ‘Yes’ or ‘No’ against each prerequisite. This will help you to track the prerequisites you have met and the prerequisites you have not met.
Table 5-1 Prerequisites for Upgrading to Enterprise Manager 11g

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Basic Prerequisites</strong></td>
<td>The basic prerequisites for upgrading Enterprise Manager Grid Control depend on the installation type that is being upgraded.</td>
<td></td>
</tr>
<tr>
<td>· If you are upgrading the installation type <em>Enterprise Manager Grid Control Using a New Database</em> or <em>Enterprise Manager Grid Control Using an Existing Database</em> of 10g Release 4 (10.2.0.4) or higher, then meet the prerequisites described in Section 2.3. One of the most important prerequisite is to install Oracle WebLogic Server 10.3.2 (<em>Oracle Fusion Middleware 11g Release 1 Patch Set 1</em>).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>· Important: In Section 2.3, one of the prerequisites is to ensure that the existing database does not have any Management Repository configured. However, for upgrade, ignore this prerequisite because while upgrading, the existing Management Repository will be reused</td>
<td></td>
<td></td>
</tr>
<tr>
<td>· If you are upgrading the installation type <em>Additional Oracle Management Service</em> of 10g Release 4 (10.2.0.4) or higher, then meet the prerequisites described in Section 3.3. One of the most important prerequisite is to install Oracle WebLogic Server 10.3.2 (<em>Oracle Fusion Middleware 11g Release 1 Patch Set 1</em>).</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Existing Management Repository</strong></td>
<td>Ensure that the existing, certified Oracle Database, which houses the Management Repository, already has a Management Repository configured, and that the Management Repository is compatible with Oracle Management Service 11g Release 1 (11.1).</td>
<td></td>
</tr>
<tr>
<td><strong>Existing Database Backup and OMS Backup Requirements</strong></td>
<td>Ensure that you back up the existing, certified Oracle Database, which houses the Management Repository, the Oracle home of the OMS, and the Oracle Inventory directory. This helps you maintain a copy of the database, the Oracle home, and the inventory details that were existing before the environment was upgraded, and it naturally offers the scope to revert to it whenever you want.</td>
<td></td>
</tr>
<tr>
<td><strong>Database Partitioning Requirements</strong></td>
<td>Ensure that the existing, certified Oracle Database has the Partitioning Option enabled. To verify this, connect to the database as SYSDBA and run the following query:</td>
<td></td>
</tr>
<tr>
<td></td>
<td><code>select value from v$option where parameter = 'Partitioning';</code></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The result of this query should be <code>VALUE=TRUE</code>. No additional partitioning license is required for the database that houses the Management Repository.</td>
<td></td>
</tr>
</tbody>
</table>

5-4 Oracle Enterprise Manager Grid Control Basic Installation Guide
If the Enterprise Manager system that you are about to upgrade was shut down for a long period of time, then you will not have partitions created in the existing, certified Oracle Database, which houses the Management Repository, to load new data. Therefore, under such circumstances, do the following:

1. Log in to the database as SYSMAN and run the following command:
   ```sql
   execute emd_maintenance.analyze_emd_schema('SYSMAN');
   commit;
   ```

2. Restart the OMS from its Oracle home:
   ```
   $<ORACLE_HOME>/bin/emctl start oms
   ```

Ensure that the existing, certified Oracle Database and its listener are running.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Database Partition Maintenance</td>
<td>If the Enterprise Manager system that you are about to upgrade was shut down</td>
<td></td>
</tr>
</tbody>
</table>
| Requirements                       | for a long period of time, then you will not have partitions created in the existing, certified Oracle Database, which houses the Management Repository, to load new data. Therefore, under such circumstances, do the following: 1. Log in to the database as SYSMAN and run the following command:  ```sql
   execute emd_maintenance.analyze_emd_schema('SYSMAN');
   commit;
   ``` 2. Restart the OMS from its Oracle home:  ```
   $<ORACLE_HOME>/bin/emctl start oms
   ``` |        |
| Database and Listener Status        | Ensure that the existing, certified Oracle Database and its listener are running. |        |
Prerequisites

Valid Objects

Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid SYSMAN objects</td>
<td>Ensure that you do have only valid SYSMAN and SYS objects in the existing, certified Oracle Database.</td>
<td></td>
</tr>
<tr>
<td>- To verify whether there are only valid SYSMAN objects, log in to the database as SYS and run the following command:</td>
<td></td>
<td></td>
</tr>
<tr>
<td><code>select object_name, object_type from all_objects where owner='SYSMAN' and status &lt;&gt; 'VALID';</code></td>
<td>The command must return 0 rows. However, if it returns one or more rows, then you have some invalid objects, and to turn them valid, run the following command as SYSMAN:</td>
<td></td>
</tr>
<tr>
<td><code>@admin_recompile_invalid.sql SYSMAN</code></td>
<td>Run this command again to ensure that all SYSMAN objects are valid. If you still have invalid SYSMAN objects, then contact Oracle Support.</td>
<td></td>
</tr>
<tr>
<td><strong>Note:</strong> The <code>admin_recompile_invalid.sql</code> script is in the following location of the Oracle home of the OMS:</td>
<td></td>
<td></td>
</tr>
<tr>
<td><code>&lt;ORACLE_HOME&gt;/sysman/admin/emdrep/sql/core/latest/admin</code></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- To verify whether there are only valid SY objects, log in to the database as SYS and run the following command:</td>
<td></td>
<td></td>
</tr>
<tr>
<td><code>select object_name, object_type from all_objects where status&lt;&gt;'VALID' and object_name like 'DBMS%';</code></td>
<td>The command must return 0 rows. However, if it returns one or more rows, then you have some invalid objects, and to turn them valid, recompile them by running the following command:</td>
<td></td>
</tr>
<tr>
<td><code>alter &lt;object type&gt; &lt;object name&gt; compile;</code></td>
<td>For example,</td>
<td></td>
</tr>
<tr>
<td>If the object type is <code>mypackage</code> and the object name is <code>foo</code>, then run the following command:</td>
<td></td>
<td></td>
</tr>
<tr>
<td><code>alter mypackage foo compile;</code></td>
<td>Run this command again to ensure that all the packages are valid. If you still have invalid packages, then contact Oracle Support.</td>
<td></td>
</tr>
</tbody>
</table>

Table 5–1 (Cont.) Prerequisites for Upgrading to Enterprise Manager 11g

5-6 Oracle Enterprise Manager Grid Control Basic Installation Guide
Prerequisites for Upgrading to Enterprise Manager 11g

### DBMS Jobs and DBMS Scheduler Status Requirements

1. Write down the value of `job_queue_processes` by running the following command:

```sql
SELECT a.instance_name as sid, b.value as jobqueue FROM gv$instance a, gv$parameter b WHERE a.inst_id = b.inst_id AND b.name='job_queue_processes';
```

2. Stop the DBMS JOBS by running the following command:

```sql
EXECUTE emd_maintenance.remove_em_dbms_jobs;
ALTER SYSTEM SET job_queue_processes=0 SID='*';
COMMIT;
```

Note: This will allow the currently running jobs to finish, but will not allow any new jobs to be started.

3. Ensure that there are no active jobs by running the following:

```sql
SELECT l.id2 job, l.sid, TO_CHAR(last_date, 'DD-MON-YYYY:HH24.MI.SS') last_date, TO_CHAR(this_date, 'DD-MON-YYYY:HH24.MI.SS') this_date, l.inst_id instance
FROM sys.job$ j, gv$lock l
WHERE l.type = 'JQ' AND j.job (+) = l.id2 ORDER BY 5, 4;
```

4. Stop the DBMS Scheduler by running the following command:

```sql
EXECUTE dbms_scheduler.set_scheduler_attribute('SCHEDULER_DISABLED','TRUE');
```

5. Ensure that there were no active schedulers running by waiting until the following query returns 0:

```sql
SELECT COUNT(*) FROM dba_scheduler_running_jobs WHERE SLAVE_PROCESS_ID IS NOT NULL;
```

### Gather Statistics Job Status Requirements

1. Ensure that you stop the Gather Statistics job that is running in the existing, certified Oracle Database. To do so, log in to the database as SYS and run the following commands:

   - For Oracle Database 10g (10.2.0.4) or higher:
     ```sql
     EXECUTE dbms_scheduler.disable('GATHER_STATS_JOB', TRUE);
     EXECUTE dbms_scheduler.stop_job('GATHER_STATS_JOB', TRUE);
     ```
   
   - For Oracle Database 11g (11.1.0.7) or higher:
     ```sql
     EXECUTE dbms_auto_task_admin.disable('auto optimizer stats collection', null, null);
     ```

---

Table 5–1 (Cont.) Prerequisites for Upgrading to Enterprise Manager 11g

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBMS Jobs and DBMS Scheduler Status Requirements</td>
<td>Ensure that your stop the DBMS Jobs and the DBMS scheduler in the existing, certified Oracle Database. To do so, log in to the database as SYS:</td>
<td></td>
</tr>
<tr>
<td>Gather Statistics Job Status Requirements</td>
<td>Ensure that you stop the Gather Statistics job that is running in the existing, certified Oracle Database. To do so, log in to the database as SYS:</td>
<td></td>
</tr>
</tbody>
</table>
### Prerequisites

**User Privilege Requirements**

Ensure that SYSMAN and DBSNMP users have EXECUTE privileges to access the `DBMS_RANDOM` package in the existing, certified Oracle Database. To verify whether the users have EXECUTE privileges, run the following query. When you run this query for the SYSMAN user, the `<user_account_name>` must be SYSMAN, and when you run it for the DBSNMP user, the `<user_account_name>` must be DBSNMP.

```sql
SQL> CONNECT AS SYS;
SQL> SELECT grantee, grantor, owner, table_name
FROM DBA_TAB_PRIVS
WHERE table_name = 'DBMS_RANDOM'
AND privilege = 'EXECUTE'
AND grantee IN
(SELECT DISTINCT granted_role
FROM DBA_ROLE_PRIVS
START WITH grantee = '<user_account_name>'
CONNECT BY PRIOR granted_role = grantee
UNION ALL
SELECT '<user_account_name>' FROM dual
WHERE ROWNUM = 1
UNION ALL
SELECT 'PUBLIC' FROM dual
WHERE ROWNUM = 1)

If these users do not have EXECUTE privileges, then grant them the privileges by running the following command. When you run this command for granting the privileges for the SYSMAN user, the `<user_account_name>` must be SYSMAN, and when you run it for the DBSNMP user, the `<user_account_name>` must be DBSNMP.

```sql
SQL> GRANT EXECUTE ON DBMS_RANDOM TO <user_account_name>;
```

**Environment Variable Setting Requirements**

Ensure that the environment variable `ORACLE_HOME` is set to the Oracle home of the OMS. For example, in Cshell, set it in the following way:

```bash
setenv ORACLE_HOME /home/OraHomes/oms10g
```

For example, in bash shell, set it in the following way:

```bash
export ORACLE_HOME=/home/OraHomes/oms10g
```

---

### Table 5–1 (Cont.) Prerequisites for Upgrading to Enterprise Manager 11g

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>User Privilege Requirements</td>
<td>Ensure that SYSMAN and DBSNMP users have EXECUTE privileges to access the DBMS_RANDOM package in the existing, certified Oracle Database. To verify whether the users have EXECUTE privileges, run the following query. When you run this query for the SYSMAN user, the <code>&lt;user_account_name&gt;</code> must be SYSMAN, and when you run it for the DBSNMP user, the <code>&lt;user_account_name&gt;</code> must be DBSNMP.</td>
<td></td>
</tr>
<tr>
<td>Environment Variable Setting</td>
<td>Ensure that the environment variable <code>ORACLE_HOME</code> is set to the Oracle home of the OMS. For example, in Cshell, set it in the following way: <code>setenv ORACLE_HOME /home/OraHomes/oms10g</code> For example, in bash shell, set it in the following way: <code>export ORACLE_HOME=/home/OraHomes/oms10g</code></td>
<td></td>
</tr>
</tbody>
</table>
5.3 Upgrade Procedure

To upgrade to Enterprise Manager 11g, follow these steps:

1. Invoke the installer by running the following command:
   
   `<Software_Location>/runInstaller`

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>OMS and Grid Control Process Status Requirements</td>
<td>Ensure that you shut down all the running processes (OPMN, DCM, and so on) and also all the OMSes, which are connecting to the same Management Repository. To do so, follow these steps:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Run the following commands from each of the Oracle homes of the OMS:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$&lt;ORACLE_HOME&gt;/opmn/bin/opmnctl stopall</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$&lt;ORACLE_HOME&gt;/bin/emctl stop oms</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Run the following command from each of the Oracle homes of the Management Agent:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$&lt;ORACLE_HOME&gt;/bin/emctl stop agent</td>
<td></td>
</tr>
<tr>
<td>Customization File Requirements</td>
<td>If there are any middle-tier customizations files that cannot be accessed using the credentials of the user account that is used for the upgrade process, then ensure that such customizations are removed or commented out. You can reapply these customizations after the upgrade is successfully completed.</td>
<td></td>
</tr>
<tr>
<td>Oracle Home Path Requirements</td>
<td>In the following file, ensure that the Oracle home path is the same as the component you are upgrading. The path must be a hardlink.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><code>&lt;Oracle_Inventory&gt;/ContentsXML/inventory.xml</code></td>
<td></td>
</tr>
<tr>
<td>SUDO Configuration Requirements</td>
<td>Ensure that you configure SUDO in your environment. If you are unable to do so or if you have already upgraded any of the core components (OMS or Management Agent) without configuring SUDO, then follow the workaround described in My Oracle Support note 945697.1.</td>
<td></td>
</tr>
<tr>
<td>User-Defined Metric Script Definition Requirement</td>
<td>If you have any user-defined metric scripts in the Oracle home of a Management Agent that you are upgrading, then ensure that you manually copy all those scripts to another directory outside any Oracle home, and then update the user-defined metric definitions to reflect the new script location. This is because, after the Management Agent is upgraded, the user-defined metric scripts are not automatically copied to the new Oracle home.</td>
<td></td>
</tr>
</tbody>
</table>

Note: Besides the prerequisites mentioned in Table 5–1, refer to My Oracle Support note 1073166.1 for information on other upgrade-related known issues, prerequisites, and additional requirements.
In this command, <Software_Location> is either <DVD> or <Software_Downloaded_Location>.

Note:
- For Microsoft Windows operating systems, run setup.exe instead of runInstaller.
- In Microsoft Windows, if the path to the software download location contains a subdirectory name with two or more words and a space between each of the words, then ensure that the parent directory of such a subdirectory does not contain a file whose name matches with the first word of that subdirectory.
  For example, if the software is downloaded to C:\Documents and Settings, then before you invoke setup.exe, ensure that there are no files titled Documents (for example, shortcut files such as C:\Documents) in the C:\ drive.
- After the installation ends successfully, the OMS and the Management Agent start automatically. If you do not want them to start automatically, then invoke the installer using the following command:

  ./runInstaller START_OMS=false b_startAgent=false

  However, if you pass the START_OMS=false argument, the installation does not configure the EMCLI tool, and as a result, none of the EMCLI commands will work. Therefore, after the installation ends, you must manually configure the EMCLI tool in the $<ORACLE_HOME>/bin directory. To do so, refer to the Oracle Enterprise Manager Command Line Interface available at:
  http://www.oracle.com/technology/documentation/oem.htm

- By default, GCDomain is the default name used for creating the WebLogic Domain.
  To override this, invoke the installer using the following command and specify a unique custom WebLogic Domain name:

  ./runInstaller WLSDOMAIN_NAME=<Custom_Domain_Name>

2. Specify My Oracle Support Details
(Optional) On the My Oracle Support Details screen, specify your My Oracle Support credentials to enable Oracle Configuration Manager. If you do not want to enable Oracle Configuration Manager now, go to Step (3).

If the host from where you are running the installation wizard does not have a connection to the Internet, then specify only the e-mail address and leave the other fields blank. After you complete the installation, manually collect the configuration information and upload it to My Oracle Support.

**Note:** For information about manually collecting the configuration information and uploading it to My Oracle Support, refer to the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:

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

3. Click Next.
4. Check for Updates
On the Check for Updates screen, select one of the following sources from where the software updates can be automatically downloaded and installed while the installation of Enterprise Manager Grid Control is in progress. If you do not want to apply them now, then select Skip Software Updates.

**Note:** If you choose to skip installing the software updates during installation by not providing the My Oracle Support credentials, you can always register the credentials later using the Enterprise Manager Grid Control console and view the recommended security patches. To do so, log in to Enterprise Manager Grid Control, and click Preferences from the top-right corner of the screen. On the General page, from the left menu bar, click Preferred Credentials. On the Preferred Credentials page, from the My Oracle Support Preferred Credentials section, click Set Credentials. On the My Oracle Support Preferred Credentials page, specify the credentials and click Apply.

- Select Download and install updates from My Oracle Support if you want the installer to connect to My Oracle Support and automatically download the updates from there. Specify the My Oracle Support account user name and password to connect to the site.

  If a connection from your network to the Internet requires you to connect through a proxy, then select Proxy Settings and provide the proxy connection details. To test the connection, click Test Connection.

  **Note:** After specifying the My Oracle Support details, when you click Next, the installation wizard connects to My Oracle Support and checks for new software updates. The installer displays the new software updates that are found. If you want to install them, click Download Updates. If you do not want to install them, click Skip Updates.

- (Recommended) Select Install updates from a staging location if the software updates are already downloaded and available in an accessible location. You can either specify the location or click Browse to search the host and select the
location. Ensure that the location you specify or select leads to the Updates directory where the software updates are available.

For example, if the software updates are available in /scratch/OracleHomes/Updates, then specify /scratch/OracleHomes/Updates.

**Note:** For more information about software updates, and how you can manually download them, see the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:

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

For information about the auto update feature and to know what patches are available in auto update, see My Oracle Support notes 1101208.1 and 1099123.1.

5. Click Next.

If you specified the My Oracle Support details in Step (4), the installer connects to My Oracle Support and checks for new software updates. The installer displays the new software updates that are found. If you want to install them, click Download Updates. If you do not want to install them, click Skip Updates.

Similarly, if any patches (including one-off patches) were found, then the installer displays the Product Updates screen. On the Product Updates screen, select Apply Software Updates and click Next if you want to apply all the patches. Otherwise, deselect that option and click Next.

6. Select Installation Type

On the Select Installation Type screen, select Upgrade to Enterprise Manager 11g.
Upgrade Procedure

7. Click Next.

8. Select Oracle Homes to Upgrade

On the Select Oracle Homes to Upgrade screen, select the components you want to upgrade.

If there are multiple OMSes connecting to one Management Repository, then select only one of the OMSes on this screen, and proceed with the upgrade process to upgrade it. Once that OMS is upgraded, invoke the installer again, and on this screen, select all other OMSes, which connect to the same Management Repository, so that they are upgraded simultaneously.

The Management Agents installed by default with OMSes will be automatically upgraded when you choose to upgrade an OMS.

However, additional Management Agents installations will NOT be listed on this screen, and therefore, they will not be upgraded automatically. To upgrade them, use one of the agent upgrade methods as described in this guide.

9. Click Next.

10. Check Prerequisites
On the Check Prerequisites screen, check the status of the prerequisite checks run by the installation wizard is shown.

The prerequisite checks can result in either Warning, Failed, or Succeeded status. If all the prerequisite checks succeed, then click Next to proceed to the next screen. However, if some checks result in Warning or Failed status, then do the following:

- For the prerequisite checks with Failed status and Warning status, investigate and correct the problems before you proceed with the installation. You can also update the prerequisite with the latest software updates, if they have been released by Oracle, and rerun them. To understand how you can manually download the software updates to update the prerequisites, see Step (4).

- After you correct the problems in your environment, you can return to this screen and click Check Again to check the prerequisites once again.

- If you prefer to ignore all these checks and proceed, then select Ignore All. However, ignoring the prerequisite checks with Failed status and Warning status might result in an unsuccessful installation, and therefore, Oracle recommends you to correct the problem and then proceed only after all the checks succeed.

11. Click Next.
12. Specify Install Locations
On the Specify Install Locations screen, provide the information required for installing the core components of Enterprise Manager Grid Control and storing the configuration files.

- **For Oracle Middleware Home Location**, validate and accept the default middleware location, or select or specify another middleware location, which is present on the host where you are installing the product. Ensure that the middleware location has write permission to create the Oracle home for OMS and the Oracle home for Management Agent. For example, if you accept the default location `/u01/app/Oracle/Middleware`, then the Oracle home for OMS is created as `/u01/app/Oracle/Middleware/oms11g`, and the Oracle home for Management Agent is created as `/u01/app/Oracle/Middleware/agent11g`.

  **Note**: Ensure that the Middleware Home you accept, select, or specify here is used only for Enterprise Manager Grid Control. Ensure that no other Oracle Fusion Middleware products or components are installed in the same Middleware Home that is designated for Enterprise Manager Grid Control.

- **For OMS Instance Base Location**, validate and accept the default instance base location, or specify another instance base location, which is present on the host where you are installing the product and has write permission to store the configuration files of OMS.

  By default, the instance base is under the parent directory of the Oracle Middleware Home. And, by default, the instance home is `gc_inst`. You can, however, edit this and specify a custom name.

  For example, if the Oracle Middleware Home is `/u01/app/Oracle/Middleware` and if you choose to retain the default instance home name, then the instance home location is `/u01/app/Oracle/gc_inst`. 

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If the parent directory of the Oracle Middleware Home does not have write permission, then the instance base is created in the Oracle Middleware Home itself.

**Note:** For information about Oracle Middleware Home and OMS Instance Base Location, see the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at: http://www.oracle.com/technology/documentation/oem.html

13. Click Next.

14. Connect to Oracle Database

On the Connect to Oracle Database screen, specify the SYS user account’s password of the existing Oracle Database that houses the Management Repository for the selected OMS.

15. Click Next.

16. Create WebLogic Server Domain
On the Create WebLogic Server Domain screen, specify the WebLogic password, the Node Manager password, and the JVM Diagnostics Data Tablespace password. By default, the WebLogic Domain name is GCDomain, and the Node Manager name is nodemanager. These are non-editable fields. The installer uses this information for creating Oracle WebLogic Domain and other associated components such as the admin server, the managed server, and the node manager. A Node Manager enables you to start, shut down, or restart an Oracle WebLogic Server instance remotely, and is recommended for applications with high availability requirements.

During upgrade, an additional JVM Diagnostics Data Tablespace is created for storing JVM-related monitoring data. Specify the full path to a location where the data file (mgmt_ad4j.dbf) for that tablespace can be stored. Ensure that the specified path leads up to the file name. For example, /home/john/oradata/mgmt_ad4j.dbf

If the Management Repository is on a database that uses Oracle Automatic Storage Management (Oracle ASM) for storage, then when you specify the data file location, only the disk group is used for creating the tablespace. For example, if you specify +DATA/a.dbf, then only +DATA is used for creating the tablespace on Oracle ASM, and the exact location of the data file on the disk group is decided by Oracle Managed Files.

**Note:** If you are upgrading an additional OMS, then specify the Admin Server Host, the Admin Server Port, and the WebLogic Server credentials.

17. Click Next.
18. Customize Ports
On the Customize Ports screen, customize the ports to be used for various components, and click Next.

If staticports.ini file is passed during installation, then by default, the ports defined in the staticports.ini file are displayed. Otherwise, the first available port from the recommended range is displayed.

**Note:** For information about the default ports that are assigned and the possibility of using custom ports instead of default ports, see the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:

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

You can choose to retain the default port or customize it. To customize the ports, edit the port value in the Port column of the table, and specify a free custom port as recommended in the Recommended Port Range column.

19. Click Next.

20. Review
On the Review screen, review the details you provided for the selected installation type.

- If you want to change the details, click Back repeatedly until you reach the screen where you want to make the changes.
- After you verify the details, if you are satisfied, click Install to begin the installation process.

21. Once the software binaries are copied, you are prompted to run the allroot.sh script, and the oraInstRoot.sh script if this is the first Oracle product installation on the host. Open another window, log in as root, and manually run the scripts.

If you are installing on Microsoft Windows operating system, then you will not be prompted to run this script. You will directly reach the Configuration Assistants screen as described in Step (23).

22. On the Configuration Assistants screen, you should see the Configuration Assistants run for the upgrade operation. If you see any failed Configuration Assistants and if you want to rerun them, then select the failed ones and click Retry. If you prefer to rerun them later in standalone mode, then click Cancel to exit the installer.

**Note:** If the Configuration Assistants fail, then review the relevant log files, resolve the issues, and rerun the Configuration Assistants as described in the Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:

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

You can also refer to the Master Note for Enterprise Manager Grid Control Installation and Upgrade available in the same location. Once you access the URL, click the Release Notes tab, and from the Master Support Notes section, click HTML.
23. On the End of Installation screen, you should see information pertaining to the upgrade of Enterprise Manager Grid Control or additional OMS. Review the information and click Close to exit the installation wizard.

For more information about this upgrade operation, refer to the following file available in the Oracle home of the OMS:

$<ORACLE_HOME>/install/setupinfo.txt

5.4 After You Upgrade

After you upgrade, follow these steps:

1. Start the DBMS Jobs and the DBMS Scheduler. To do so, log in to the database as SYS and perform the following:
   a. Start the DBMS Jobs by setting the job_queue_processes to the value you recorded while stopping the DBMS Jobs as a prerequisite.
      
      ```sql
      alter system set job_queue_processes=original_value
      scope=both;
      ```

   b. Start DMBS Scheduler by running the following command:
      ```sql
      execute dbms_scheduler.set_scheduler_attribute
      ('SCHEDULER_DISABLED', 'FALSE');
      ```

   c. Submit the DBMS jobs by running the following command:
      ```sql
      execute emd_maintenance.submit_em_dbms_jobs;
      ```

2. Start the Gather Statistics job in the existing database by running the following as SYS:
   For Oracle Database 10g (10.2.0.4) or higher
   ```sql
   execute dbms_scheduler.enable('GATHER_STATS_JOB');
   ```
   For Oracle Database 11g (11.1.0.7) or higher
   ```sql
   execute dbms_auto_task_admin.enable('auto optimizer stats collection',null,null);  
   ```

3. To use a secure protocol (HTTPS) to connect to the Enterprise Manager Administration Server, do the following:
   a. Specify additional SSL arguments in the environment. To do so, set JAVA_OPTS to append the appropriate SSL arguments to use before invoking the ocmrepeaterctl script.

      For information about these JAVA options, access these URLs:

      http://download.oracle.com/docs/cd/E12840_01/wls/docs103/client/security.html#wp1077561
      http://download-llnw.oracle.com/docs/cd/E12840_01/wls/docs103/config_scripting/using_WLST.html#wp1093943

      Depending on whether a Demo or a Custom Trust certificate is used by the SSL realm, the SSL arguments will include the following:

      ```
      -Dweblogic.security.TrustKeyStore=DemoTrust
      -Dweblogic.security.JavaStandardTrustKeystorePassPhrase=password
      ```
After You Upgrade

b. Ensure that HTTP tunneling is enabled in the Administration Server. To verify this, log in to Oracle WebLogic Server Administration Console, and do the following:
   (i) From the Domain Structure panel on the left side of the Home page, expand Environment and click Servers.
   (ii) On the Summary of Servers page, from the Servers table, click the Admin Server.
   (iii) On the Settings for <Admin_Server> page, click the Protocols tab, and then click the HTTP subtab.
   (iv) On the HTTP page, select Enable Tunneling, and click Save.

4. If you upgraded an additional OMS, then refresh the Oracle WebLogic Server Domain, which hosts the Enterprise Manager application, so that the configuration changes made to the domain as a result of adding an additional OMS are reflected in the Grid Control console. To refresh the Oracle WebLogic Server Domain, follow these steps:
   a. In Enterprise Manager Grid Control, navigate to the Home page for the Oracle WebLogic Server Domain that hosts the Enterprise Manager application. In most cases, the following is the direct URL to the Home page: If your domain name is not GCDomain, then replace that string with your domain name:

   [protocol]://[host]:[port]/em/faces/as/as/domainHome?target=/secFarm_GCDomain/GCDomain&type=weblogic_domain

   b. From the WebLogic Domain menu, click Refresh WebLogic Domain.
   c. On the Refresh WebLogic Domain page, click Continue.

   **Note:** This submits a WebLogic Domain Refresh job, which captures the domain configuration changes and reflects them in the Enterprise Manager Grid Control console. The job repeats itself once a day, and therefore, if you add any more additional OMSes or remove OMSes from your Enterprise Manager system in the future, this job automatically captures the configuration changes to the Oracle WebLogic Server Domain. You do NOT have to repeat this procedure every time you add an additional OMS.

5. Remove Oracle Application Server-related targets such as Oracle Application Server, Oracle HTTP Server, OC4J, and Oracle Web Cache from the Management Repository.
In particular, remove `<OLD_OMS_NAME>`, `<OLD_OMS_NAME>_home`, `<OLD_OMS_NAME>_OC4J_EM`, `<OLD_OMS_NAME>_OC4J_EMPROV`, `<OLD_OMS_NAME>_HTTP Server`, and `<OLD_OMS_NAME>_Web Cache`.

Table 5-2 shows how these targets might appear in Enterprise Manager Grid Control.

**Table 5-2  Oracle Application Server Targets to be Removed**

<table>
<thead>
<tr>
<th>Target Name</th>
<th>Target Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>EnterpriseManager0.hostname.com</td>
<td>Oracle Application Server</td>
</tr>
<tr>
<td>EnterpriseManager0.hostname.com_home</td>
<td>OC4J</td>
</tr>
<tr>
<td>EnterpriseManager0.hostname.com_HTTP Server</td>
<td>Oracle HTTP Server</td>
</tr>
<tr>
<td>EnterpriseManager0.hostname.com_OC4J_EM</td>
<td>OC4J</td>
</tr>
<tr>
<td>EnterpriseManager0.hostname.com_OC4J_EMPROV</td>
<td>OC4J</td>
</tr>
<tr>
<td>EnterpriseManager0.hostname.com_Web Cache</td>
<td>Web Cache</td>
</tr>
</tbody>
</table>

To remove these targets, log in to Enterprise Manager Grid Control, click All Targets, select for the target, and click Remove.

6. Discover all new targets such as Scan Listener and so on either using the Enterprise Manager Grid Control console or by running the following command from the Oracle home of the Management Agent where the new targets are running:

```bash
$<ORACLE_HOME>/bin/agentca -d
```

7. In Enterprise Manager 11g Grid Control, the emoms.properties file is no longer supported. To view details related to the Management Repository, run the following command:

```bash
eectl config oms -list_repos_details
```

8. (Optional) If you want to connect to another Management Repository, then shut down the OMS, run the following command, and then restart the OMS.

```bash
emctl config oms -store_repos_details [-repos_host <host> -repos_port <port> -repos_sid <sid> | -repos_conn_desc <connect descriptor>] -repos_user <username> [-repos_pwd <pwd>] [-no_check_db]
```
9. (Optional) If you want to discover the newly installed targets, if you want to convert the standalone Management Agent to a cluster-based Management Agent, if you want to discover the targets on the new nodes of the cluster, or if you want to reconfigure the cluster-based Management Agent, you must run the agentca script to reconfigure and discover all new targets. For information about the agentca script and to know how you can reconfigure the Management Agent and discover all new targets, see Oracle Enterprise Manager Grid Control Advanced Installation and Configuration Guide available at:

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

10. (Optional) If you want to enable the Request Monitoring feature for tracing transaction requests in WLS, you need JVM Diagnostics as well as Application Dependency and Performance (ADP) managers and agents configured against the target to be monitored.

For information about installing JVM Diagnostics and enabling the Request Monitoring feature, refer to the Oracle Enterprise Manager Administration Guide.

For information about enabling the ADP feature in Enterprise Manager Grid Control, refer to the Oracle Enterprise Manager Getting Started with Management Pack Plus for SOA.

Both these guides are available at:

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

11. Delete the old Oracle homes of OMS (oms10g) and Management Agent (agent10g). Also remove their entries, oms10g and agent10g, from the /etc/oratab file.

However, do NOT delete the Oracle home of the database because it contains the upgrade schemas.
Part III
Appendixes

This part contains the following appendixes:

- Appendix A, "Meeting Hardware Requirements"
- Appendix B, "Meeting Package and Library Requirements"
- Appendix C, "Creating Operating System Groups and Users Requirements"
- Appendix D, "Setting Up SSH Connectivity"
- Appendix E, "Validating Command Locations"
- Appendix F, "Passing Additional Parameters"
- Appendix G, "Configuring Database and ASM Targets for Monitoring"
- Appendix H, "Setting Up Proxy Configuration for Oracle Management Service"
Meeting Hardware Requirements

This appendix describes the hardware requirements you must meet before installing Oracle Management Service (OMS), a standalone Oracle Management Agent (Management Agent), and Oracle Management Repository.

Table A–1 shows the minimum physical memory (RAM) required for installing an OMS and a standalone Management Agent:

<table>
<thead>
<tr>
<th>Installation Type</th>
<th>Physical Memory (RAM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle Management Service</td>
<td>3 GB</td>
</tr>
<tr>
<td>Oracle Management Service with ADP Manager¹</td>
<td>6 GB</td>
</tr>
<tr>
<td>Oracle Management Agent (standalone)</td>
<td>512 MB</td>
</tr>
<tr>
<td>Oracle Management Agent (standalone) with ADP Manager</td>
<td>1 GB</td>
</tr>
</tbody>
</table>

¹ ADP Manager is Application Dependency and Performance Manager

Table A–2 shows the recommended physical memory (RAM) for installing an OMS and a standalone Management Agent:

Note: For information about the hard disk space required and the ulimits to be set for OMS and standalone Management Agent, see My Oracle Support note 1076472.1. For information about planning and sizing your Enterprise Manager deployment, refer to the Oracle Enterprise Manager Administration Guide available at:

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

Note: For information about ADP and for instructions to enable the ADP feature in Enterprise Manager Grid Control, refer to the Oracle Enterprise Manager Getting Started with Management Pack Plus for SOA. Both these guides are available at:

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

Table A–2 shows the recommended physical memory (RAM) for installing an OMS and a standalone Management Agent:
Table A–3 shows the recommended physical memory (RAM) and the hard disk space required for configuring a Management Repository.

<table>
<thead>
<tr>
<th>Deployment Size</th>
<th>Installation Type</th>
<th>Physical Memory (RAM)</th>
<th>Hard Disk Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small (&lt; 100 monitored targets)</td>
<td>Oracle Management Service</td>
<td>2 GB</td>
<td>50 GB</td>
</tr>
<tr>
<td></td>
<td>Oracle Management Service with ADP Manager1</td>
<td>4 GB</td>
<td>100 GB</td>
</tr>
<tr>
<td></td>
<td>Oracle Management Service with ADP Manager</td>
<td>6 GB</td>
<td>400 GB</td>
</tr>
</tbody>
</table>

1 ADP Manager is Application Dependency and Performance Manager
This appendix describes the packages and libraries required on different operating systems (32-bit as well as 64-bit) for installing Oracle Management Service (OMS) and Oracle Management Agent (Management Agent).

In particular, this appendix covers the following:
- Package Requirements for Oracle Management Service
- Package Requirements for Oracle Management Agent
- Library Requirements for Oracle Management Service

**Note:** The packages and libraries are NOT required for Microsoft Windows operating systems.

### B.1 Package Requirements for Oracle Management Service

Table B–1 describes the packages required on different operating systems for installing an OMS:

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Hat Enterprise Linux 4</td>
<td>kernel-utils-2.4</td>
</tr>
<tr>
<td>Oracle Enterprise Linux 4</td>
<td>make-3.80</td>
</tr>
<tr>
<td></td>
<td>binutils-2.15.92.0.2-13</td>
</tr>
<tr>
<td></td>
<td>gcc-3.4.5</td>
</tr>
<tr>
<td></td>
<td>libaio-0.3.105</td>
</tr>
<tr>
<td></td>
<td>glibc-common-2.3.4-2.9</td>
</tr>
<tr>
<td></td>
<td>compat-libstdc++-296-2.96-132.7.2</td>
</tr>
<tr>
<td></td>
<td>libstdc++-3.4.3-22.1</td>
</tr>
<tr>
<td></td>
<td>libstdc++-devel-3.4.3-22.1</td>
</tr>
<tr>
<td></td>
<td>pdksh-5.2.14-30</td>
</tr>
<tr>
<td></td>
<td>setarch-1.6-1</td>
</tr>
<tr>
<td></td>
<td>sysstat-5.0.5-1</td>
</tr>
<tr>
<td></td>
<td>compat-db-4.1.25-9</td>
</tr>
</tbody>
</table>

Table B–1 Package Requirements for Oracle Management Service
<table>
<thead>
<tr>
<th>Operating System</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Hat Enterprise Linux 5.x</td>
<td>- rng-utils-2</td>
</tr>
<tr>
<td>Oracle Enterprise Linux 5.x</td>
<td>- make-3.81</td>
</tr>
<tr>
<td></td>
<td>- binutils-2.17.50.0.6</td>
</tr>
<tr>
<td></td>
<td>- gcc-4.1.1</td>
</tr>
<tr>
<td></td>
<td>- libaio-0.3.106</td>
</tr>
<tr>
<td></td>
<td>- glibc-common-2.3.4-2.9</td>
</tr>
<tr>
<td></td>
<td>- compat-libstdc++-2.96-2.96</td>
</tr>
<tr>
<td></td>
<td>- libstdc++-4.1.1</td>
</tr>
<tr>
<td></td>
<td>- libstdc++-devel-4.11</td>
</tr>
<tr>
<td></td>
<td>- setarch-1.6-1</td>
</tr>
<tr>
<td></td>
<td>- sysstat-5.0.5-1</td>
</tr>
<tr>
<td></td>
<td>- compat-db-4.1.25-9</td>
</tr>
<tr>
<td>Asianux Linux 3</td>
<td>- make-3.81</td>
</tr>
<tr>
<td></td>
<td>- binutils-2.17.50.0.6</td>
</tr>
<tr>
<td></td>
<td>- gcc-4.1.1</td>
</tr>
<tr>
<td></td>
<td>- libaio-0.3.106</td>
</tr>
<tr>
<td></td>
<td>- glibc-common-2.3.4</td>
</tr>
<tr>
<td></td>
<td>- compat-libstdc++-2.96-2.96</td>
</tr>
<tr>
<td></td>
<td>- libstdc++-4.1.1</td>
</tr>
<tr>
<td></td>
<td>- libstdc++-devel-3.4.3</td>
</tr>
<tr>
<td></td>
<td>- setarch-1.6-1</td>
</tr>
<tr>
<td></td>
<td>- sysstat-5.0.5-1</td>
</tr>
<tr>
<td></td>
<td>- compat-db-4.1.25</td>
</tr>
<tr>
<td>SUSE Linux Enterprise Server 10</td>
<td>- make-3.80</td>
</tr>
<tr>
<td></td>
<td>- binutils-2.17.91.0.5</td>
</tr>
<tr>
<td></td>
<td>- gcc-4.1.0</td>
</tr>
<tr>
<td>Solaris Sparc 5.9</td>
<td>- SUNWlibm</td>
</tr>
<tr>
<td></td>
<td>- SUNWlibms</td>
</tr>
<tr>
<td></td>
<td>- SUNWspres</td>
</tr>
<tr>
<td></td>
<td>- SUNWtoo</td>
</tr>
<tr>
<td></td>
<td>- SUNWl1of</td>
</tr>
<tr>
<td></td>
<td>- SUNWxwfrst</td>
</tr>
<tr>
<td>Solaris Sparc 5.10</td>
<td>SUNWbtool</td>
</tr>
<tr>
<td>HP PA-RISC 11.23</td>
<td>BUNDLE11i(B.11.23.0409.3)</td>
</tr>
<tr>
<td>HP PA-RISC 11.31</td>
<td>Base-VXFS(B.11.31)</td>
</tr>
<tr>
<td></td>
<td>OnlineDiag(B.11.31.01.03)</td>
</tr>
<tr>
<td>HPUX Itanium-11.23</td>
<td>BUNDLE11i(B.11.23.0409.3)</td>
</tr>
<tr>
<td>HPUX Itanium-11.33</td>
<td>BUNDLE(B.11.31)</td>
</tr>
<tr>
<td>IBM AIX 5.3</td>
<td>bos.perf.proctools</td>
</tr>
</tbody>
</table>
### B.2 Package Requirements for Oracle Management Agent

Table B–2 describes the packages required on different operating systems for installing a Management Agent:

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM AIX 6.1</td>
<td>• bos.adt.base.0.0</td>
</tr>
<tr>
<td></td>
<td>• bos.adt.lib.0.0</td>
</tr>
<tr>
<td></td>
<td>• bos.adt.libm.0.0</td>
</tr>
<tr>
<td></td>
<td>• bos.perfplib.stat.0.0</td>
</tr>
<tr>
<td></td>
<td>• bos.perf.procstat.0.0</td>
</tr>
<tr>
<td></td>
<td>• bos.perf.proctools.0.0</td>
</tr>
<tr>
<td></td>
<td>• rsct.basic.rte.0.0</td>
</tr>
<tr>
<td></td>
<td>• rsct.compat.clients.rte.0.0</td>
</tr>
<tr>
<td></td>
<td>• xCl.aix61.rte.9.0.0.0</td>
</tr>
<tr>
<td></td>
<td>• xCl.rte.9.0.0.0</td>
</tr>
<tr>
<td>Red Hat Enterprise Linux 4</td>
<td>• make-3.80</td>
</tr>
<tr>
<td>Oracle Enterprise Linux 4</td>
<td>• binutils-2.15.92.0.2</td>
</tr>
<tr>
<td></td>
<td>• gcc-3.4.5</td>
</tr>
<tr>
<td></td>
<td>• libstdc++-3.4.5</td>
</tr>
<tr>
<td>Red Hat Enterprise Linux 5.x</td>
<td>• make-3.81</td>
</tr>
<tr>
<td>Oracle Enterprise Linux 5.x</td>
<td>• binutils-2.17.50.0.6</td>
</tr>
<tr>
<td></td>
<td>• gcc-4.1.1</td>
</tr>
<tr>
<td></td>
<td>• libstdc++-4.1.1</td>
</tr>
<tr>
<td>Asianux Linux 1</td>
<td>• make-3.79</td>
</tr>
<tr>
<td></td>
<td>• binutils-2.14</td>
</tr>
<tr>
<td></td>
<td>• gcc-3.2</td>
</tr>
<tr>
<td>Asianux Linux 2</td>
<td>• make-3.80</td>
</tr>
<tr>
<td></td>
<td>• binutils-2.15.92.0.2</td>
</tr>
<tr>
<td></td>
<td>• gcc-3.4.5</td>
</tr>
<tr>
<td></td>
<td>• libstdc++-3.4.5</td>
</tr>
<tr>
<td>Asianux Linux 3</td>
<td>• make-3.81</td>
</tr>
<tr>
<td></td>
<td>• binutils-2.17.50.0.6</td>
</tr>
<tr>
<td></td>
<td>• gcc-4.1.1</td>
</tr>
<tr>
<td></td>
<td>• libstdc++-4.1.1</td>
</tr>
<tr>
<td>United Linux 1</td>
<td>• make-3.79</td>
</tr>
<tr>
<td></td>
<td>• binutils-2.14</td>
</tr>
<tr>
<td></td>
<td>• gcc VERSION-3.2</td>
</tr>
</tbody>
</table>
Table B–3 describes the libraries required on different operating systems for installing an OMS:

### Table B–3 Library Requirements for Oracle Management Service

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Library</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUSE Linux Enterprise Server 10</td>
<td>GLIBC-2.3.4-2.19</td>
</tr>
<tr>
<td>SUSE Linux Enterprise Server 11</td>
<td>GLIBC-2.3.4-2.19</td>
</tr>
<tr>
<td>Solaris Sparc 5.9</td>
<td>SUNWlibm, SUNWlib, SUNWspro, SUNWtoo, SUNWt1of, SUNWxwfits</td>
</tr>
<tr>
<td>Solaris Sparc 5.10</td>
<td>SUNWbtool</td>
</tr>
<tr>
<td>HP PA-RISC 11.23</td>
<td>BUNDLE(EH.11.23.0409.3)</td>
</tr>
<tr>
<td>HP PA-RISC 11.31</td>
<td>Base-VXFS(EH.11.31), OnlineDiag(EH.11.31.01.03)</td>
</tr>
<tr>
<td>HP-UX Itanium-11.23</td>
<td>BUNDLE(EH.11.23.0409.3)</td>
</tr>
<tr>
<td>HP-UX Itanium-11.31</td>
<td>BUNDLE(EH.11.31)</td>
</tr>
<tr>
<td>IBM AIX 6.1</td>
<td>bos.perf.proctools(5.3.0.50)</td>
</tr>
<tr>
<td>IBM AIX 6.1</td>
<td>bos.adt.base.0.0, bos.adt.lib.0.0, bos.adt.libm.0.0, bos.perf.libperfstat0.0, bos.perf.perfstat0.0, bos.perf.proctools0.0, rctl.basic.rte0.0, rctl.compat.clients.rte0.0, xlC.aix61.rte9.0.0.0, xlC.rte9.0.0.0</td>
</tr>
</tbody>
</table>

B.3 Library Requirements for Oracle Management Service

Table B–3 describes the libraries required on different operating systems for installing an OMS:
<table>
<thead>
<tr>
<th>Operating System</th>
<th>Library</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUSE Linux Enterprise Server 10</td>
<td>GLIBC-2.2.4-31.7</td>
</tr>
</tbody>
</table>
The appendix explains what operating system groups and users you need to create and how to create them. In particular, this appendix covers the following:

- What Operating System Groups and Users Are Required?
- How To Create the Operating System Groups and Users?

C.1 What Operating System Groups and Users Are Required?

The following operating system group and user are required for all installation types:

- The Oracle Inventory Group (`oinstall`)
  
  You must create this group the first time you install Oracle software on the system. The default name chosen for this group is `oinstall`. This group owns the Oracle inventory that is a catalog of all Oracle software installed on the system.

  **Note:** If Oracle software is already installed on the system, then the existing Oracle Inventory group must be the primary group of the operating system user that you use to install other Oracle software.

- The Oracle Software Owner User (typically, `oracle`)
  
  You must create this user the first time you install Oracle software on the system. This user owns all of the software installed during the installation. This user must have the Oracle Inventory group as its primary group.

  **Note:** In Oracle documentation, this user is referred to as the `oracle` user.

A single Oracle Inventory group is required for all installations of Oracle software on the system. After the first installation of Oracle software, you must use the same Oracle Inventory group for all subsequent Oracle software installations on that system. However, you can choose to create different Oracle software owner users, OSDBA groups, and OSOPER groups (other than `oracle`, `dba`, and `oper`) for separate installations. By using different groups for different installations, members of these different groups have DBA privileges only on the associated databases rather than on all databases on the system.
How To Create the Operating System Groups and Users?

The following sections describe how to create the required operating system users and groups:

- Creating the Oracle Inventory Group
- Creating the OSDBA Group
- Creating an OSOPER Group (Optional)
- Creating the Oracle Software Owner User

Note: As an alternative to creating local users and groups, you can create the appropriate users and groups in a directory service, for example, Network Information Services (NIS). For information about using directory services, contact your system administrator or refer to your operating system documentation.

C.2.1 Creating the Oracle Inventory Group

You must create the Oracle Inventory group if it does not already exist. The following subsections describe how to determine the Oracle Inventory group name, if it exists, and how to create it if necessary.

C.2.1.1 Determining Whether the Oracle Inventory Group Exists

When you install Oracle software on the system for the first time, the oraInst.loc file is created. This file identifies the name of the Oracle Inventory group and the path to the Oracle Inventory directory.

To determine whether the Oracle Inventory group exists, enter the following command:

```
# more /etc/oraInst.loc
```

If the output of this command shows the oinstall group name, then the group already exists.

If the oraInst.loc file exists, then the output from this command looks like:

```
inventory_loc=/u01/app/oracle/oraInventory
inst_group=oinstall
```

The inst_group parameter shows the name of the Oracle Inventory group, oinstall.

C.2.1.2 Creating the Oracle Inventory Group

If the oraInst.loc file does not exist, then create the Oracle Inventory group using the following command:

```
#/usr/sbin/groupadd oinstall
```

C.2.2 Creating the OSDBA Group

You must create an OSDBA group in the following cases:

- An OSDBA group does not exist, for example, if you do not have Oracle Database already installed on the system.
How To Create the Operating System Groups and Users?

Creating Operating System Groups and Users Requirements

An OSDBA group exists, but you want to give a different group of operating system users database administrative privileges in a new Oracle installation.

If the OSDBA group does not exist or if you require a new OSDBA group, then create it as follows. In the following command, use the group name `dba` unless a group with that name already exists.

```bash
#/usr/sbin/groupadd dba
```

C.2.3 Creating an OSOPER Group (Optional)

Create an OSOPER group only if you want to identify a group of operating system users with a limited set of database administrative privileges (SYSOPER operator privileges). For most installations, it is sufficient to create only the OSDBA group. If you want to use an OSOPER group, then you must create it in the following circumstances:

- If an OSOPER group does not exist, for example, if this is the first installation of Oracle Database software on the system
- If an OSOPER group exists, but you want to give a different group of operating system users database operator privileges in a new Oracle installation

If you require a new OSOPER group, then create it as follows. In the following command, use the group name `oper` unless a group with that name already exists.

```bash
#/usr/sbin/groupadd oper
```

C.2.4 Creating the Oracle Software Owner User

You must create an Oracle software owner user in the following circumstances:

- If an Oracle software owner user does not exist, for example, if this is the first installation of Oracle software on the system
- If an Oracle software owner user exists, but you want to use a different operating system user, with different group membership, to give database administrative privileges to those groups in a new Oracle Database installation

C.2.4.1 Determining Whether an Oracle Software Owner User Exists

To determine whether an Oracle software owner user named `oracle` exists, run the following command:

```bash
#/id oracle
```

If the `oracle` user exists, then the output from this command looks like this:

```
uid=440(oracle) gid=200(oinstall) groups=201(dba),202(oper)
```

If the user exists, then determine whether you want to use the existing user or create another `oracle` user.

- To use the existing user, ensure that the user’s primary group is the Oracle Inventory group and that it is a member of the appropriate OSDBA and OSOPER groups.
- To modify an existing user, refer to the Section C.2.4.3, “Modifying an Oracle Software Owner User”.
- To create a user, refer to Section C.2.4.2, “Creating an Oracle Software Owner User”. 

Creating Operating System Groups and Users Requirements C-3
How To Create the Operating System Groups and Users?

C.2.4.2 Creating an Oracle Software Owner User

If the Oracle software owner user does not exist or if you require a new Oracle software owner user, then follow these steps to create one. In the following procedure, use the user name oracle unless a user with that name already exists.

1. To create the oracle user, enter a command similar to the following:
   
   ```
   # /usr/sbin/useradd -g oinstall -G dba[,oper] oracle
   ```

   In this command:
   - The `-g` option specifies the primary group, which must be the Oracle Inventory group, for example oinstall
   - The `-G` option specifies the secondary groups, which must include the OSDBA group and if required, the OSOPER group. For example, dba or dba,oper

2. Set the password of the oracle user:

   ```
   # passwd oracle
   ```

C.2.4.3 Modifying an Oracle Software Owner User

If the oracle user exists, but its primary group is not oinstall or it is not a member of the appropriate OSDBA or OSOPER groups, then enter a command similar to the following to modify it. Specify the primary group using the `-g` option and any required secondary group using the `-G` option:

```
# /usr/sbin/usermod -g oinstall -G dba[,oper] oracle
```

C.2.4.4 Verifying that the User nobody Exists

Before installing the software, follow these steps to verify that the nobody user exists on the system:

1. To determine whether the user exists, enter the following command:

   ```
   # id nobody
   ```

   If this command displays information about the nobody user, then you do not have to create that user.

2. If the nobody user does not exist, then enter the following command to create it:

   ```
   # /usr/sbin/useradd nobody
   ```

Note: If necessary, contact your system administrator before using or modifying an existing user.

Note: Oracle recommends you to use the same UIDs across all the OMSes, especially when you use shared file system loader and Oracle Software Library. If the UIDs are different, then the files created by one OMS cannot be modified by another OMS.
This appendix explains how you can set up SSH connectivity before installing Oracle Management Agent (Management Agent) on Microsoft Windows operating systems. In particular, this appendix covers the following:

- Overview
- Setting Up SSH Server (SSHD) on Microsoft Windows
- Setting Up SSH on Microsoft Windows Using sshUserSetupNT.sh
- Setting Up the Timezone Variable on Remote Hosts

### D.1 Overview

SSH (Secure Shell) Setup is the connectivity that is established between the host running Oracle Management Service (OMS) and the host where the Management Agent needs to be installed. This is primarily required for the Agent Deployment Wizard to install Management Agents over HTTP on remote hosts.

The Agent Deployment Wizard is an application that is part of the Enterprise Manager Grid Control console. It is used for deploying Management Agents in your environment using an interactive user interface. The installation of a Management Agent from the source host to the remote destination host happens using SSH protocol, and for this communication to happen over SSH, an SSH setup is required between the two hosts. This also helps to avoid SSH authentication calls during future Agent Deploy operations.

**Caution:** The SSH Setup must always be set between the destination hosts and the OMS, and never among the destination hosts.

In Enterprise Manager 11g Grid Control Release 1 (11.1.0.1.0), the Agent Deployment Wizard sets up and drops the SSH connectivity automatically, but if the Management Agent is going to be on a Microsoft Windows operating systems, then you need to manually install and configure Cygwin on that host.

**Note:** The Agent Deployment Wizard is certified and supported with Cygwin 1.5.
D.2 Setting Up SSH Server (SSHD) on Microsoft Windows

Before starting with the SSHD setup, ensure you are not using OpenSSH and MKSNT when using the Agent Deploy application. The Agent Deploy application uses the complete Cygwin suite (full collection of the software tools packaged in Cygwin). To get the complete collection of Cygwin, do the following:

Note: The Agent Deployment Wizard is certified and supported with Cygwin 1.5.

1. Ensure OpenSSH\bin and mksnt are not in your %PATH%. If they are, remove them by doing the following:
   a. Right-click on My Computer and go to Properties.
   b. In the System Properties window that appears, click Advanced.
   c. In this tab, click Environment Variables.
   d. Here, search for the Path system variable, select it, and if the OpenSSH\bin and mksnt are present in the PATH, click Edit.
   e. In the Edit System Variable dialog box that appears, delete these two values from the PATH, and click OK.

2. Now, stop the SSH Daemon if it is running from OpenSSH. To do this:
   a. Right-click on My Computer, and select Manage.
   b. In the Computer Management window that appears, go to Services under Services and Applications.
   c. In the right-pane, select the SSH daemon service and click the Stop Service icon.

Note: Ensure you rename the installation directories of OpenSSH and MKSNT.

3. To install the full suite of Cygwin software, go to http://www.cygwin.com, and install Cygwin in your C:\cygwin directory.

Note: If you are installing Cygwin into another directory than what has been previously mentioned, ensure you update the $OMS_INSTANCE_HOME/aysman/prov/resources/ssPaths_msplats.properties file with the proper Cygwin binary values after installing Oracle Enterprise Manager Grid Control.

Caution: If you are installing Cygwin at a directory that is other than C:\cygwin on a remote machine, you must also ensure that Cygwin is installed on the OMS machine at the exact same location.

The Cygwin installation directory should not contain any spaces.

While installing Cygwin, ensure you choose the following binaries:
   a. Zip, unzip binaries from the Archive package.
b. OpenSSH and dependencies (automatically selected if you choose OpenSSH) from the Net package.

4. Modify the C:\cygwin\cygwin.bat file to add the following line:
   ```bash
   set CYGWIN=binmode tty ntsec
   ```

5. Ensure cygrunsrv is installed by going to C:\cygwin\bin and executing the following:
   ```bash
   bash
cygrunsrv -h
   ```

   **Note:** If you are prompted to provide a Cygwin value, enter `binmode tty ntsec`. If this returns an error message stating "service does not exist", you are on the right track, and can proceed to the next step.
6. Open a new command prompt and execute the following:

```
bash
ssh-host-config
```

**Note:** Enter "no" when prompted to create sshd user account (message reads "sshd user account needs to be created"). Enter "yes" at all other prompts.

When prompted to answer the question "Which value should the environment variable CYGWIN have when sshd starts?", Oracle recommends that you set the value to at least "ntsec" as shown in the following example. This will enable you to change the user context without having to specify the password.

As an answer to the previously mentioned question, specify a value that is similar to the following and press **Enter**:

```
CYGWIN="binmode tty ntsec"
```

7. Now, open the `/etc/passwd` file, and remove only those entries of the user that you will use to connect to the OMS machine.

For example,

- If the user that you are employing to connect to the OMS machine is a local user, execute the following:
  
  ```
  /bin/mkpasswd -l -u <USER> >> /etc/passwd
  ```

- If the user you are employing to connect to the OMS machine is a domain user, execute the following:

  ```
  /bin/mkpasswd.exe -d -u <USER> >> /etc/passwd
  /bin/mkgroup.exe -d >> /etc/group
  ```

  ```
  mkdir -p /home/<USER>  (for example, mkdir -p /home/pjohn)
  chown <USER> /home/<USER> (for example, chown pjohn /home/pjohn)
  ```

8. Start the SSH daemon.

If the user you are employing to connect to the OMS machine is a domain user, do the following:

- Right-click on **My Computer**, and select **Manage**.
- In the Computer Management dialog box that appears, go to **Services and Applications**, and select **CYGWIN sshd**.
- Right-click **CYGWIN sshd** and select **Properties**.
- In the **Properties** dialog box, go to the **Log On** tab.
- Here, specify the domain/username and password. Click **Apply**.
- Now, go to the **CYGWIN** command prompt, and execute the following:

  ```
  chmod 644 /etc/ssh*
  chmod <USERNAME> /var/empty
  chmod 755 /var/empty
  chmod 644 /var/log/sshd.log
  ```
Setting Up SSH on Microsoft Windows Using sshUserSetupNT.sh

**Note:** If /var/log/sshd.log does not exist, you do not have to execute the following command:

```
chmod 644 /var/log/sshd.log
```

9. Start the SSH daemon by executing:

```
/usr/sbin/sshd
```

Alternatively, from the same BASH prompt, you can also execute:

```
cygrunsrv -S sshd
```

**Note:** Use cygrunsrv -E sshd to stop the SSH daemon.

9. You can now test your cygwin setup.

To do this, go to a different machine (that has the ssh client running), and execute the following command:

```
ssh -l <USERNAME> <localhost> 'date'
```

OR

```
ssh -l <USERNAME> <this node> 'date'
```

For example,

```
ssh -l pjohn egal07.db.funds.com 'date'
```

This command will prompt you to specify the password. When you specify the correct password, the command should return the accurate date.

### D.3 Setting Up SSH on Microsoft Windows Using sshUserSetupNT.sh

**Note:** Before executing the sshUserSetupNT.sh script, execute the following commands to ensure the home directory has been correctly set:

1. Execute `echo $HOME`

   Ensure this displays the home directory of the current user.

2. If it points to the home directory of another user, execute the following command:

   ```
   export HOME=<Windows style absolute path of homedir>
   ```

3. Now, execute `echo $HOME` again, to verify the home directory. The $HOME value must be the same as that passed to -homeDir

This is the script that should be executed to set up SSH on Microsoft Windows operating systems. The usage of the script is as follows:

```
./sshUserSetupNT.sh -user -asUser -asUserGrp -sshLocalDir -homeDir -hosts -hostfile
```
Setting Up SSH on Microsoft Windows Using sshUserSetupNT.sh

Note: After the SSHUserSetupNT.sh script has been executed, you must verify the successful SSH user setup on all the hosts, individually.

That is, if you have run the script to set up SSH on two hosts (host1, and host2), you must run the following command on each host to verify successful SSH setup:

```
ssh -l <username> host1 'date'
```

and then run:

```
ssh -l <username> host2 'date'
```

Caution: You must execute the sshUserSetupNT.sh script on the local OMS machine from within the cygwin (BASH) shell only. The script will fail to execute if done from outside this location.

All the previously mentioned options are mandatory, and should be passed while executing the script.

Note: It is assumed that C:\cygwin is the default installation directory for the Cygwin binaries.

If you install Cygwin at a location other than C:\cygwin (default location), it can cause the SSH setup to fail, and in turn, the agent installation will fail.

To work around this issue, you must either install Cygwin in the default directory (C:\cygwin), or update the ssPaths_msplats.properties file with the correct path to the cygwin binaries. The ssPaths_msplats.properties file is available in <OMS_INSTANCE_HOME>/sysman/prov/resources/.

Description
This script is used on Microsoft Windows operating systems to set up SSH 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.

- **-asUser**
  This is the user of the local machine on which the setup must be performed. For example, SYSTEM.

- **-asuserGrp**
  This is the group to which the specified asUser belongs.

- **-sshLocalDir**
This is the full path to the directory where the keys should be generated for the
-asUser on the local machine.

- `~homeDir`

This is the full path to the home directory of the current user.

If the `/home` key (in `regedit`) is seen as a subkey under the Cygwin Solutions
key, then the value of the `/home` key must have `/<username>` as a suffix and
then be used as `-homeDir` value.

If the `/home` key is not found, go to the Cygwin BASH prompt and check the
value of `$HOME`. You can now use the same value of `$HOME` as the value for
`-homeDir`.

If `$HOME` does not have any value (is empty), then you must update the
`/etc/passwd` file.

**Identifying the Correct Entry in the `/etc/passwd` File**

If the `/etc/passwd` file has only one entry for the user, you can simply modify
that value. In the event that there are multiple entries in this file, you must first
identify the correct entry and then modify it.

To identify the correct entry:

- Execute the following command if you have specified a local user during SSH
  setup:
  
  ```bash
  /bin/mkpasswd -l -u <username>
  ```

- Execute the following command if you have specified a domain user during
  SSH setup:
  
  ```bash
  /bin/mkpasswd -d -u <username>
  ```

Now, match the output with the corresponding entry in the `/etc/passwd` file.
This is the entry that you must modify.

**Updating the `-homeDir` value**

All values for all users are listed as colon (:) separated entries (or fields). To update
the user entry that you have identified previously, go to the penultimate value (or
field) of that user entry, and modify the value of the home directory for that user.

Always specify the absolute path needed by Cygwin as value for the home
directory. For example, if the path is `C:\Documents and Settings\pjohn`,
modify it to:

```
/cygdrive/c/Documents and Settings/pjohn
```

Or, if the path reads `C:\cygwin\pjohn`, modify this to:

```
/cygdrive/c/cygwin/pjohn
```

Now, save the password file and reenter the BASH shell.

**Note:** If you have used spaces in the `$HOME` value (for example,
`/cygdrive/c/Documents and Settings/pjohn`), specify the
$HOME value in Microsoft Windows style and within double-quotes
marks (for example, "C:\ Documents and Settings\pjohn")
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 sections:

### D.4.1 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 CSH 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
     ```
   - Restart the SSH daemon by executing:
     ```
     sudo /etc/init.d/sshd restart
     ```
   - 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'
     ```

### D.4.2 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
```

---

**Note:** Specify the full path within double-quotes (" ").

**Caution:** You must execute the `sshUserSetupNT.sh` script on the local OMS machine from within the `cygwin` (BASH) shell only. The script will fail to execute if done from outside this location.

---

**Setting Up the Timezone Variable on Remote Hosts**

---
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'
```
Validating Command Locations

This appendix describes what property files and the command locations within them you need to validate before installing Oracle Management Agent (Management Agent). In particular, this appendix covers the following:

E.1 Overview of Property Files

Every time you install a Management Agent, the property files mentioned in the platformInfo.properties file are loaded with default locations for commands that are required for successful running of certain Application Programming Interfaces (APIs). For example, the ping executable. This section describes such property files. In particular, this section covers the following:

- Property Files Loaded from platformInfo.properties File
- Other Property Files Loaded

E.1.1 Property Files Loaded from platformInfo.properties File

Table E–1 describes the property files loaded from the platformInfo.properties file.

<table>
<thead>
<tr>
<th>Loading Order</th>
<th>Property File Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Paths.properties</td>
<td>Generic</td>
<td>Contains arguments that need to be passed every time the commands listed in this file are run.</td>
</tr>
<tr>
<td>2</td>
<td>ssPaths.&lt;platform&gt;.properties</td>
<td>Operating System-Specific</td>
<td>Contains commands that need to be run for that operating system. For example, ssPaths_linux_zseries64.properties. On Microsoft Windows, the path to the Cygwin binaries is hardcoded in the ssPaths_msplats.properties file. If you install Cygwin in a location other than c:\cygwin (default location), it can cause the Management Agent installation to fail. To resolve this issue, you must either install Cygwin in the default directory (c:\cygwin), or update this properties file with the correct path to the Cygwin binaries.</td>
</tr>
</tbody>
</table>
Keep in mind the following points:

- The property files mentioned in the `platformInfo.properties` file are loaded one-by-one in ascending order. This means that command locations you specify in the last file that is loaded will override the values you specified for the same key in the previously loaded property file.

  For example, `sPaths.properties` is loaded before `ssPaths.properties`. So if the default location for the ping executable in `sPaths.properties` file is `usr/bin/ping`, and if location for the same executable in the `ssPaths.properties` file is `usr/sbin/ping`, then the value in the latter file takes precedence over the former file.

- If you want to include other command variables, then you can do one of the following:
  - Specify the additional command variables in `sPaths.properties`, `ssPaths_<platform>.properties`, or `userPaths.properties`.
  - Create a new property file with additional command variables. Then, mention the name of this new property file in `platformInfo.properties`.

### E.1.2 Other Property Files Loaded

Table E–2 describes the other property files that are loaded.

<table>
<thead>
<tr>
<th>Loading Order</th>
<th>Property File Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>userPaths.properties</td>
<td>Generic</td>
<td>Contains variables that are used to specify the command paths. You must uncomment the variables that you want to use and specify appropriate values.</td>
</tr>
</tbody>
</table>

Table E–2 Other Property Files Loaded

<table>
<thead>
<tr>
<th>Property File Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| system.properties  | Generic | Contains properties that help you control the activity and performance of the application. For example, these:  
  - `oracle.system.prov.threadpoolsize`  
    Number of threads that get created in the application and work in parallel to run the commands on the destination hosts. The default threadpool size value that is set is 32. You can specify an appropriate value for the threadpool size in this property.  
  - `oracle.sysman.prov.threadpoolmaxsize`  
    Number of threads that can increase dynamically depending on the workload. The default value used in the application is 256. You can specify an appropriate maximum value for the threadpool size in this property. |
Validating Command Locations

E.2 Validating Command Locations

The default command locations specified in the property files can vary between hosts and operating systems. Therefore, it is important to verify the command locations before you install a Management Agent.

This section describes what property files and command locations within them you need to validate before you install a Management Agent. In particular, this section covers the following:

- Validating Command Locations on the OMS Host
- Validating Command Locations on the Destination Host

### E.2.1 Validating Command Locations on the OMS Host

In the property files present in the `<OMS_INSTANCE_HOME>/sysman/prov/resources/` location, validate the command locations (on the OMS host) for the following variables:

- `SH_PATH`
- `SSH_ARGS`
- `SSH_KEYGEN_PATH`
- `SSH_PATH`

---

**Table E–2 (Cont.) Other Property Files Loaded**

<table>
<thead>
<tr>
<th>Property File Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ignoreMessages.txt</td>
<td>Generic</td>
<td>If there are error messages displayed in the error stream that you know can be ignored in the setup, then you can update these messages in the <code>ignoreMessages.txt</code> file. Generally, if the error stream contains data when you run any command, then it is assumed that the command failed, however, 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 <code>ignoreMessages.txt</code> file. For example, when you run <code>/usr/local/bin/lsdu</code> on a remote host, it writes the following messages on to the error stream. Error messages of this kind can be added to the <code>ignoreMessages.txt</code> file. 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.</td>
</tr>
</tbody>
</table>

*Note:* The data format for these files mandates only one property per line. You must specify the property values in the format: `variable=value`.
Validating Command Locations

- SCP_ARGS
- SCP_PATH
- UNZIP_ARGS
- UNZIP_PATH
- TAR_PATH

Instead of manually reviewing each of the property files, you can run the following command from the Oracle home of the OMS to automatically list the variables that are not found in the default locations.

```
$<ORACLE_HOME>/sysman/prov/resources/scripts/validatePaths -dirloc oms/sysman/prov/resources/
```

E.2.2 Validating Command Locations on the Destination Host

In the property files present in the `<OMS_INSTANCE_HOME>/sysman/prov/resources/` location, validate the command locations (on the destination host) for the following variables:

- SH_PATH
- SH_ARGS
- SCP_PATH
- SCP_ARGS
- SUDO_PATH
- SSH_HOST_KEY_LOC
- ZIP_PATH
- TAR_PATH
This appendix describes the additional parameters you can pass while installing Oracle Management Agent (Management Agent) using the Agent Deployment Wizard and the `agentDownload` script. In particular, this appendix covers the following:

- Additional Parameters Supported by `agentDownload` Script
- Additional Parameters Supported by Agent Deployment Wizard for Custom Location

### F.1 Additional Parameters Supported by `agentDownload` Script

If you install a Management Agent using the `agentDownload` script, then you can pass the following additional parameters while invoking the script.

You can also pass these additional parameters in the Additional Parameters section of the Agent Deployment Wizard if you install a Management Agent using the default source location in the Agent Deployment Wizard.

**Note:** On Microsoft Windows, do not hyphenate the arguments. For example, the `-b` argument when run on Microsoft Windows is `b`.

<table>
<thead>
<tr>
<th>Option</th>
<th>Optional/Mandatory</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>-b</code></td>
<td>Mandatory</td>
<td>Specify the full path to the installation base directory where you want to install the Management Agent. For example, <code>/scratch/OracleHomes/</code></td>
</tr>
<tr>
<td><code>-c</code></td>
<td>Optional</td>
<td>Specify the short names of the nodes of the cluster separated by a comma. Do NOT specify their fully-qualified names. Do NOT include any white spaces between the node names.</td>
</tr>
<tr>
<td><code>-d</code></td>
<td>Optional</td>
<td>Use this option only if you do not want automatic discovery of targets to be initiated after the installation ends.</td>
</tr>
<tr>
<td><code>-h</code></td>
<td>Optional</td>
<td>Use this option if you want to view an entire list of options that can be passed with the command. It essentially displays this entire table.</td>
</tr>
</tbody>
</table>
If you install a Management Agent using a custom source location in the Agent Deployment Wizard, then you can pass the following additional parameters in the Additional Parameters section of the Agent Deployment Wizard.

### Table F–1 (Cont.) Additional Parameters You Can Pass While Running agentDownload

<table>
<thead>
<tr>
<th>Option</th>
<th>Optional/Mandatory</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-i</td>
<td>Optional</td>
<td>Specify the full path to the location (leading to the file name) where the <code>oraInst.loc</code> file is available. For example, <code>-i /scratch/oraInst.loc</code> The <code>oraInst.loc</code> file contains the following entries: inventory_loc=location_of_central_inventory inst_group=group_of_the_user_that_is_installing_the_agent</td>
</tr>
<tr>
<td>-l</td>
<td>Optional</td>
<td>Use this to indicate that the installation must be done on the local host.</td>
</tr>
<tr>
<td>-m</td>
<td>Mandatory (Only if OMS host is not specified in the response file)</td>
<td>Specify the host name where OMS is running. This is to download the Management Agent software. For example, <code>software.server.com</code></td>
</tr>
<tr>
<td>-n</td>
<td>Optional</td>
<td>Specify the name of the cluster.</td>
</tr>
<tr>
<td>-N</td>
<td>Optional</td>
<td>Use this option only if you DO NOT want to be prompted for Management Agent registration password.</td>
</tr>
<tr>
<td>-o</td>
<td>Optional</td>
<td>Specify the full path to the Oracle home of the lower version of the Management Agent that you want to upgrade. For example, <code>/scratch/OracleHomes/agent10g</code></td>
</tr>
<tr>
<td>-p</td>
<td>Optional</td>
<td>Specify the full path to the location (leading to the file name) where the <code>staticports.ini</code> file is available.</td>
</tr>
<tr>
<td>-r</td>
<td>Mandatory</td>
<td>Specify the port number of the OMS from where the Management Agent software needs to be downloaded.</td>
</tr>
<tr>
<td>-R</td>
<td>Optional</td>
<td>Use this option to use virtual host name (ORACLE_HOSTNAME) for the installation. If this is being used along with more than one cluster node through <code>-c</code> option, then <code>-t</code> option also needs to be passed.</td>
</tr>
<tr>
<td>-t</td>
<td>Optional</td>
<td>Use this option only when you DO NOT want to start the Management Agent after the installation ends.</td>
</tr>
<tr>
<td>-u</td>
<td>Optional</td>
<td>Use this option when you want to upgrade the Management Agent.</td>
</tr>
<tr>
<td>-v</td>
<td>Optional</td>
<td>Specify the location to the inventory directory. For example, <code>/scratch/oraInventory</code>. This option is recommended only when it is a fresh installation and when the host does not have a central inventory.</td>
</tr>
<tr>
<td>-x</td>
<td>Optional</td>
<td>Use this option to debug output.</td>
</tr>
<tr>
<td>-y</td>
<td>Optional</td>
<td>Indicates that you want to decline the security updates.</td>
</tr>
</tbody>
</table>
Passing Additional Parameters

### Table F–2 Additional Parameters You Can Pass in Agent Deployment Wizard

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-clusterware oracle.crs, &lt;crs version&gt;</td>
<td>Specify the version of the installed Oracle Clusterware.</td>
</tr>
<tr>
<td>-crslocation &lt;path&gt;</td>
<td>For cluster installs, specify the path to the Oracle home of the clusterware. If you specify this, then it overrides the clusterware information obtained from the central inventory.</td>
</tr>
<tr>
<td>-invPtrLoc &lt;full path of oraInst.loc&gt;</td>
<td>Specify the full path to the location (leading to the file name) where the oraInst.loc file is available. For example, <code>-invPtrLoc /scratch/oraInst.loc</code> The oraInst.loc file contains the following entries: inventory_loc=&lt;location_of_central_inventory&gt; inst_group=&lt;group_of_the_user_that_is_ installing_the_agent&gt;</td>
</tr>
<tr>
<td>INVENTORY_LOCATION=&lt;location&gt;</td>
<td>Specify the inventory location. Instead of using the -invPtrLoc parameter to point to a file that has the inventory location details, you can use INVENTORY_LOCATION parameter to directly pass the inventory location. Therefore, this is an alternative to -invPtrLoc. This option is recommended only when it is a fresh installation and when the host does not have a central inventory.</td>
</tr>
<tr>
<td>-jreLoc &lt;location&gt;</td>
<td>Specify the path where the Java Runtime Environment (JRE) is installed.</td>
</tr>
<tr>
<td>-logLevel &lt;level&gt;</td>
<td>Specify the filter log messages that have a lesser priority level than &lt;level&gt;. Valid options are: severe, warning, info, config, fine, finer, finest, basic, general, detailed, trace. The use of basic, general, detailed, and trace is deprecated.</td>
</tr>
<tr>
<td>-paramFile &lt;location of file&gt;</td>
<td>Specify the location of oraparam.ini file to be used.</td>
</tr>
<tr>
<td>-responseFile &lt;Path&gt;</td>
<td>Specify the full path to the response file. The path must lead up to the response file name.</td>
</tr>
<tr>
<td>-sourceLoc &lt;location of products.xml&gt;</td>
<td>Specify the full path to the source location where the software is available.</td>
</tr>
<tr>
<td>-cfs</td>
<td>Indicates that the Oracle home specified is on the cluster file system (shared). This is mandatory when <code>-local</code> is specified so that the Oracle home can be appropriately registered in the inventory.</td>
</tr>
<tr>
<td>-debug</td>
<td>Indicates that you want to get debug information.</td>
</tr>
<tr>
<td>-executeSysPrereqs</td>
<td>Indicates that you want to run system prerequisite checks.</td>
</tr>
<tr>
<td>-force</td>
<td>Indicates that you want to allow silent mode installation into a non-empty directory.</td>
</tr>
<tr>
<td>-help</td>
<td>Indicates that you want to display the usage of all supported options.</td>
</tr>
</tbody>
</table>

### Note:
On Microsoft Windows, do not hyphenate the arguments. For example, the `-b` argument when run on Microsoft Windows is `b`. 

---

*Additional Parameters Supported by Agent Deployment Wizard for Custom Location*
### Additional Parameters Supported by Agent Deployment Wizard for Custom Location

**Table F–2 (Cont.) Additional Parameters You Can Pass in Agent Deployment Wizard**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>-ignoreSysPrereqs</code></td>
<td>Indicates that you want to ignore the results of the system prerequisite checks.</td>
</tr>
<tr>
<td><code>-local</code></td>
<td>Indicates that you want to perform the operation on the local node regardless of the number of cluster nodes you have specified.</td>
</tr>
<tr>
<td><code>-printmemory</code></td>
<td>Indicates that you want the log debug information for memory usage.</td>
</tr>
<tr>
<td><code>-printtime</code></td>
<td>Indicates that you want to log debug information for time usage.</td>
</tr>
<tr>
<td><code>-updateNodeList</code></td>
<td>Indicates that you want to update the node list for this Oracle home in the inventory.</td>
</tr>
</tbody>
</table>
Configuring Database and ASM Targets for Monitoring

In the Enterprise Manager Grid Control console, when you view the Home page for an Oracle Database target for the first time, the Database Home page may not display any monitoring data, and the status of the database may indicate that there is a metric collection error. This is because the DBSNMP credentials has not been configured, or has been locked due to unsuccessful login attempts.

Similarly, when you view the Home page of an Oracle Automatic Storage Management (Oracle ASM) target for the first time, the status of the Oracle ASM instance may be unknown or unavailable, and the Home page may indicate that the Management Agent is unavailable (down). Again, this is because you have not specified the ASM SYS credentials.

To fix this problem for an Oracle Database target, follow these steps:

1. If your DBSNMP user account is locked, then unlock it. To do so, follow these steps:
   a. In Grid Control, click Targets and then Databases.
   b. On the Databases page, from the table that lists all databases, click a database name.
   c. On the Database Home page, click the Server tab.
   d. On the Server page, from the Security section, click Users. If you are prompted to log in to the database, make sure to use a database user account with DBA privileges such as SYSTEM.
   e. On the Users page, find and select the DBSNMP user account. From the Actions list, select Unlock User, and click Go. If you are asked to confirm whether you want to unlock the DBSNMP user account, click Yes.

2. Set the monitoring credentials for a standalone Oracle Database or Oracle RAC database. To do so, follow these steps:
   a. In Grid Control, click Targets and then Databases.
   b. On the Databases page, find and select the database target and click Monitoring Configuration.
   c. On the Properties page, specify the password for the DBSNMP user in the Monitor Password field. To verify the monitoring credentials, click Test Connection.
   d. If the connection is successful, click Next, then click Submit.

3. Set the monitoring credentials for Oracle ASM. To do so, follow these steps:
a. In Grid Control, click Targets and then Databases.

b. On the Databases page, find and select the Oracle ASM target and click Monitoring Configuration.

c. On the Properties page, specify the password for the ASMSYS user in the Password field. To verify the monitoring credentials, click Test Connection.

d. If the connection is successful, click Next, then click Submit.
Setting Up Proxy Configuration for Oracle Management Service

For the following reasons, set up the proxy server settings in Enterprise Manager Grid Control so that it can use those details to access My Oracle Support:

- If you have a proxy server running on the host where Oracle Management Service (OMS) is installed.
- If you want to use the same proxy server settings or have different settings for the OMS to communicate with its Oracle Management Agents (Management Agents).

To set up the proxy server settings, do the following:

1. In Enterprise Manager Grid Control, click Setup from the top-right corner of the home page.
2. On the Overview of Setup page, from the vertical menu to the left, click Patching Setup.
   
   **Note:** Only HTTP and HTTPS protocols are supported. Also note that NTLM proxy is not currently supported.

4. If you want to use the same proxy settings for communicating with the Management Agents, then go to Step (6). Otherwise, go to Step (5).
5. In the Agent Connection Setting section, do one of the following:
   
   a. If you want to use the proxy settings given in My Oracle Support Connection Setting section, then retain the default section, that is, Use My Oracle Support connection settings.
   
   b. If you want to use proxy settings different from the ones specified in My Oracle Support Connection Setting section, then select Manual proxy configuration and specify the proxy server details.
   
   **Note:** Only HTTP and HTTPS protocols are supported. And NTLM proxy is not currently supported.

6. Click Apply.

The proxy server settings you specify are registered in the Management Repository. However, in case of multiple OMS environment, after you set up the proxy server settings for one OMS, restart other OMSes to ensure that the proxy server settings
registered for communication with Management Agents are propagated across all OMSes.
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