

HP OpenView Operations

Installation Guide

Software Version: A.08.10

Sun Solaris



Manufacturing Part Number: None

August 2006

© Copyright 1998 - 2006 Hewlett-Packard Development Company, L.P.

Legal Notices

Warranty.

Hewlett-Packard makes no warranty of any kind with regard to this document, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Hewlett-Packard shall not be held liable for errors contained herein or direct, indirect, special, incidental or consequential damages in connection with the furnishing, performance, or use of this material.

A copy of the specific warranty terms applicable to your Hewlett-Packard product can be obtained from your local Sales and Service Office.

Restricted Rights Legend.

Use, duplication or disclosure by the U.S. Government is subject to restrictions as set forth in subparagraph (c) (1) (ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013.

Hewlett-Packard Company
United States of America

Rights for non-DOD U.S. Government Departments and Agencies are as set forth in FAR 52.227-19(c)(1,2).

Copyright Notices.

©Copyright 1998-2006 Hewlett-Packard Development Company, L.P.

No part of this document may be copied, reproduced, or translated to another language without the prior written consent of Hewlett-Packard Company. The information contained in this material is subject to change without notice.

Trademark Notices.

Adobe® is a trademark of Adobe Systems Incorporated.

HP-UX Release 10.20 and later and HP-UX Release 11.00 and later (in both 32 and 64-bit configurations) on all HP 9000 computers are Open Group UNIX 95 branded products.

Intel386, Intel80386, Intel486, and Intel80486 are U.S. trademarks of Intel Corporation.

Intel Itanium™ Logo: Intel, Intel Inside and Itanium are trademarks or registered trademarks of Intel Corporation in the U.S. and other countries and are used under license.

Java™ and all Java based trademarks and logos are trademarks or registered trademarks of Sun Microsystems, Inc. in the U.S. and other countries.

Microsoft® is a U.S. registered trademark of Microsoft Corporation.

MS-DOS® is a U.S. registered trademark of Microsoft Corporation.

Netscape™ and Netscape Navigator™ are U.S. trademarks of Netscape Communications Corporation.

OpenView® is a registered U.S. trademark of Hewlett-Packard Company.

Oracle® is a registered U.S. trademark of Oracle Corporation, Redwood City, California.

OSF, OSF/1, OSF/Motif, Motif, and Open Software Foundation are trademarks of the Open Software Foundation in the U.S. and other countries.

Pentium® is a U.S. registered trademark of Intel Corporation.

SQL*Plus® is a registered U.S. trademark of Oracle Corporation, Redwood City, California.

UNIX® is a registered trademark of the Open Group.

Windows® and MS Windows® are U.S. registered trademarks of Microsoft Corporation.

All other product names are the property of their respective trademark or service mark holders and are hereby acknowledged.

1. Installation Requirements for the Management Server

In This Chapter	26
Choosing the Correct Installation and Upgrade Path	27
Verifying the Installation Requirements	31
Hardware Requirements	32
Software Requirements	41
Supported Agent Platforms	54

2. Installing OVO on the Management Server

In This Chapter	56
Before You Install OVO	57
To Install OVO	58
Installing and Verifying an Oracle Database	59
Required Oracle Products	60
Using an Existing Oracle Database	61
Before You Install an Oracle Database	62
Installing an Oracle Database	65
Installing the OVO Software on the Management-Server System	76
About the OVO A.08.10 Installation CDs	76
About the OVO Installation Program ovoidinstall	77
Running ovoidinstall	81
Installing the OVO Software on the Sun Solaris Management Server	85
Viewing the Installation Logfiles	94
OVO Software Bundles	95
Installing DCE/NCS Agent-Software Packages on the Management-Server System Manually	96
Installing HTTPS Agent-Software Packages on the Management-Server System Manually	97
Starting OVO and Verifying the Installation	98
After You Install OVO	102
Reconfiguring the OVO Software	103

3. Installing the Java Operator GUI

In This Chapter	108
Supported Platforms	109
Supported Languages	110

Contents

Installation Requirements	111
Hardware Requirements	111
Software Requirements	112
Supported Web Browsers	113
Installing the OVO Java Operator GUI	114
Installation Requirements	114
To Install OVO Java GUI through HTTP	115
To Install OVO Java GUI through FTP	116
To Install OVO Java GUI on HP-UX or Sun Solaris Systems Other than OVO Management Servers	118
Installing the HTTPS-based Java GUI	120
Starting the OVO Java GUI	123
About the ito_op Startup Script	123
Starting the Java GUI on a PC	123
Starting the Java GUI on a UNIX-based System	124
Starting the Java GUI from a Web Browser	124
Starting the Online Documentation	125
Connecting Through a Firewall	126
Configuring the HTTP Server	127
To Configure a Netscape Server	128
To Configure a CERN/W3C Server	129

4. Startup/Shutdown Services and Manual Database Configuration

In This Chapter	132
Starting and Stopping OVO Automatically	133
Starting and Stopping an Oracle Database Automatically	135
Starting and Stopping an Oracle Database Manually	136
Starting an Oracle Database Manually	136
Stopping an Oracle Database Manually	137
Native-Language Support in an Oracle Database	138
Environment Variables in an Oracle Database	139
Alternative Database Locations	140
Setting Up an Independent Database-Server System	141

5. Directory Structure on the Management Server

In This Chapter	150
---------------------------	-----

OVO File Tree on the Management Server	151
6. Software Administration on the Management Server	
In This Chapter	160
Deinstalling the Entire OVO Installation	161
Deinstalling the OVO Java GUI	163
To Deinstall the Java GUI from a PC Client.....	163
To Deinstall the Java GUI from a Solaris Client	163
To Deinstall the Java GUI from Other UNIX-based Systems	163
Reinstalling the OVO Software	164
Reinitializing the OVO Database and Configuration	164
7. Upgrading OVO to Version A.08.10	
Upgrade Overview	168
OVO Upgrade Restrictions	169
.....	170
Verifying the Installation Requirements for the Management Server	171
Installing the Oracle Database	173
Before Migration	174
Upgrading the Oracle Database Version	175
Using an Existing Oracle Database.....	176
Changed Setting of ORACLE_HOME	177
Backing Up the Current OVO A.07.1x Installation	179
Saving the Administrator's ovw Map	180
Downloading the Current OVO A.07.1x Configuration	181
Clearing the Database	183
Deinstalling OVO A.07.1x	185
Installing the OVO Software.....	188
Uploading the Saved OVO A.07.1x Configuration	189
After Migration	193
After an OVO Upgrade	194
Importing Saved A.07.1x Management-Server Configuration Data	195
Upgrading the OVO Java Operator UI	196
Upgrading Managed Nodes	197
Compatibility with A.07.1x Managed Nodes.....	197
Obsolete A.07.xx Agent Platforms	197

Contents

Upgrading Managed Nodes to A.08.10 from OVO GUI	198
License Migration During an Upgrade to OVO A.08.10	200
Cluster Environment	202
Upgrading OVO Version A.08.00 to OVO Version A.08.10	203

8. Setting Up OVO Licensing

In This Chapter	206
About OVkey Licenses	207
Types of Licenses	207
Checking Licenses	208
Setting Up and Activating OVkey Licenses	209
Getting the Required License Information	210
Requesting a Product License	211
Receiving Your License Password	214
Installing Product Licenses	215
Verifying Product Licenses	217

9. Installing OVO in a Sun Cluster Environment

In This Chapter	220
About OVO in a Sun Cluster System	221
Glossary of Sun Cluster Terms	221
Configuration Scenarios	221
Installation Requirements	226
Installation Requirements for an Oracle Database	226
Creating a Network Interface Group	226
Installing and Configuring the OVO Management Server on Cluster Nodes	228
Preparation Steps	230
Before You Install the OVO Management Server on the First Cluster Node	231
Before You Install the OVO Management Server on Additional Cluster Nodes	248
Installing the Oracle Database Server for OVO in a Cluster Environment	257
Oracle Database Server on a Local Disk	259
Oracle Database Server on a Shared Disk (Exceptional)	260
Oracle Database Server on a Remote Filesystem	263
To Install and Configure the OVO Management Server on Cluster Nodes	265
Log Files	268
Installing the OVO Agent Software and Templates on Cluster Nodes	269

Deinstalling the OVO Software from Cluster Nodes	270
Deinstalling OVO from Passive Cluster Nodes	271
Deinstalling OVO from the Active Cluster Node	272
Upgrading OVO to Version A.08.10 in a Cluster Environment	273
Upgrading the OVO Management Server on the Active Cluster Node	273
Upgrading the OVO Management Server on the Passive Cluster Node	276
Upgrading OVO From Version A.08.00 to Version A.08.10 in a Cluster Environment	278
Stopping the OVO Management Server in a Cluster Environment for Maintenance	280

10. Installing OVO in a VERITAS Cluster Environment

In This Chapter	282
About OVO in a VERITAS Cluster System	283
Glossary of VERITAS Cluster Terms	283
Configuration Scenarios	283
Installation Requirements	288
Installation Requirements for an Oracle Database	288
Installing and Configuring the OVO Management Server on Cluster Nodes	289
Preparation Steps	291
Before You Install the OVO Management Server on the First Cluster Node	292
Before You Install the OVO Management Server on Additional Cluster Nodes	304
Installing the Oracle Database Server for OVO in a Cluster Environment	306
Oracle Database Server on a Local Disk	308
Oracle Database Server on a Shared Disk (Exceptional)	309
Oracle Database Server on a Remote Filesystem	312
To Install and Configure the OVO Management Server on Cluster Nodes	314
Log Files	317
Installing the OVO Agent Software and Templates on Cluster Nodes	318
Customizations of the OVO Management Server	319
Supporting Multi NIC B with OVO 8 and VERITAS Cluster Server	319
Deinstalling the OVO Software from Cluster Nodes	320
Deinstalling OVO from Passive Cluster Nodes	321
Deinstalling OVO from the Active Cluster Node	322
Upgrading OVO to Version A.08.10 in a Cluster Environment	323
Upgrading the OVO Management Server on the Active Cluster Node	323
Upgrading the OVO Management Server on the Passive Cluster Node	326

Contents

Upgrading OVO From Version A.08.00 to Version A.08.10 in a Cluster Environment	328
Stopping the OVO Management Server in a Cluster Environment for Maintenance	330

A. Installing the Remote NNM Integration Package

In This Appendix	332
Installing the NNM Integration Software	333

B. Bundling OVO for Sun Solaris Software

In This Appendix	336
OVO Product Bundles	337

Index	345
------------------------	------------

Printing History

The printing date and part number of the manual indicate the edition of the manual. The printing date will change when a new edition is printed. Minor changes may be made before a reprint without changing the printing date. The part number of the manual will change when extensive changes are made.

Manual updates may be issued between editions to correct errors or to document product changes. To ensure that you receive the latest edition of the manual, you should subscribe to the product-support service. See your HP sales representative for details.

First Edition:	OPC 2.0	October 1995
Second Edition:	OPC 2.1	January 1996
Third Edition:	ITO 3.0	June 1996
Fourth Edition:	ITO 4.0	August 1997
Fifth Edition:	ITO 5.1	February 1999
Sixth Edition:	ITO 5.3	September 1999
Seventh Edition:	VPO 6.0	June 2000
Eighth Edition:	VPO 7.0	January 2002
Ninth Edition:	VPO 7.1	May 2002
Tenth Edition:	OVO 8.0	June 2004
Eleventh Edition:	OVO 8.1	October 2004
Twelfth Edition:	OVO 8.1	April 2005
Thirteenth Edition:	OVO 8.1	June 2005
Fourteenth Edition:	OVO 8.1	October 2005
Fifteenth Edition:	OVO 8.1	November 2005
Sixteenth Edition:	OVO 8.1	August 2006

Conventions

The following typographical conventions are used in this manual.

Table 1 **Typographical Conventions**

Font	Meaning	Example
<i>Italic</i>	Book or manual titles, and man page names	Refer to the <i>OVO Administrator's Reference</i> and the <i>opc(1M)</i> manpage for more information.
	Emphasis	You <i>must</i> follow these steps.
	Variable that you must supply when entering a command	At the prompt, enter rlogin <i>username</i> .
	Parameters to a function	The <i>oper_name</i> parameter returns an integer response.
Bold	New terms	The HTTPS agent observes...
Computer	Text and other items on the computer screen	The following system message displays: Are you sure you want to remove current group?
	Command names	Use the <code>grep</code> command ...
	Function names	Use the <code>opc_connect()</code> function to connect ...
	File and directory names	<code>/opt/OV/bin/OpC/</code>
	Process names	Check to see if <code>opcmona</code> is running.
	Window/dialog-box names	In the Add Logfile window ...
	Menu name followed by a colon (:) means that you select the menu, then the item. When the item is followed by an arrow (->), a cascading menu follows.	Select Actions: Filtering -> All Active Messages from the menu bar.

Table 1 **Typographical Conventions (Continued)**

Font	Meaning	Example
Computer Bold	Text that you enter	At the prompt, enter ls -l
Keycap	Keyboard keys	Press Return .
[Button]	Buttons in the user interface	Click [OK].

OVO Documentation Map

HP OpenView Operations (OVO) provides a set of manuals and online help that help you to use the product and to understand the concepts underlying the product. This section describes what information is available and where you can find it.

Electronic Versions of the Manuals

All the manuals are available as Adobe Portable Document Format (PDF) files in the documentation directory on the OVO product CD-ROM.

With the exception of the *OVO Software Release Notes*, all the manuals are also available in the following OVO web-server directory:

```
http://<management_server>:3443/ITO_DOC/<lang>/manuals/*.pdf
```

In this URL, *<management_server>* is the fully-qualified hostname of your management server, and *<lang>* stands for your system language, for example, C for the English environment and japanese for the Japanese environment.

Alternatively, you can download the manuals from the following website:

```
http://ovweb.external.hp.com/lpe/doc_serv
```

Watch this website regularly for the latest edition of the OVO Software Release Notes, which gets updated every 2-3 months with the latest news such as additionally supported OS versions, latest patches and so on.

OVO Manuals

This section provides an overview of the OVO manuals and their contents.

Table 2 **OVO Manuals**

Manual	Description	Media
<i>OVO Installation Guide for the Management Server</i>	<p>Designed for administrators who install OVO software on the management server and perform the initial configuration.</p> <p>This manual describes:</p> <ul style="list-style-type: none">• Software and hardware requirements• Software installation and deinstallation instructions• Configuration defaults	Hardcopy PDF
<i>OVO Concepts Guide</i>	<p>Provides you with an understanding of OVO on two levels. As an operator, you learn about the basic structure of OVO. As an administrator, you gain an insight into the setup and configuration of OVO in your own environment.</p>	Hardcopy PDF
<i>OVO Administrator's Reference</i>	<p>Designed for administrators who install OVO on the DCE/NCS-based managed nodes and are responsible for OVO administration and troubleshooting. Contains conceptual and general information about the OVO DCE/NCS-based managed nodes.</p>	PDF only
<i>OVO DCE Agent Concepts and Configuration Guide</i>	<p>Provides platform-specific information about each DCE/NCS-based managed-node platform.</p>	PDF only
<i>OVO HTTPS Agent Concepts and Configuration Guide</i>	<p>Provides platform-specific information about each HTTPS-based managed-node platform.</p>	PDF only
<i>OVO Reporting and Database Schema</i>	<p>Provides a detailed description of the OVO database tables, as well as examples for generating reports from the OVO database.</p>	PDF only
<i>OVO Entity Relationship Diagrams</i>	<p>Provides you with an overview of the relationships between the tables and the OVO database.</p>	PDF only

Table 2 **OVO Manuals (Continued)**

Manual	Description	Media
<i>OVO Java GUI Operator's Guide</i>	Provides you with a detailed description of the OVO Java operator GUI and the Service Navigator. This manual contains detailed information about general OVO and Service Navigator concepts and tasks for OVO operators, as well as reference and troubleshooting information.	PDF only
<i>OVO Software Release Notes</i>	Describes new features and helps you: <ul style="list-style-type: none">• Compare features of the current software with features of previous versions.• Determine system and software compatibility.• Solve known problems.	PDF only
<i>Managing Your Network with HP OpenView Network Node Manager</i>	Designed for administrators and operators. This manual describes the basic functionality of the HP OpenView Network Node Manager, which is an embedded part of OVO.	Hardcopy PDF
<i>Service Navigator Concepts and Configuration Guide</i>	Provides information for administrators who are responsible for installing, configuring, maintaining, and troubleshooting the HP OpenView Service Navigator. This manual also contains a high-level overview of the concepts behind service management.	Hardcopy PDF
<i>OVO Database Tuning</i>	This ASCII file is located on the OVO management server at the following location: <code>/opt/OV/ReleaseNotes/opc_db.tuning</code>	ASCII

Additional OVO-related Products

This section provides an overview of the OVO-related manuals and their contents.

Table 3 **Additional OVO-related Manuals**

Manual	Description	Media
HP OpenView Operations for UNIX Developer's Toolkit If you purchase the HP OpenView Operations for UNIX Developer's Toolkit, you receive the full OVO documentation set, as well as the following manuals:		
<i>OVO Application Integration Guide</i>	Suggests several ways in which external applications can be integrated into OVO.	Hardcopy PDF
<i>OVO Developer's Reference</i>	Provides an overview of all the available application programming interfaces (APIs).	Hardcopy PDF
HP OpenView Event Correlation Designer for NNM and OVO If you purchase HP OpenView Event Correlation Designer for NNM and OVO, you receive the following additional documentation.		
<i>HP OpenView ECS Configuring Circuits for NNM and OVO</i>	Explains how to use the ECS Designer product in the NNM and OVO environments.	Hardcopy PDF

OVO Online Information

The following information is available online.

Table 4 **OVO Online Information**

Online Information	Description
HP OpenView Operations Administrator's Guide to Online Information	Context-sensitive help system contains detailed help for each window of the OVO administrator GUI, as well as step-by-step instructions for performing administrative tasks.
HP OpenView Operations Operator's Guide to Online Information	Context-sensitive help system contains detailed help for each window of the OVO operator Motif GUI, as well as step-by-step instructions for operator tasks.
HP OpenView Operations Java GUI Online Information	HTML-based help system for the OVO Java operator GUI and Service Navigator. This help system contains detailed information about general OVO and Service Navigator concepts and tasks for OVO operators, as well as reference and troubleshooting information.
HP OpenView Operations Man Pages	<p>Manual pages available online for OVO. These manual pages are also available in HTML format.</p> <p>To access these pages, go to the following location (URL) with your web browser:</p> <p><code>http://<management_server>:3443/ITO_MAN</code></p> <p>In this URL, the variable <code><management_server></code> is the fully-qualified hostname of your management server.</p>

About OVO Online Help

This preface describes online documentation for the HP OpenView Operations (OVO) Motif and the Java operator graphical user interfaces (GUIs).

Online Help for the Motif GUI

Online information for the HP OpenView Operations (OVO) Motif graphical user interface (GUI) consists of two separate volumes, one for operators and one for administrators. In the operator's volume you will find the HP OpenView OVO Quick Start, describing the main operator windows.

Types of Online Help

The operator and administrator volumes include the following types of online help:

❑ **Task Information**

Information you need to perform tasks, whether you are an operator or an administrator.

❑ **Icon Information**

Popup menus and reference information about OVO icons. You access this information with a right-click of your mouse button.

❑ **Error Information**

Information about errors displayed in the OVO Error Information window. You can access context-sensitive help when an error occurs. Or you can use the number provided in an error message to perform a keyword search within the help system.

❑ **Search Utility**

Index search utility that takes you directly to topics by name.

❑ **Glossary**

Glossary of OVO terminology.

- ❑ **Help Instructions**

Instructions about the online help system itself for new users.

- ❑ **Printing Facility**

Printing facility, which enables you to print any or all topics in the help system. (An HP LaserJet printer or a compatible printer device is required to print graphics.)

To Access Online Help

You can access the help system in any of the following ways:

- ❑ **F1 Key**

Press **F1** while the cursor is in any active text field or on any active button.

- ❑ **Help Button**

Click [Help] at the bottom of any window.

- ❑ **Help Menu**

Open the drop-down Help menu from the menu bar.

- ❑ **Right Mouse Click**

Click a symbol, then right-click the mouse button to access the Help menu.

You can then select task lists, which are arranged by activity, or window and field lists. You can access any topic in the help volume from every help screen. Hyperlinks provide related information on other help topics.

You can also access context-sensitive help in the Message Browser and Message Source Templates window. After selecting Help: On Context from the menu, the cursor changes into a question mark, which you can then position over the area about which you want help. When you click the mouse button, the corresponding help page is displayed in its help window.

Online Help for the Java GUI and Service Navigator

The online help for the HP OpenView Operations (OVO) Java graphical user interface (GUI), including Service Navigator, helps operators to become familiar with and use the OVO product.

Types of Online Help

The online help for the OVO Java GUI includes the following information:

- ❑ **Tasks**

Step-by-step instructions.

- ❑ **Concepts**

Introduction to the key concepts and features.

- ❑ **References**

Detailed information about the product.

- ❑ **Troubleshooting**

Solutions to common problems you might encounter while using the product.

- ❑ **Index**

Alphabetized list of topics to help you find the information you need, quickly and easily.

Viewing a Topic

To view any topic, open a folder in the left frame of the online documentation window, then click the topic title. Hyperlinks provide access to related help topics.

Accessing the Online Help

To access the help system, select `Help: Contents` from the menu bar of the Java GUI. A web browser opens and displays the help contents.

NOTE

To access online help for the Java GUI, you must first configure OVO to use your preferred browser.

1 Installation Requirements for the Management Server

In This Chapter

This chapter describes how to select the correct system to use as an HP OpenView Operations (OVO) management server running on a Sun Solaris platform.

Check your system parameters before running the OVO installation script. This chapter will help you to set the system parameters.

Choosing the Correct Installation and Upgrade Path

Before you start to install OVO, you need to choose an installation path that suits your requirements. For example, you *must* decide whether you are installing a new version of OVO or performing an upgrade from a previous version of OVO. See Table 1-1 for a description of the standard OVO installation and upgrade tasks.

WARNING

The major version of your OVO agent software must *not* be higher than the version of your OVO management-server software. For example, an OVO version A.08.10 HTTPS agent *cannot* communicate with an OVO version A.07.1x management server. If you are operating in a flexible management environment with A.07.1x and A.08.10 management servers, make sure that all the OVO agents remain on version A.07.1x until all the management servers have been upgraded to OVO version A.08.10.

Table 1-1 Choosing the Correct Installation and Upgrade Path

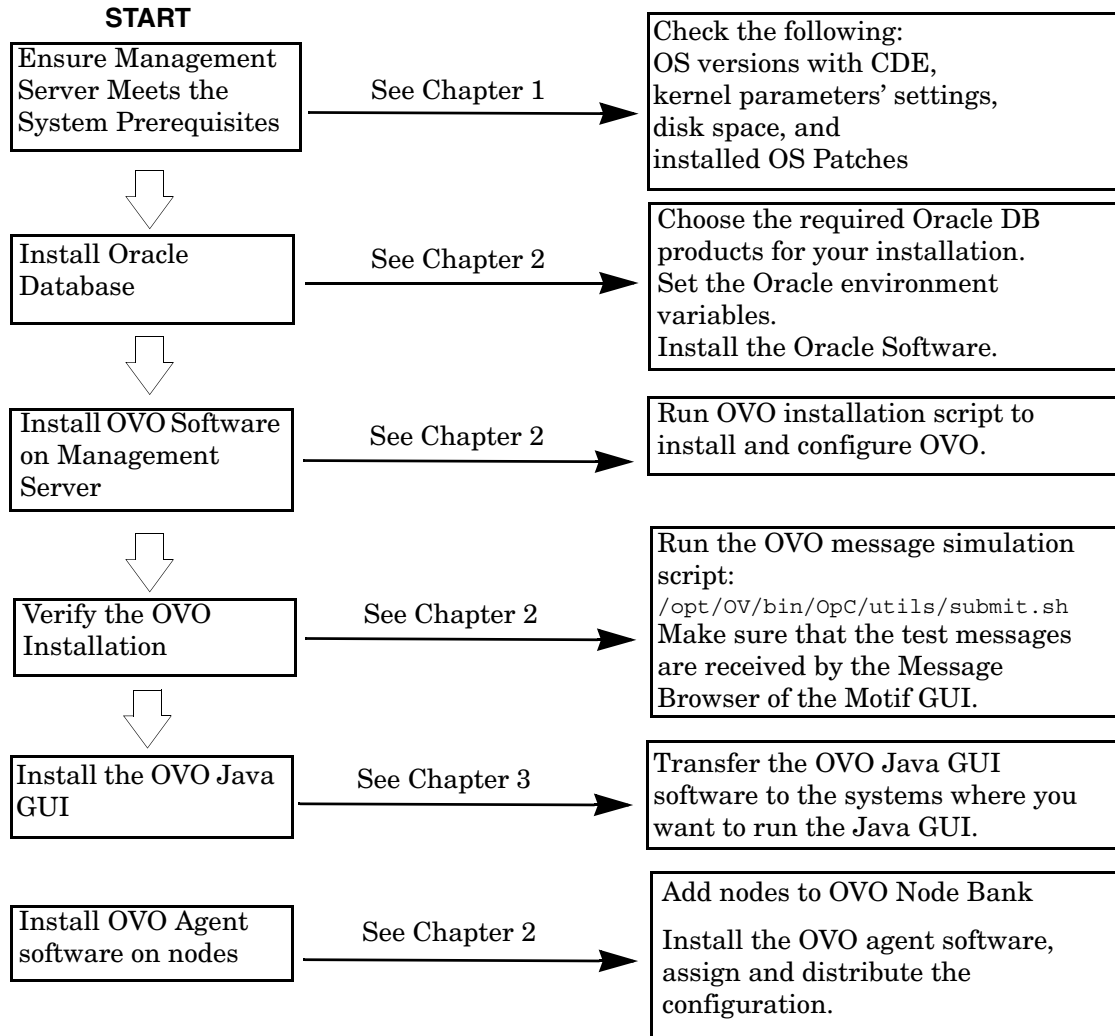
To...	You Need to...	Refer To...
1. Install OVO A.08.10 for Sun Solaris on the management server.	<ol style="list-style-type: none"> 1. Have management-server hardware that conforms to <i>at least</i> the minimum system requirements for the OVO management server. 2. Check the OVO installation CDs' layout presented in Table 2-1 on page 72. 3. Select an OVO language. See also Table 2-2 on page 88 for information about available OVO bundles. 	<p>This chapter</p> <p>“Installing OVO on the Management Server” on page 55</p>
2. Install additional OVO DCE/NCS-based agent software.	<ol style="list-style-type: none"> 1. Have OVO version A.08.10 installed on the management server. 2. Install the DCE/NSC agent software. 	<p>“Installing DCE/NCS Agent-Software Packages on the Management-Server System Manually” on page 89</p>
3. Install the OVO Java GUI.	<ol style="list-style-type: none"> 1. Have OVO version A.08.10 installed on the management server. 2. Install the OVO Java GUI software on the systems where the OVO Java GUI will be running. 	<p>Chapter 3, “Installing the Java Operator GUI,” on page 107</p>
4. Install OVO in a Sun Cluster Environment. ^a	<ol style="list-style-type: none"> 1. Install the OVO filesets on the first Sun Cluster node. 2. Install OVO on any additional Sun Cluster nodes. 	<p>Appendix 9, “Installing OVO in a Sun Cluster Environment,” on page 219</p>
5. Install OVO in a VERITAS Cluster Server Environment.	<ol style="list-style-type: none"> 1. Install the OVO filesets on the first VERITAS Cluster Server node. 2. Install OVO on any additional VERITAS Cluster Server nodes. 	<p>Appendix 10, “Installing OVO in a VERITAS Cluster Environment,” on page 281</p>

Table 1-1 Choosing the Correct Installation and Upgrade Path (Continued)

To...	You Need to...	Refer To...
6. Upgrade installation of OVO version A.07.xx to version A.08.10.	<ol style="list-style-type: none"> 1. Have management-server hardware and software that conforms to <i>at least</i> the minimum system requirements for the OVO A.08.10 management server. 2. Upgrade to OVO version A.08.10. 	<p>Chapter 1, “Installation Requirements for the Management Server,” on page 25</p> <p>Chapter 7, “Upgrading OVO to Version A.08.10,” on page 167</p>
7. Install or update OVO agent software on the managed nodes.	<ol style="list-style-type: none"> 1. Have OVO installed on the management server. 2. Add the nodes to the OVO Node Bank. 3. Install the OVO agent software, assign and distribute the configuration. <p>Note that changing the OVO agent software from DCE/NCS to HTTPS, or vice versa, requires a deinstallation of the previous version of the OVO agent software.</p>	<p><i>OVO Administrator’s Reference Volume I and II</i></p> <p><i>OVO HTTPS Agent Concepts and Configuration Guide</i></p>

a. *Not supported on Solaris 10.*

Figure 1-1 Summary of Standard OVO Installation Tasks



Verifying the Installation Requirements

The OVO management server for Sun Solaris is the controlling element of the entire OVO system, so you should carefully select the right system to host the management server. Before selecting a system, decide how many managed nodes are to be monitored, how many concurrent operators will use OVO, and approximately how many messages will be processed in the final OVO environment. Migrating the management server to a larger system at a later date requires considerable effort, particularly if your configuration is large and includes hundreds or thousands of managed nodes.

The hardware and software requirements are discussed in this chapter. It is recommended that you review them carefully before starting the installation.

After completing the prerequisites, continue with “Resolving Hostnames” on page 46, then adapt your system resources if they are below the required minimum. The kernel parameter values can be adapted in the `/etc/system` file. For details of how to do this, see “Kernel Parameters for the Management Server” on page 48.

Plan your OVO installation carefully. If you have never used OVO before, you may want to install and configure it in an isolated test environment before moving it into your production environment. This isolation enables you to gain experience with OVO and design a configuration that represents a reasonable test of your use of OVO.

The following sections in this chapter list all the system requirements in detail. Review the system requirements before running the OVO installation script. For more information on the OVO installation script, see Chapter 2, “Installing OVO on the Management Server,” on page 55”.

Hardware Requirements

The system you select as the management server *must* meet the following hardware requirements:

- ❑ Sun SPARC or Fujitsu-Siemens SPARC, with at least one X terminal or workstation.

For information about display redirection to a Windows system, see “Configuration Required to Redirect Displays to Windows” on page 39.
- ❑ Color, bit-mapped monitor with a minimum resolution of 1280 x 1024. The monitor *does not* have to be physically connected to the management server if you use the X-redirection mechanism when running the OVO Motif GUI remotely.
- ❑ Graphics board supporting at least 8-bit color planes.
- ❑ Mouse.
- ❑ Additional disk space.
- ❑ Additional RAM.
- ❑ Swap space (see Table 1-2 on page 36).
- ❑ CD-ROM drive (optional and can be mounted remotely).

NOTE

It is strongly recommended that you use a multi-CPU system for the OVO management server, with the possibility to add additional CPUs, RAM and disk space to the system at a later time if needed.

NOTE

The Oracle database can be installed on a dedicated system. For further information, refer to “Setting Up an Independent Database-Server System” on page 141.

Required Disk Space

Review the following questions before selecting a system to host the management server:

1. How much disk space is available on the system?

The total required disk space for the OVO management server is approximately 5 GB. For more details refer to the OVO installation requirements info file applicable to your version of the Sun Solaris operating system. Installation requirements info files located in the `Required_OS_Patch_Lists` directory are on the OVO 8 (1) CD. For more information about the installation CDs, see “About the OVO A.08.10 Installation CDs” on page 72.

Solaris 8 `ovo.info.SunOS.5.8.txt`

Solaris 9 `ovo.info.SunOS.5.9.txt`

NOTE

For Solaris 10, the dedicated `ovoinstall` installation script and `ovo.info.SunOS.5.10.txt` file are available, which can be downloaded from the following location:

`ftp://ovweb.external.hp.com/pub/cpe/ito/OVO_Sol10_Installer/`

Also review the disk requirements of any other applications, such as HP OpenView Performance Manager, that you want to install on the management server.

Review also the disk requirements of any other applications such as HP OpenView Performance Manager or any HP OpenView Smart Plug-ins (SPIs) that you want to install on the management server in the future.

If you *do not* have enough disk space in the file tree, you can use one of the following methods to solve the problem:

- Mount a dedicated volume for the directory.
- Make the directory a symbolic link to a file system with enough disk space.

For details about the OVO directory structure, see Chapter 5, “Directory Structure on the Management Server,” on page 149.

2. How much disk space is required by the DCE/NSC agents?

Verifying the Installation Requirements

For all DCE/NCS-based agents, if you decide to install them, allow approximately 250 MB in `/var/opt/OV`.

3. How fast is the average disk I/O time?

The disk I/O time affects the application startup time and the swapping activities. It is recommended that you distribute the database, and the OVO binaries and runtime data over several disks. To maintain optimum performance, do not locate swap space on the same disks as the OVO files and the Oracle database. For details, refer to the document `db_tuning.txt`, which is located on the OVO management server at the following location:

```
/opt/OV/ReleaseNotes/opc_db.tuning
```

NOTE

An automatic file-system layout with small physical disks is *not* suitable for OVO.

If you have a Solaris system with small physical disks and you have chosen the “Automatic File System Layout” option during the installation of the Solaris OS, then the resulting file-system layout will *not* meet OVO’s disk-space requirements.

Required RAM and Swap Space

The amount of available RAM and swap space determines whether applications can run, and also how fast they can run. The more RAM you make available, the better the application performance you can achieve. The application performance improves because increased RAM reduces the swapping and paging activities of the system. Review the following questions before selecting a system to serve as a management server:

1. How much memory (RAM) is installed on the system?

The OVO management server requires at least 1GB RAM of dedicated RAM. In addition, you will need approximately 35 MB of RAM for every OVO operator Motif GUI session and approximately 16-20 MB of RAM, plus 6 MB per 1000 active messages for every OVO Java GUI session, including Service Navigator.

The actual RAM requirements depend heavily on your production environment and mode of use. The factors that affect the RAM requirements include: the number and frequency of OVO messages, the number of operators working in parallel, and the number of managed nodes.

Memory consumption of the Java GUI needed on the server and the display station may be approximately computed. For more information refer to the *Performance Guide*.

2. Does the system provide enough swap space?

In most cases, you need a total of 2048 MB of swap space on the management-server system.

TIP

Use device swap space rather than file-system swap space for improved system performance.

Individual requirements are listed in Table 1-2.

Table 1-2 Minimum Swap Space Required for OVO Installation on the Management Server

Product	Required Swap Space
Sun Solaris Operating System	512 MB
Oracle database	1024 MB ^a
HP OpenView Operations	512 MB ^b
Approximate total	2048 MB

- a. The value recommended by Oracle is equal to the system's Physical Memory (RAM) or 1 GB, whichever is greater.
- b. This value depends on the number of GUIs running in parallel and the number of active and acknowledged messages. For each additional operating Motif GUI, about 35 MB of RAM/swap is required. For each additional operating Java GUI and Service Navigator, about 16-20 MB of RAM/swap is required plus 6 MB per 1000 active messages.

To check your currently available swap space in blocks (1 block contains 512 bytes), run the command:

```
/usr/sbin/swap -l
```

To achieve the best performance and to avoid a disk access bottleneck, *do not* locate the database and the swap space on the same physical disk.

3. How many OVO users will work at the same time?

The number of users influences the number of parallel GUIs running on the management server. For each additional operating Motif GUI, about 35 MB of RAM/swap is required. For each additional operating Java GUI and Service Navigator about 16-20 MB of RAM/swap is required, plus 6 MB per 1000 active messages.

4. How many background graphics are integrated into the Motif GUI or Service Navigator?

Background graphics can also slow down the system by using excessive amounts of RAM.

Reserve enough physical memory to accommodate all the virtual-memory needs of OVO. This will prevent the need for process swapping, and will result in the best possible performance. The performance of OVO can decrease if swapping becomes necessary.

Performance Requirements

The speed with which OVO processes messages and the OVO GUI performance both depend on the available CPU time as well as the overall CPU power. Therefore, consider the demands of other installed applications on CPU time, disk access, and RAM/swap usage.

NOTE

It is strongly recommended that you use a multi-CPU system for the management-server system, especially if you plan to run multiple Java GUIs.

Since the throughput of LAN packets can affect the management server's performance, you *should not* use the management-server system for other purposes, such as NFS, NIS (YP), DNS, and so on. However, configuring the OVO management-server system as a secondary Domain Name Server (DNS) can help to increase the speed of name look-ups.

Intersystem Connectivity Requirements

The connection between the managed nodes and the OVO management server affects the time OVO needs to install OVO software, the time it takes to configure the software on the managed nodes, and the time needed to respond to problems. The connection between the display stations and the management server also affects the performance of your OVO GUI operations if X redirection is required.

Review the following questions before setting up the connection between the managed nodes and the OVO management server:

1. Is the system accessible all the time (or at least while OVO operators are working)?

The management server should at least be accessible while the managed nodes are operating.

If *not*, the following inconveniences can occur:

- a. Automatic actions that *do not* run directly on the local managed node cannot be performed while the management server is down.
- b. When the management server is restarted, the managed nodes forward all locally buffered OVO messages to the management server. If hundreds or thousands of messages need to be processed, this will have a significant effect on the performance of OVO.

2. Is the system located centrally for network connectivity and network speed?

A fast network (LAN) should be available between the management-server system and its managed nodes to minimize the OVO response time. For example, the management server *should not* be connected through a serial line or X.25 with all the other systems networked in a LAN.

3. Are the display stations of the OVO operators and the management server connected through fast lines?

Having slow lines between the management server and your display stations lowers the OVO Motif GUI performance because X redirection is required. In this case, better performance can be achieved by using the Java operator GUI.

Configuration Required to Redirect Displays to Windows

OVO supports WRQ Reflection X for Windows and Hummingbird Exceed, which enable you to redirect an OVO display to a Windows system. Refer to Table 1-3 and Table 1-4 for detailed requirements.

Table 1-3 Configuration Required for Display Redirection

Requirements	Configuration
Hardware requirements on a Windows PC	Recommended requirements: <ul style="list-style-type: none"> • Pentium III or equivalent • 1 GHz • 512 MB main memory • 25 MB free disk space for a full Reflection X installation, and 50 MB for Hummingbird Exceed.
Software requirements on a Windows PC	<ul style="list-style-type: none"> • Windows 2000, Windows XP or Windows 2003 • Reflection X Version 8.00 or higher for Windows 2000/XP, Hummingbird Exceed Version 9.0J
Screen resolution	1280 x 1024 or higher
Min. number of colors	256
Min. network bandwidth	128 kBps (256 kBps is recommended)

Table 1-4 X Settings Required for Reflection and Hummingbird Exceed

Requirements	Settings
Window	X Terminal Desktop option, for Reflection. Screen definition: Window mode: single, for Hummingbird Exceed.
XDMCP	Direct option for Reflection. Enter the system name you want to connect to. Exceed XDMCP Query for Hummingbird Exceed.
Font	75 dpi must be listed first in the fonts path.

Verifying the Installation Requirements

Table 1-4 X Settings Required for Reflection and Hummingbird Exceed (Continued)

Requirements	Settings
Mouse	Middle mouse button: emulation enabled

Software Requirements

Before you install OVO, the following software *must* be correctly installed on the management server:

- Operating system
- Additional software packages
- Operating system patches
- Communication protocols
- Oracle Database

Operating System

Table 1-5 shows on which OS versions of Sun Solaris the OVO management server is supported.

CAUTION

When installing Sun Solaris, choose the Developer System Support option (DSS) for Software Group.

Table 1-5

Supported OS Versions for the OVO Management Server

Operating System	Platform	Supported OS Versions
Solaris (minimum DSS installation)	Sun SPARC	8, 9 and 10
	Fujitsu-Siemens PRIMEPOWER SPARC	8, 9 and 10

NOTE

OVO A.08.10 on Sun Solaris 8, 9 and 10 is a 32-bit application. It runs on the 64-bit Sun Solaris 8, 9 and 10 operating systems, but *does not* support integrations with 64 bit applications on the API level. Oracle 9.2 is a 64-bit application and therefore Oracle *must* be installed on a system running a 64-bit Sun Solaris 8 or 9 operating system. On 64-bit Sun Solaris 10, Oracle 10g can be installed. OVO connects to the Oracle database through the 32-bit SQL interface.

Additional Software Packages

OVO requires the following software packages to be installed on the management server:

- ❑ Network communication services
- ❑ X Windows System
- ❑ Common Desktop Environment (CDE) online help packages

These packages are part of the CDE, which is installed on the management server with the Solaris operating system. All required CDE packages are installed with the DSS installation, except for the SUNWaccu (System Accounting, Use) package, which has to be installed separately.

If you have an existing Solaris operating system, you can check which software packages are already installed on the workstation chosen as the management server by using one of the following methods:

- ❑ *admintool(1M)* GUI

Use the software view of *admintool* to check which installation option was used when the OS was initially installed.

- ❑ *pkginfo* command

Enter the following command:

```
/usr/bin/pkginfo | more
```

Operating-System Patches

The OVO installation script `ovoinstall` checks the OS patches that are currently installed on the OVO management server. For information about the required Sun Solaris OS patches, refer to the OVO installation requirements info file applicable to your version of the Sun Solaris operating system. Installation requirements info files are located in the `Required_OS_Patch_Lists` directory on the OVO 8 (1) CD. For more information about the installation CDs, see “About the OVO A.08.10 Installation CDs” on page 72.

Solaris 8 `ovo.info.SunOS.5.8.txt`

Solaris 9 `ovo.info.SunOS.5.9.txt`

NOTE

For Solaris 10, the dedicated `ovoinstall` installation script and `ovo.info.SunOS.5.10.txt` file are available, which can be downloaded from the following location:

`ftp://ovweb.external.hp.com/pub/cpe/ito/OVO_Sol10_Installer/`

IMPORTANT

Before installing the OVO Management Server on a Sun Solaris 10 system, make sure that the 119254-06 patch (Install and Patch utilities patch) is *not* installed on this system. The installation on a system with this patch installed will fail.

NOTE

In addition to the operating-system patches required for the management server, it is necessary to install the agent patches required for the Sun Solaris managed nodes. For more details refer to the *OVO HTTPS Agent Concepts and Configuration Guide*.

You can obtain the latest versions of Sun Solaris OS patches, including download and installation instructions, from the Sun website at <http://www.sunsolve.sun.com/>.

IMPORTANT

Before you install any of the required OS patches, make sure you have read the README file supplied with the patch.

Also check the latest edition of the *OVO Software Release Notes* for last-minute documentation about the required patches. This document can be downloaded from the website:

http://ovweb.external.hp.com/lpe/doc_serv/

IMPORTANT

The OVO management server has been tested with the patch revisions listed in the installation requirements info files. Patches with higher revisions should also be suitable, but *have not* been tested.

NOTE

Certain features and add-on components may require additional operating-system patches. To make `ovoinstall` aware of these mandatory patches, you *must* uncomment the corresponding lines (or add additional entries) to the `/etc/opt/OV/share/conf/OpC/mgmt_sv/ovo.info.<platform>.txt` file, where `<platform>` is either Sun Solaris 8 or Sun Solaris 9.

For example, if you plan to use Kerberos PAM authentication, uncomment the corresponding lines in the `ovo.info.SunOS.5.x.txt` file prior to the installation (unless it is a CD-based installation) and make sure that those patches are installed on the management-server system prior to configuring PAM.

For Sun Solaris 10, as distinguished from Sun Solaris 8 and 9, no OS patches are required for LDAP and Kerberos. However, since PAM uses new authentication modules on Solaris 10, you have to add the following lines to the `/etc/pam.conf` file in order to configure PAM:

```
ovo auth requisite pam_authtok_get.so.1
ovo auth required pam_unix_auth.so.1
ovo account required pam_unix_account.so.1
```

Communication Protocols

With OVO for Sun Solaris systems DCE, NCS and HTTPS communication protocols are supported. For DCE-based operation, to provide DCE server functionality in the environments where DCE software is *not* commercially available, an embedded DCE client is included with OVO. The supplied daemon is capable of emulating the NCS local location broker.

OVO is compatible with the following commercially available DCE software:

- ❑ IBM DCE 3.1 for Sun Solaris
- ❑ DASCOS DCE 1.2 for Sun Solaris

NOTE

The embedded DCE client provides a minimal DCE functionality as required by OVO. It *does not* support advanced DCE functionality, such as Cell Directory Services or Security Services.

Verifying Requirements Manually

You can check the prerequisites manually, before starting the OVO installation script.

- ❑ To check the operating-system version, run the command:

```
uname -sr
```

For example, the output for Sun Solaris 8 and 9 would be the following:

Solaris 8 SunOS.5.8

Solaris 9 SunOS.5.9

Solaris 10 SunOS.5.10

- ❑ To check the available disk space, run the command:

```
/usr/sbin/df -k
```
- ❑ To check the available swap space in blocks, run the command:

```
/usr/sbin/swap -l
```
- ❑ To check the available RAM, run the command:

```
/usr/sbin/prtconf | more
```
- ❑ To check the hostnames, see “Resolving Hostnames” on page 46.
- ❑ To check the kernel parameters’ values, see “Kernel Parameters for the Management Server” on page 48.

Resolving Hostnames

The name service *must* be configured in such a way that hostnames are resolved as fully-qualified hostnames.

You can resolve hostnames in one of four ways:

- ❑ DNS (recommended)
- ❑ NIS
- ❑ NIS+
- ❑ files

<IP address> <fully qualified hostname> <short hostname>

When using `files` verify that the following set of items is present for all the hosts contained in the `/etc/hosts` file:

A short hostname may *not* be longer than 8 characters. Whenever a host is added to `/etc/hosts`, make sure that its name is fully qualified.

For example, for the host `hpmgr` in the domain `bbn.hp.com`, the following line *must* be entered in the `/etc/hosts` file:

```
193.197.95.42 hpmgr.bbn.hp.com hpmgr
```

When using other hostname-resolution methods, such as DNS or NIS+, make sure the entry for the local node in `/etc/hosts` contains the fully-qualified hostname. The fully-qualified hostname *must* be listed before the short hostname.

Kernel Parameters for the Management Server

Before adapting the kernel parameters to their recommended values, make sure that you have loaded the semaphores and shared-memory modules as described below.

Loading the Semaphores and Shared-memory Modules

For the OVO installation script to run successfully, the semaphores and shared memory need to be enabled.

Use the *modinfo(IM)* command to check whether the required modules are loaded:

```
/usr/sbin/modinfo | grep shmsys
```

```
/usr/sbin/modinfo | grep semsys
```

If the modules are *not* loaded on your system (in which case *sysdef* lists each related kernel parameter value as zero), you will have to load the modules manually with the *modload(IM)* command:

```
/usr/sbin/modload /kernel/sys/semsys /kernel/sys/shmsys
```

In addition, you will have to force-load the semaphore and shared-memory modules at boot time to ensure that the kernel parameters are set correctly.

To force the semaphores and shared-memory modules to be loaded automatically, enter the following lines at the beginning of your */etc/system* file:

```
forceload: sys/shmsys
```

```
forceload: sys/semsys
```

Checking and Setting the Kernel Parameter Values

Make sure you load the `semsys` as well as `shmsys` modules before checking the current values of the kernel parameters. Otherwise, you may inadvertently lower the current `semsys` and `shmsys` values. See “Loading the Semaphores and Shared-memory Modules” on page 48 for more information about loading these modules.

1. To check the kernel parameter values, run the command:

```
/usr/sbin/sysdef | more
```

The OVO installation utility `ovoinstall` also checks your current settings.

2. Adjust the values in your `/etc/system` file to the values suggested in the following installation requirements info files, applicable to your version of the Sun Solaris operating system:

- `ovo.info.SunOS 5.8.txt`

- `ovo.info.SunOS 5.9.txt`

The installation requirements info files are stored in the `Required_OS_Patch_Lists` directory on the OVO 8 (1) CD. For more information about the installation CDs’ layout, see “About the OVO A.08.10 Installation CDs” on page 76.

NOTE

For Solaris 10, the dedicated `ovoinstall` installation script and `ovo.info.SunOS.5.10.txt` file are available, which can be downloaded from the following location:

```
ftp://ovweb.external.hp.com/pub/cpe/ito/OVO_Sol10_Installer/
```

CAUTION

The values of some kernel parameters on your system can already be higher than the ones listed in the installation requirements info files. If so, *do not* decrease them in the `/etc/system` file.

The values in the installation requirements info files are the minimum values required for a successful installation and operation of OVO. Any additional software installed on the management-server system can require increased values.

NOTE

As of Solaris 10, System V IPC tunables are no longer required. The assignments to these parameters have no longer any effect, since they have been commented out. This, however, does not apply to the `shminfo_shmmax` parameter which has to be reset after the Solaris OS upgrade.

For more information about System V IPC tunables, refer to the Solaris operating system documentation.

-
3. After modifying the kernel parameters, reboot the system to load the new kernel values.

Example 1-1 Kernel Parameters Syntax in the `/etc/system` file:

```
forceload: sys/shmsys
forceload: sys/semsys
set shmsys:shminfo_shmmax=4294967295
set shmsys:shminfo_shmmin=1
set shmsys:shminfo_shmseg=400
set shmsys:shminfo_shmmni=500
set semsys:seminfo_semmni=500
set semsys:seminfo_semaem=16384
set semsys:seminfo_semmns=1024
set semsys:seminfo_semmnu=400
set semsys:seminfo_semume=250
set semsys:seminfo_sevmx=32767
set semsys:seminfo_semmsl=400
set semsys:seminfo_semopm=100
```

Oracle Database

OVO A.08.10 is certified to work with the following Oracle database versions:

IMPORTANT

See Table 1-6 for details about support for Oracle database versions on respective Sun Solaris OS versions.

- ❑ Oracle Database 9i Release 2 Enterprise/Standard Edition (or Oracle for OpenView 9.2.0) with 9.2.0.2 Patch Set for the Oracle Database Server for Sun Solaris.
- ❑ Oracle Database 10g Release 1 Enterprise/Standard Edition with 10.1.0.4 Patch Set for the Oracle Database Server for Sun Solaris.
- ❑ Oracle Database 10g Release 2 Enterprise/Standard Edition with 10.2.0.2 Patch Set for the Oracle Database Server for Sun Solaris.

The extent of the Oracle databases support is detailed in the Table 1-6 as it is not the same for all versions of Sun Solaris operating system.

Table 1-6 Supported Oracle Database Versions on Sun Solaris

Operating System	Oracle Database 9i Release (or Oracle for OpenView 9.2.0) with 9.2.0.2 Patch Set	Oracle Database 10g Release 1 with 10.1.0.4 Patch Set	Oracle Database 10g Release 2 with 10.2.0.2 Patch Set
Solaris 8	✓		
Solaris 9	✓	✓	✓
Solaris 10		✓	✓

If you have an existing Oracle database and want to verify which Oracle products are installed, use the Oracle Universal Installer to view the installed Oracle products:

1. Switch to user `oracle`. Enter the following:

```
su - oracle
```

2. Run the Oracle Universal Installer. Enter the following:

```
$ORACLE_HOME/bin/runInstaller
```

3. In the Oracle Universal Installer Welcome window, click Installed Products . . . to view the installed Oracle products.

Table 1-6, “Supported Oracle Database Versions on Sun Solaris,” on page 51 lists the required Oracle products.

Table 1-7 Required Oracle Products for OVO

HP-UX Version...	Oracle Version...	Required Products...
Solaris 8 Solaris 9	Oracle9i Database Release 2 (9.2.0.1.0) Enterprise Edition (64-bit) ^a	<ul style="list-style-type: none"> • Oracle9i 9.2.0.1.0 • Oracle Net Services 9.2.0.1.0^b
	Oracle for OpenView 9.2.0 (64-bit) ^a	<ul style="list-style-type: none"> • Oracle9i 9.2.0.2.0 • Oracle Net Services 9.2.0.2.0
Solaris 9 Solaris 10	Oracle 10g Database Release 1 (10.1.0.2) Standard and Enterprise Edition (64-bit) for Sun Solaris SPARC ^c	<ul style="list-style-type: none"> • Oracle10.1.0.2.0 • Oracle Net Services 10.1.0.2.0
	Oracle 10g Database Release 2 (10.2.0.1) Standard and Enterprise Edition (64-bit) for Sun Solaris SPARC ^d	<ul style="list-style-type: none"> • Oracle10.2.0.1.0 • Oracle Net Services 10.2.0.1.0

- a. OVO *does not* support 32-bit Oracle.
- b. All subproducts are required: Oracle Net Listener 9.2.0.1.0 and Oracle Connection Manager 9.2.0.1.0
- c. All subproducts are required.
- d. All subproducts are required.

NOTE

To have the Oracle database version 9.2.0.2.0 installed, you *must* first install the Oracle database version 9.2.0.1.0, and then upgrade it by installing the 9.2.0.2 Patch Set for the Oracle Database Server for Sun SPARC Solaris.

Likewise, to install Oracle database versions 10.1.0.4 or 10.2.0.2, you should first install Oracle databases 10.1.0.2 or 10.2.0.1 and then upgrade each of them with the corresponding Patch Set (10.1.0.4 or 10.2.0.2).

Supported Agent Platforms

OVO A.08.10 supports the OVO A.07.xx DCE/NCS-based managed nodes in backward-compatibility mode. The next major release of OVO will no longer support the OVO A.07.xx DCE/NCS-based managed nodes.

IMPORTANT

An HTTPS agent *must* be installed on the OVO management-server system. It is no longer possible to install the DCE/NCS-based managed node on the OVO management server.

For the list of platforms and operating systems supported on OVO agents and the HP OpenView Performance Agent (OVPA) support on the managed nodes, refer to *OVO Software Release Notes*.

NOTE

OVO agents and OVPA can be installed on SAN (Storage Area Network) attached disks as well.

2 **Installing OVO on the Management Server**

In This Chapter

This chapter describes:

- ❑ How to install HP OpenViewHP OpenView Operations (OVO) for Sun Solaris for the **first time** on the management server using the OVO installation program.
- ❑ How to set up the Oracle database for use with OVO.
- ❑ How to install DCE/NCS-based software manually.
- ❑ How to reconfigure the OVO software.

NOTE

The OVO HTTPS agent software is automatically installed during the installation of the OVO software on the OVO management server.

IMPORTANT

Do not install OVO product bundles directly using HP Software Distributor (SD-UX), use `ovoinstall` for the administration of the OVO software on the OVO management server.

Oracle for OpenView is available from Hewlett-Packard and provides an OpenView-specific “license-to-use” for the Oracle products listed in Table 1-11 on page 42.

NOTE

It is *not* possible to run the Japanese, Korean, Simplified Chinese and English/Spanish language versions of OVO on the same management server because they require different and incompatible database character sets.

Before You Install OVO

Before installing OVO, make sure that your system meets the following prerequisites:

- ❑ Sun Solaris operating system (minimum Developer System Support) with CDE *must* be installed.
- ❑ Kernel parameters on the management server *must* be adapted. See “Verifying the Installation Requirements” on page 31.
- ❑ Sun Solaris operating system patches *must* be installed. For more information, see “Operating-System Patches” on page 43.
- ❑ Sufficient disk space *must* be available in the right partitions of the file system. For more information, see “Required Disk Space” on page 33.

When your system conforms with the prerequisites you can start with the OVO installation.

To Install OVO

To install OVO, ensure that your system meets all the prerequisites detailed in Chapter 1, “Installation Requirements for the Management Server,” on page 25, then complete the following steps:

1. Install and check your database.

See “Installing and Verifying an Oracle Database” on page 59 for details.

2. Install the OVO software on the management-server system.

See “Installing the OVO Software on the Management-Server System” on page 76 for details.

3. Verify the OVO installation.

See “Starting OVO and Verifying the Installation” on page 98 for details.

Installing and Verifying an Oracle Database

For operation with OVO, install and set up one of the following Oracle databases:

IMPORTANT

See Table 1-7 on page 47 for details about support for Oracle database versions on respective Sun SPARC Solaris versions.

- ❑ Oracle Database 9i Release 2 Enterprise/Standard Edition (or Oracle for OpenView 9.2.0) with 9.2.0.2 Patch Set for the Oracle Database Server for Sun SPARC Solaris.
- ❑ Oracle Database 10g Release 1 Enterprise/Standard Edition with 10.1.0.4 Patch Set for the Oracle Database Server for Sun SPARC Solaris.
- ❑ Oracle Database 10g Release 2 Enterprise/Standard Edition with 10.2.0.2 Patch Set for the Oracle Database Server for Sun SPARC Solaris.

For more detailed instructions than those provided in this section, or for non-standard installations, refer to the documentation supplied with the Oracle database product.

NOTE

Oracle 9i and **10g** are products of the Oracle Corporation and *cannot* be purchased directly from Hewlett-Packard. Oracle for OpenView 9.2.0 is available from Hewlett-Packard and provides an OpenView “license-to-use” for the Oracle products listed in Table 1-8 on page 48

Required Oracle Products

See Table 1-6 on page 51 for a complete list of required Oracle products.

A standalone OVO system has the database and all the management-server processes, including the user-interface processes, running on the same system. However, if the database is installed on a different server than the OVO management server, you *must* also install additional Oracle products. See “Setting Up an Independent Database-Server System” on page 141 for details.

Using an Existing Oracle Database

IMPORTANT

OVO can be installed and configured using the existing database, but it requires its own database instance. Although it is possible to configure OVO with an existing instance, this is *not* supported.

If you want to use an existing Oracle database, do the following:

1. Refer to the Oracle product documentation to make sure that the database is compatible with Oracle version 9.2.0 or 10g (10.1.0 or 10.2.0), depending on the Sun Solaris OS version you have installed.
2. Make sure the Oracle-environment variables are set as described in “Preparing an Oracle Database for Installation” on page 62.
3. Continue with “Installing the OVO Software on the Management-Server System” on page 76.

Before You Install an Oracle Database

The following section contains the preparation steps for installing an Oracle database (9.2.0.2 or 10g) on the OVO management server.

Preparing an Oracle Database for Installation

Before installing an Oracle database on the management server, follow these steps:

1. Make sure that your system conforms to the hardware and software requirements listed in Chapter 1, “Installation Requirements for the Management Server,” on page 25.

NOTE

The dynamically linked Oracle environments are *not* supported.

2. Run `admintool` as root, and create the user `oracle` with the following attributes:
 - a. Create a UNIX group named `dba`.
The group ID should be greater than 100.
 - b. In case you are installing an Oracle 10g database, create a UNIX group named `oinstall`.
The group ID should be greater than 100.
 - c. Create a UNIX user named `oracle`.
The user ID should be greater than 100.
 - d. Perform the following, depending on the version of the Oracle database you are installing:
 - *Oracle 9.2.0*
Make the user `oracle` a member of the group `dba`.
 - *Oracle 10g*
Make the user `oracle` a member of the group `oinstall` as the primary group and `dba` as the secondary group.
 - e. As the home directory of the `oracle` user, use:
`/export/home/oracle`

NOTE

On Sun Solaris systems, the directory on which you can create user home directories is `/export/home/`. The directory `/home/` is a mount point for remote-user home directories.

- f. The recommended shell for the `oracle` user is **Korn shell** (**ksh**).
3. Set `umask` to allow users to access the Oracle binaries:

```
umask 022
```

4. Create the directories required by the Oracle installation:

- a. Create the Oracle home directory `ORACLE_HOME`:

```
mkdir -p /opt/oracle/product/<version>
```

In this instance, `<version>` is the supported version of the Oracle database: 9.2.0 or 10g (10.1.0 or 10.2.0)

You can also choose a different directory for `ORACLE_HOME` but you *must* use it consistently in all subsequent steps.

`/opt/oracle/product/<version>` is the value recommended by OVO. This value meets the Optimal Flexible Architecture (OFA) directory structure recommended by Oracle.

- b. Create a base directory for the Oracle installation files:

```
mkdir -p /opt/oracle/oraInventory
```

You can also choose a different directory. If you do so, use the new directory consistently in all subsequent steps.

5. Perform the following, depending on the version of the Oracle database you are installing:

- *Oracle 9.2.0*

Change the ownership of the directories to `oracle:dba` by entering:

```
chown -R oracle:dba /opt/oracle
```

- *Oracle 10g*

Change the ownership of the directories to `oracle:oinstall` by entering:

```
chown -R oracle:oinstall /opt/oracle
```

6. Set the following Oracle-environment variables in the `/export/home/oracle/.profile` of user `oracle`:

- **export ORACLE_BASE=/opt/oracle**

This variable determines the location of the Oracle installation. The subdirectory prefix `/opt` is the recommended default. You can use other prefixes, if needed.

- **export ORACLE_HOME=\$ORACLE_BASE/product/<version>**

This variable determines the location and the version of the Oracle installation. This is the recommended setting. You can choose a different setting, if needed.

- **export ORACLE_SID=openview**

This variable defines the name of the database you will create. The default setting is `openview` but you can use a different setting if required.

When using an existing database, use the name of this database for the setting of `ORACLE_SID`. When configuring the database, the script `opconfig` detects that a database of this name exists and asks whether you also want to use it for the OVO database objects. If you choose this approach, the OVO database objects are created within the existing database, instead of creating a new database.

If you use a short filename file system on the management server, `ORACLE_SID` may not be longer than four characters.

- **export ORACLE_TERM=xterm**

This variable specifies the terminal definition resource file for an `xterm` to be used with the Oracle installer and other Oracle tools.

- **export PATH=\$PATH:\$ORACLE_HOME/bin**

This variable sets the directories through which the system searches to find and execute commands.

7. Continue with the installation of the Oracle database depending on selected version, as described in the following sections.

Installing an Oracle Database

This section describes how to install the following databases for use with OVO:

IMPORTANT

See Table 1-7 on page 47 for details about support for Oracle database versions on respective Sun Solaris OS versions.

- ❑ Oracle Database 9i Release 2 with 9.2.0.2 Patch Set for the Oracle Database Server for Sun SPARC Solaris.
- ❑ Oracle Database 10g Release 1 with 10.1.0.4 Patch Set for the Oracle Database Server for Sun SPARC Solaris.
- ❑ Oracle Database 10g Release 1 with 10.2.0.2 Patch Set for the Oracle Database Server for Sun SPARC Solaris.

For more detailed information, or for non-standard installations, see the documentation supplied with the Oracle database.

The following procedure installs the Oracle image without creating the openview database. After installing the OVO software, `ovoinstall` creates the openview database and configures the OVO software as described in “Installing the OVO Software on the Management-Server System” on page 76.

NOTE

Browse through this section before starting the installation. The order of the system prompts can differ slightly from the example described below. These slight variations *do not* indicate any problems with the installation.

Installing an Oracle Database 9.2.0.2 or 10g

NOTE

The *Oracle9i Database Release 2 (9.2.0.1.0) Enterprise Edition (64-bit) for the Sun SPARC Solaris* product is available on three CD-ROMs, and the *Oracle10g Database Release 1 Enterprise Edition (64-bit) for the Sun SPARC Solaris* is available on two CD-ROMs. *Oracle10g Database Release 2 Enterprise Edition (64-bit) for the Sun SPARC Solaris* as well as all required Patch Sets can be downloaded from the Oracle web site.

To install Oracle 9.2.0.2 or 10g (10.1.0 or 10.2.0) from the CD-ROMs, follow these steps:

1. During the Oracle installation, you will need to perform some steps as user `root` and some as user `oracle`. Open two terminal windows and perform the following steps:

- a. Log in as user `root` in the first terminal window, and as user `oracle` in the second.
- b. Make sure that the Oracle-environment variable `ORACLE_TERM` is set correctly in both terminal windows. To check the setting, enter:

```
echo $ORACLE_TERM
```

If the `ORACLE_TERM` is not set, enter the following:

```
export $ORACLE_TERM=xterm
```

- c. Verify, and if necessary, set the `ORACLE_HOME` and `ORACLE_SID` variable.
For example:

```
ORACLE_HOME=/opt/oracle/product/<version>
```

In this instance, `<version>` is the supported version of the Oracle database: 9.2.0 or 10g (10.1.0 or 10.2.0).

Where `<version>` is the supported version of the Oracle database: 9.2.0 or 10g (10.1.0 or 10.2.0).

```
export ORACLE_HOME
```

```
export ORACLE_SID=openview
```

- d. Set the `DISPLAY` environment variable:

```
export DISPLAY=<nodename>:0.0
```

Where *<nodename>* is the name of your system.

2. Insert the *Oracle 9i* CD-ROM 1 of 3 into the drive. The CD-ROM is automatically mounted on Sun Solaris systems.

3. As user *oracle*, start the Oracle Universal Installer by entering:

```
cd /; /cdrom/cdrom0/runInstaller &
```

When the Oracle Universal Installer is started, the *Welcome* window is displayed.

4. In the *Specify Inventory directory and credentials* window click [Next].

You are prompted to run certain actions with root privileges. As user *root*, run the utility *orainstRoot.sh* by entering:

```
/opt/oracle/oraInventory/orainstRoot.sh
```

5. Continue with the installation depending on the type of installation you choose.

Installing an Oracle Database 9.2.0.2 Using the Custom Installation Type

To install the Oracle Database 9.2.0.2 using the Custom installation type, perform the following steps:

1. In the Oracle Universal Installer Welcome window, click [Next].

The Inventory Location window is displayed.

- a. In the Inventory Location window, make sure that the path `/opt/oracle/oraInventory` is given. Click [OK].

The UNIX Group Name window is displayed.

- b. In the UNIX Group Name window, leave the field empty and click [Next].

You are prompted to run the utility `oraInstRoot.sh`.

- c. As user `root`, run the utility `oraInstRoot.sh` by entering:

```
/tmp/oraInstRoot.sh
```

When the utility has completed, return to the Oracle Universal Installer and click [Continue].

The File Locations window is displayed.

- d. In the File Locations window, *do not* change the text in the Source field. This is the location of the installation files.

The two destination fields display the Oracle Home name and its full path. Path field displays the value of the `ORACLE_HOME` variable. Accept the proposed values.

NOTE

If the Name field is empty, enter the following:

```
ORACLE_HOME
```

In the File Locations window, click [Next].

The Available Products window is displayed.

- e. In the Available Products window, click the [Product Languages] button. The Language Selection window is displayed.

- f. In the Language Selection window, verify that English, as the language Oracle can run in, is selected. If you have *not* set LANG=C, you may have to select English manually.
- g. In the Available Products window, select Oracle9i Database 9.2.0.1.0
Click [Next]. The Installation Types window is displayed.
- h. In the Installation Type window, select the Custom installation type. Click [Next].
The Available Product Components window is displayed.
- i. In the Available Product Components window, choose the required Oracle products from the list of available products. See Table 1-7, “Required Oracle Products for OVO,” on page 52.
When the list is complete, click [Next]. The Component Locations window is displayed.
- j. In the Component Locations window, the destination location for the Oracle Universal Installer is displayed. Accept the default value \$ORACLE_BASE/oui and click [Next]. The Privileged Operating System Groups window is displayed.
- k. In the Privileged Operating system Groups window, ensure that the default group dba is set for the Database Administrator (OSDBA) Group and the Database Operator (OSOPER) Group.
Click [Next]. The Create Database window is displayed.
- l. In the Create Database window, you are asked whether you want to create a new database. Choose No and click [Next].
The Summary window is displayed.
- m. In the Summary window, review the information to ensure that you have enough disk space. You *cannot* make any product or space allocation changes during the installation.
In the Summary window, click [Install].
- n. The Disk Location window is displayed, asking you to insert the Oracle 9i disk 2, and later the Oracle 9i disk 3 into your disk drive:
 - A. Change the CD-ROM. Enter the following:

eject

- B. In the Disk Location window, click [OK].
 - o. The Setup Privileges window is displayed, prompting you to run the `root.sh` utility as described in the following steps.
2. As user `root`, run the `root.sh` utility as follows:
 - a. Change to `ORACLE_HOME` by entering:

```
cd $ORACLE_HOME
```
 - b. Start the `root.sh` utility by entering:

```
./root.sh
```
 - c. The following information is displayed:
The following environment variables are set as:

```
ORACLE_OWNER= oracle  
ORACLE_HOME= /opt/oracle/product/9.2.0
```


Enter the full pathname of the local bin directory
[/usr/local/bin]:

```
Enter: /usr/bin
```
 - d. When the `root.sh` utility has finished, click [OK] in the Setup Privileges window.
3. The Configuration Tools window is displayed at the end of the installation and starts the Oracle Net Configuration Assistant.
Cancel this assistant with the [Cancel] button as soon as it is started. You can ignore any resulting error messages.
4. In the Configuration Tools window, click [Next].
The End of Installation window is displayed.
5. Click [Exit] to exit the Oracle Universal Installer.
6. Unmount the CD-ROM drive by entering:
eject
7. Install the Oracle 9.2.0.2 Patch Set as described in the README file available on the Oracle web site.

NOTE For increased security, Oracle recommends that **‘password complexity’** is enabled.

Installing the Oracle Database Standard/Enterprise Edition

NOTE The following section describes the procedure for installing the Oracle database (9.2.0.2 or 10g) Standard/Enterprise Edition on the OVO management server.

To install the Oracle Database Standard/Enterprise Edition 9.2.0.2 or 10g (10.1.0 or 10.2.0), perform the following steps:

After clicking [Next] in the Oracle Universal Installer Welcome window, continue with the installation by choosing one of the following editions:

1. In the Oracle Universal Installer Welcome window, click [Next].

The Specify File Locations window is displayed.

2. If you have previously set all Oracle variables properly in the Specify File Locations window, click [Next].

Depending on the version of the Oracle database that you are installing, follow the appropriate step:

- For Oracle 9.2.0.2:

The Available Products window opens.

Select the Oracle Database 9.2.0 option, and click [Next].

The Installation Type window opens. Click Next.

- For Oracle 10g:

The Installation Type window opens. Click [Next].

3. In the Select Installation Type window, choose Enterprise Edition or Standard Edition type according to your needs or your Oracle licence agreement. Click [Next].

NOTE

If you will be running other-than-English OVO management server, you can add additional language(s) by clicking [Product languages . . .] button and selecting your choice from the list. The default language is English.

4. Depending on the version of the Oracle database that you are installing, follow the appropriate procedure:
 - For Oracle 9.2.0.2:

The Database Configuration window opens.

Select the Software Only option, and click [Next].

The Summary window opens.
 - For Oracle 10g:
 - a. The Product-specific Prerequisite Checks window opens. Click [Next].

In this window, the result of checking requirements is displayed. If there were no problems reported, click [Next].

The Select Database Configuration window opens.
 - b. In the Select Database Configuration window, select Do not create a starter database option and click [Next]. The Summary window opens.
5. In the Summary window, click [Install] to start installation.
6. When the Setup Privileges window is displayed, prompting you to run the `root.sh` utility, follow these steps:
 - a. Login as user `root`.
 - b. Change to `ORACLE_HOME` by entering:

```
cd $ORACLE_HOME
```
 - c. Start the `root.sh` utility by entering:

```
./root.sh
```

The following should be displayed:

The following environment variables are set as:
ORACLE_OWNER= oracle
ORACLE_HOME= /opt/oracle/product/<version>

In this instance, <version> is the supported version of the Oracle database: 9.2.0 or 10g (10.1.0 or 10.2.0).

Enter the full pathname of the local bin directory
[/usr/local/bin]:
Enter: /usr/lbin

7. When the root.sh utility has finished, click [OK] in the Setup Privileges window. The End of Installation window opens.
8. In the End of Installation window, you can verify installed Oracle products. Click [Exit] when you finish the verification.
9. Install the Oracle 10g Patch Set (10.1.0.4 or 10.2.0.2) as described in the README file available on the Oracle web site.

NOTE

For increased security, Oracle recommends that **'password complexity'** is enabled.

Installing 10.1.0.4 Patch Set for Oracle Database Server

To install the 10.1.0.4 Patch Set for the Oracle Database Server, follow these steps:

1. Download the patch set installation archive to a directory.

NOTE

Make sure that this directory is *not* Oracle home directory, or under it in the filesystem structure.

2. Unzip and extract the installation files with following commands:

```
$ unzip <zip_file_name>.zip  
$ cpio -idcmv <p4163362_10104_SOLARIS64.cpio
```

3. Start the Oracle Universal Installer as user oracle. Enter the following:

```
cd <patchset_directory>/Disk1
```

Where the *<patchset_directory>* is a directory where you have extracted the installation files.

```
./runInstaller
```

4. In the Oracle Universal Installer Welcome window, click [Next].

The Specify File Locations window opens.

5. In the Specify File Locations window, click [Next].

Select the `products.xml` file from the stage directory where you unpacked the patch set files and click [Next]. For example:

```
<directory_path>/stage/products.xml
```

6. In the Name field of the Destination section, select the name of the Oracle home from the drop-down list, and click [Next].

The Summary window opens.

7. In the Summary window, click [Install] to start installation.

8. When prompted, run the `$ORACLE_HOME/root.sh` script as the root user.

The following should be displayed:

The following environment variables are set as:

```
ORACLE_OWNER= oracle
```

```
ORACLE_HOME= /opt/oracle/product/<version>
```

Where *<version>* is the supported version of the Oracle database:
9.2.0 or 10g (10.1.0 or 10.2.0).

Enter the full pathname of the local bin directory

```
[/usr/local/bin]:
```

```
Enter: /usr/lbin
```

9. When the root .sh utility has finished, click [OK] in the Setup Privileges window.

NOTE

If Oracle Universal Installer warns you that some of the Oracle processes are still running and thus is impossible to proceed with the installation, stop the Oracle daemon `ocssd.bin` using the following command:

```
/sbin/init.d/init.cssd stop
```

After stopping the `ocssd.bin` daemon, continue with the installation.

Installing the OVO Software on the Management-Server System

This section describes:

- ❑ The OVO installation CDs.
- ❑ How to install the OVO software on the management server using the OVO installation program, `ovoinstall`.

About the OVO A.08.10 Installation CDs

OVO A.08.10 software is supplied as a set of 8 CDs. Table 2-1 lists the OVO A.08.10 installation CDs.

NOTE

The OVO media kit contains several more CDs containing products such as OV Performance Manager and OVPA for standalone installations.

Table 2-1 OVO A.08.10 Installation CDs

Installation CDs	Content of CDs
OVO 8 (1) CD	Includes , OVO installation program, OVO software depot, installation requirements info files (<code>ovo.info.SunOS.5.8.txt</code> and <code>ovo.info.SunOS.5.9.txt</code>), OVO documentation, and OV Core components depot.
OVO 8 (2) CD	Includes management server depot, HTTPS clients depot, and RPC clients depot.
OVO 8 (3) CD	OVPA software depot.
NNM (1) CD ^a	Network Node Manager software depot, including OVSNMP, and ECS runtime, and OV Composer.
NNM (2) CD ^a	
SPI CDs	Includes HP OpenView smart plug-ins for OVO.

- a. Make sure you install the NNM version 7.51 available in the latest OVO media kit from August 2006.

NOTE

The OVO media kit contains several more CDs containing products such as OV Performance Manager and OVPA for standalone installations.

About the OVO Installation Program `ovoinstall`

The OVO installation program, `ovoinstall`, does the following:

- ❑ Collects all information required for the installation and configuration of the OVO software. For more details, see “Preparing for the Installation of the OVO Software Using `ovoinstall`” on page 79.
- ❑ Upgrades the shared OV components installed by NNM.
- ❑ Checks for installed Sun Solaris operating-system patches and lists patches that must still be installed.
- ❑ Checks kernel parameters and disk-space requirements.
- ❑ Starts the NNM installation.
- ❑ Installs OVO software on your management-server system.
- ❑ Installs HTTPS agent-software packages on the OVO management-server system.
- ❑ If requested, installs DCE/NCS-based agent-software packages on the OVO management-server system.

You can also install DCE/NCS-based agent software at a later time, as described in the “Installing DCE/NCS Agent-Software Packages on the Management-Server System Manually” on page 96.

- ❑ Creates the `openview` database and configures the OVO software.
- ❑ Installs the local agent (if enabled) and deploys the agent configuration to the local agent.
- ❑ Starts the OVO processes.
- ❑ Installs OSSPI, if selected.

IMPORTANT

Do not install OVO product bundles directly using HP Software Distributor (SD-UX), use `ovoinstall` for the administration of the OVO software on the OVO management server.

Preparing for the Installation of the OVO Software Using `ovoinstall`

To ensure that the OVO installation goes smoothly, make sure that all the prerequisites are met and consider the following points prior to running `ovoinstall`:

- Do you want the DCE/NCS agent software to be installed? If you do, how many nodes do you want to be managed by DCE/NCS, and how many by the HTTPS agent software?
- How many Motif GUI operators will be working simultaneously?
- How many Java GUI operators will be working simultaneously? How many of them will use the Service Navigator?
- Do you want NNM to be reinstalled, in case it already exists on your OVO management server?
- Do you want Developer's Toolkit to be installed?
- Do you want the installation of the local agent to be performed automatically?
- Do you want the OSSPI installation to be performed automatically?
- Do you want the database to start automatically every time you restart your system?
- Do you want the database to be overwritten if it already exists?

`ovoinstall` also prompts you for the following pieces of information:

- The `ORACLE_HOME` value
- The `ORACLE_BASE` value
- The destination for Oracle data files and index files
- The database language
- The passwords for the `opc_op` and `opc_report` database users
- The password for the existing database user `system`
- Oracle DBA user
- The `ORACLE_SID` value

NOTE

For information about installing OVO in cluster environments, see Appendix 9, “Installing OVO in a Sun Cluster Environment,” on page 219 and Appendix 10, “Installing OVO in a VERITAS Cluster Environment,” on page 281.

Running ovoidinstall

The time required to install the entire OVO software depends on your management-server hardware: generally, it *should not* take more than 90 minutes to complete.

Before running `ovoidinstall`, verify whether you are using Network Information Services (NIS or NIS+) for user or group management. This information is available from the entries for `passwd` and `group` in the `/etc/nsswitch.conf` file.

If you are using NIS or NIS+, keep the following in mind before running the `ovoidinstall` installation script:

- ❑ Make sure that, if the `opc_op` user already exists in the NIS or NIS+ environment, it belongs to the group `opcgrp`. If *not* created before, the user `opc_op` will be created by the `ovoidinstall` script during the OVO installation.
- ❑ Make sure that the home directories of the `opc_op` and `oracle` users are accessible on the OVO management server, and that they are the same as on the NIS (or NIS+) server.

If you are *not* using NIS or NIS+ for user or group management, `ovoidinstall` automatically sets up both groups and users.

NOTE

Before starting the OVO software installation, stop any NCS-based applications running on your system.

You can install OVO software on the Sun Solaris management server in one of the following ways:

- ❑ **From a CD-ROM**

If you are installing OVO from a CD-ROM, the installation will prompt you to insert subsequent CDs when needed.

- ❑ **Using CD Images**

If you are installing OVO using CD images, you can copy the content from all the CDs to the disk, the NFS share or the DVD and continue with the installation.

Preparing for the OVO Software Installation from a CD-ROM

To prepare for the OVO software installation from a CD-ROM, insert the first OVO Server Installation CD (OVO 8 (1) CD) into the CD-ROM drive.

The CD-ROM is automatically mounted with the automountd process on Sun Solaris Systems, with the mount point in the /cdrom directory.

IMPORTANT

Do not start `ovoinstall` from the mounted CD-ROM directory.

Preparing for the OVO Software Installation Using CD Images

To prepare for the OVO software installation using CD images, follow the steps:

1. Create a master directory to serve as a holder for the disk subdirectories. It can be, for example, `/tmp` directory.
2. Create the following directories as subdirectories of the master directory:
 - OVOCDD1
 - OVOCDD2
 - OVOCDD3
 - OVNNMCD1¹
 - OVNNMCD2¹
 - OVOSSPI
3. Store the content of the OVO installation CDs in these directories. Use the following pattern:
 - OVOCDD1 for OVO 8 (1) CD content
 - OVOCDD2 for OVO 8 (2) CD content
 - OVOCDD3 for OVO 8 (3) CD content (*optional*)
 - OVNNMCD1 for NNM (1) CD content (Required *only* if NNM is *not* yet installed.)
 - OVNNMCD2 for NNM (2) CD content (Required *only* if NNM is *not* yet installed.)
 - OVOSSPI for Smart-Plug CD containing the Operating System SPIs (Required *only* if you want to install the OS-SPIs during the OVO installation procedure. You can also install the OS-SPI separately later on.)
4. Set the permissions for OVNNMCD1 and OVNNMCD2.
Enter the following:

-
1. Make sure you install the NNM version 7.51 available in the latest OVO media kit from August 2006.

Installing OVO on the Management Server

Installing the OVO Software on the Management-Server System

```
find OVNNMCD1 -type d | xargs chmod a+rx  
find OVNNMCD2 -type d | xargs chmod a+rx
```

Installing the OVO Software on the Sun Solaris Management Server

NOTE

The installation procedure for Solaris 10 Management Server differs from the installation on other supported Sun Solaris platforms. It is detailed in the section “Installing OVO on the Solaris 10 Management Server” on page 91.

To install the OVO software on the Sun Solaris management server, complete the following steps:

1. Log in as user `root`.
2. Set the `umask` of user `root`:

```
umask 022
```

3. Make sure that the environment variable `LANG` is set to `C`.

To check the setting, enter:

```
echo $LANG
```

NOTE

If you are using any `LANG` variable other than `C`, make sure that you set it to `C` before running `ovoinstall`. After `ovoinstall` has finished, you can set the `LANG` variable back to its original value. Refer to *OVO Administrator's Reference* for the list of supported languages and `LANG` settings.

4. Set your `DISPLAY` environment variable, enter:

```
export DISPLAY=<nodename>:0.0
```

Where `<nodename>` is the name of your system.

5. Start the OVO installation.

- If you are installing OVO from a CD-ROM, enter the following:

```
/<mount_point>/ovoinstall -t
```

where `<mount_point>` is a location where the OVO installation CD is mounted.

- If you are installing OVO using the CD images, enter the following:

```
/<master_directory>/OVOCd1/ovoinstall -t
```

For example, if you created /tmp directory as a master directory, you can start ovoinstall by entering the following:

```
/tmp/OVOCd1/ovoinstall -t
```

ovoinstall starts the installation procedure.

6. In the ovoinstall terminal window, ovoinstall prompts you to either accept the default settings or to customize the parameters grouped in the OpenView Resource Calculation Section.

NOTE

The parameters set in the OpenView Resource Calculation Section are used *only* for memory requirements and estimating kernel parameters. See “Preparing for the Installation of the OVO Software Using ovoinstall” on page 79 for more information about these parameters.

The default value is displayed below each setting, for example [5].

Press [Enter] if you want to accept the defaults, or enter the desired value.

7. ovoinstall checks the memory requirements and the kernel parameters, and displays a warning if their values *do not* match the required values. ovoinstall checks for the required Sun Solaris operating-system patches and lists any missing patches.

You are prompted to either continue or cancel the installation.

8. ovoinstall prompts you to either accept the default settings or to customize the parameters grouped in the following sections:

- OpenView Software Configuration Section

IMPORTANT

At the end of the OpenView Software Configuration Section, `ovoinstall` asks you whether you want to install patches before the OVO configuration startup.

We strongly recommend you install the latest OVO patches. Installing patches that influence the configuration process is essential.

-
- OpenView Database Configuration Section

The default value is displayed below each setting, for example `[y]`.

NOTE

If not required otherwise, use the default (recommended) values.

Press `[Enter]` if you want to accept the defaults, or enter the desired value.

IMPORTANT

When prompted whether you want to set up the database manually, do one the following:

- If you want to set your database automatically, press `[Enter]` and continue with installation.
- If you want to set an independent system as the database server, enter `y` and continue with installation until the following message is displayed:

Once you are finished with applying patches/setting up the remote database, answer `y` to the following question to continue with the configuration of the database.

Do you want to continue now (y |n):
`[y]`

When this message is displayed, *leave the `ovoinstall` window open without answering the question* and proceed with the step 4 of the remote database configuration procedure described in the “Setting Up an Independent Database-Server System” on page 141.

NOTE

Make sure you have installed the NNM version 7.51, available with the latest media kit from August 2006.

NOTE

For more information on how to install NNM, refer to *HP OpenView Network Node Manager Quick Start Installation Guide*.

WARNING

***Do not* abort the installation with Ctrl-C or kill anytime after the Network Node Manager installation has started, as this can corrupt your system.**

Ctrl-C or kill can be used up to and including the file-system requirements check.

The settings and parameters from the configuration sections are discussed in more details in “Reconfiguring the OVO Software” on page 103.

When the settings are specified, the installation begins.

NOTE

If you are installing OVO directly from the CD-ROM, replace the installation CDs when prompted.

After the installation of the selected packages is finished, `ovoinstall` informs you that the installation of the patches should be done at this point.

IMPORTANT

Wait till the process of installing the patches is finished, then press [Enter].

`ovoinstall` will automatically start `opconfig`, which configures the OVO management server.

NOTE

`ovoinstall` saves all the settings and parameters that you specified in the installation and configuration sections. When `opconfig` is started, it uses these specified values. You *cannot* change them at this stage; however, you can reconfigure your OVO software later, by running `opconfig` manually. See “Reconfiguring the OVO Software” on page 103 for information on `opconfig` and configuration details.

NOTE

After deploying and installing OSSPI policies you *must* set the Message Groups and Node Groups in the responsibility matrix of user `opc_adm`. For further information, refer to the *OVO Administrator’s Reference*.

NOTE

During the OVO installation, you will be prompted to enter a certificate backup password. This password is required only with disaster recovery when no other backup is performed.

-
9. When the installation is completed, unmount the CD-ROM drive by entering:

```
eject
```

10. Make the OVO man pages available to users by adding the `/opt/OV/man` directory to the `MANPATH` environment variable. Enter the following:

```
MANPATH=$MANPATH:/opt/OV/man
```

```
export MANPATH
```

The `MANPATH` environment variable *must* be set either:

- For the current user by the user in his/her `.profile`
- For all users by the system administrator in the `/etc/profile`

NOTE

To login in the OVO GUI for the first time, use default users and passwords. The default login passwords are the following:

- For administrators: `OpC_adm`
- For operators: `OpC_op`

Upon next login you should change your default password for security reasons. You can change your password again at a later time, but you will not be allowed to set the password back to the default.

Installing OVO on the Solaris 10 Management Server

NOTE

Before the OVO installation on Solaris 10, download the dedicated `ovoinstall` installation script and `ovo.info.SunOS.5.10.txt` file from the following location:

`ftp://ovweb.external.hp.com/pub/cpe/ito/OVO_Sol10_Installer/`

1. Prepare for the OVO installation as described in the section “Preparing for the OVO Software Installation Using CD Images” on page 83.
2. Copy the dedicated `ovoinstall` installation script and the `ovo.info.SunOS.5.10.txt` file to `OVOCDD1/Required_OS_Patch_Lists/` (update the original files with the new ones).
3. Add the following line to the `/etc/system` file (if it is not already present):

```
set shmsys:shminfo_shmmax=4294967295
```

After changing the `/etc/system` file, restart the system.

4. Copy downloaded SD bits to the `/tmp/sd` directory. Unzip and untar the package as follows:

```
# gunzip OVO_Sol10_Installer.tar.gz
# tar xvf OVO_Sol10_Installer.tar
```

Run the `/tmp/sd/sd_install.sol` script to install the HP Software Distributor.

5. Install the OVO/UNIX Management Server using the dedicated `ovoinstall` installation script.

Make sure you perform the following:

- When prompted if you plan to install OVO patches before the configuration start, answer **y**.
- When installation procedure stops before the server configuration, install 8.14 (ITOSOL_00477) or latest OVO/UNIX Server patch and continue with the installation.

NOTE

Do not install Core Agent and E/A patch at the same time as the OVO/UNIX Server patch, they will be installed afterwards.

- When the OVO/UNIX Server patch is installed check the value of `OPC_MGMT_SERVER` using the following command:

```
/opt/OV/bin/ovconfget -ovrg server opc OPC_MGMT_SERVER
```

If the returned value is a short hostname, change the value to the value of the fully qualified domain name (FQDN) using the following command:

```
/opt/OV/bin/ovconfchg -ovrg server -ns opc -set \  
OPC_MGMT_SERVER <FQDN>
```

Continue with the installation.

For detailed installation instructions, see “Installing the OVO Software on the Sun Solaris Management Server” on page 85.

NOTE

The local OVO/UNIX agent is not installed during the OVO/UNIX Management Server installation. You will install it manually afterwards using the OVO/UNIX Administrator GUI.

6. After installing the OVO Management Server on a Solaris 10 system, write the same kind of record as for the `/etc/inetd.conf` file into a temporary file and import/convert it into an `smf` repository using the `inetconv` tool:

```
inetconv -f -i <temporary_file>
```

`inetd.conf` is obsolete on Solaris 10, and `smf` services are used instead.

If you want to remove a service at a later time, use the following command:

```
svccfg delete -f <service_name>
```

7. When the OVO/UNIX Management Server installation is completed, install the following patches:

- Core Agent 8.12 (ITOSOL_00423) or latest

- E/A Agent 8.13 (ITOSOL_00429) or latest
8. Install the local OVO/UNIX agent using the OVO/UNIX Administrator GUI.

NOTE

The `mech_krb5.so.1` Kerberos library on Solaris 10 is located in the directory different from its directory on the Solaris 8 and 9. This causes the dynamic linker to fail while searching for this library in the defined runtime path.

To avoid this problem, create a symbolic link `/usr/lib/gss/g1` pointing to `/usr/lib/gss` before starting the Motif GUI.

9. Restart OVO/UNIX server processes. Perform the following:
 - a. In a cluster environment, disable OVO Server monitoring by entering:

```
/opt/OV/lbin/ovharg -monitor ov-server disable
```
 - b. Enter the following:

```
ovstop ovctrl  
ovc -kill  
ovc -start  
ovstart opc
```
 - c. In a cluster environment, enable OVO Server monitoring by entering:

```
/opt/OV/lbin/ovharg -monitor ov-server enable
```

Viewing the Installation Logfiles

When `ovoinstall` has finished installing the OVO software, verify that the installation has been successful by checking the end of the `/var/opt/OV/log/OpC/mgmt_sv/ovoinstall.log` logfile. Either open the logfile using a text editor or enter:

```
more /var/opt/OV/log/OpC/mgmt_sv/ovoinstall.log
```

You can also check for any errors by viewing the analysis and installation logfiles during the installation. To view the installation logfiles, enter the following in the new terminal window:

```
tail -f /var/adm/sw/swagent.log
```

```
tail -f /var/opt/OV/tmp/pkgadd.log
```

OVO Software Bundles

Table 2-2 describes OVO Software bundles. See Appendix B, “Bundling OVO for Sun Solaris Software,” on page 335, for more information about OVO software bundles, products, and filesets.

Table 2-2 OVO Software Bundles

OVO Bundle	Version	Description
OVOLocalized ^a	A.08.10	HP OpenView OVO, with Documentation (English)
OVOLocalized ^a	A.08.10	HP OpenView OVO, with Documentation (for non-English Languages)
OVORemoteOVw	A.08.10	Remote OVw Integration

- a. *Must* be installed on top of the OVOLocalized bundle for the following non-English languages: Japanese, Spanish, Korean and Simplified Chinese.

NOTE

To have OVO Developer’s Toolkit available, you *must* install OVOPC-DEV and OVOPC-DEVDOC products on top of OVO, if they are not already installed by `ovoinstall`.

After installing the OVO software on the management server, you can check whether the installation was successful. See “Starting OVO and Verifying the Installation” on page 98 for more information.

Installing DCE/NCS Agent-Software Packages on the Management-Server System Manually

You can also manually install DCE/NCS-based agent software on the management server after the OVO management-server software has been installed on the OVO management-server system. To perform the DCE/NCS-based software installation, follow these steps:

1. Log in as user `root` on the OVO management-server system.
2. In the terminal window, install the DCE/NCS agent-software depot using the following command:

```
swinstall -s <full path name>/HPOvOrpcClients.depot \*
```

Where *<full path name>* is the full path name to the `HPOvOrpcClients.depot`.

3. Change the current directory, enter the following:

```
cd /var/opt/OV/share/databases/OpC/mgd_node/vendor
```
4. Upload the agent information into the database using the following command:

```
for i in `find . -type d -name A.07.10`; \  
do j=`echo ${i} | sed -e 's|^./|'|' -e 's|/A.07.10|'|'`; \  
/opt/OV/bin/OpC/opcagtdbcfg -p ${j} -d -f; \  
done
```

Installing HTTPS Agent-Software Packages on the Management-Server System Manually

You can also manually install HTTPS agent software on the management server after the OVO management-server software has been installed on the OVO management-server system. To perform the HTTPS agent-software installation, follow these steps:

1. Log in as user `root` on the OVO management server.
2. In the terminal window, install the HTTPS agent-software depot using the following command:

```
swinstall -s <full path name>/HPOvOhttpsClients.depot \*
```

Where *<full path name>* is the full path name to the `HPOvOhttpsClients.depot`.

3. Change the current directory. Enter the following:

```
cd /var/opt/OV/share/databases/OpC/mgd_node/vendor
```
4. Upload the agent information into the database using the following command:

```
for i in `find . -type f -name <AgentPlatform>`; \  
do j=`echo ${i} | sed -e 's|^\.|'|' -e 's|\ \  
/<AgentPlatform>|'|`; /opt/OV/bin/OpC/opcagtdbcfg -p ${j} \  
-d -f; \  
done
```

Starting OVO and Verifying the Installation

To verify the OVO installation, follow these steps:

1. Verify that all OVO server services are running by entering the following:

```
/opt/OV/bin/OpC/opcsv
```

An output similar to the following should be displayed:

```
OVO Management Server status:
```

```
-----
```

```
Control Manager      opcctlm      (13013) is running
Action Manager       opcactm      (13025) is running
Message Manager      opcmmsgm     (13026) is running
TT & Notify Mgr      opcttnsm     (13027) is running
Forward Manager      opcforwm     (13028) is running
Service Engine       opcsvcm      (13042) is running
Cert. Srv Adapter    opccsad      (13036) is running
BBC config adapter   opcbbcdist   (13037) is running
Display Manager      opcdispm     (13029) is running
Distrib. Manager     opcdistm     (13031) is running
```

```
Open Agent Management status:
```

```
-----
```

```
Request Sender       ovoareqsdr   (13010) is running
Request Handler       ovoareqhdlr  (13014) is running
Message Receiver (HTTPS) opcmgrb      (13015) is running
Message Receiver (DCE) opcmgrd      (13016) is running
```

OV Control Core components status:

```
-----  
OV Control                ovcd          (11431) is running  
OV Communication Broker   ovbbccb      (11961) is running  
OV Certificate Server     ovcs         (12968) is running
```

If the OVO server services are *not* running, you can start them with the following command:

```
/opt/OV/bin/OpC/opcsv -start
```

IMPORTANT

You *must* have a local agent installed to perform steps 2 and 4.

2. Verify that all the OVO agent services are running on the management-server system by doing one of the following:

- Enter the command:

```
/opt/OV/bin/OpC/opcagt -status
```

- In the OVO administrator's GUI, double-click the OVO Status symbol in the Application Bank.

An output similar to the following should be displayed:

OVO Managed Node status:

```
opcmsga    OVO Message Agent      AGENT, EA    (18525)  Running  
opcacta    OVO Action Agent       AGENT, EA    (18526)  Running  
opcmsgi    OVO Message Interceptor AGENT, EA    (18527)  Running  
opcle      OVO Logfile Encapsulator AGENT, EA    (18528)  Running  
opcmona    OVO Monitor Agent      AGENT, EA    (18529)  Running  
opctrapi   OVO SNMP Trap Interceptor AGENT, EA    (18530)  Running
```

NOTE

If the OVO agent services are *not* running, you can start them with the following command:

```
/opt/OV/bin/OpC/opcagt -start
```

3. Start the OVO GUI as one of the default users (for example, `opc_op`), and verify that it works correctly:

Enter: `opc`

User login: `opc_op`

Password: `OpC_op`

NOTE

The OVO GUI can take several minutes to start up.

The startup is complete when the following windows open:

- Root
- Managed Nodes [`opc_op`]
- Application Desktop [`opc_op`]
- Message Groups [`opc_op`]
- Message Browser [`opc_op`]

4. Submit test messages as user `root` by entering:

```
/opt/OV/bin/OpC/utlils/submit.sh
```

This utility sends simulated messages to the Message Browser. The number of messages received depends on the configuration of your system. You will normally receive five or six.

5. To be able to test and use an application configured as Window (Input/Output) from the OVO User's Assigned Applications window, you will probably have to perform one of the following:

- ❑ As user `root`, set the UNIX password for the default operator `opc_op` for each managed node where you want to use Input/Output applications.

To do this, enter:

```
passwd opc_op
```

NOTE

By default, the user `opc_op` is *not* allowed to login to the system (* entry in `/etc/passwd`).

- ❑ Working as `opc_admin` in the OVO administrator's GUI, set the password for an Input/Output application (for example the Virtual Terminal application for the operator `opc_op`):
 - a. Select Window: Application Bank from the menu in any submap to open the Application Bank.
 - b. Right-click the Virtual Terminal symbol.
This displays a popup menu for the object.
 - c. Choose Modify... from the popup menu to open the Modify Internal Application: Virtual Terminal window.
 - d. In the Platform Family / User Name listbox of the Modify Internal Application: Virtual Terminal window, double-click the entry for UNIX/`opc_op`.
This opens the Change User window.
 - e. In the Password field of the Change User window, enter the password for the operator `opc_op`.
- ❑ Make sure the file `$HOME/.rhosts` exists on the managed node (`$HOME` is the home directory of the executing user `opc_op` on the managed node).

If it *does not* exist, create it.

Now make an entry in `.rhosts` for the user `opc_op` on the managed node.

For example:

```
<management_server>.<domain> opc_op
```

- ❑ Make sure the file `/etc/hosts.equiv` exists on the managed node.

If it *does not* exist, create it.

Add the hostname of your management server to this file.

For example:

```
<management_server>.<domain>
```

After You Install OVO

After you have completed the installation of OVO, decide whether the following issues need addressing in your environment:

- ❑ During the initial configuration setup, Oracle creates the default users `sys`, `system`, `outln` and `dbstmp`, and gives them default passwords. Depending on the installed Oracle components and version, additional database users may be created.

These Oracle users are *not* used by OVO.

You can change the password of these Oracle users with the Oracle tool, SQL*Plus, as illustrated in the following example:

```
su - oracle
sqlplus /nolog
connect /as sysdba
alter user system identified by <new_password>
exit
exit
```

- ❑ You can choose the following backup options:
 - offline backup (`opcbackup`)
 - automatic backup (`ovbackup.ovpl`).

NOTE

The backup option that you choose determines any further configuration that can be necessary.

For more information, see the respective man pages, `opc_backup(1M)` and `ovbackup.ovpl(1M)`, or the section on system maintenance in the *OVO Administrator's Reference*.

- ❑ You can customize the Oracle database if, for example, you want to take advantage of Oracle features that enable you to use additional disks. For more information, see the section on database maintenance in the *OVO Administrator's Reference*.

For information about database tuning, refer to the OVO Database Tuning ASCII file, located on the management server at the following location: `/opt/OV/ReleaseNotes/opc_db.tuning`.

Reconfiguring the OVO Software

If you want to reconfigure the OVO software, you must run the OVO configuration utility `opconfig` as user `root` on the management server.

If you want to use a separate system as the database server, first configure the database-server system as described in “Setting Up an Independent Database-Server System” on page 141.

To reconfigure the OVO software, follow these steps:

1. Make sure that the NLS language variable (`NLS_LANG`) is set correctly by entering:

```
export NLS_LANG=american_america.WE8ISO8859P15
```

2. Make sure that the environment variable `LANG` is set to `C`.

To check the setting, enter:

```
echo $LANG
```

3. Export all Oracle environment variables.

See “Before You Install an Oracle Database” on page 62 for instructions.

NOTE

Make sure that you have set the same `ORACLE_SID` value as the one you specified before running `ovoinstall`.

4. Set the `DISPLAY` environment variable:

```
export DISPLAY=<nodename>:0.0
```

5. To start `opconfig`, enter:

```
/opt/OV/bin/OpC/install/opconfig -c  
<database_characterset>
```

By default, if you execute only `opconfig`, the English character set is used.

Respond to the questions as they are displayed.

The configuration utility asks whether you want to configure your database manually.

- Enter **y** (yes) to configure your database automatically. This is the recommended method. You are prompted to enter the Oracle system user password.
- Choose **n** (no) if you have already configured your database on an independent database server.

NOTE

If you want to use an independent system as the database server, first configure the database-server system as described in “Setting Up an Independent Database-Server System” on page 141.

If you choose the answer **yes**, the installation continues with the following prompts:

- a. You are asked to enter the password of the Oracle database user `system`.

If you do *not* have a configured database, press **Enter** for OVO to create the database and the user `system`. If you want OVO to use an existing database, enter the password of the Oracle database user `system`.

- b. You are asked to enter the password for the Oracle database user `opc_op`.

NOTE

The database user `opc_op` is independent of the OS user `opc_op`, and the OVO user `opc_op`.

Enter a password of your choice.

If you need to change this password at a later date, use the command `opcdbpwd`.

CAUTION

Do *not* change the password in the database directly. OVO stores the password in an encrypted file. If the password in the database is different from the password in the encrypted file, OVO *cannot* connect to the database.

- c. You are asked to enter the password for the Oracle database user `opc_report`.

NOTE

The database user `opc_report` is required for read-only access to the database for report-writing tools.

Enter a password of your choice. This password is *not* used by OVO itself. You can change it directly in Oracle at a later time. When changing this password, you also need to change the password in your reporting solution.

- d. You are asked whether you require automatic startup of the database at the system boot time. Accept the default: **Yes**
- e. You are asked to choose a data directory for the system table space, the control files, the redo log files, and the OVO data table spaces. Accept the default, for example:
`/opt/oradata/openview`
- f. You are asked to choose an index directory for the OVO index table spaces. Accept the default, for example:
`/opt/oradata/openview`

IMPORTANT

Do not specify any of the following locations for the data and index directory: `/opt/OV`, `/var/opt/OV`, and `/etc/opt/OV`. Also, the name of the directory must correspond to the `ORACLE_SID` value (`openview` is recommended).

- g. The database setup utility uses the answers you give to create and configure the database, which can take some time.

The utility performs the following configuration steps:

- Creates and configures the Oracle database.
- Creates OVO table spaces and users.
- Creates OVO tables.
- Loads the initial OVO configuration into the database.
- Configures Net9 and starts the Net9 listener.
- Configures the agent on the management server.

The utility then does the following:

- Verifies the installed HP OpenView platform by starting the OpenView server processes.
 - Checks and verifies the OVW fields for OVO.
 - Asks you whether you want to read the logfile `/tmp/opc_tmp/opc.log`. This logfile indicates whether errors occurred while OV Windows was loaded. Enter **y** (yes) to view the logfile, or **n** (no) to continue.
 - Displays the login screen for the OVO GUI.
6. Log in as the OVO administrator using the following default login and password:
- user: **opc_adm**
- password: **OpC_adm**

NOTE

The startup of the OVO GUI can take several minutes and is complete when the OVO Node Bank window opens.

In This Chapter

This chapter describes how to install the HP OpenView Operations (OVO) Java operator graphical user interface (GUI), and how to configure a web server so that you can use your own customized icons and background graphics, as well as access the online documentation.

This section assumes that you have already installed the OVO software as described in the Chapter 2, “Installing OVO on the Management Server,” on page 55Chapter 2, Installing OVO on the Management Server, and have a supported web server as described by the vendor of the server.

Supported Platforms

The OVO Java GUI should, in theory, run on all platforms that meet the requirements listed in “Installation Requirements” on page 111. However, the software was tested *only* on the OS platforms listed in Table 3-1, and is therefore supported *only* on these OS platforms.

On all OS platforms not listed in Table 3-1, customers run the OVO Java GUI at their own risk.

Table 3-1 Supported Platforms of the OVO Java GUI Client

Supported Platforms	Java Application	Java Applet ^a
HP-UX 11.0, 11.11 and 11.23	yes	no
RedHat Linux 9.0	yes	yes
Solaris 8, 9 and 10 for Sun SPARC Station	yes	no
Windows 2000 Windows XP Windows 2003	yes	yes

a. See “Supported Web Browsers” on page 113 for a list of supported web browsers.

CAUTION

Running the OVO Java GUI on a UNIX platform is *not* recommended because it can lead to performance problems.

Supported Languages

See Table 3-2 for a list of languages into which the OVO Java operator GUI has been translated.

Table 3-2 Supported Languages of the OVO Java GUI Client

Supported Platforms	Language
HP-UX 11.00, 11.11 and 11.23	English Spanish
Redhat Linux 9.0	English Spanish
Solaris 8 and 9 for Sun SPARC Station	English Spanish
Windows 2000 Windows XP Windows 2003	English Spanish

NOTE

When starting the OVO Java operator GUI, select the correct locale. The locale influences the sorting, the text display (fonts), and the representation of date and time. It also selects the localized files for your installation.

For example, to start a Spanish Java GUI, select Spain (Spanish) in the login window.

Installation Requirements

This section describes the hardware and software requirements for installing the OVO Java Operator GUI. It also describes the recommended patches and web browsers supported by the product.

Hardware Requirements

❑ UNIX

See Chapter 1, Installation Requirements for the Management Server, for more information.

❑ Windows

The best performance is achieved with a Pentium-based personal computer (PC) with at least 500 Mhz, a minimum of 256 MB RAM, and an additional 30MB RAM per GUI session.

Software Requirements

Java Runtime Environment

In general, Java Runtime Environment, version 1.4.2 or higher *must* be installed on the system where the OVO Java GUI will be installed and running. It is recommended that you use Java Runtime Environment version 1.4.2_09.

NOTE

With Solaris 10 operating system, Java 1.5.0_01 is delivered. OVO/UNIX Java GUI does not support this version, therefore it is required to have 1.4.2_09 version installed. Install Java version 1.4.2_09 and export the JAVA_DIR environment variable using the following command:

```
export JAVA_DIR=/usr/j2se/jre
```

Additional installed software must also be converted using `inetconv`.

For the platforms listed in Table 3-3, the required versions of JRE are included in the OVO Java GUI installation directory on the management server:

```
/opt/OV/www/htdocs/ito_op/
```

Table 3-3 Bundled JRE Versions

Platform	JRE Version	File name
Windows 2000/XP/2003	JRE 1.4.2_09	ITO_JAVA.exe

NOTE

OVO delivers JRE 1.4.2_09 only for Windows as a part of the install shield package.

If you want to use the Java GUI on any other operating system, including the OVO management server, you have to download JRE 1.4.2_09 by yourself. You will also have to set the JAVA_DIR environment variable before using the following script to start the Java GUI:

```
/opt/OV/bin/OpC/ito_op
```

Supported Web Browsers

If you want to run the OVO Java GUI as an applet from a web browser, or if you want to use the online documentation supplied with the Java GUI, you should have one of the following web browsers installed:

- ❑ Microsoft Windows:
 - Microsoft Internet Explorer 5.5 or 6
 - Mozilla 1.7
- ❑ HP-UX and Sun Solaris:
 - Mozilla 1.7

Embedded Web Browser

The Java GUI comes with an embedded web browser that is based on Java technology.

Before calling URLs in the embedded web browser, make sure that you have configured its proxy settings correctly. This is done in the `Embedded Web Browser Settings` dialog box, which can be accessed from the `Web Browser` tab in the `Preferences` dialog box.

On Windows, the Java GUI automatically selects `Embedded web browser` as the preferred web browser. An additional configuration is *not* required.

Installing the OVO Java Operator GUI

You can either run the Java operator GUI directly on your management-server system, or use HTTP or FTP to transfer the Java GUI binaries from the management server to the system where the GUI will be running.

The OVO management-server installation automatically installs the OVO Java GUI binaries into the `/opt/OV/www/htdocs/ito_op/` directory on the management server.

Installation Requirements

Before installing the OVO Java operator GUI, make sure the following prerequisites are met:

- ❑ Management-server system meets all hardware and software requirements described in Chapter 1, “Installation Requirements for the Management Server.”Chapter 1, “Installation Requirements for the Management Server.”
Note that the kernel parameter `maxfiles` can need to be adjusted to ensure good performance.
- ❑ OVO software for the management server is installed. See Chapter 2, “Installing OVO on the Management Server.”Chapter 2, “Installing OVO on the Management Server,” on page 55 for more details.

NOTE

The OVO Java GUI client version A.07.xx is also fully compatible with an A.08.10 management server. You can also run an A.07.xx Java GUI client with an A.08.10 management server, but you will *not* be able to take advantage of the new features introduced with A.08.10.

-
- ❑ JRE 1.4.2_09 *must* be installed on the system where the OVO Java GUI will be installed and running. See also Table 3-3 on page 112.

The OVO installation automatically installs and configures an Apache Web server on the management server. See “Configuring the HTTP Server” on page 127 for configuration instructions for other web servers.

To Install OVO Java GUI through HTTP

To install OVO through HyperText Transfer Protocol (HTTP), follow these steps:

1. Make sure that all the prerequisites are met as described in “Installation Requirements” on page 111,
2. Make sure that an HTTP server is installed and running.
See “Configuring the HTTP Server” on page 127 for information about configuring a web server other than the Apache Web server.
3. On the system where the Java GUI will be running, open the following URL in a web browser:

```
http://<management_server>:3443/ITO_OP
```

In this instance, *<management_server>* is the fully qualified hostname of your management server.

4. Follow the instructions given on the web page:
 - If you are running the Java GUI on a PC running Microsoft Windows, download and execute the file `ITO_JAVA.exe`.
 - If you are running the Java GUI on a UNIX-based system, download and untar the file `ito_op_install.tar`. Make sure that you have JRE for your platform installed. The recommended version of JRE is 1.4.2_09.

To Install OVO Java GUI through FTP

To install OVO via File Transfer Protocol (FTP), follow these steps:

1. Make sure that all the prerequisites are met as described in “Installation Requirements” on page 111.

The OVO management server installation automatically installs the GUI client binaries in the following directory on the management server:

```
/opt/OV/www/htdocs/ito_op/
```

2. Transferring the files via FTP:

- a. Start the MS-DOS command prompt or a terminal window on the system where the GUI will be installed.
- b. Open an FTP connection to the OVO management server by entering:

```
ftp <management_server>
```

In this instance, <management_server> is the hostname of your management server.

- c. Make sure that binary mode is used by entering:

```
bin
```

- d. Change to the directory where the GUI software is located by entering:

```
cd /opt/OV/www/htdocs/ito_op
```

Retrieve the Java GUI executable.

For a PC-based system, enter:

```
get ITO_JAVA.exe
```

For a UNIX-based system, enter:

```
get ito_op_install.tar
```

For UNIX-based systems, you *must* download platform-specific JREs from their websites. The recommended version of JRE is 1.4.2_09.

Close the FTP connection when the files are transferred successfully.

3. Extract the software from the files, enter:

- PC-based system:

```
<drive_letter>:ITO_JAVA.exe
```

This starts the installation wizard that will guide you through the installation.

- UNIX-based system:

```
tar xvf ito_op_install.tar
```

To Install OVO Java GUI on HP-UX or Sun Solaris Systems Other than OVO Management Servers

On HP-UX or Sun Solaris systems other than OVO management servers, use the HP SD-UX utility `swinstall` to install the Java GUI client.

IMPORTANT

The Software Distributor (SD-UX) utility is supplied with the HP-UX operating system. However, you have to install it prior to installing the Java GUI client on Sun Solaris systems.

To install OVO Java GUI on HP-UX or Sun Solaris systems with `swinstall`, follow these steps:

1. Ensure that all the prerequisites are met as described in “Installation Requirements” on page 111.
2. Enter the commands as stated below for the following languages:

- *English*

```
swinstall -s \  
/<mount_point>/OVOC2/OV_DEPOT/HPOvOServer.depot\  
OVOPC-WWW.OVOPC-WWW-GUI OVOPC-WWW.OVOPC-WWW-ENG
```

where `<mount_point>` is a location where the OVO installation CD is mounted.

- *Spanish*

```
swinstall -s \  
/<mount_point>/OVOC2/OV_DEPOT/HPOvOServer.depot\  
OVOPC-WWW.OVOPC-WWW-GUI OVOPC-WWW.OVOPC-WWW-SPA
```

- *Japanese*

```
swinstall -s \  
/<mount_point>/OVOC2/OV_DEPOT/HPOvOServer.depot\  
OVOPC-WWW.OVOPC-WWW-GUI OVOPC-WWW.OVOPC-WWW-JPN
```

- *Korean*

```
swinstall -s \  
/<mount_point>/OVOC2/OV_DEPOT/HPOvOServer.depot\  
OVOPC-WWW.OVOPC-WWW-GUI OVOPC-WWW.OVOPC-WWW-KOR
```

- *Simplified Chinese*

```
swinstall -s \  
/<mount_point>/OVCD2/OV_DEPOT/HPOvOServer.depot\  
OVOPC-WWW.OVOPC-WWW-GUI OVOPC-WWW.OVOPC-WWW-SCH
```

Installing the HTTPS-based Java GUI

HTTPS-based Java GUI is a solution for providing a secure communication between Java GUI and the OVO management server, since the standard Java GUI has no secured link to the management server.

NOTE

If you plan to use only the HTTPS-based Java GUI, it is recommended to disable the non-secure communication between the Java GUI client and the OVO management server for security reasons. See “Disabling Non-secure Communication” on page 122 for more information.

For more information about the HTTPS-based Java GUI architecture, configuring and usage, refer to the *OVO Java GUI Operator’s Guide*.

For information about how to configure `opcuihttps` settings as well as for the list the parameters related to HTTPS-based Java GUI, refer to the *OVO Administrator’s Reference*.

To Install and Enable the HTTPS-based Java GUI

IMPORTANT

The following installation procedure is applicable *only* for the OVO Java GUI A.08.14.

To install and enable the HTTPS Java GUI communication type, follow these steps:

1. Start the `opcuihttps` process on the OVO management server. Perform the following:
 - a. Move the `opcuihttps` file from `/opt/OV/contrib/OpC/opcuihttps` to `/opt/OV/bin/OpC`.
 - b. Start the `opcuihttps` process. Enter the following:
`/opt/OV/bin/OpC/opcsv -start`
2. Enable HTTPS communication on the Java GUI client. Do one of the following:
 - a. Start Java GUI client from the command line using the option `-https true`. For example, enter the following:

- *On Windows systems*
C:\Program Files\Hewlett-Packard\HP OVO Java
Console>ito_op -https true
 - *On HP-UX and SOLARIS systems*
/opt/OV/www/htdocs/ito_op/ito_op https=true
- b. Edit the ito_op startup script. Perform the following:
- *On Windows systems*
In the ito_op.bat script, replace the line:
if "%HTTPS%" == "" set HTTPS=false
with the following line:
if "%HTTPS%" == "" set HTTPS=true
 - *On HP-UX and SOLARIS systems*
In the ito_op script, replace the line:
https=false
with the following line:
https=true
- c. Edit the ito_for_activator.html file to start Java UI as an applet.
- To start Java UI in Internet Explorer replace following line:
<PARAM NAME = https VALUE = "false">
with the following line:
<PARAM NAME = https VALUE = "true">
 - To start Java GUI in Mozilla or Firefox web browser, locate and change the https="false" to https="true" in the line starting with:
else if (_ns == true) document.writeln...

NOTE

A required Java runtime environment (JRE) version for running Java UI in the HTTPS communication mode is 1.4.2_09.

To set up the JRE on UNIX systems, export the JAVA_DIR variable to the base directory where the JRE is installed. For example, enter the following:

```
export JAVA_DIR=/opt/java1.4/jre/
```

Disabling Non-secure Communication

To ensure the secure exchange of data between Java GUI and the OVO management server, it is recommended to disable the non-secure communication. This is achieved by disabling all non-localhost connections to the port 2531. To do so, perform the following:

- ❑ *On HP-UX systems*

Edit the `/var/adm/inetd.sec` file. Enter the following line:

```
ito-e-gui allow 127.0.0.1
```

Starting the OVO Java GUI

This section describes how to start the OVO Java GUI on a PC, on a UNIX-based system, and from a web browser.

NOTE

To login in the OVO GUI for the first time, use default users and passwords. The default login passwords are the following:

- For administrators: `OpC_adm`
- For operators: `OpC_op`

Upon next login you should change your default password for security reasons. You can change your password again at a later time, but you will not be allowed to set the password back to the default.

NOTE

If you want to access web pages that start Java2 applets in a workspace, the Java GUI itself *must* be running as an applet. See “Starting the Java GUI from a Web Browser” on page 124 for more information about starting the Java GUI as an applet.

About the `ito_op` Startup Script

The `ito_op` startup script first reads the environment variables, then evaluates the command-line options, and finally the preferences listed in the `itopr` file.

For more information about the `ito_op` script, see the man page `ito_op(1M)` (UNIX), the `ito_op.bat` script (Windows), and the *OVO Administrator's Reference*.

Starting the Java GUI on a PC

The install shield of the OVO Java GUI client software installs a desktop shortcut for the GUI.

To start the OVO Java operator GUI on a PC, follow these steps:

1. Do one of the following:

- Use the installed desktop shortcut
- Enter the following:

```
<drive_letter>:<install_directory>\ito_op\ito_op.bat
```

The OVO Java GUI is now started and displays a login screen.

2. Enter the OVO username and password.

Starting the Java GUI on a UNIX-based System

To start the OVO Java operator GUI on a UNIX system, perform:

1. Enter the following:

```
/opt/OV/www/htdocs/ito_op/ito_op &
```

The OVO Java GUI is now started and displays a login screen.

2. Enter the OVO username and password.

Starting the Java GUI from a Web Browser

NOTE

You do *not* need to install the GUI if you want to start the OVO Java GUI from a web browser. Simply download the Java applet provided with the GUI client software.

To start the OVO Java GUI from a web browser, follow these steps:

1. Ensure that all the prerequisites are met as described in “Installation Requirements” on page 111.
2. On the system where the Java GUI will be running, open the following URL in a web browser:

```
http://<management_server>:3443/ITO_OP
```

In this instance, <management_server> is the fully qualified hostname of your management server.

3. Follow the instructions given on this web page for downloading the Java applet.

Starting the Online Documentation

The HTML-based online documentation supplied with the Java GUI is automatically installed on the OVO management server. However, before you can access it from within OVO, you *must* configure the OVO Java GUI to open a web browser at the corresponding URL of the management server.

NOTE

It is recommended that you view the online documentation with Microsoft Internet Explorer (Windows) or Netscape Communicator (UNIX) rather than the embedded web browser.

You can change your web-browser preferences by selecting Edit: Preferences... from the menu bar, then clicking the Web Browser tab in the Preferences dialog box. For details, see the *OVO Java GUI Operator's Guide*.

To start the OVO online documentation, follow these steps:

1. In the OVO Java GUI, select Help: Contents from the menu bar.
A window opens that lets you select a web browser to be used for running web-based applications.
2. Select the web browser you want to use and click [OK].

The web browser opens at the following URL:

```
http://<management_server>:3443/ITO_OP/help/\  
<lang>/ovo/html/index.htm
```

In this URL, <lang> is en for English or es for Spanish.

The online documentation for the Java GUI is displayed. Use the navigation tree on the left to find the topics that interest you, or use the index to search for a specific term.

NOTE

You can change the URL for the online documentation in the Preferences dialog of the OVO Java GUI. Select Preferences from the Edit menu to open this dialog.

Connecting Through a Firewall

If you want to access the OVO management server with the OVO Java GUI from outside a firewall, open port 2531. Port 2531 is the socket used by the Java GUI to connect to the management server.

Configuring the HTTP Server

Install your web server as described in the vendor's documentation and verify that the web server is running properly.

If you want to install and access the OVO Java GUI, you need to configure your HTTP server to do so. The configuration varies depending on the type of HTTP server that you have.

The following web servers are supported:

- NCSA/Apache (automatically installed and configured with the OVO installation)
- Netscape
- CERN/W3C

This section describes how to configure these web servers for use with the OVO Java GUI.

To Configure a Netscape Server

To configure Netscape for installing and accessing the OVO Java GUI, complete the following steps:

1. Select the Netscape server that you want to configure.
2. From the Netscape Enterprise Configuration, do the following:
 - a. Click the [Content mgmt] button at the top of the window.
 - b. Select Additional Document Directories from the left side of the window.
 - c. For URL prefix enter:
`ITO_OP/`
 - d. For Map To Directory enter:
`/opt/OV/www/htdocs/ito_op`
 - e. Click [OK].
 - f. Click [Save and Apply].

Restart your web server and open the following URL:

```
http://<server_hostname>/ITO_OP/
```

Where `<server_hostname>` is the hostname of your web server, including the domain.

3. Make sure the `.exe` extension is defined in the following file:
`/opt/ns-fasttrack/httpd-<server_hostname>/config/\
mime.types`
4. Add the following line to the file:
`type=application/octet-stream exts=exe`

To Configure a CERN/W3C Server

To configure a CERN/W3C web server for installing and accessing the OVO Java GUI, complete the following steps:

1. Add the following line to the file `httpd.conf`:

```
Pass /ITO_OP/* /opt/OV/www/htdocs/ito_op/*
```

2. Restart the web server.

3. Open the following URL:

```
http://<server_hostname>/ITO_OP/
```

4. Where `<server_hostname>` is the hostname of your web server, including the domain.

4

Startup/Shutdown Services and Manual Database Configuration

In This Chapter

This chapter describes how to set up the automatic startup and shutdown operations for the HP OpenView Operations (OVO) management-server services. It describes both the automatic and manual startup and shutdown methods for your installed database.

Starting and Stopping OVO Automatically

When you configure OVO, the startup of the OVO processes (`ovstart/ovstop`) is automatically integrated into the system boot sequence.

The OVO management-server services are started automatically by the `ovstart` command. This service is integrated so that it is executed during the system boot phase. Similarly, OVO management-server services are automatically shut down by the command `ovstop`.

The `ovstart` and `ovstop` scripts are located in the following directory:

```
/opt/OV/bin
```

The script `opcsv` is also available to start and stop the OVO services by calling `ovstart/ovstop`.

The `opcsv` script is located in the following directory:

```
/opt/OV/bin/OpC
```

The `opcsv` command functions as follows:

opcsv -start First calls `ovstop opc` and then `ovstart opc`.

opcsv -stop Calls `ovstop opc`.

opcsv -status Displays more detailed OVO-status information than `ovstatus opc`.

NOTE

The command `opcsv -stop` *does not* stop all the subagent processes. Subagent communication processes depend on the OVO OpenAgent (`ovoacomm`), which is *not* stopped by the `opcsv` command. If you want to stop both the OpenAgent and OVO server processes, use `ovstop opc ovoacomm ovctrl`. Conversely, if you want to start both the OpenAgent and OVO processes, use `ovstart opc ovoacomm`.

For more information about the `opcsv` command, see the man page `opcsv(1M)` and `ovstart(1M)`.

The OVO installation process automatically configures the DCE RPC daemon so that it is started in the system boot phase.

Starting and Stopping OVO Automatically

TIP

If you experience communication problems between the OVO server and the agents or if the server processes are not correctly informed about configuration changes, restart both the OpenAgent and the OVO server processes:

```
/opt/OV/bin/ovstop opc ovoacomm ovctrl
```

```
/opt/OV/bin/ovstart ovoacomm opc
```

Starting and Stopping an Oracle Database Automatically

You can use the OVO shell script `/sbin/init.d/ovoracle` to ensure a clean, automatic startup and shutdown of an Oracle database whenever you start or shut down the OVO management server. If you choose to start the OVO management-server processes automatically at system startup, the Oracle database *must* be running before OVO.

The script `ovoracle` is linked to:

- ❑ For the start

```
/sbin/rc3.d/S940ov300 /etc/rc3.d/S83ovoracle
```

- ❑ For the shutdown

```
/sbin/rc1.d/K060ov900 /etc/rc0.d/K11ovoracle,  
/etc/rc1.d/K11ovoracle
```

The option for the automatic startup and shutdown of the database is set in the file:

```
/etc/rc.config.d/ovoracle
```

You can enable automatic startup and shutdown of the database by editing the file:

```
/etc/rc.config.d/ovoracle
```

Change both the `OVORACLE` and `OVORALISTENER` variable to 1, as shown in the following extract from the file:

```
# configure if oracle database should be started  
# 0 - do not start  
# 1 - start  
# default is 0. This may be changed here manually  
#  
OVORACLE=1  
OVORALISTENER=1
```

Starting and Stopping an Oracle Database Manually

If you choose *not* to incorporate the Oracle `startup/shutdown` commands in the system boot sequence, you will need to start and stop the database manually as described below. You *must* start the database before starting OVO and stop the database after stopping OVO.

Starting an Oracle Database Manually

To start an Oracle database manually, follow these steps:

1. Switch to user `oracle`:

```
su - oracle
```

2. Set the `ORACLE_HOME` environment variable.

The default is as follows:

```
export ORACLE_HOME=/opt/oracle/product/<version>
```

Where `<version>` is the Oracle database version 9.2.0 or 10g (10.1.0 or 10.2.0).

3. Set the `ORACLE_SID` environment variable.

The default is as follows:

```
export ORACLE_SID=openview
```

4. Run the SQL*Plus tool to administrate the database:

```
<ORACLE_HOME>/bin/sqlplus /nolog
```

5. Enter the following commands at the prompt to start the Oracle database:

```
connect / as sysdba
startup
exit
```

6. Switch back to user `root`:

```
exit
```

Stopping an Oracle Database Manually

To shut down an Oracle database manually, follow these steps:

1. Switch to user `oracle`:

```
su - oracle
```

2. Set the `ORACLE_HOME` environment variable.

The default is as follows:

```
export ORACLE_HOME=/opt/oracle/product/<version>
```

Where `<version>` is the Oracle database version 9.2.0 or 10g (10.1.0 or 10.2.0).

3. Set the `ORACLE_SID` environment variable.

The default is as follows:

```
export ORACLE_SID=openview
```

4. Run the SQL*Plus tool:

```
<ORACLE_HOME>/bin/sqlplus /nolog
```

5. Enter the following to stop the Oracle database:

```
connect / as sysdba  
shutdown  
exit
```

6. Switch back to user `root`:

```
exit
```

Native-Language Support in an Oracle Database

This section summarizes the Native-Language Support (NLS) rules followed by an installed Oracle database.

NOTE

The same character set *must* be used for both the Oracle database and the environment of the OVO user interface and server processes. This helps to avoid unnecessary conversions taking place in the Oracle database. After you install an Oracle database, you can no longer change the character set.

The character set of the database is determined by the `CHARACTER SET` option of the `CREATE DATABASE` command. When the `opconfig` script creates the database, it determines the character set by evaluating the `LANG` and `NLS_LANG` environment variables. It uses the following character set for the English and Spanish language installations:

```
CHARACTER SET = "american_america.WE8ISO8859P15"
```

The NLS parameters are controlled by the Oracle-environment variable `NLS_LANG` which has the format:

```
<language>_<territory>.<character_set>
```

OVO uses the following `NLS_LANG` setting:

```
English/Spanish language: american_america.WE8ISO8859P15
```

By default, OVO uses the value of `NLS_LANG` set in the environment.

If `NLS_LANG` is *not* set in the environment, OVO uses the value specified in the file:

```
/etc/opt/OV/share/conf/ovdbconf
```

OVO checks the character set of the Oracle database, and stores this information as part of its configuration. Oracle provides a dynamic database table `v$nls_parameters` that contains the settings for the language and character-set parameters.

Environment Variables in an Oracle Database

When starting the OVO process with a database connection, the following steps are taken to determine the database variables:

- ❑ *ORACLE_HOME* variable is determined.
If *ORACLE_HOME* is set in the environment, this value is used. If *not*, OVO uses the value from the configuration file
`/etc/opt/OV/share/conf/ovdbconf`
- ❑ *ORACLE_SID* variable is determined.
If *ORACLE_SID* is set in the environment, this value is used. If *not*, OVO uses the value from the configuration file
`/etc/opt/OV/share/conf/ovdbconf`
- ❑ *NLS_LANG* variable is determined.
If *NLS_LANG* is set in the environment, this value is used. If *not*, OVO uses the value from the configuration file
`/etc/opt/OV/share/conf/ovdbconf`
- ❑ *ORA_NLS* variable is determined.
This variable is needed for a Japanese-language installation of Oracle. If *ORA_NLS* is *not* set in the environment, OVO selects the corresponding setting.
- ❑ It is determined whether the parameter *DATABASE* <database> is set using the `ovconfchg` command line tool.
This parameter is used to establish a connection. If set, the *ORACLE_SID* variable is ignored.
For example, if the line `DATABASE ov_net` is set using the `ovconfchg`, the string `opc_op/<password>@ov_net` is used to connect to the identifier `ov_net`.
- ❑ A connection to the database is established, as described in the section “Starting and Stopping an Oracle Database Automatically” on page 135.
If *DATABASE* is *not* used, the connect string `opc_op/<passwd>` is used.

Alternative Database Locations

The following table shows several alternative database installations, describes the location of associated processes, and lists the entries used in the foundation config component (FCC).

Table 4-1 **Alternative Database Locations**

Database Scenario	Entries used in the FCC	Location of Processes
Local Database using (default)	DATABASE ov_net	All processes (database, OVO management server, and the GUI) run on the management server. They connect to the database server using .
Independent Database Server (See “Setting Up an Independent Database-Server System” on page 141.)	DATABASE ov_net	On the database server: <ul style="list-style-type: none"> • Oracle processes On the OVO management server: <ul style="list-style-type: none"> • OVO server processes • GUI Processes

Setting Up an Independent Database-Server System

You should set up the Oracle database and the OVO management server on the *same* system. Using the same system reduces the complexity of your computing environment and enables you to use all the OVO administration tools. However, if the system resources on the OVO management-server system are *not* sufficient, you may set up an independent database-server system. You can use Oracle as the network link between the OVO system and the database-server system.

NOTE

The OVO backup and recover programs only function when the database is on the local management server. For a consistent backup, the data files and the data in the database *must* be synchronized.

Before you start to setup an independent database-server system refer to Chapter 1, “Installation Requirements for the Management Server,” on page 25 for the *minimum* recommended hardware and software prerequisites.

IMPORTANT

An Independent Database-Server System is supported *only* on a system running the same operating system and the same OS version as used by the system hosting the OVO management server. For example, installing the remote Oracle database on Sun Solaris version 9 is supported *only* if the OVO management server is also on a Sun Solaris version 9 system.

To set up an independent database-server system, follow these steps:

1. Install the following Oracle 9.2.0 or 10g products on the *database server*:
 - Oracle9i 9.2.0.1.0 or Oracle10g (10.1.0.2.0 or 10.2.0.1.0)
 - Oracle Net Services 9.2.0.1.0 or Oracle Net Services 10g (10.1.0.2.0 or 10.2.0.1.0)

Setting Up an Independent Database-Server System

2. Install the following Oracle products on the OVO *management server*:

- Oracle9i Client 9.2.0.1.0 or Oracle10g Client 10g (10.1.0.2.0 or 10.2.0.1.0)
- Oracle Net Services 9.2.0.1.0 or Oracle Net Services 10g (10.1.0.2.0 or 10.2.0.1.0)

NOTE

For all Oracle database versions, all subproducts are required.

To install these products, select Oracle9i Client 9.2.0.1.0 or Oracle10g Client 10.1.0.2.0 or Oracle10g Client 10.1.0.2.0 in the Available Products window and choose the Custom installation type.

IMPORTANT

Make sure that you install the 9.2.0.2 or 10g (10.1.0.4 or 10.2.0.2) Patch Set for Oracle Database Server after the Oracle database installation. For more information on database and patch-set installation, see “Installing an Oracle Database” on page 61.

IMPORTANT

Verify whether your Oracle database is properly installed and configured before setting and independent database-server system. Ensure you have chosen the correct settings. If not required otherwise, their values should be as recommended. See “Before You Install an Oracle Database” on page 62 for details about the recommended settings.

3. On the database-server system and on the OVO management server system, create the group `opcgrp` and the user `opc_op`, using the `admintool`.

The Group ID and the user ID must be same on the database-server system and the OVO management server system.

4. Install OVO on the OVO management-server system following the installation procedure described in Chapter 2, “Installing OVO on the Management Server,” on page 55. During the OVO installation, complete the following additional steps:

- When `ovoinstall` asks you whether you want to set up the database manually, enter `yes`.
- Continue with the installation until the following message is displayed:

```
Once you are finished with applying patches/setting up the
remote database, answer y to the following question to
continue with the configuration of the database.
```

```
Do you want to continue now (y |n):
[y]
```

When this message is displayed, *leave the `ovoinstall` window open without answering the question* and proceed with configuring the database-server system as described in the following procedure.

5. Share the `/opt/OV`, `/etc/opt/OV`, and `/var/opt/OV` directories on the OVO management server as it follows:

a. Add the following lines to the `/etc/dfs/dfstab` file:

```
share -F nfs -o rw=<DB server>,\
root=<DB server> /opt/OV
share -F nfs -o rw=<DB server>,\
root=<DB server> /etc/opt/OV
share -F nfs -o rw=<DB server>,\
root=<DB server> /var/opt/OV
```

Where `<DB server>` is the name of the database-server machine.

b. Perform *one* of the following commands:

- `/usr/sbin/shareall`
- `/etc/init.d/nfs.server start`
(if there were no share lines in the `/etc/dfs/dfstab` file before)

6. Login as `root` on the database server (the system on which you want to run the database).

7. Mount the `/opt/OV`, `/etc/opt/OV`, and `/var/opt/OV` directories from the management server with NFS to the database server.

Make sure that the directory is exported on the management server with write access and access for `root`:

```
umask 022

mkdir /opt/OV /etc/opt/OV /var/opt/OV

mount <mgmt_server>:/opt/OV /opt/OV

mount <mgmt_server>:/etc/opt/OV /etc/opt/OV

mount <mgmt_server>:/var/opt/OV /var/opt/OV
```

8. Copy the following scripts that control the automatic database startup from the OVO management server to the database server:

- `/etc/rc.config.d/ovoracle`
- `/sbin/init.d/ovoracle`
- `ln -s /sbin/init.d/ovoracle /etc/rc0.d/K11ovoracle`
- `ln -s /sbin/init.d/ovoracle /etc/rc1.d/K11ovoracle`
- `ln -s /sbin/init.d/ovoracle /etc/rc3.d/S83ovoracle`

9. Add the values for `ORACLE_HOME`, `ORACLE_SID`, and `NLS_LANG` to `/etc/rc.config.d/ovoracle`:

```
export ORACLE_HOME=/opt/oracle/product/<version>
```

Where `<version>` is the Oracle database version 9.2.0 or 10g (10.1.0 or 10.2.0).

```
export ORACLE_SID=openview
```

```
export NLS_LANG=american_america.WE8ISO8859P15
```

10. Export the Oracle variables as follows:

```
export ORACLE_HOME=/opt/oracle/product/<version>
```

```
export ORACLE_SID=openview
```

```
export ORACLE_BASE=/opt/oracle
```

```
export NLS_LANG=american_america.WE8ISO8859P15
```

Where `<version>` is the Oracle database version 9.2.0 or 10g (10.1.0 or 10.2.0).

11. Call `opcdbsetup` on the database server to create and configure the database:

IMPORTANT

Before calling `opcdbsetup`, manually install the DCE light-weight runtime environment on the database server system using `pkgadd` command. The DCE package can be found in the directory `HP1wdce` on the `OVO CD1`.

```
/opt/OV/bin/OpC/opcdbsetup
```

See the man page `opcdbsetup(1M)` for more details.

The program asks whether you want to configure the database. Accept the default values at the prompts. The command `opcdbsetup` automatically configures and starts the listener.

12. Copy the following files from the database server to the OVO management server:

- `$ORACLE_HOME/network/admin/sqlnet.ora`
- `$ORACLE_HOME/network/admin/tnsnames.ora`
- `$ORACLE_HOME/network/admin/tnsnv.ora`

These files are required on both systems.

13. Unmount the `/opt/OV`, `/etc/opt/OV`, and `/var/opt/OV` directories.
14. Exit the database server.

NOTE

If you use a different value for `ORACLE_HOME` on the OVO management server and on the database server, edit the value of the `ORACLE_HOME` in the `/etc/opt/OV/share/conf/ovdbconf` shared file on the management server.

15. The command `opcdbsetup` creates symbolic links from the OVO libraries to the Oracle shared library.

```
ln -s <ORACLE_HOME>/lib32/libclntsh.so\  
/opt/OV/lib/hpux32/libclntsh.so
```

```
ln -s <ORACLE_HOME>/lib32/libclntsh.so\  
/opt/OV/lib/hpux32/libclntsh.so.1.0
```

```
ln -s <ORACLE_HOME>/lib32/libclntsh.so\  
/opt/OV/lib/hpux32/libclntsh.so.8.0  
  
sohpux32/so  
  
sohpux32/so  
  
sohpux32/so  
  
sohpux32/so  
  
soso  
  
ln -s <ORACLE_HOME>/lib32/libclntsh.so\  
/opt/OV/lib/libclntsh.so.9.0  
  
ln -s <ORACLE_HOME>/lib32/libclntsh.so\  
/opt/OV/lib/libopcora.so  
  
ln -s <ORACLE_HOME>/lib32/libwtc9.so\  
/opt/OV/lib/libwtc9.so  
  
<ORACLE_HOME>/lib32/libclntsh.so  
<ORACLE_HOME>/lib32/libclntsh.so  
<ORACLE_HOME>/lib32/libclntsh.so  
<ORACLE_HOME>/lib32/libclntsh.so  
<ORACLE_HOME>/lib32/libclntsh.so  
<ORACLE_HOME>/lib32/libclntsh.so
```

If above OVO links do not exist in the OVO management server library directory, use the following procedure to create them:

```
ln -sf <ORACLE_HOME>/lib32/libclntsh.so \  
/opt/OV/lib/hpux32/libclntsh.so  
ln -sf <ORACLE_HOME>/lib32/libclntsh.so \  
/opt/OV/lib/hpux32/libclntsh.so.1.0  
ln -sf <ORACLE_HOME>/lib32/libclntsh.so \  
/opt/OV/lib/hpux32/libclntsh.so.8.0  
ln -sf <ORACLE_HOME>/lib32/libclntsh.so \  
/opt/OV/lib/hpux32/libclntsh.so.9.0  
ln -sf <ORACLE_HOME>/lib32/libclntsh.so \  
/opt/OV/lib/hpux32/libclntsh.so.10.1  
ln -sf <ORACLE_HOME>/lib32/libclntsh.so \  
/opt/OV/lib/hpux32/libopcora.so
```

16. Reset the name of the OVO management server in the database by changing the IP address using the `opc_node_change.pl` script.

Use the following “old name / new name” scheme:

```
/opt/OV/bin/OpC/utils/opc_node_change.pl -oldname  
OLD_FQDN -oldaddr OLD_IP_ADDR -newname NEW_FQDN -newaddr  
NEW_IP_ADDR
```

Since `opcdbsetup` was run on the database-server system, the entry in the database for the OVO management server uses the hostname and IP address of the database-server system. This is incorrect: the entry needs to be changed to reflect the hostname and IP address of the OVO management server itself.

NOTE

When prompted to enter the data and the index directories, accept the recommended value (the same one for both the data and index), for example:

```
/opt/oradata/openview
```

Do not specify any of the following locations for the data and index directory: `/opt/OV`, `/var/opt/OV`, and `/etc/opt/OV`. Also, the name of the directory must correspond to the `ORACLE_SID` value (`openview` is recommended).

-
17. Wait for the database-server system configuration to complete, then press [Enter] in the `ovinstall` window to continue with the OVO installation.
 18. Use the OVO administrator GUI *after* OVO installation to:
 - Change the machine type of the OVO management server, if the machine type of the database server and the OVO management server are different.
 - Unassign the `mondfile` template from the OVO management-server template group and, if an OVO agent is running on the database-server system, assign the `mondfile` template there.

In This Chapter

This chapter provides file trees showing the hierarchy of the HP OpenView Operations (OVO) directories on the management server.

OVO File Tree on the Management Server

The major OVO directories on Sun Solaris systems are as follows:

<code>/opt/OV</code>	All OVO binaries
<code>/etc/opt/OV</code>	Configuration data
<code>/var/opt/OV</code>	Run-time data

NOTE The file tree may include additional subdirectories if OVO agent software or other HP OpenView software is installed. For more information on agent file trees, see the *OVO DCE Agent Concepts and Configuration Guide*.

Figure 5-1 File Tree on the Management Server (/opt/OV Branch)

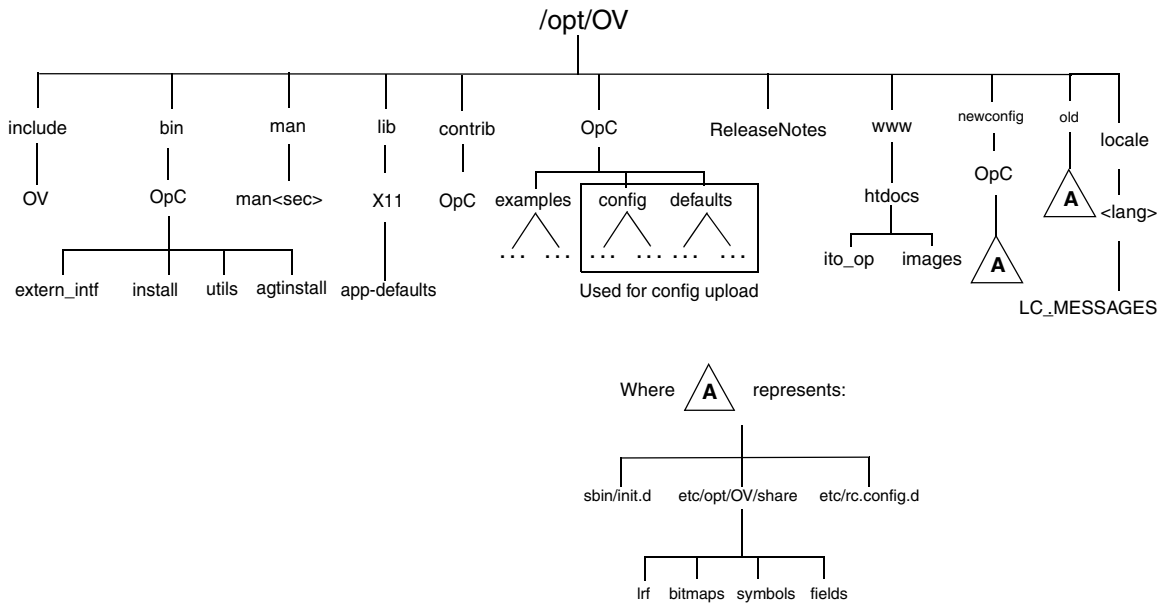


Figure 5-2 File Tree on the Management Server (/var/opt/OV Branch)

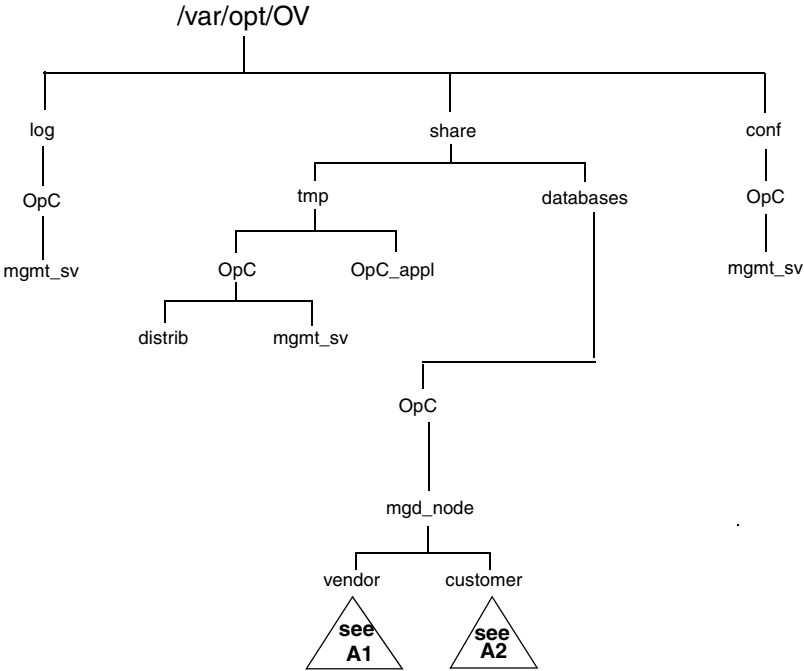
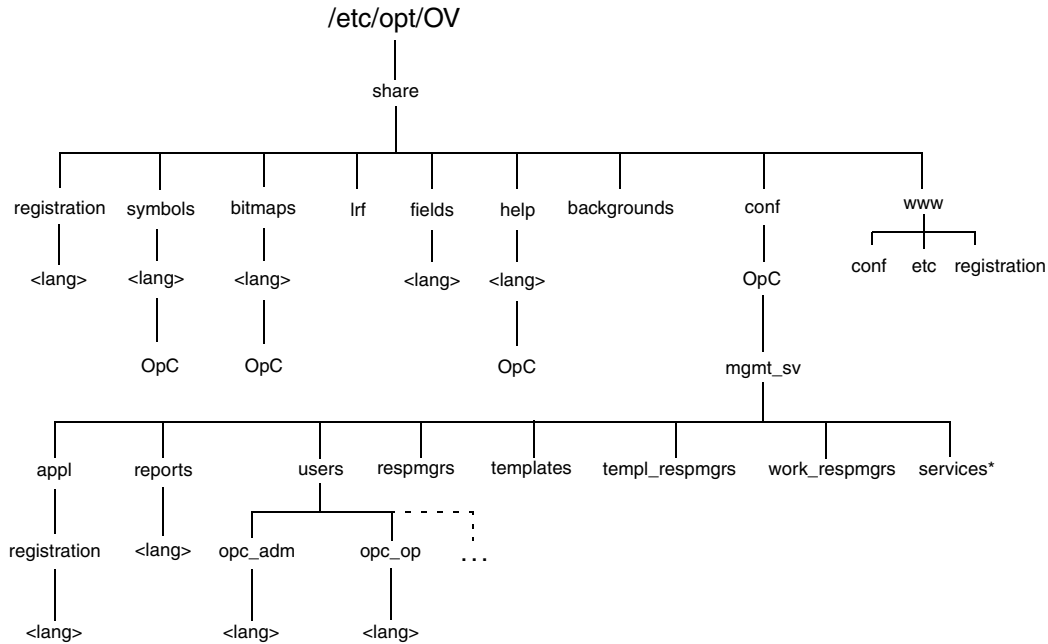


Figure 5-3 File Tree on the Management Server (/etc/opt/OV Branch)



* Only if the HP OpenView Service Navigator is installed

Figure 5-4 Vendor-specific OVO Software Sub-tree on the Management Server

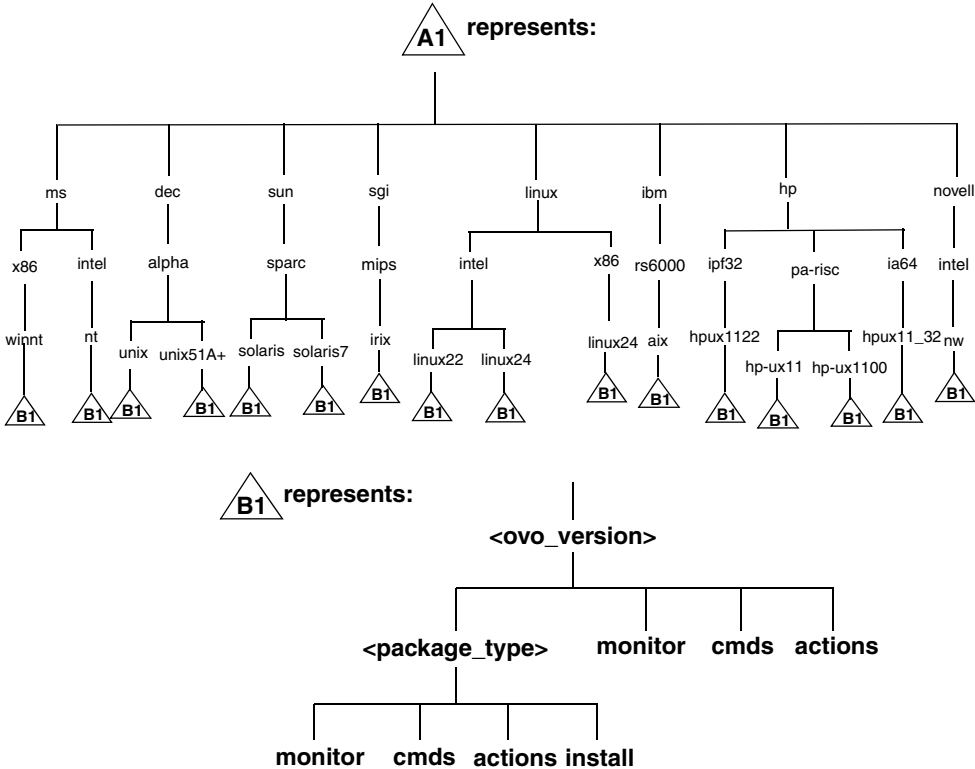


Figure 5-4 contains the following variables:

`<OVO_version>`

Version of OVO (for example, A.08.10) that supports a particular agent platform.

OVO can manage several different OVO versions for each agent platform. For more information about OVO version management, see the *OVO DCE Agent Concepts and Configuration Guide*.

<package_type>

Communication type used by the remote procedure calls (RPC) of a particular agent platform.

For example:

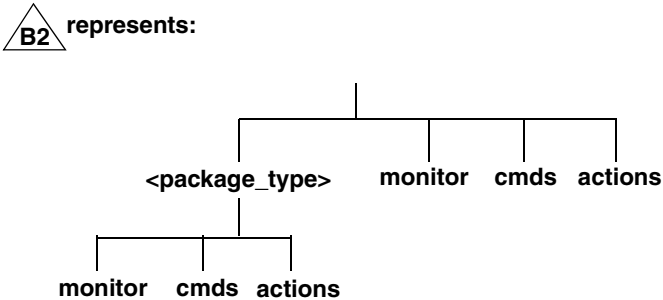
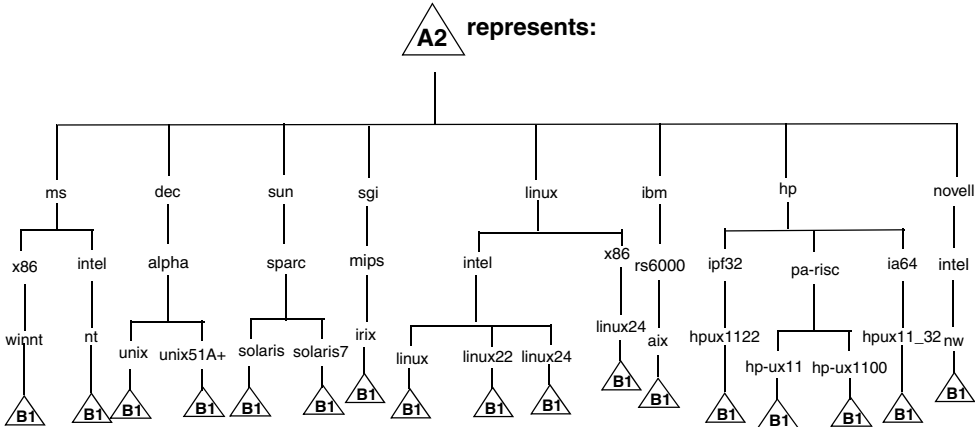
- RPC_BBC
- RPC_NCS
- RPC_DCE_TCP
- RPC_DCE_UDP

NOTE

When DCE-based managed nodes communicate with the management server over a fast network (LAN), choose DCE RPC (UDP) in preference to DCE RPC (TCP) as the communication protocol for the best performance.

The customer sub-tree is similar to the vendor sub-tree, without the OVO version. You can integrate your additional scripts, including individual scripts and binaries in the `monitor`, `cmds` and `actions` subdirectories. These files are automatically distributed to the managed node by OVO.

Figure 5-5 Customer-specific OVO Software Sub-tree on the Management Server



Directory Structure on the Management Server
OVO File Tree on the Management Server

In This Chapter

This chapter describes how to do the following:

- ❑ Deinstall OVO from the management server.
- ❑ Reinstall OVO on the management server.

Deinstalling the Entire OVO Installation

To deinstall the entire OVO installation, login as user `root` on the management server and follow these steps:

1. Stop all managed-node services by doing one of the following:

- Enter:

```
/opt/OV/bin/OpC/opcragt -stop -all
```

- Use the GUI windows.

2. Deinstall the OVO software from all the managed nodes, including the management server.

Use the `Deinstall OVO Software and Configuration` window in the administrator's GUI:

Select Actions: Agents->Deinstall...

CAUTION

Deinstall *all* the OVO agents belonging to the management-server environment *before* you deinstall the OVO management server. If you do not do so, the removal process will fail.

If the management server is, in turn, managed by another management server, you *must* also deinstall the managed-node software from the management server. After completely deinstalling the entire OVO installation, you can reinstall the managed-node software from the server using the `Force Update` option.

3. Verify that all OVO GUI processes are terminated by entering:

```
ps -eaf | grep opcui or /opt/OV/contrib/OpC/listguis
```

If they are not yet terminated, terminate them by selecting [Map: Exit] or by pressing **Ctrl + E** in any HP OpenView submap. Alternatively, use the `kill` command.

NOTE

The `opcuiwww` process is *not* an OVO GUI process. It is an OVO management-server process. The process is stopped in step 4.

4. Deinstall OVO by using the `ovoremove` script.

NOTE

When deinstalling from cluster environments, manually remove the agent from non-active cluster nodes before starting the `ovoremove` utility.

To start OVO deinstallation, as user `root`, do the following:

- a. Start the deinstallation script by entering:

```
/opt/OV/bin/OpC/ovoremove
```

5. Check the following logfiles for problems occurring during deinstallation:

- `/var/adm/sw/swagent.log`
- `/var/opt/OV/ovoinstall.log` (during deinstallation)

NOTE

After deinstallation, the `ovoinstall.log` file is located in the `/tmp` directory.

To deinstall the Oracle database, see the documentation supplied by the database vendor.

Deinstalling the OVO Java GUI

If you no longer require the OVO Java operator GUI, you can easily deinstall it using the following instructions:

To Deinstall the Java GUI from a PC Client

1. Close all running GUIs on the client.
2. Select Start: Settings -> Control Panel. The Windows Control Panel opens.
3. In the Windows Control Panel, doubleclick the Add/Remove Programs icon. The Add/Remove Programs Properties dialog opens.
4. In the Add/Remove Programs Properties dialog, select HP Operations for UNIX Java Console and click [Add/Remove...].

To Deinstall the Java GUI from a Solaris Client

1. Close all running GUIs on the client.
2. Deinstall the OVO Java GUI interactively, using the `swremove` utility. Enter the following:

```
/usr/sbin/swremove OVOEnglish.OVOPC-WWW
```
3. Check the following logfiles for problems occurring during the deinstallation:
 - `/var/adm/sw/swagent.log`
 - `/var/adm/sw/swremove.log`

To Deinstall the Java GUI from Other UNIX-based Systems

1. Close all running GUIs on the client.
2. Remove the directory `/opt/OV/www/htdocs/ito_op/` and its contents.

Reinstalling the OVO Software

To reinstall the OVO software, follow these steps:

1. Deinstall OVO.

See “Deinstalling the Entire OVO Installation” on page 161 for details.

2. Install OVO.

See Chapter 2, “Installing OVO on the Management Server,” on page 55 for details.

Reinitializing the OVO Database and Configuration

If required, you can reinitialize the OVO database and configuration on the management server as follows.

To reinitialize the OVO database and configuration, follow these steps:

1. If required, deinstall the OVO software from all the managed nodes.

See the *OVO Administrator’s Reference* for details.

CAUTION

When you reinitialize the OVO database, all the node configuration will be lost. You *must* then reconfigure the nodes.

2. Remove all the HP OpenView maps of all the OVO users:

- a. Start an HP OpenView Windows session:

```
/opt/OV/bin/ovw
```

- b. Select [Map: Open...] from the menu.

- c. On the Available Maps window, select the administrator’s and operator’s entries and click the [Delete] button.

3. As user root, export the Oracle variables as follows:

```
export ORACLE_HOME=/opt/oracle/product/<version>
```

```
export ORACLE_BASE=/opt/oracle
```

4. Clean up the `/etc/opt/OV/share/conf/OpC/mgmt_sv/users` directory.

Delete all the subdirectories except the following:

- `itop`
- `opc_op`
- `opc_adm`
- `netop`

5. If the software has been deinstalled, reinstall it.

See “Reinstalling the OVO Software” on page 164 for details.

6. Stop all OVO management services by entering:

```
/opt/OV/bin/ovstop opc ovoacomm ovctrl
```

7. Clean up the database, including the configuration for operators and nodes, and all active and history messages, by entering:

```
su - root
```

```
/opt/OV/bin/OpC/opcdbinit -c [-v]
```

```
exit
```

The `opcdbinit` command uses the following modes:

- | | |
|-----------------|---|
| <code>-c</code> | Clean mode. Cleans tables and loads the default configuration |
| <code>-v</code> | Verbose mode. Used to show detailed processing progress. |

8. Restart all the OVO management services by entering:

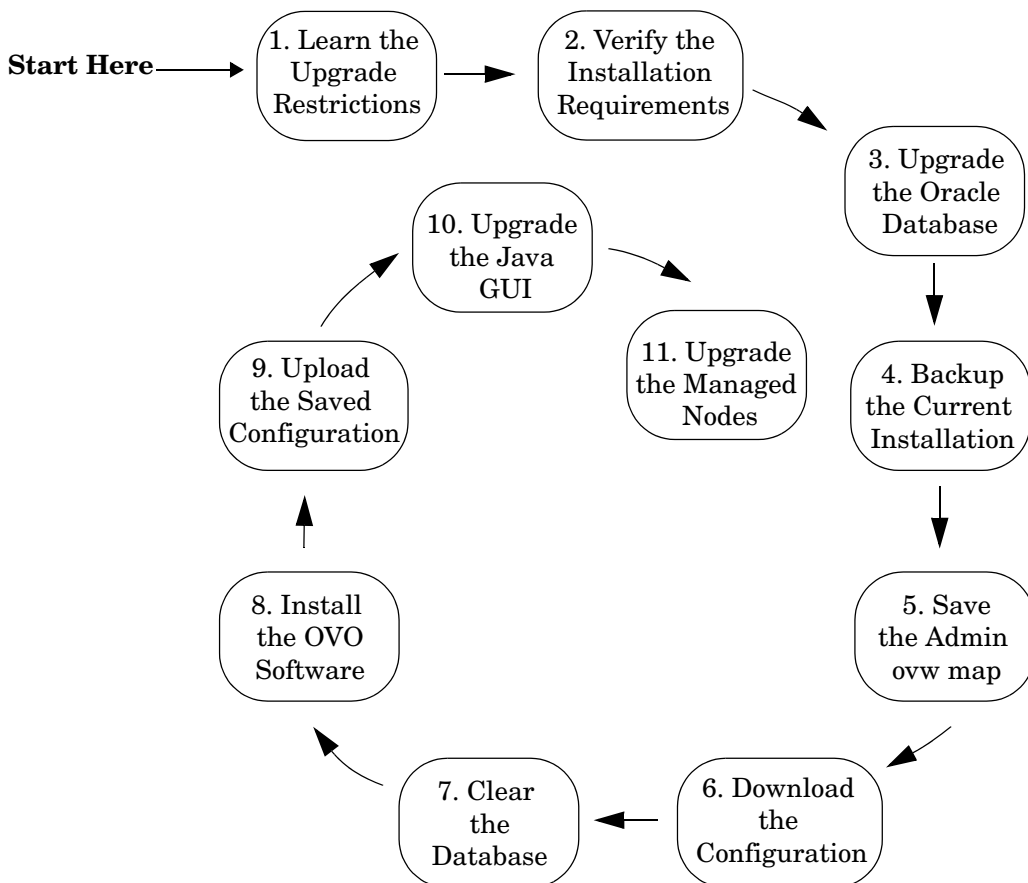
```
/opt/OV/bin/ovstart opc
```

7 Upgrading OVO to Version A.08.10

Upgrade Overview

To upgrade from A.07.1x to A.08.10 with database customizations, follow the high-level steps described in Figure 7-1 on page 168. Each step is explained in detail in a separate section in this chapter.

Figure 7-1 Upgrade Steps



OVO Upgrade Restrictions

If you upgrade OVO on the same management-server system, all NNM data is migrated, *except for* the following:

- ❑ **ovw maps of the OVO administrator (opc_admin)**
 - Customizations to the OVO maps are lost.
 - Settings made with the NNM `view` menu are lost.
 - Background graphics of maps and submaps are lost.
 - Symbol types and additional symbols are lost. The following maps are affected: `root` map including all submaps, `OVO Node Bank` including all submaps, and `OVO Node Hierachy Bank`.
 - Manually created map layouts are lost.

The `ovw` maps necessary for OVO are created when the GUI is started.

- ❑ **Data in the NNM data warehouse**

Data in the NNM data warehouse is lost if it is stored in the Oracle database. See the *NNM 7.0 Migration Guide* for more information about migrating NNM data.

This chapter describes the migration steps from OVO/Unix 7.x on HP-UX and Solaris to OVO/Unix 8.20 HP-UX on Itanium.

Verifying the Installation Requirements for the Management Server

Make sure that the management server meets at least the minimum system requirements as described in Chapter 1, “Installation Requirements for the Management Server,” and in installation requirements info files.

NOTE

The installation requirements info files are stored in the `Required_OS_Patch_Lists` directory on the OVO 8 (1) CD. For more information about the installation CDs’ layout, refer to Chapter 2, “Installing OVO on the Management Server.”

Pay particular attention to which versions of the operating system and Oracle database are required for the current *and* upgrade OVO software. As a general rule, you *must* perform upgrades in the following order:

1. Hardware
2. Operating system (including operating-system patches)
3. Database
4. OVO software

NNM places no restrictions on the number of nodes to be managed with the 60-day, Instant-On license and enables the NNM Advanced Edition. Ensure that you acquire the correct license for your requirements before the Instant-On licence expires. For more information, refer to Chapter 7, “Upgrading OVO to Version A.08.10.”

NOTE

OVO documentation is now automatically installed into the following web-server directory:

`http://<management_server>:3443/ITO_DOC/<lang>/manuals/`

The directory `/opt/OV/doc/<lang>/OpC/` will still contain the A.07.10 manuals after the upgrade. If you no longer require these manuals, uninstall the SD bundle `ITOEngDoc` before you install the OVO A.08.10 software.

If you have a product installed that is integrated into or certified with OVO 7.1x (for example Smart Plug-Ins, Service Navigator Value Pack, OV Performance Manager, OV Internet Services, OV Service Information Portal, etc.), make sure this product is also compatible with OVO 8.20 before starting the OVO migration process. See the documentation of the integrated product for information about how to perform the OVO migration in this situation.

Installing the Oracle Database

To install an Oracle database, perform the following steps:

1. Prepare the system for the Oracle database installation.

For detailed prerequisites and the installation steps for the Oracle 10.1.0.3 database, refer to the “Installing and Verifying an Oracle Database” section of the OVO/UNIX 8.20 Installation Guide for the Management Server.

2. Install and set up the Oracle10g Database Release 1 for HP/IA64 with Patch Set for Oracle Database Server version 10.1.0.3.

For more detailed information, or for non-standard installations, see the following documentation supplied with the Oracle product:
Oracle10g Database Quick Installation Procedure Release 10.1.0 for HP.

Oracle10g Database Installation Checklist Release 10.1.0 for HP.

Before Migration

If the new server has a hostname and IP address different from the old server, it is recommended that you take advantage of the flexible management concept available with OVO and configure the new management server as a backup server.

The first part of backup server configuration has to be done before new server installation, the other part is covered in “Changing the Management Server responsibility” chapter.

To configure a backup server follow these steps:

1. Create the necessary configuration file.
Use the template for backup servers as a basis for your configuration file. It is important that you name your configuration file `allnodes` and that the old and the new management server are listed in the file. The new management server must be set up as a secondary and as an action-allowed management server.
2. Run the template validation tool `opcmomchk` on your configuration file. See the man page `opcmomchk(1M)` for more information.
3. Distribute the configuration file to the managed nodes.
Use the standard OVO template distribution mechanism to distribute the templates.

Upgrading the Oracle Database Version

The following table shows the operating system and Oracle database versions supported by OVO A.07.1x.

Table 7-1 Supported Oracle Versions

OVO Version	HP-UX Version	Oracle Version
A.07.1x	HP-UX 11.0 and 11.11	8.1.7 9.0.1 9.2.0.2
A.08.10	HP-UX 11.0 and 11.11	9.2.0.2

Table 7-2 Supported Oracle Versions

OVO Version	Solaris Version	Oracle Version
A.07.1x	Solaris 7, 8 and 9 ^a	8.1.7 9.0.1 9.2.0.2 ^a
A.08.10	Solaris 8 and 9	9.2.0.2

a. Supported after OVO A.07.10 release.

If you are currently running OVO A.07.1x with an Oracle version lower than 9.2.0.2, you *must* upgrade to Oracle 9.2.0.2 **before** upgrading the OVO software. For details on how to upgrade to Oracle 9.2.0.2 on OVO A.7.1x, refer to the Oracle product documentation.

Because Oracle 9.2.0.2 is supported by both OVO A.07.xx and OVO A.08.10, you can use the current OVO installation to verify that the database upgrade was successful. This verification makes the subsequent OVO upgrade easier.

Using an Existing Oracle Database

If you want to use an existing Oracle database, do the following:

1. Make sure that the database is compatible with Oracle version 9.2.0 by editing the configuration file of the target instance (`$ORACLE_HOME/dbs/init<instance>.ora`).

Add the following line to the end of the configuration file:

```
compatible = 9.2.0.0.0
```

2. Make sure the Oracle-environment variables are set as described in Chapter 2, “Installing OVO on the Management Server.”
3. Stop the Oracle database processes:

```
/sbin/init.d/ovoracle stop
```

4. Start the Oracle database processes:

```
/sbin/init.d/ovoracle start
```

CAUTION

If you fail to stop and start the Oracle database processes, the configuration of your Oracle database will *not* succeed.

Changed Setting of ORACLE_HOME

If you changed the setting of the `ORACLE_HOME` variable when upgrading the database, you will have to manually change the setting of `ORACLE_HOME` in the files that are created, modified, or used by OVO.

❑ Configuration Files

These files include:

- `/etc/oratab`
- `/etc/profile`
- `/etc/csh.login`
- `/etc/opt/OV/share/conf/ovdbconf`

(Also change the entry for the database release in this file.)

- `/etc/opt/OV/share/conf/analysis/ovdwenvs.conf`

(This file is used by NNM for their Data Warehouse implementation.)

❑ Resource Files

Also check the `.profile` and `.cshrc` files of the users who require access to the database (for example, `oracle`, `root`, and `opc_op`).

❑ Linked Libraries

Change the symbolic links `libopcora.sl`, `libclntsh.sl`, and `libclntsh.sl.1.1.0`. They point to the Oracle shared libraries. Change them to point to the Oracle shared libraries in the new `ORACLE_HOME`:

```
rm -f /opt/OV/lib/libopcora.sl

ln -s $ORACLE_HOME/lib32/libclntsh.sl \
/opt/OV/lib/libopcora.sl

rm -f /opt/OV/lib/libclntsh.sl

ln -s $ORACLE_HOME/lib32/libclntsh.sl \
/opt/OV/lib/libclntsh.sl

rm -f /opt/OV/lib/libclntsh.sl.1.1.0

ln -s $ORACLE_HOME/lib32/libclntsh.sl.9.0 \
/opt/OV/lib/libclntsh.sl.1.1.0
```

```

rm -f /opt/OV/lib/libclntsh.sl.8.0
ln -s $ORACLE_HOME/lib32/libclntsh.sl.9.0 \
/opt/OV/lib/libclntsh.sl.8.0
rm -f /opt/OV/lib/libclntsh.sl.9.0
ln -s $ORACLE_HOME/lib32/libclntsh.sl.9.0 \
/opt/OV/lib/libclntsh.sl.9.0
rm -f /opt/OV/lib/libwtc9.sl
ln -s $ORACLE_HOME/lib32/libwtc9.sl\
/opt/OV/lib/libwtc9.sl

```

❑ **Linked Libraries**

Change the symbolic link `libclntsh.so.1.0`. It points to the Oracle shared library. Change it to point to the Oracle shared library in the new `ORACLE_HOME`:

```

rm -f /opt/OV/lib/libclntsh.so
rm -f /opt/OV/lib/libclntsh.so.1.0
ln -s $ORACLE_HOME/lib/libclntsh.so \
/opt/OV/lib/libclntsh.so.1.0
ln -s $ORACLE_HOME/lib/libclntsh.so \
/opt/OV/lib/libclntsh.so
ln -s <ORACLE_HOME>/lib32/libclntsh.so\
/opt/OV/lib/libclntsh.so.8.0
ln -s <ORACLE_HOME>/lib32/libclntsh.so\
/opt/OV/lib/libclntsh.so.9.0
ln -s <ORACLE_HOME>/lib32/libclntsh.so\
/opt/OV/lib/libopcora.so
ln -s <ORACLE_HOME>/lib32/libwtc9.so\
/opt/OV/lib/libwtc9.so

```

For more detailed information on maintaining the OVO database, see the section on database maintenance in the *OVO Administrator's Reference*.

Backing Up the Current OVO A.07.1x Installation

To back up the current OVO installation, follow these steps:

1. Exit all OVO GUIs.
2. Stop other applications on the system, as needed.
3. Make a full backup of the current installation:

a. Enter:

```
/opt/OV/bin/OpC/opc_backup
```

b. When prompted:

```
Do you want to use the full or configuration backup?  
(f|c) ==>
```

Enter **f** for a *full* backup, which includes the OVO binaries and the configuration data.

c. When prompted:

```
Do you want to back up another directory, too ?  
(y|n) ==>
```

Enter **y** (yes) or **n** (no) as required.

d. When prompted:

```
Please enter the backup destination:
```

```
Enter a filename for the backup data, for example  
/tmp/opc_backup_full_ovo71 or enter a tape device.
```

e. Store the backup data on backup media or a separate system.

See the man page *opc_backup(1M)* for more information about this command.

Saving the Administrator's ovw Map

1. Verify that all running GUIs are terminated by entering:

```
ps -eaf | grep opcu
```

2. If you have made any customizations to the ovw map of the user `opc_adm`, save the map for future reference because it will no longer be available after the upgrade:

```
/opt/OV/bin/ovw -copyMap opc_adm opc_adm_orig
```

TIP

To view this map after the upgrade has completed, start `ovw` as follows:

```
/opt/OV/bin/ovw -map opc_adm_orig
```

See the man page `ovw(1)` for more information.

3. Remove the ovw map of user `opc_adm`:

```
/opt/OV/bin/ovw -deleteMap opc_adm
```

Downloading the Current OVO A.07.1x Configuration

To download the current OVO configuration, follow these steps:

1. Rename the default templates or applications that you have changed.

Some default templates and applications have changed with OVO A.08.xx. If you have modified these templates or applications, you should rename them before downloading the data. By renaming them you ensure that the old, default configuration *does not* overwrite the new, modified configuration. See the section “Uploading the OVO A.08.00 Default Configuration” for a list of the elements of the default configuration that have changed with A.08.10, as well as the corresponding OS-SPI documentation, as the majority of the default instrumentation is now included as part of the OS-SPI.

If you rename any templates, make sure to redistribute them to the managed nodes after the upgrade has completed.

2. Create a new user, or modify an existing user, in the OVO User Bank. This user *must* have full responsibility for *all* message groups and node groups. You will need this user later on to acknowledge all active messages.
3. Verify that all running Java-based GUIs are terminated by entering:

```
ps -eaf | grep opcu
```

4. Stop the HP OpenView platform processes by entering:

```
/opt/OV/bin/ovstop
```

5. Stop the local agent on the management server:

```
/opt/OV/bin/OpC/opcagt -kill
```

6. Download all the configuration data:

- a. Create an empty download specification file:

```
echo "*" ;" > /tmp/download.dsf
```

- b. Download the configuration:

```
/opt/OV/bin/OpC/opccfgdwn /tmp/download.dsf \  
/tmp/cfgdwn
```

7. If you want to migrate your active messages, do this:

- a. Perform a history download by entering

```
/opt/OV/bin/OpC/opchistdwn -older 0s -file /tmp/history
```

- b. Acknowledge all active messages by running `opcack` for the user you have previously set up:

```
/opt/OV/bin/OpC/opcack -u <user_for_all_msg_grps> -a -f
```

- c. Perform a second history download by entering:

```
/opt/OV/bin/OpC/opchistdwn -older 0s -file /tmp/active
```

8. If you want to migrate audit data, do this:

- a. Download all audit data by entering:

```
/opt/OV/bin/OpC/opcauddwn -older 0s -file /tmp/audit
```

9. With OVO A.08.xx there is no `opcsvinfo` file anymore, instead all the management-server configuration data is maintained in the foundation `config` component. If you have made any custom adaptations to the `opcsvinfo` file, create a backup copy and store it in a safe place. The contents of this file will be imported to OVO A.08.10 in the section “Importing Saved A.07.1x Management-Server Configuration Data”.

10. If Service Navigator is installed:

If you have Service Navigator installed, see the *HP OpenView Service Navigator Concepts and Configuration Guide* for information about migrating your service data.

11. If ANS from OV Advanced Security is installed:

If you have installed OV Advanced Security, you must deactivate and uninstall OVAS. OVAS is *not* supported with OVO A.08.xx. For more information, see the *HP OpenView Operations Advanced Security Installation and Concepts Guide*.

Clearing the Database

1. If you have added any foreign keys, triggers, and so on to the OVO database, remove them now.
2. As user `root`, do one of the following:

- Remove the OVO database:

```
/opt/OV/bin/OpC/opcdbsetup -d
```

See the man page *opcdbsetup(1M)* for more information about this command.

- To remove all tables from the database, execute:

```
opcdbinst -r
```

This will keep all tablespaces intact, so any custom configuration is not lost.

- Migrate from dictionary base to locally managed tablespaces. Login as a database administrator and enter the following:

```
execute SYS.dbms_space_admin.tablespace_migrate_TO_local('TOOLS');  
execute SYS.dbms_space_admin.tablespace_migrate_TO_local('OPC_1');  
execute SYS.dbms_space_admin.tablespace_migrate_TO_local('OPC_2');  
execute SYS.dbms_space_admin.tablespace_migrate_TO_local('OPC_3');  
execute SYS.dbms_space_admin.tablespace_migrate_TO_local('OPC_4');  
execute SYS.dbms_space_admin.tablespace_migrate_TO_local('OPC_5');  
execute SYS.dbms_space_admin.tablespace_migrate_TO_local('OPC_6');  
execute SYS.dbms_space_admin.tablespace_migrate_TO_local('OPC_7');  
execute SYS.dbms_space_admin.tablespace_migrate_TO_local('OPC_8');  
execute SYS.dbms_space_admin.tablespace_migrate_TO_local('OPC_9');  
execute SYS.dbms_space_admin.tablespace_migrate_TO_local('OPC_10');  
execute SYS.dbms_space_admin.tablespace_migrate_TO_local('OPC_INDEX1');  
execute SYS.dbms_space_admin.tablespace_migrate_TO_local('OPC_INDEX2');  
execute SYS.dbms_space_admin.tablespace_migrate_TO_local('OPC_INDEX3');
```

NOTE

OVO's Oracle tablespaces are *not all* locally managed, due to the following limitations:

- It is *not* possible to have SYSTEM as a locally managed tablespace.
 - It is *not* possible to create a first ROLLBACK segment in a locally managed tablespace, unless a non-system ROLLBACK segment already exists in the dictionary-managed tablespace.
-

Deinstalling OVO A.07.1x

The standard upgrade case can be executed with a script that is provided with OVO version A.08.10. The script is named `ovoremove710.sh` and is located on the OVO A.08.10 installation CD1 (OV OCD1).

NOTE

Note that the script `ovoremove710.sh` is *not* localized.

To deinstall the old version of the OVO management-server software, follow these steps:

1. If you are using other products with dependencies to OVO A.07.1x bundles, products or filesets, it is recommended that you deinstall them prior to the upgrade to OVO A.08.10. To determine these dependencies use the `ovoremove710.sh` script with the `-check_dep` option.
2. With OVO A.08.00 there is no `opcsvinfo` file anymore, instead all the management-server configuration data is maintained in the foundation config component. If you have made any custom adaptations to the `opcsvinfo` file, create a backup copy and store it in a safe place. The contents of this file will be imported to OVO A.08.10 in the section “Importing Saved A.07.1x Management-Server Configuration Data” on page 195.
3. Execute the script `ovoremove710.sh`, as follows:

```
ovoremove710.sh -upgrade
```
4. This script performs all the upgrade steps, saves the necessary data and removes the OVO A.07.1x product.
 - a. The script asks a number of questions. They can be answered using `y` for yes, `n` for no, or `a` for abort.
 - b. The script determines the list of currently installed bundles and products related to OVO A.07.1x and compares it with an internal list on bundles and products that must be preserved. This provides a list of files that need to be removed.

NOTE

After deinstalling the old version of the OVO management-server software from a managed node using the `ovoremove710.sh` script, the `swlist` command output can contain the old bundle labels, such as `ITOEngOraAll`. To remove the old label, enter the following:

```
swmodify -u <label_name>
```

-
- c. The `ovoremove710.sh` script writes all the elements from the drop list into a list file `/tmp/ovo710todrop.list`.
 - d. The script copies `/optOV/bin/OpC/install/opcsvinfo` to `/tmp/save710/opcsvinfo`.
 - e. The script starts `swremove` as follows:

```
swremove -f /tmp/ovo710todrop.list -x  
mount_all_filesystems=false -x  
enforce_dependencies=false
```

NOTE

If you have more recent OVO A.07.1x DCE agent patches installed than those delivered with OVO A.08.10, you *must* reinstall the agent patches with the SD option `-x reinstall=true` if you want to use the newer versions.

NOTE

When running `ovoremove710.sh` with the `-check_dep` option, some internal dependency checks result in the display of warning messages, which are also written to the `swagent.log` file.

Example of message:

```
The fileset "OVOPC-CLT.OVOPC-UX10-CLT,l=/,r=A.07.10"
requires the selected fileset
"OVOPC-ORA.OVOPC-GUI-ORA,l=/,r=A.07.10" as a prerequisite.
```

The `ovoremove710.sh` script evaluates these logs and creates a list of the dependent products it has discovered. It is recommended that you deinstall (using `swremove`) these products prior to the execution of `ovoremove710.sh` with the `-upgrade` option. You may now decide whether to follow these recommendations or not. If not, these products will remain with unresolved dependencies when cleaning up OVO A.07.10, as all dependencies will then be ignored.

Installing the OVO Software

Install the OVO version A.08.10 software, as described in Chapter 2, “Installing OVO on the Management Server.”

NOTE

Make sure your system meets the hardware and software requirements for the OVO A.08.10 software installation.

For information about the installation requirements, refer to Chapter 1, “Installation Requirements for the Management Server,” and to installation requirements info files.

The installation requirements info files are stored in the `Required_OS_Patch_Lists` directory on the OVO 8 (1) CD. For more information about the installation CDs’ layout, refer to Chapter 2, “Installing OVO on the Management Server.”

During the OVO installation, answer with default answers when asked the following questions:

```
Do you want to set up the database manually (local/remote)
(y|n) :
```

```
[n] n
```

```
If there is a current database - clear and re-initialize the
tables (y|n) :
```

```
[y] y
```

During the OVO A.08.10 configuration, the following messages can be safely ignored:

```
WARNING: Some Oracle errors occurred in the script crdbopc.sql.
These errors occurred because of a second call to opcdbsetup.
Please check the spool file
/opt/oracle/admin/openview/create/crdbopc.lst for errors.
```

```
ORA-00942
ORA-00955
ORA-01430
ORA-01434
ORA-01543
ORA-01919
ORA-01920
```

Uploading the Saved OVO A.07.1x Configuration

To upload the previously saved configuration with `opccfgupld`, follow these steps:

1. Transfer saved configuration files to the machine where management server has been installed.
2. In cluster environment, disable the HA Resource group monitoring using the command:
`/opt/OV/sbin/ovharg -monitor ov-server disable`

3. Stop the HP OpenView platform processes.

To stop the HP OpenView platform processes, enter:

```
/opt/OV/bin/ovstop
```

4. Upload the configuration data.

To upload the configuration data, enter:

```
opccfgupld -add -subentity -configured \  
<download_directory>
```

For example:

```
opccfgupld -add -subentity -configured /tmp/cfgdwn
```

5. After uploading data with `-add -subentity`, you can upload the data with `-replace -subentity` if you exclude the managed nodes:

- a. Copy the index file of the download
(download-directory /\$LANG/*.idx). For example:

```
cp /tmp/cfgdwn/C/cfgdwn.idx /tmp/cfgdwn/C/nonodes.idx
```

- b. Modify the copied index file. Remove the node bank section from the index file. This is everything from the line:

```
ENTITY NODE_BANK
```

To the semi colon (';') before the node defaults:

```
;  
ENTITY NODE_DEFAULTS *
```

Also, remove the following line if it exists:

```
CONTENTS *;
```

- c. Now upload your configuration data using the command:

```
opccfgupld -replace -subentity -configured -index \  
<download_directory>/<index_file>
```

Where *<index_file>* is the copied index file of the download.

For example:

```
opccfgupld -replace -subentity -configured -index \  
/tmp/cfgdwn/C/nonodes.idx
```

NOTE

With OVO version A.08.00, the default templates have been replaced by the OS-SPI. Because the saved A.07.1x configuration contains node / template assignments referring to the obsolete default templates, they will also be uploaded. It is recommended that you deassign the old default templates from the managed nodes and replace them with the templates provided by the OS-SPI after the upload.

-
6. Start the HP OpenView platform processes.

To start the HP OpenView platform processes, enter:

```
/opt/OV/bin/ovstart
```

7. Upload your active messages.

If you have downloaded your active messages, upload them now:

- a. Upload the “active” messages from your download:

```
/opt/OV/bin/OpC/opchistupl /tmp/active
```

- b. Reset the IP submaps as described in the “After an OVO Upgrade” on page 194.

- c. Unacknowledge the “active” messages in the History Message Browser and disown them in the Message Browser using the OVO administrator GUI.

- d. Upload the history messages:

```
/opt/OV/bin/OpC/opchistupl /tmp/history
```

8. If you have downloaded audit data, upload it now by entering:

```
/opt/OV/bin/OpC/opcaudupl /tmp/audit
```

9. If Service Navigator is installed:

If you have Service Navigator installed, see the *HP OpenView Service Navigator Concepts and Configuration Guide* for information about migrating your saved service configuration and data.

10. In cluster environment, Enable the HA Resource group monitoring using the command:

```
/opt/OV/lbin/ovharg -monitor ov-server enable
```

NOTE

Before enabling the HA Resource group monitoring, make sure that the OVO management server is running.

11. If you are upgrading from OVO A.07.xx, and are running OVO A.08.10 in an HP-UX 11.x only environment, change the virtual terminal font for each managed node manually after the upgrade.

With the release of version 11.0, HP-UX has obsoleted associative fonts previously used by OVO to map fonts with fontsets. Consequently, dtterm or hpterm (used as virtual terminal emulator for the OVO software installation, the configuration download, and the virtual terminal application) are no longer able to map the new fontset name with the previous font name. This causes problems whenever dtterm or hpterm are displayed on a Japanese HP-UX 11.x system because the required fonts are not available.

To change the virtual terminal font for each managed node, do this:

- a. Select the managed node in the OVO Node Bank and open the Modify Node window.
- b. Open the Node Advanced Options window, and click on [Select From Fontlist...].
- c. Select the appropriate fontset in the Select Font window.

During the OVO software installation, the required fontset name is installed in the following file on the management server:

```
/etc/opt/OV/share/conf/OpC/mgmt_sv/fonts/fonts
```

You can also add your own fontset names to this file. You must add a colon (:) at the end of each fontset name so the terminal emulator can identify it as a fontset.

- d. Close all windows to confirm the modification.

If you have to modify a large number of managed nodes, you may want to use the APIs of the OVO Developer's Toolkit to write a C program that allows you to change the virtual terminal font *en masse*.

If your Japanese environment includes an HP-UX 10.x system, you can also display OVO A.08.10 on the 10.x system or use it as font server during the transition phase.

Note that xterm always uses fonts instead of fontsets.

After Migration

If you change the hostname and IP address of the management server, the managed nodes migrated from the old management server must be notified and updated so that they start communicating with the new management server instead of with the old one. You can achieve this by either manually updating `OPC_MGMT_SERVER` entry in the `opcinfo` file on each managed node, or by using a backup server concept. The first part of backup server configuration was covered in “Before Downloading the Current OVO Server Configuration”.

To switch responsibility for the managed nodes to the backup server, enter the following command on the backup server system:

```
/opt/OV/bin/OpC/opcragt -primmgr -all
```

After an OVO Upgrade

After the upgrade but before starting OVO, the IP submaps need to be reset.

To reset the submaps:

1. Start `ovw -map opc_adm`.
2. Select the VPO Node Bank.
3. Select `Edit: Delete...` from the menu bar, then click `From All Submaps`.

Now when you start OVO, the correct OVO Node Bank icon is displayed.

NOTE

After the successful upgrade and restart of OVO, OVO A.07.1x managed nodes that were in the original VPO Node Bank are now in the Holding Area. Move these nodes from the Holding Area to the OVO Node Bank.

Importing Saved A.07.1x Management-Server Configuration Data

If you have made any custom adaptations to the `opcsvinfo` file and have created a backup copy as described in the section “Downloading the Current OVO A.07.1x Configuration” Step 10, “Deinstalling OVO A.07.1x” on page 185, Step 2, import the data from `opcsvinfo` to OVO A.08.10 as follows:

1. Restore the `opcsvinfo` from backup to `/tmp` directory on the management server.
2. Import the data using the `opcinfoconv` tool as follows:

```
/opt/OV/contrib/OpC/opcinfoconv /tmp/opcsvinfo opc
```
3. Remove the `opcsvinfo` file from the `/tmp` directory.

Upgrading the OVO Java Operator UI

To upgrade the OVO Java GUI, follow these steps:

1. Deinstall any previous version of the OVO Java GUI from the client system.
2. Install version A.08.10 of the OVO Java GUI on the client system.

NOTE

See Chapter 3, “Installing the Java Operator GUI,” for information about installing and deinstalling the Java GUI.

Upgrading Managed Nodes

Version A.08.10 of the OVO management server can manage nodes for version A.07.1x and A.08.1x. However, you should upgrade your managed nodes to OVO version A.08.10 to take advantage of the latest improvements and supported operating-system versions. For details of the improved capabilities of the new HTTPS agent, refer to the *HTTPS Agent Concepts and Configuration Guide*. This manual describes in detail the new OVO agent architecture, commands and compatibility aspects.

Compatibility with A.07.1x Managed Nodes

The major version of your OVO agent software *must not be higher* than the version of your OVO management-server software. For example, an OVO version A.08.10 HTTPS agent *cannot* communicate with an OVO version A.07.1x management server.

If you are operating in a flexible management environment with A.07.1x and A.08.10 management servers, make sure that all OVO agents remain on version A.07.1x until all the management servers have been upgraded to OVO version A.08.10.

Obsoleted A.07.xx Agent Platforms

With OVO A.08.10, the following OVO A.07.xx DCE Agent Platforms have been obsoleted:

- ❑ AIX 4.3.x
- ❑ HP-UX 10.20
- ❑ Linux Kernel 2.2 all derivatives
- ❑ Novell NetWare 4.x
- ❑ Sun Solaris 2.6
- ❑ Tru64 UNIX 4.0x
- ❑ MPE/iX 6.x, 7.x
- ❑ IBM/sequent ptx

Version A.08.10 of the OVO management server can support managed nodes for versions A.07.1x and A.08.10. However, you should upgrade your managed nodes to OVO version A.08.10 to take advantage of the latest improvements and supported operating-system versions. For details of the platforms supported by the new HTTPS agent, refer to the *HTTPS Agent Concepts and Configuration Guide*.

Upgrading Managed Nodes to A.08.10 from OVO GUI

Every effort has been made to prevent data loss during the upgrade of the agent software. For most managed-node platforms the message queues are converted to the format required by OVO version A.08.10 and then forwarded to the message browser after the upgrade has completed. Events that have not been processed by OVO *before* the upgrade begins will be lost. Message queues on Novell NetWare managed nodes are *not* converted.

IMPORTANT

Make sure you have installed the OS patches required for OVO A.08.10 managed nodes before starting the upgrade process. Refer to *HTTPS Agent Concepts and Configuration Guide* and to the *OVO DCE Agent Concepts and Configuration Guide* for more information about the required OS patches for the managed nodes.

To upgrade a managed node to version A.08.10 from OVO GUI, follow these steps:

1. Stop the OVO agent processes on the managed nodes by entering:

```
opcagt -stop
```

2. Select the managed node in OVO Node Bank on the management server and open the Modify Node window Actions -> Node -> Modify...

Select HTTPS type and close the window.

3. From the menu bar of the OVO Node Bank, select Actions: Agents -> Install/Update SW & Config...

The Install / Update OVO Software and Configuration window opens.

From the Install / Update OVO Software and Configuration, do this:

- a. In the Components section, check the boxes corresponding to the parts of the OVO agent you want to upgrade:

- Agent Software: Upgrades the agent software to version A.08.10.
- Templates: Installs A.08.10 templates on the managed node.

If you select this option, but do *not* select the Agent Software box, you *must* make sure that the templates do not make use of any new features introduced with OVO A.08.10. This workaround is a temporary solution used during the OVO migration process. Do *not* select the Actions, Monitors or Commands boxes if you do not select the Agent Software box.

Select the managed nodes you want to upgrade.

- b. Click [OK].

An additional terminal window opens, running the installation script `inst.sh(1M)`. Review the messages carefully as the installation script might require your interaction.

4. After the installation has completed successfully, verify that the OVO agent processes are running.

If they are *not* running, start them manually on the managed node by entering:

```
opcagt -status
```

```
opcagt -start
```

NOTE

If you had more recent OVO A.07.1x DCE agent patches installed than those delivered with OVO A.08.10, you *must* reinstall the agent patches with the SD option `-x reinstall=true` if you want to use the newer versions.

License Migration During an Upgrade to OVO A.08.10

When an OVO A.07.x installation is upgraded to OVO A.08.10, most of the OVO 7.x licenses can be reused as long as the IP address is not changed on that system. The OVO 7.x license password files are saved by the `ovremove710.sh` script and stored at the following locations:

If IP address is not changed, most of the OVO 7.x license can be reused. The OVO 7.1x license password files can be found at the following locations:

- `/tmp/save710/.itolicense`
- `/tmp/save710/.license`
- `/etc/opt/OV/share/conf/.itolicense`
- `/etc/opt/OV/share/conf/.license`

To install these licenses, add them with the OVO A.08.10 license tools:

1. Transfer the license files to the machine where management server has been installed.

2. Stop the OVO and NNM processes:

```
ovstop -v
```

3. Add the OVO 7.x license passwords:

```
/opt/OV/bin/opcllic -add /tmp/save710/.itolicense
```

4. Add the NNM license passwords:

```
/opt/OV/bin/ovnnmInstallLic /tmp/save710/.license
```

5. Check the installed passwords:

```
/opt/OV/bin/opcllic -report
```

NOTE

It is *not* possible to run NNM 7.015 with an OVO license password. With OVO A.08.10 it is necessary to have at least an NNM AE 1000 license, which is not available in the migrated NNM license file. This license *must* be requested from the password delivery center.

Cluster Environment

Since the uploaded configuration does not overwrite the current management server configuration, the part of server configuration for cluster environment will be preserved. No additional server configuration is required.

Upgrading OVO Version A.08.00 to OVO Version A.08.10

If you have OVO A.08.00 installed, you can directly upgrade to OVO A.08.10 and retain and reuse the database instance and all the stored data.

To upgrade a standalone OVO A.08.00 installation to OVO Version A.08.10:

1. Backup the current installation as described in “Backing Up the Current OVO A.07.1x Installation” on page 179.
2. Prepare the installations as described in “Preparing for the OVO Software Installation from a CD-ROM” on page 77 or “Preparing for the OVO Software Installation Using CD Images” on page 78
3. Start the install process as described in “Installing the OVO Software on the HP-UX Management Server” on page 80, using one of the following commands, as appropriate:
 - If you are installing OVO from a CD-ROM, enter the following:

```
/<mount_point>/ovoinstall -t
```

where *<mount_point>* is a location where the OVO installation CD is mounted.
 - If you are installing OVO using the CD images, enter the following:

```
/<master_directory>/OVOCd1/ovoinstall -t
```
4. Follow the on-screen instructions and enter the requested information.
5. Change the CD when requested.
6. After the installation process completes, restart OVO.

NOTE

If you had more recent OVO A.07.1x DCE agent patches installed than those delivered with OVO A.08.10, you *must* reinstall the agent patches with the SD option `-x reinstall=true` if you want to use the newer versions.

If you had installed OVO A.08.10 agent patches on your OVO A.08.00 system, when you upgrade to OVO A.08.10 the HTTPS agents will have the component versions of the OVO A.08.10 HTTPS agent. You *must* reinstall the agent patches with the SD option `-x reinstall=true` if you want to use the more recent agent-patch versions.

NOTE

If you had more recent OVO A.07.1x DCE agent patches installed than those delivered with OVO A.08.10, you must delete `/system/{PATCHID}` before reinstalling them again.

If you had installed OVO A.08.10 agent patches on your OVO A.08.00 system, when you upgrade to OVO A.08.10 the HTTPS agents will have the component versions of the OVO A.08.10 HTTPS agent. You must delete `/system/{PATCHID}` before reinstalling the agent patches if you want to use the more recent agent-patch versions.

8 Setting Up OVO Licensing

In This Chapter

This chapter describes how to install and configure OVkey licenses for HP OpenView Operations (OVO).

About OVkey Licenses

OVO uses the AutoPass licensing security technology for the management of OVkey licenses. All OVkey licenses' passwords are stored in a license file, maintained by AutoPass.

Because the OVkey licensing technology does *not* require a license server, the product may be used behind firewalls and in cluster environments.

When installing and setting up OVKey licenses in your OVO environment, keep the following points in mind:

- ❑ No license server is required.
- ❑ Password files work in a clustered environment.
- ❑ Licenses are linked to the IP address of the OVO management server and *not* its target ID.
- ❑ Multiple licenses may be linked to one password (for example, OVO managed nodes).
- ❑ Each OVO management server has one central location for license administration.

Types of Licenses

You can obtain the following types of licenses:

❑ **Instant-On License**

This license enables you to use OVO for evaluation purposes. You can use OVO for a period of 60 days. You can extend its validity once for a further 60 days by submitting a request to the HP Password Delivery Service.

❑ **Permanent License**

See “Requesting a Product License” on page 211 for more details about requesting licenses.

Checking Licenses

OVO checks management-server licenses at its startup and when scheduled, once in 24 hours. OVO managed-node licenses are checked once a week.

If your Instant-On license is still valid, you will be informed of the days remaining before the license expires.

If your Instant-On license has expired, or if there are not enough OVO managed-node licenses available, you receive a message in a message browser at each 24-hour check.

Setting Up and Activating OVkey Licenses

To set up and activate an OVO product license, follow these steps:

1. Obtain the required information from your host system.
See “Getting the Required License Information” on page 210.
2. Complete the HP OpenView License Request Form by doing one of the following:
 - Edit the request-form file for a licence, then email, fax or mail the file to HP.
 - Fill out an online form at the HP Internet License Request Center.
See “Requesting a Product License” on page 211 for details.
3. Receive a license from the HP Password Delivery Center.
See “Receiving Your License Password” on page 214 for details.
4. Install and verify the OVO Product License.
See “Installing Product Licenses” on page 215, and “Verifying Product Licenses” on page 217.

Getting the Required License Information

You can get the information specified in Table 8-1 from documents included with your product.

Table 8-1 Information Required to Get Licenses

Information Required	Where to Find It:
HP Order Number (Permanent passwords <i>only</i>)	License-to-Use Entitlement Certificate Local system administrator or HP Sales Representative.
IP address of the OVO ^a management server	On the OVO management server, enter: <code>/usr/bin/nslookup</code> <code><OVO_mgt_server_name></code>
Hostname ^b	On the OVO management server, enter: <code>hostname</code>
Operating System Version	On the OVO management server, enter: <code>uname -a</code>
Number of Licenses (Permanent passwords <i>only</i>)	HP Purchase Order

- a. If you are operating in a clustered environment, the IP address of the OVO cluster package is required.
- b. If you are operating in a clustered environment, the fully-qualified hostname of the OVO cluster package is required.

Requesting a Product License

You may request a license in one of two ways:

Internet

If you can access the Internet, you can use the HP Internet Password Delivery Service.

Mail, Phone or Fax

If you *cannot* access the Internet, you can complete and submit a license-request form.

NOTE

Since AutoPass stores the passwords at a location that is typically not shared in HA environments, and it also uses the local IP Address and not the virtual IP Address, make sure that you requested OVO license passwords for all cluster nodes in an HA environment with its physical IP Address and install these passwords on the according cluster nodes.

Requesting a Product License Via the Internet

If you can access the Internet, you can get license passwords by visiting the home page of the HP Password Delivery Service at the following location:

<http://www.webware.hp.com/>

You can use this site to do the following:

Generate Passwords

Generate new product passwords, assuming you have already purchased a product and have an HP order number.

Move Licenses

Move licenses from one machine to another.

Migrate Licenses

Migrate licenses from an older version of a product to a new version using a migration password. For more information, see the OVO cover letter, *HP OpenView Operations A.08.10: License Information*.

Requesting a Product License by Mail, Phone or Fax

If you *cannot* access the Internet, you can request a license by mail or fax.

To request a license by mail or fax, follow these steps:

1. Log on to the OVO management server.
2. Make a copy of the file in the following directory:

```
/etc/opt/OV/share/conf/OVLICENSE/forms/opc/
```

Edit the copied file:

- **New Purchases**

```
product.OVO_Solaris
```

- **Evaluations**

```
evaluation.OVO_Solaris
```

- **Server IP Address Changes**

```
server_move.OVO_Solaris
```

3. Complete all requested information.
4. Save the file.
5. Print the form.

Mail or fax it to the nearest HP Password Delivery Center using the information in Table 8-2.

Table 8-2 HP Password Delivery Centers

Your Location	Password Center Location	Email Address	Phone/Fax Number	Service Hours (Local Time)
North/South America	USA	americas_password@end.hp.com	+1 (801) 431-1597 +1 (801) 431-3654	08:00-20:00 (EST) ^a
Asia/Pacific	Japan	asia_password@end.hp.com	+81 (3) 3227-5264 +81 (3) 3227-5238	09:00-17:00 (JST) ^b
Europe & Africa	Netherlands	europe_password@end.hp.com	+31 (55) 543 4642 +31 (55) 543 4645	08:00-17:00 (CET) ^c

a. Eastern Standard Time (U.S.A.)

b. Japanese Standard Time

c. Central European Time

Receiving Your License Password

You should receive your license password:

Immediately (Internet)

If you ordered a password on the HP License Center Internet site, you will receive a license password immediately.

Within 48 hours (mail, fax)

If you ordered a password by mail, fax, or phone, you will receive a license password within 48 hours of receipt from one of the Password Delivery Centers listed in Table 8-2 on page 213.

You will receive your password in one of three ways:

Email

If you provided an email address on your request form, you will receive your password by email.

Fax

If you did *not* specify an email address, you will receive your password by fax.

Phone

If you did *not* specify either a fax number or an email address, you will receive your password by phone.

Installing Product Licenses

When you receive your license password(s), you can install the OVO A.08.10 product license.

IMPORTANT

To install OVO product licenses, you *must* login as user `root` or as OVO administrator.

To install the OVO A.08.10 product licenses, follow these steps:

1. Login as user `root`.
2. Enter the license password in the password file using the following command:

```
opcllic -add [<filename>]
```

Where *<filename>* is the name of the file where you store your password(s).

IMPORTANT

If you do not specify the *<filename>* with the `-add` option of the `opcllic` command, the Autopass GUI opens and enables you to select a file from which you choose the licence(s) you want to install.

Make sure you set the `$DISPLAY` variable before you use this feature.

The licenses included with the Password Certificate consist of only one line, even though they may be wrapped in multiple lines. An example of the OVO management-server password string is:

```
# HP OpenView Operations Management Server  
4MSF 97ZW 2SCR KSHT 3DP6 X9BC XF77 TKRV 7XPS U746 EPNB  
4ERP MR9F DH2A EGU7 96Q3 YQ6W LZG9 AZA9 EQ97 "Annotation  
of Password"
```

The first line in the example above is a comment. *Do not include any comment lines in the license file.* The second line (which wraps to two lines) is the password, followed by the annotation.

NOTE

The annotation is part of the license password. If you receive a password without an annotation, pass an empty annotation ("") with the `opcllic` command.

3. Verify that there are no license-related error messages in the OVO error log:

```
/var/opt/OV/log/System.txt
```

Verifying Product Licenses

After installing OVO A.08.10 product licenses, make sure that the licenses are correctly added to the license file. You can verify licenses in the following ways:

❑ List Passwords in the License File.

You can do this in one of the following ways:

- Enter the following:

```
opcllic -list
```

This command lists all the valid OVO license passwords. Obsolete passwords are ignored.

- Enter the following:

NOTE

Make sure you set the `$DISPLAY` variable before you use the following command.

```
opcllic - glist
```

This command lists *all* the installed license passwords in the AutoPass GUI.

By listing the passwords you check which licenses are in the license file.

❑ Generate an OVO License Report.

You can do this in one of the following ways:

- In the OVO GUI, select
Actions->Utilities->Reports...->License Overview

The AutoPass report passwords' window is displayed, showing an OVO license report.

- Enter the following:

```
opcllic -report
```

By generating an OVO license report, you check if enough licenses are installed to allow OVO to run correctly as well as how many valid licenses are in the license file. If there are insufficient licenses, warning messages are displayed.

❑ **Check whether OVO Runs in a Licensed State.**

Enter the following:

```
opcli -check [-quiet]
```

One of the following values is returned:

0 (Licensed)

4 (Server not licensed)

8 (Missing agent licenses)

9**Installing OVO in a Sun Cluster Environment**

In This Chapter

This chapter describes the following:

- ❑ Installation and configuration of the OVO management server in a Sun cluster environment.
- ❑ Deinstallation of the OVO management server from Sun cluster nodes.
- ❑ Upgrade of the OVO management server in a Sun cluster environment.

NOTE

Before proceeding with the installation and configuration of the OVO management server in a Sun Cluster environment, read the chapter titled “Administration of the OVO Management Server in a Cluster Environment” in the OVO Administrator’s Reference manual

About OVO in a Sun Cluster System

Glossary of Sun Cluster Terms

HA Resource Group

Application running in a cluster environment. An HA Resource Group can simultaneously be a cluster object that represents an application in a cluster.

Network Interface Group

A group of network interfaces.

Configuration Scenarios

When installing the OVO management server and the Oracle database server in a cluster environment, you can choose one of the following configuration scenarios:

❑ Basic management server configuration

This is the simplest cluster configuration. You can use all backup and maintenance commands without restrictions.

See Figure 9-1 on page 223 for graphical presentation of this scenario.

❑ Decoupled management server configuration

With this setup you can use both physical nodes with the OVO HA resource group running on one node and the Oracle database server resource group on the other node.

You *must* install patch ITOSOL_00386 to use this scenario.

The automated backup scripts used by `ovbackup.ovpl` have been adapted to work even if the OVO and Oracle HA resource groups are running on different nodes. But to restore a backup with `ovresore.ovpl` and to use the offline backup scripts, the OVO and Oracle HA resource groups must run on the same node.

See Figure 9-2 on page 224 for graphical presentation of this scenario.

❑ **Independent database server configuration**

Following this scenario, you can use a remote database. The remote database should also run on a cluster, otherwise the high availability of the OVO setup is compromised. You may find this scenario useful, if you already have a central database server cluster that you also want to use for the OVO database.

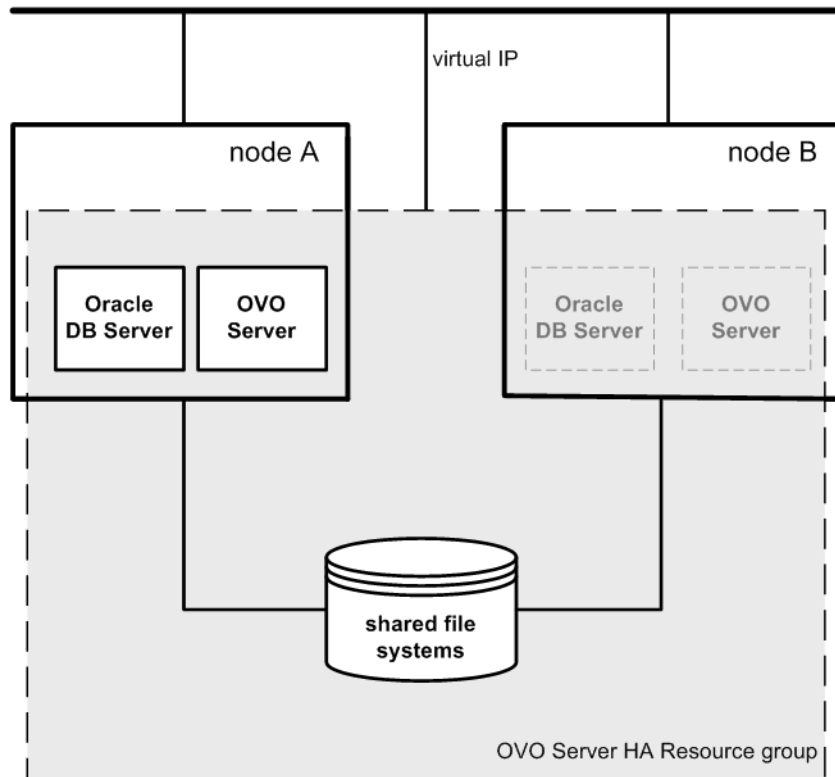
Following this scenario, you cannot use the OVO backup scripts.

See Figure 9-3 on page 225 for graphical presentations of this scenario.

❑ **Basic management server configuration**

The OVO management server and the Oracle database server are part of the same HA resource group.

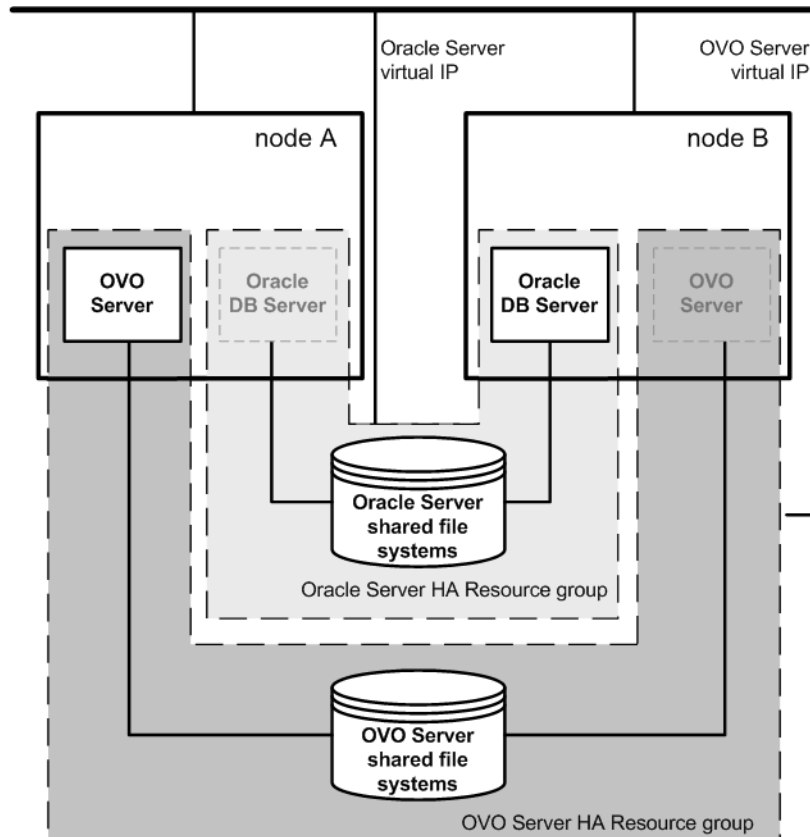
Figure 9-1 Basic management server configuration



❑ **Decoupled management server configuration**

The OVO management server and the Oracle database server are configured as separate HA resource groups by the OVO management server installation scripts. This configuration scenario is also known as 3Tier OVO management server configuration in a cluster environment.

Figure 9-2 Decoupled management server configuration



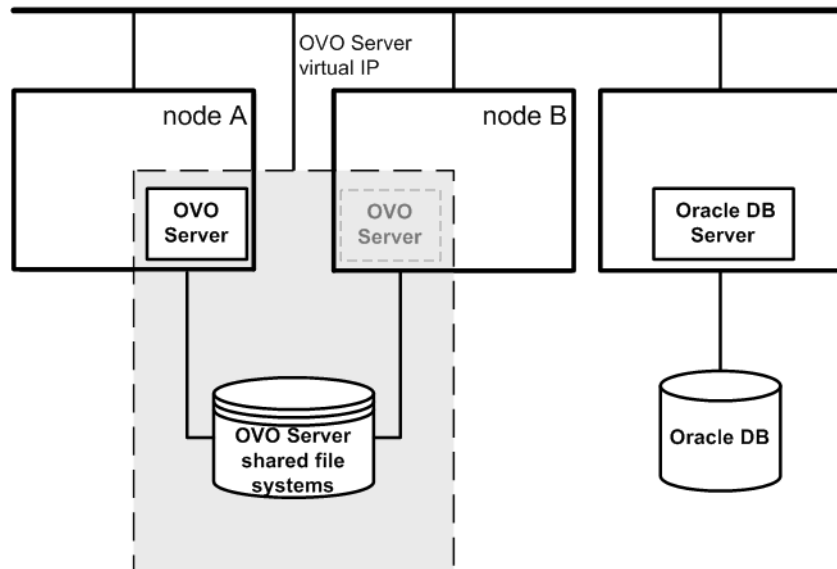
❑ **Independent database server configuration**

In exceptional cases, the Oracle database server can be configured as an independent database server:

- *Independent database server configuration*

Install the Oracle client software on the cluster nodes that are hosting the OVO management server. You can install the independent database as a standalone server or as an HA resource group on an independent cluster.

Figure 9-3 Independent database server configuration



Installation Requirements

To run OVO in a Sun Cluster environment, you *must* meet the following requirements:

- ❑ Solaris 8 or 9 operating-system software on two or more SPARC/Solaris platforms.
- ❑ Sun Cluster 3.0 or 3.1 software.
- ❑ VERITAS Volume Manager for Solaris version 3.5, or Solstice DiskSuite 4.2.1, or Solaris Volume Manager.

For additional requirements about installing OVO, see Chapter 1, “Installation Requirements for the Management Server,” on page 25.

Installation Requirements for an Oracle Database

The Oracle database (the database binaries) should preferably be installed on a local disk.

In exceptional cases, you can decide to install the Oracle database server binaries on a shared disk. For the preparation of such an environment, you will need to perform the additional configuration steps that are marked as optional in the configuration procedures.

For more information on installing the Oracle database server binaries, see “Installing the Oracle Database Server for OVO in a Cluster Environment” on page 257.

Creating a Network Interface Group

Before you start with the installation of the OVO management server in a Sun Cluster environment, you need to create a Network Interface Group on all the cluster nodes.

The way in which the Network Interface Group is created depends on the version of the Sun Cluster software.

- ❑ For Sun Cluster 3.0, create a NAFO group, as described in the section entitled “Creating a Network Interface Group for Sun Cluster 3.0” on page 227.

- ❑ For Sun Cluster 3.1, create IPMP group, as described in the section entitled “Creating a Network Interface Group for Sun Cluster 3.1” on page 227.

Creating a Network Interface Group for Sun Cluster 3.0

In Sun Cluster 3.0, a NAFO group is used for HA networking. For this reason, it is necessary to establish a NAFO group, which is used for the OVO management server running as an HA Resource Group.

Create a specific NAFO group with one or more network interfaces.

For example:

```
pnmset -c nafo0 -o create hme0
```

To check if the NAFO group is properly created, use the `pnmstat -l` command.

Use this NAFO group name when entering the network interface for the OVO management-server HA Resource Group (during `opconfig` or `ovoinstall`).

Creating a Network Interface Group for Sun Cluster 3.1

In Sun Cluster 3.1, IP Network Multipathing is used for the HA networking. For this reason, you have to put a specific network interface into the IPMP group.

Assign the network interface to a specific IPMP group.

For example:

```
ifconfig hme0 group ipmp
```

NOTE

Note that you have to perform the same IPMP-related configuration steps on all the cluster nodes before installing OVO Server.

To check if the interface is properly assigned, use the `ifconfig -a` command.

Use this IPMP group name when entering the network interface for the OVO management server running as the HA Resource Group (during `opconfig` or `ovoinstall`).

Installing and Configuring the OVO Management Server on Cluster Nodes

To install and configure the OVO management server in a cluster environment, you *must* complete the following procedure first on the **first** cluster node, and then on each **additional** cluster node:

1. Preparation Steps

See “Before You Install the OVO Management Server on the First Cluster Node” on page 231 for information on preparing for the installation and configuration of the OVO management server on the first cluster node.

See “Before You Install the OVO Management Server on Additional Cluster Nodes” on page 248 for information on preparing for the installation and configuration of the OVO management server on additional cluster nodes.

2. Installation of the Oracle Database

See “Installing the Oracle Database Server for OVO in a Cluster Environment” on page 257 for details.

3. Installation and Configuration of the OVO Management Server

See “To Install and Configure the OVO Management Server on Cluster Nodes” on page 265 for details.

4. Installation of the OVO Agent Software and Templates

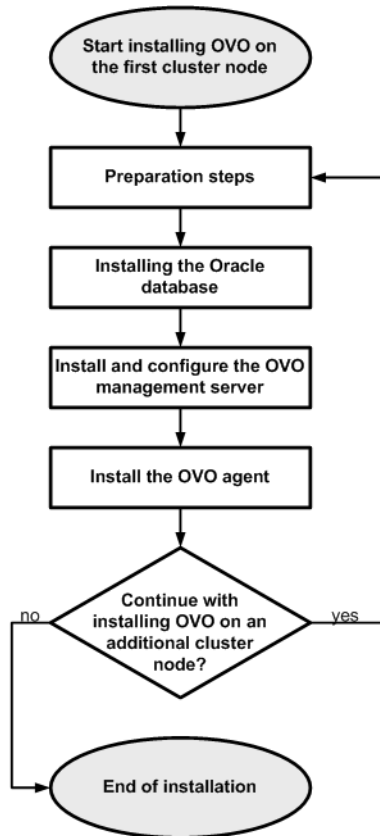
See “Installing the OVO Agent Software and Templates on Cluster Nodes” on page 269 for details.

WARNING

You *cannot* install OVO simultaneously on all the cluster nodes. When the installation process is completed on one cluster node, proceed with the installation on the next node, until OVO is installed on all the nodes in a cluster environment.

Figure 9-4 on page 229 shows the flow of the OVO management server installation and configuration steps.

Figure 9-4 **Flow of OVO Management Server Installation and Configuration Steps in a Cluster Environment**



For more information about administration of OVO management server in a cluster environment, see the *OVO Administrator's Reference* manual.

Preparation Steps

Before you start installing and configuring the OVO management server on a cluster node, perform the preparation steps. Follow these procedures for the first cluster node and for each additional cluster node:

1. Preparation steps for the first cluster node

See “Before You Install the OVO Management Server on the First Cluster Node” on page 231.

2. Preparation steps for an additional cluster node

See “Before You Install the OVO Management Server on Additional Cluster Nodes” on page 248.

Before You Install the OVO Management Server on the First Cluster Node

Before you install the OVO management server on the first cluster node, you have to perform appropriate preparation procedures depending on the cluster environment you want to configure. Choose one of the following scenarios:

❑ **OVO management server in a basic environment**

Using this scenario, Oracle and OVO Server are configured as part of a single HA resource group.

See “Preparation Steps for the First Cluster Node in a Basic Environment” on page 232.

❑ **OVO management server in a Decoupled environment**

Using this scenario, Oracle and OVO Server are separated, Oracle is configured as a separate HA resource group. In this case there are two independent resource groups, one for Oracle and one for the OVO management server.

See “Preparation Steps for the First Cluster Node in a Decoupled Environment” on page 238.

❑ **OVO management server uses an independent database server**

Using this scenario, the Oracle database is configured on a node that is not part of the cluster, or on a cluster node independently of the OVO management server installation.

See “Preparation Steps for the First Cluster Node in a Cluster Environment Using an Independent Database Server” on page 245.

Preparation Steps for the First Cluster Node in a Basic Environment

I. Installation Prerequisites

Before you install the OVO management server in a cluster environment, the following prerequisites *must* be met:

- ❑ If you are using VERITAS Volume Manager:
 - Define the disk device group `ov-dg`, consisting of at least one shared disk for the HA Resource group.
 - Define the following volumes within the `ov-dg` disk device group:
 - `ov-volume-var`
 - `ov-volume-etc`
 - `ov-volume-lcore`
 - `ov-volume-ora-data`
 - `ov-volume-ora-core*`
- * If the Oracle database server binaries will be installed on a shared disk.

- ❑ If you are using Solstice DiskSuite 4.2.1 or Solaris Volume Manager:
 - Define the disk device group `ov-dg`, consisting of at least one shared disk for the HA Resource group. The disk device group is represented as a disk set in this case.
 - Define the following four metadvice/volumes within the `ov-dg` disk device group:
 - `d0`
 - `d1`
 - `d2`
 - `d3`
 - `d4*`
- * If you choose to install the Oracle database server binaries on a shared disk.

❑ The following file systems *must* be available:

- file system for `/etc/opt/OV/share`
- file system for `/var/opt/OV/share`
- file system for `/var/opt/OV/shared/server`
- file system for the OVO server database
- file system for Oracle*

* If you choose to install the Oracle database server binaries on a shared disk.

II. Pre-Installation Steps

You *must* perform the following preparation steps manually:

1. Prepare mount points for the shared file systems:

- `/etc/opt/OV/share`
- `/var/opt/OV/share`
- `/var/opt/OV/shared/server`
- Mount point for the OVO management-server database.

You may select an alternative mount point. The default is:
`/opt/oradata/<ORACLE_SID>`,

where `<ORACLE_SID>` is the value of the `ORACLE_SID` variable used for the configuration of the OVO management-server database. It is usually set to `openview`.

- Mount point for the Oracle database server binaries if they will be installed on a shared disk. The mount point is equal to the value of the `ORACLE_BASE` variable.

Table 9-1

Disk Space Required for Shared File Systems:

Shared File System	Recommended	Initial
<code>/etc/opt/OV/share</code>	150 MB	55 MB
<code>/var/opt/OV/share</code>	1 GB	550 MB ^a
<code>/var/opt/OV/shared/server</code>	100 MB	1 MB

Table 9-1 Disk Space Required for Shared File Systems: (Continued)

Shared File System	Recommended	Initial
/opt/oradata/openview	1 GB	420 MB ^b
Oracle database server binaries (<i>optional</i>)	3 GB	

- a. Further disk space will be required when SPIs are installed.
- b. For small to medium sized installations. Larger installations and high numbers of messages will result in greater space requirements.

NOTE

When installing on additional cluster nodes, the disk space for /etc/opt/OV/share, /var/opt/OV/share, and /var/opt/OV/shared/server is needed only temporarily and can be removed after the installation, before the shared disks are switched to that node. For example, local volumes can be created and mounted to these locations before installing. These volumes can be deleted after installation is complete.

-
- 2. Put the ov-dg disk device group online on the current node by entering:

```
/usr/cluster/bin/scswitch -z -D ov-dg -h <hostname>
```

- 3. Mount the shared file systems on the prepared mount points:

If you are using VERITAS Volume Manager, mount the shared file systems on the prepared mount points as follows:

- a. /usr/sbin/mount -F <FSType> \
/dev/vx/dsk/ov-dg/ov-volume-etc /etc/opt/OV/share
- b. /usr/sbin/mount -F <FSType> \
/dev/vx/dsk/ov-dg/ov-volume-var /var/opt/OV/share
- c. /usr/sbin/mount -F <FSType> \
/dev/vx/dsk/ov-dg/ov-volume-lcore \
/var/opt/OV/shared/server

- d. `/usr/sbin/mount -F <FSType> \
/dev/vx/dsk/ov-dg/ov-volume-ora-data \
/<oracle_database_mount_point>`,

where `oracle_database_mount_point` is the mount point you have chosen for the OVO server database, and `FSType` is a file system type of shared file systems.

- e. *Optional*: If you choose to install Oracle database server binaries on a shared disk:

```
/usr/sbin/mount -F <FSType> \  
/dev/vx/dsk/ov-dg/ov-volume-ora-core \  
/<oracle_binaries_mount_point>
```

where `oracle_binaries_mount_point` is the mount point you have chosen for the Oracle database server binaries installation (equal to the value of the `ORACLE_BASE` variable).

If you are using Solstice DiskSuite 4.2.1 or Solaris Volume Manager, mount the shared file systems on the prepared mount points as follows:

- a. `/usr/sbin/mount -F ufs /dev/md/ov-dg/dsk/d0 \
/etc/opt/OV/share`
- b. `/usr/sbin/mount -F ufs /dev/md/ov-dg/dsk/d1 \
/var/opt/OV/share`
- c. `/usr/sbin/mount -F ufs /dev/md/ov-dg/dsk/d2 \
/var/opt/OV/shared/server`
- d. `/usr/sbin/mount -F ufs /dev/md/ov-dg/dsk/d3 \
/<oracle_database_mount_point>`

where `oracle_database_mount_point` is the mount point you have chosen for the OVO server database.

- e. *Optional*: If you choose to install Oracle database server binaries on a shared disk:

```
/usr/sbin/mount -F ufs /dev/md/ov-dg/dsk/d4 \  
/<oracle_binaries_mount_point>
```

where `oracle_database_mount_point` is the mount point you have chosen for the Oracle database server binaries installation (equal to the value of the `ORACLE_BASE` variable).

4. Edit the `/etc/vfstab` file.

If you are using VERITAS Volume Manager, edit the `/etc/vfstab` file and add the following lines in the order indicated below:

- a. `/dev/vx/dsk/ov-dg/ov-volume-etc \`
`/dev/vx/rdisk/ov-dg/ov-volume-etc \`
`/etc/opt/OV/share <FSType> 1 no -`
- b. `/dev/vx/dsk/ov-dg/ov-volume-var \`
`/dev/vx/rdisk/ov-dg/ov-volume-var \`
`/var/opt/OV/share <FSType> 1 no -`
- c. `/dev/vx/dsk/ov-dg/ov-volume-lcore \`
`/dev/vx/rdisk/ov-dg/ov-volume-lcore \`
`/var/opt/OV/shared/server <FSType> 1 no -`
- d. `/dev/vx/dsk/ov-dg/ov-volume-ora-data \`
`/dev/vx/rdisk/ov-dg/ov-volume-ora-data \`
`/<oracle_database_mount_point> <FSType> 1 no -`

where `oracle_database_mount_point` is the mount point you have chosen for the OVO server database, and `FSType` is a file system type of shared file systems.

- e. *Optional:* If you choose to install Oracle database server binaries on a shared disk:

```
/dev/vx/dsk/ov-dg/ov-volume-ora-core \
/dev/vx/rdisk/ov-dg/ov-volume-ora-core \
/oracle_binaries_mount_point <FSType> 1 no -
```

where `oracle_binaries_mount_point` is the mount point you have chosen for the Oracle database server binaries installation (equal to the value of the `ORACLE_BASE` variable).

If you are using Solstice DiskSuite 4.2.1 or Solaris Volume Manager, edit the `/etc/vfstab` file and add the following lines in the order indicated below:

- a. `/dev/md/ov-dg/dsk/d0 \`
`/dev/md/ov-dg/rdsk/d0 \`
`/etc/opt/OV/share ufs 1 no -`
- b. `/dev/md/ov-dg/dsk/d1 \`
`/dev/md/ov-dg/rdsk/d1 \`
`/var/opt/OV/share ufs 1 no -`

c. `/dev/md/ov-dg/dsk/d2 \
/dev/md/ov-dg/rdisk/d2 \
/var/opt/OV/shared/server ufs 1 no -`

d. `/dev/md/ov-dg/dsk/d3 \
/dev/md/ov-dg/rdisk/d3 \
/<oracle_database_mount_point> ufs 1 no -`

where `oracle_database_mount_point` is the mount point you have chosen for the OVO server database.

e. *Optional:* If you choose to install Oracle database server binaries on a shared disk:

`/dev/md/ov-dg/dsk/d4 \
/dev/md/ov-dg/rdisk/d4 \
/<oracle_binaries_mount_point> ufs 1 no -`

where `oracle_binaries_mount_point` is the mount point you have chosen for the Oracle database server binaries installation (equal to the value of the `ORACLE_BASE` variable).

5. Activate the Virtual Network IP using the `ifconfig` command:

`ifconfig <network_interface>:1`

For example, you can configure the IP address as follows:

a. `ifconfig <network_interface>:1 plumb`

b. `ifconfig <network_interface>:1 inet \
<IP> netmask 255.255.0.0 up,`

where

- `<network_interface>` is the physical network interface used for virtual IP. `hme0` is used as the network interface on Solaris.
- `<IP>` is the IP address of the virtual host that you previously selected.

NOTE

To configure the IP address, use decimal notation (for example, 255.255.0.0) instead of hexadecimal notation (for example, ffff0000).

After completing the preparation steps, continue with installing the Oracle database server. See “Installing the Oracle Database Server for OVO in a Cluster Environment” on page 257.

Preparation Steps for the First Cluster Node in a Decoupled Environment

I. Installation Prerequisites

Before you install the OVO management server in a cluster environment, the following prerequisites *must* be met:

- ❑ If you are using VERITAS Volume Manager:
 - Define the disk device group `ov-dg`, consisting of at least one shared disk for the HA Resource group.
 - Define the following volumes within the `ov-dg` disk device group:
 - `ov-volume-var`
 - `ov-volume-etc`
 - `ov-volume-lcore`
 - Define the disk device group `ovoracle-dg`, consisting of at least one shared disk for the HA Resource group.
 - Define the following volumes within the `ovoracle-dg` disk device group:
 - `ov-volume-ora-data`
 - `ov-volume-ora-core*`

* If you choose to install the Oracle database server binaries on a shared disk.
- ❑ If you are using Solstice DiskSuite 4.2.1 or Solaris Volume Manager:
 - Define the disk device group `ov-dg`, consisting of at least one shared disk for the HA Resource group. The disk device group is represented as a disk set in this case.
 - Define the following three metadevices/volumes within the `ov-dg` disk device group:

- d0

- d1

- d2

- Define the disk device group `ovoracle-dg`, consisting of at least one shared disk for the HA Resource group. The disk device group is represented as a disk set in this case.
- Define the following volumes within the `ovoracle-dg` disk device group:

- d0

- d1*

* If you choose to install the Oracle database server binaries on a shared disk.

□ The following file systems *must* be available:

- file system for `/etc/opt/OV/share`
- file system for `/var/opt/OV/share`
- file system for `/var/opt/OV/shared/server`
- file system for the OVO server database
- file system for the Oracle database server binaries*

* If you choose to install the Oracle database server binaries on a shared disk (equal to the value of the `ORACLE_BASE` variable).

II. Pre-Installation Steps

You *must* perform the following preparation steps manually:

1. Prepare mount points for the shared file systems:

- `/etc/opt/OV/share`
- `/var/opt/OV/share`
- `/var/opt/OV/shared/server`
- Mount point for the OVO management server database.

You may select alternative mount point. The default is:

`/opt/oradata/<ORACLE_SID>`

Preparation Steps

where `<ORACLE_SID>` is the value of the `ORACLE_SID` variable used for the configuration of the OVO management server database. It is usually set to `openview`.

- Mount point for the Oracle database server binaries*

* If you choose to install the Oracle database server binaries on a shared disk. (equal to the value of the `ORACLE_BASE` variable).

Table 9-2 Disk Space Required for Shared File Systems:

Shared File System	Recommended	Initial
<code>/etc/opt/OV/share</code>	150 MB	55 MB
<code>/var/opt/OV/share</code>	1 GB	550 MB ^a
<code>/var/opt/OV/shared/server</code>	100 MB	1 MB
<code>/opt/oradata/openview</code>	1 GB	420 MB ^b
Oracle database server binaries (<i>optional</i>)	3 GB	

a. Further disk space will be required when SPIs are installed.

b. For small to medium sized installations. Larger installations and high numbers of messages will result in greater space requirements.

2. Put the `ov-dg` and `ovoracle-dg` disk device groups online on the current node by entering:

```
/usr/cluster/bin/scswitch -z -D ov-dg -h <hostname>
/usr/cluster/bin/scswitch -z -D ovoracle-dg -h \
<hostname>
```

3. Mount the shared file systems on the prepared mount points:

If you are using VERITAS Volume Manager, mount the shared file systems on the prepared mount points as follows:

- a. `/usr/sbin/mount -F <FSType> \`
`/dev/vx/dsk/ov-dg/ov-volume-etc /etc/opt/OV/share`
- b. `/usr/sbin/mount -F <FSType> \`
`/dev/vx/dsk/ov-dg/ov-volume-var /var/opt/OV/share`

- c.

```
/usr/sbin/mount -F <FSType> \  
/dev/vx/dsk/ov-dg/ov-volume-lcore \  
/var/opt/OV/shared/server
```
- d.

```
/usr/sbin/mount -F <FSType> \  
/dev/vx/dsk/ovoracle-dg/ovoracle-volume-ora-data \  
/<oracle_database_mount_point>
```

where *oracle_database_mount_point* is the mount point you have chosen for the OVO server database, and *FSType* is a file system type of shared file systems.

- e. *Optional:* If you choose to install Oracle database server binaries on a shared disk:

```
/usr/sbin/mount -F <FSType> \  
/dev/vx/dsk/ovoracle-dg/ovoracle-volume-ora-core \  
/<oracle_binaries_mount_point>
```

where *oracle_binaries_mount_point* is the mount point you have chosen for the Oracle database server binaries installation (equal to the value of the `ORACLE_BASE` variable).

If you are using Solstice DiskSuite 4.2.1 or Solaris Volume Manager, mount the shared file systems on the prepared mount points as follows:

- a.

```
/usr/sbin/mount -F ufs \  
/dev/md/ov-dg/dsk/d0 /etc/opt/OV/share
```
- b.

```
/usr/sbin/mount -F ufs \  
/dev/md/ov-dg/dsk/d1 /var/opt/OV/share
```
- c.

```
/usr/sbin/mount -F ufs \  
/dev/md/ov-dg/dsk/d2 /var/opt/OV/shared/server
```
- d.

```
/usr/sbin/mount -F ufs \  
/dev/md/ovoracle-dg/dsk/d0 \  
/<oracle_database_mount_point>
```

where *oracle_database_mount_point* is the mount point you have chosen for the OVO server database.

- e. *Optional:* If you choose to install Oracle database server binaries on a shared disk:

Preparation Steps

```

/usr/sbin/mount -F ufs \
/dev/md/ovoracle-dg/dsk/d1 \
/<oracle_binaries_mount_point>

```

where *oracle_binaries_mount_point* is the mount point you have chosen for the Oracle database server binaries installation (equal to the value of the `ORACLE_BASE` variable).

4. Edit the `/etc/vfstab` file.

If you are using VERITAS Volume Manager, edit the `/etc/vfstab` file and add the following lines in the order indicated below:

- a. `/dev/vx/dsk/ov-dg/ov-volume-etc \`
`/dev/vx/rdsk/ov-dg/ov-volume-etc \`
`/etc/opt/OV/share <FSType> 1 no -`
- b. `/dev/vx/dsk/ov-dg/ov-volume-var \`
`/dev/vx/rdsk/ov-dg/ov-volume-var \`
`/var/opt/OV/share <FSType> 1 no -`
- c. `/dev/vx/dsk/ov-dg/ov-volume-lcore \`
`/dev/vx/rdsk/ov-dg/ov-volume-lcore \`
`/var/opt/OV/shared/server <FSType> 1 no -`
- d. `/dev/vx/dsk/ovoracle-dg/ovoracle-volume-ora-data \`
`/dev/vx/rdsk/ovoracle-dg/ovoracle-volume-ora-data \`
`/<oracle_database_mount_point> <FSType> 1 no -`

where *oracle_database_mount_point* is the mount point you have chosen for the OVO server database, and *FSType* is a file system type of shared file systems.

- e. *Optional:* If you choose to install Oracle database server binaries on a shared disk:

```

/dev/vx/dsk/ovoracle-dg/ovoracle-volume-ora-core \
/dev/vx/rdsk/ovoracle-dg/ovoracle-volume-ora-core \
/<oracle_binaries_mount_point> <FSType> 1 no

```

where *oracle_binaries_mount_point* is the mount point you have chosen for the Oracle database server binaries installation (equal to the value of the `ORACLE_BASE` variable).

If you are using Solstice DiskSuite 4.2.1 or Solaris Volume Manager, edit the `/etc/vfstab` file and add the following lines in the order indicated below:

- a.

```
/dev/md/ov-dg/dsk/d0 \  
/dev/md/ov-dg/rdisk/d0 \  
/etc/opt/OV/share ufs 1 no -
```
- b.

```
/dev/md/ov-dg/dsk/d1 \  
/dev/md/ov-dg/rdisk/d1\  
/var/opt/OV/share ufs 1 no -
```
- c.

```
/dev/md/ov-dg/dsk/d2 \  
/dev/md/ov-dg/rdisk/d2 \  
/var/opt/OV/shared/server ufs 1 no -
```
- d.

```
/dev/md/dsk/ovoracle-dg/dsk/d0 \  
/dev/md/rdisk/ovoracle-dg/dsk/d0 \  
/<oracle_database_mount_point> ufs 1 no -
```

where *oracle_database_mount_point* is the mount point you have chosen for the OVO server database.

- e. *Optional:* If you choose to install Oracle database server binaries on a shared disk:

```
/dev/md/dsk/ovoracle-dg/dsk/d1 \  
/dev/md/rdisk/ovoracle-dg/dsk/d1 \  
/<oracle_binaries_mount_point> ufs 1 no -
```

where *oracle_binaries_mount_point* is the mount point you have chosen for the Oracle database server binaries installation (equal to the value of the ORACLE_BASE variable).

5. Activate the OVO Server Virtual Network IP using the `ifconfig` command:

```
ifconfig <network_interface>:1
```

For example, you can configure the IP address as follows:

- a. `ifconfig <network_interface>:1 plumb`
- b. `ifconfig <network_interface>:1 inet \
<IP> netmask 255.255.0.0 up`

where

- *<network_interface>* is the physical network interface used for virtual IP. `hme0` is used as the network interface on Solaris.

Preparation Steps

- *<IP>* is the IP address of the virtual host that you previously selected.

NOTE

To configure the IP address, use decimal notation (for example, 255.255.0.0) instead of hexadecimal notation (for example, ffff0000).

6. Activate the Oracle Virtual Network IP using the `ifconfig` command:

```
ifconfig <network_interface>:2
```

For example, you can configure the IP address as follows:

- a. `ifconfig <network_interface>:2 plumb`
- b. `ifconfig <network_interface>:2 inet \
<IP> netmask 255.255.0.0 up`

where

- *<network_interface>* is the physical network interface used for virtual IP. `hme0` is used as the network interface on Solaris.
- *<IP>* is the IP address of the Oracle virtual host that you previously selected.

NOTE

To configure the IP address, use decimal notation (for example, 255.255.0.0) instead of hexadecimal notation (for example, ffff0000).

After completing the preparation steps, continue with installing the Oracle database server. See “Installing the Oracle Database Server for OVO in a Cluster Environment” on page 257.

Preparation Steps for the First Cluster Node in a Cluster Environment Using an Independent Database Server

I. Installation Prerequisites

Before you install the OVO management server in a cluster environment, the following prerequisites *must* be met:

- ❑ If you are using VERITAS Volume Manager:
 - Define the disk device group `ov-dg`, consisting of at least one shared disk for the HA Resource group.
 - Define the following three volumes within the `ov-dg` disk device group:
 - `ov-volume-var`
 - `ov-volume-etc`
 - `ov-volume-lcore`
- ❑ If you are using Solstice DiskSuite 4.2.1 or Solaris Volume Manager:
 - Define the disk device group `ov-dg`, consisting of at least one shared disk for the HA Resource group. The disk device group is represented as a disk set in this case.
 - Define the following three metadevices/volumes within the `ov-dg` disk device group:
 - `d0`
 - `d1`
 - `d2`
- ❑ The following file systems *must* be available:
 - file system for `/etc/opt/OV/share`
 - file system for `/var/opt/OV/share`
 - file system for `/var/opt/OV/shared/server`

II. Pre-Installation Steps

You *must* perform the following preparation steps manually:

1. Prepare mount points for the shared file systems:

Preparation Steps

- /etc/opt/OV/share
- /var/opt/OV/share
- /var/opt/OV/shared/server

2. Put the `ov-dg` disk device group online on the current node by entering:

```
/usr/cluster/bin/scswitch -z -D ov-dg -h <hostname>
```

3. Mount the shared file systems on the prepared mount points:

If you are using VERITAS Volume Manager, mount the shared file systems on the prepared mount points as follows:

- a. `/usr/sbin/mount -F <FSType> \
/dev/vx/dsk/ov-dg/ov-volume-etc /etc/opt/OV/share`
- b. `/usr/sbin/mount -F <FSType> \
/dev/vx/dsk/ov-dg/ov-volume-var /var/opt/OV/share`
- c. `/usr/sbin/mount -F <FSType> \
/dev/vx/dsk/ov-dg/ov-volume-lcore \
/var/opt/OV/shared/server`

If you are using Solstice DiskSuite 4.2.1 or Solaris Volume Manager, mount the shared file systems on the prepared mount points as follows:

- a. `/usr/sbin/mount -F ufs \
/dev/md/ov-dg/dsk/d0 /etc/opt/OV/share`
- b. `/usr/sbin/mount -F ufs \
/dev/md/ov-dg/dsk/d1 /var/opt/OV/share`
- c. `/usr/sbin/mount -F ufs \
/dev/md/ov-dg/dsk/d2 /var/opt/OV/shared/server`

4. Edit the `/etc/vfstab` file.

If you are using VERITAS Volume Manager, edit the `/etc/vfstab` file and add the following lines in the order indicated below:

- a. `/dev/vx/dsk/ov-dg/ov-volume-etc \
/dev/vx/rdsk/ov-dg/ov-volume-etc \
/etc/opt/OV/share <FSType> 1 no -`

- b. `/dev/vx/dsk/ov-dg/ov-volume-var \`
`/dev/vx/rdisk/ov-dg/ov-volume-var \`
`/var/opt/OV/share <FSType> 1 no -`
- c. `/dev/vx/dsk/ov-dg/ov-volume-lcore \`
`/dev/vx/rdisk/ov-dg/ov-volume-lcore \`
`/var/opt/OV/shared/server <FSType> 1 no -`

If you are using Solstice DiskSuite 4.2.1 or Solaris Volume Manager, edit the `/etc/vfstab` file and add the following lines in the order indicated below:

- a. `/dev/md/ov-dg/dsk/d0 \`
`/dev/md/ov-dg/rdsk/d0 \`
`/etc/opt/OV/share ufs 1 no -`
- b. `/dev/md/ov-dg/dsk/d1 \`
`/dev/md/ov-dg/rdsk/d1 \`
`/var/opt/OV/share ufs 1 no -`
- c. `/dev/md/ov-dg/dsk/d2 \`
`/dev/md/ov-dg/rdsk/d2 \`
`/var/opt/OV/shared/server ufs 1 no -`

5. Activate the Virtual Network IP using the `ifconfig` command:

```
ifconfig <network_interface>:1
```

For example, you can configure the IP address as follows:

- a. `ifconfig <network_interface>:1 plumb`
- b. `ifconfig <network_interface>:1 inet \`
`<IP> netmask 255.255.0.0 up,`

where

- `<network_interface>` is the physical network interface used for virtual IP. `hme0` is used as the network interface on Solaris.
- `<IP>` is the IP address of the virtual host that you previously selected.

NOTE

To configure the IP address, use decimal notation (for example, 255.255.0.0) instead of hex notation (for example, ffff0000).

Before You Install the OVO Management Server on Additional Cluster Nodes

Before you install the OVO management server on additional cluster nodes, you have to perform appropriate preparation procedures depending on the cluster environment you want to configure. Choose one of the following scenarios:

❑ **The cluster nodes are in a basic environment**

Using this scenario, Oracle and OVO Server are configured as part of a single HA resource group.

See “Preparation Steps for Additional Cluster Nodes in a Basic Environment” on page 249.

❑ **The cluster nodes are in a decoupled environment**

Using this scenario, Oracle and OVO server are separated, Oracle is configured as a separate HA resource group. In this case there are two independent resource groups, one for Oracle and one for the OVO management server.

See “Preparation Steps for Additional Cluster Nodes in a Decoupled Environment” on page 252.

❑ **The cluster environment uses an independent database server**

Using this scenario, the Oracle database is configured on a remote system, or on a cluster node independently of the OVO management server installation.

See “Preparation Steps for Additional Cluster Nodes in a Cluster Environment Using an Independent Database Server” on page 255.

Preparation Steps for Additional Cluster Nodes in a Basic Environment

The following preconditions *must* be met before installing the OVO management server on an additional cluster node:

- ❑ The OVO management server *must* already be installed and running on one of the cluster nodes. This allows you to add a local node to the OVO management-server configuration and install and start the OVO agent software on the local node.
- ❑ On the node where OVO is running, enable remote-shell connection for user `root` to the node where you plan to install the OVO management-server software. You can do this by putting the following line into `.rhosts`:

```
<node> root
```

You can check if remote shell is enabled by using the following command:

```
remsh <active_node> -l root -n ls.
```

A list of files on the `root` directory from the node where the OVO management server is running should be displayed.

In more secure environments, it is possible to setup a secure-shell (SSH) connection between the node where you plan to install an OVO Server, and the node where the OVO Server is running.

For the OVO Server installation, you have to enable passwordless SSH access for user `root` between these two nodes. `ssh` and `scp` are the two commands that are used during the installation. Both commands *must* be accessible from the main path.

You can check if the secure remote shell is enabled by using the following command:

```
ssh <active node> -l root -n ls
```

The type of connection will be automatically detected. A secure connection has a higher priority if both types of connection are enabled.

- ❑ Shared file systems must *not* be mounted on this cluster node. They are already mounted on the cluster node where the OVO management server is running.

Preparation Steps

- ❑ Virtual IP must *not* be activated on this node, since it is already used on the node where the OVO management server is running.
- ❑ Edit the `/etc/vfstab` file.
 - If you are using VERITAS Volume Manager, add the following lines in the order given below:
 - a. `/dev/vx/dsk/ov-dg/ov-volume-etc \`
`/dev/vx/rdisk/ov-dg/ov-volume-etc \`
`/etc/opt/OV/share vxfs 1 no -`
 - b. `/dev/vx/dsk/ov-dg/ov-volume-var \`
`/dev/vx/rdisk/ov-dg/ov-volume-var \`
`/var/opt/OV/share vxfs 1 no -`
 - c. `/dev/vx/dsk/ov-dg/ov-volume-lcore \`
`/dev/vx/rdisk/ov-dg/ov-volume-lcore \`
`/var/opt/OV/shared/server vxfs 1 no -`
 - d. `/dev/vx/dsk/ov-dg/ov-volume-ora-data \`
`/dev/vx/rdisk/ov-dg/ov-volume-ora-data \`
`/opt/oradata vxfs 1 no -`
 - e. *Optional:* If you choose to install Oracle database server binaries on a shared disk:


```
/dev/vx/dsk/ov-dg/ov-volume-ora-core \
/dev/vx/rdisk/ov-dg/ov-volume-ora-core \
<oracle_binaries_mount_point> vxfs 1 no -
```

where `oracle_binaries_mount_point` is the mount point you have chosen for the Oracle database server binaries installation (equal to the value of the `ORACLE_BASE` variable).

NOTE

If you are using file systems of a type other than VxFS, replace `vxfs` with the file system type name.

- If you are using Solstice DiskSuite 4.2.1 or Solaris Volume Manager, add the following lines in the order given below:
 - a. `/dev/md/dsk/ov-dg/dsk/d0 \`
`/dev/md/rdsk/ov-dg/rdsk/d0 \`
`/etc/opt/OV/share ufs 1 no -`

- b.

```
/dev/md/dsk/ov-dg/dsk/d1 \  
/dev/vx/rdisk/ov-dg/rdisk/d1 \  
/var/opt/OV/share ufs 1 no -
```
- c.

```
/dev/md/dsk/ov-dg/dsk/d2 \  
/dev/vx/rdisk/ov-dg/rdisk/d2 \  
/var/opt/OV/shared/server ufs 1 no -
```
- d.

```
/dev/md/dsk/ov-dg/dsk/d3 \  
/dev/md/rdisk/ov-dg/rdisk/d3 \  
/opt/oradata ufs 1 no -
```
- e. *Optional:* If you choose to install Oracle database server binaries on a shared disk:

```
/dev/md/dsk/ov-dg/dsk/d4 \  
/dev/vx/rdisk/ov-dg/rdisk/d4 \  
<oracle_binaries_mount_point> ufs 1 no -
```

where *oracle_binaries_mount_point* is the mount point you have chosen for the Oracle database server binaries installation (equal to the value of the ORACLE_BASE variable).

Preparation Steps for Additional Cluster Nodes in a Decoupled Environment

The following preconditions *must* be met before installing the OVO management server on an additional cluster node:

- ❑ The OVO management server *must* already be installed and running on one of the cluster nodes. This allows you to add a local node to the OVO management-server configuration and install and start the OVO agent software on the local node.
- ❑ On the node where OVO is running, enable remote-shell connection for user `root` to the node where you plan to install the OVO management-server software. You can do this by putting the following line into `/.rhosts`:

```
<node> root
```

You can check if remote shell is enabled by using the following command:

```
remsh <active_node> -l root -n ls.
```

A list of files on the `root` directory from the node where the OVO management server is running should be displayed.

In more secure environments, it is possible to setup a secure-shell (SSH) connection between the node where you plan to install an OVO Server, and the node where the OVO Server is running.

For the OVO Server installation, you have to enable passwordless SSH access for user `root` between these two nodes. `ssh` and `scp` are the two commands that are used during the installation. Both commands *must* be accessible from the main path.

You can check if the secure remote shell is enabled by using the following command:

```
ssh <active node> -l root -n ls
```

The type of connection will be automatically detected. A secure connection has a higher priority if both types of connection are enabled.

- ❑ Shared file systems must *not* be mounted on this cluster node. They are already mounted on the cluster node where the OVO management server is running.

- ❑ Virtual IP must *not* be activated on this node, since it is already used on the node where the OVO management server is running.
- ❑ Edit the `/etc/vfstab` file.
 - If you are using VERITAS Volume Manager, add the following lines in the order given below:
 - a. `/dev/vx/dsk/ov-dg/ov-volume-etc \`
`/dev/vx/rdisk/ov-dg/ov-volume-etc \`
`/etc/opt/OV/share vxfs 1 no -`
 - b. `/dev/vx/dsk/ov-dg/ov-volume-var \`
`/dev/vx/rdisk/ov-dg/ov-volume-var \`
`/var/opt/OV/share vxfs 1 no -`
 - c. `/dev/vx/dsk/ov-dg/ov-volume-lcore \`
`/dev/vx/rdisk/ov-dg/ov-volume-lcore \`
`/var/opt/OV/shared/server vxfs 1 no -`
 - d. `/dev/vx/dsk/ovoracle-dg/ovoracle-volume-ora-data \`
`/dev/vx/rdisk/ovoracle-dg/ovoracle-volume-ora-data \`
`/opt/oradata vxfs 1 no -`
 - e. *Optional:* If you choose to install Oracle database server binaries on a shared disk:
`/dev/vx/dsk/ovoracle-dg/ovoracle-volume-ora-core \`
`/dev/vx/rdisk/ovoracle-dg/ovoracle-volume-ora-core \`
`/<oracle_binaries_mount_point> vxfs 1 no -`
where *oracle_binaries_mount_point* is the mount point you have chosen for the Oracle database server binaries installation (equal to the value of the `ORACLE_BASE` variable).

NOTE

If you are using file systems of a type other than VxFS, replace `vxfs` with the file system type name.

- If you are using Solstice DiskSuite 4.2.1 or Solaris Volume Manager, add the following lines in the order given below:
 - a. `/dev/md/dsk/ov-dg/dsk/d0 \`
`/dev/md/rdsk/ov-dg/rdsk/d0 \`
`/etc/opt/OV/share ufs 1 no -`

Preparation Steps

- b. `/dev/md/dsk/ov-dg/dsk/d1 \
/dev/vx/rdisk/ov-dg/rdisk/d1 \
/var/opt/OV/share ufs 1 no -`
- c. `/dev/md/dsk/ov-dg/dsk/d2 \
/dev/vx/rdisk/ov-dg/rdisk/d2 \
/var/opt/OV/shared/server ufs 1 no -`
- d. `/dev/md/dsk/ovoracle-dg/dsk/d0 \
/dev/md/rdisk/ovoracle-dg/rdisk/d0 \
/opt/oradata ufs 1 no -`
- e. *Optional:* If you choose to install Oracle database server binaries on a shared disk:

```
/dev/md/dsk/ovoracle-dg/dsk/d1 \  
/dev/vx/rdisk/ovoracle-dg/rdisk/d1 \  
<oracle_binaries_mount_point> ufs 1 no -
```

where `oracle_binaries_mount_point` is the mount point you have chosen for the Oracle database server binaries installation (equal to the value of the `ORACLE_BASE` variable).

Preparation Steps for Additional Cluster Nodes in a Cluster Environment Using an Independent Database Server

The following preconditions *must* be met before installing the OVO management server on an additional cluster node:

- ❑ The OVO management server *must* already be installed and running on one of the cluster nodes. This allows you to add a local node to the OVO management-server configuration and install and start the OVO agent software on the local node.
- ❑ On the node where OVO is running, enable remote-shell connection for user `root` to the node where you plan to install the OVO management-server software. You can do this by putting the following line into `.rhosts`:

```
<node> root
```

You can check if remote shell is enabled by using the following command:

```
remsh <active_node> -l root -n ls.
```

A list of files on the `root` directory from the node where the OVO management server is running should be displayed.

In more secure environments, it is possible to setup a secure-shell (SSH) connection between the node where you plan to install an OVO Server, and the node where the OVO Server is running.

For the OVO Server installation, you have to enable passwordless SSH access for user `root` between these two nodes. `ssh` and `scp` are the two commands that are used during the installation. Both commands *must* be accessible from the main path.

You can check if the secure remote shell is enabled by using the following command:

```
ssh <active node> -l root -n ls
```

The type of connection will be automatically detected. A secure connection has a higher priority if both types of connection are enabled.

- ❑ Shared file systems must *not* be mounted on this cluster node. They are already mounted on the cluster node where the OVO management server is running.

Preparation Steps

- ❑ Virtual IP must *not* be activated on this node, since it is already used on the node where the OVO management server is running.
- ❑ Edit the `/etc/vfstab` file.
 - If you are using VERITAS Volume Manager, add the following lines in the order given below:
 - a. `/dev/vx/dsk/ov-dg/ov-volume-etc \`
`/dev/vx/rdisk/ov-dg/ov-volume-etc \`
`/etc/opt/OV/share vxfs 1 no -`
 - b. `/dev/vx/dsk/ov-dg/ov-volume-var \`
`/dev/vx/rdisk/ov-dg/ov-volume-var \`
`/var/opt/OV/share vxfs 1 no -`
 - c. `/dev/vx/dsk/ov-dg/ov-volume-lcore \`
`/dev/vx/rdisk/ov-dg/ov-volume-lcore \`
`/var/opt/OV/shared/server vxfs 1 no -`

NOTE

If you are using file systems of a type other than VxFS, replace `vxfs` with the file system type name.

- If you are using Solstice DiskSuite 4.2.1 or Solaris Volume Manager, add the following lines in the order given below:
 - a. `/dev/md/dsk/ov-dg/dsk/d0 \`
`/dev/md/rdisk/ov-dg/rdisk/d0 \`
`/etc/opt/OV/share ufs 1 no -`
 - b. `/dev/md/dsk/ov-dg/dsk/d1 \`
`/dev/vx/rdisk/ov-dg/rdisk/d1 \`
`/var/opt/OV/share ufs 1 no -`
 - c. `/dev/md/dsk/ov-dg/dsk/d2 \`
`/dev/vx/rdisk/ov-dg/rdisk/d2 \`
`/var/opt/OV/shared/server ufs 1 no -`

Installing the Oracle Database Server for OVO in a Cluster Environment

The Oracle database server binaries must be installed on a local disk to enable the high availability of the Oracle database server and consequently of the OVO management server. If the Oracle database server binaries become corrupt, it is very important that the Oracle database server can be switched to another cluster node with intact Oracle database server binaries.

In exceptional cases, you may want to install the Oracle database server binaries on a shared disk. This way only one set of Oracle database server binaries is installed but there is a greater risk of losing Oracle availability. If you have chosen the decoupled scenario for installing OVO, a separate Oracle client installation will be needed also.

Table 9-3 Configuration scenarios based on file system location

		Oracle database server location		
		Local Filesystem	Shared Filesystem (Exceptional)	Remote Filesystem
Configuration scenarios	Basic	See "Oracle Database Server on a Local Disk": "Basic OVO management server installation" on page 259.	See "Oracle Database Server on a Shared Disk (Exceptional)": "Basic OVO management server installation" on page 260.	
	Decoupled	See "Oracle Database Server on a Local Disk": "Decoupled OVO management server installation" on page 259.	See "Oracle Database Server on a Shared Disk (Exceptional)": "Decoupled OVO management server installation" on page 261.	
	Independent	See "Oracle Database Server on a Local Disk": "Independent database server installation" on page 259.		See "Oracle Database Server on a Remote Filesystem": "Independent database server installation" on page 263

Oracle Database Server on a Local Disk

❑ Basic OVO management server installation

Install the Oracle database software as described in “Installing and Verifying an Oracle Database” on page 59.

After installing the Oracle database server, continue with “To Install and Configure the OVO Management Server on Cluster Nodes” on page 265.

❑ Decoupled OVO management server installation

Install the Oracle database software as described in “Installing and Verifying an Oracle Database” on page 59.

After installing the Oracle database server, continue with “To Install and Configure the OVO Management Server on Cluster Nodes” on page 265.

❑ Independent database server installation

• *First cluster node*

— Install Oracle database server binaries on the first cluster node.

— Before configuring the Oracle database, set an Oracle DB hostname using the following command:

```
/opt/OV/bin/ovconfchg -ns opc -set \  
HA_ORACLE_VIRTUAL_HOST <host>
```

where <host> is the hostname of the remote host.

— Configure the Oracle database as described in “Setting Up an Independent Database-Server System” on page 141.

— After the Oracle database is configured, remove the previous configuration using the following command:

```
/opt/OV/bin/ovconfchg -ns opc -clear \  
HA_ORACLE_VIRTUAL_HOST
```

• *Additional cluster node*

Install the Oracle Net Services and Oracle client software on the local disk, all other Oracle configuration steps will be performed by the OVO server installation script.

After the Oracle server installation, we recommend that you enable the OVO management server monitoring of Oracle:

- Create a script or a binary named:

```
/opt/OV/bin/OpC/utlils/ha/ha_check_oracle
```

The exit code of this script/binary must be 0 if the Oracle database server is running, or other than 0 if it is not running. This script must be present on all OVO management server cluster nodes. With this script the OVO management server checks for the status of the Oracle database.

- Remove the following link:

```
/var/opt/OV/hacluster/ov-server/M300_ov_server
```

and create a new one with the same name pointing to:

```
/opt/OV/bin/OpC/utlils/ha/ha_mon_ovserver_3tier.
```

After installing the Oracle database server, continue with “To Install and Configure the OVO Management Server on Cluster Nodes” on page 265.

Oracle Database Server on a Shared Disk (Exceptional)

The installation script automatically detects if Oracle database server binaries are located on a shared disk, or if the `ORACLE_BASE` directory is a mount point for an external file system containing the Oracle database server binaries (the file system *must* always be mounted on the `ORACLE_BASE` mount point).

The installation procedures for Oracle depend on the type of OVO server installation.

❑ Basic OVO management server installation

Install the Oracle database software as described in “Installing and Verifying an Oracle Database” on page 59.

After installing the Oracle database server, continue with “To Install and Configure the OVO Management Server on Cluster Nodes” on page 265.

❑ **Decoupled OVO management server installation**

When Oracle is separated from the OVO server, and Oracle database server binaries are installed on a shared disk, install Oracle client software on the local disk, so that OVO server can connect to the Oracle database server through the Oracle client. You *must* install the Oracle client software on a location other than `ORACLE_BASE`. The path to the Oracle client must be the same on all OVO management server cluster nodes.

- *First cluster node*

Install the Oracle client software on the local disk and then the Oracle server software on a shared disk as described in “Installing and Verifying an Oracle Database” on page 59.

NOTE

When installing and configuring OVO server, the `ORACLE_BASE` and `ORACLE_HOME` variables *must* be set to the Oracle database server location.

After installing the OVO management server, perform the following:

1. Copy the following configuration files from the Oracle database server location on the shared disk to the Oracle client location on the local disk:

```
— <Oracle_server_home>/network/admin/listener.ora  
  to  
  <Oracle_client_home>/network/admin/listener.ora  
— <Oracle_server_home>/network/admin/sqlnet.ora  
  to  
  <Oracle_client_home>/network/admin/sqlnet.ora  
— <Oracle_server_home>/network/admin/tnsnames.ora  
  to  
  <Oracle_client_home>/network/admin/tnsnames.ora  
— <Oracle_server_home>/network/admin/tnsnav.ora  
  to  
  <Oracle_client_home>/network/admin/tnsnav.ora
```

Installing the Oracle Database Server for OVO in a Cluster Environment

2. Stop the OVO management server as an HA resource group using the following command:

```
/opt/OV/bin/ovharg_config ov-server -stop \  
<local_hostname>
```

3. Modify the ORACLE_HOME variable in

```
/etc/opt/OV/share/conf/ovdbconf
```

to contain the location of the Oracle client software.

4. Remove the existing links in /opt/OV/lib to the libraries located in the Oracle database server directory, and replace them with links to Oracle client libraries:

```
— rm -f /opt/OV/lib/libclntsh.so  
  ln -s <Oracle_client_home>/lib32/libclntsh.so \  
    /opt/OV/lib/libclntsh.so  
  
— rm -f /opt/OV/lib/libclntsh.so.1.0  
  ln -s <Oracle_client_home>/lib32/libclntsh.so \  
    /opt/OV/lib/libclntsh.so.1.0  
  
— rm -f /opt/OV/lib/libclntsh.so.8.0  
  ln -s <Oracle_client_home>/lib32/libclntsh.so \  
    /opt/OV/lib/libclntsh.so.8.0  
  
— rm -f /opt/OV/lib/libclntsh.so.9.0  
  ln -s <Oracle_client_home>/lib32/libclntsh.so \  
    /opt/OV/lib/libclntsh.so.9.0  
  
— rm -f /opt/OV/lib/libopcora.so  
  ln -s <Oracle_client_home>/lib32/libclntsh.so \  
    /opt/OV/lib/libopcora.so  
  
— rm -f /opt/OV/lib/libwtc9.so  
  ln -s <Oracle_client_home>/lib32/libwtc9.so \  
    /opt/OV/lib/libwtc9.so
```

5. Start the OVO management server as an HA resource group using the following command:

```
/opt/OV/bin/ovharg_config ov-server -start \  
<local_hostname>
```

OVO management server will now connect to the Oracle database server through the Oracle client.

- *Additional cluster node*

Install the Oracle client software on a local disk, all other Oracle configuration steps will be performed by the OVO management server installation script.

NOTE

When installing and configuring OVO server, the `ORACLE_HOME` and variables *must* be set to the Oracle client location.

After installing the Oracle database server, continue with “To Install and Configure the OVO Management Server on Cluster Nodes” on page 265.

Oracle Database Server on a Remote Filesystem

- Independent database server installation

If the Oracle database server will be running on a remote system that is not a part of the local node:

- *First cluster node*

- Install Oracle Net Service and Oracle Client on the first cluster node.
- Before configuring the Oracle database, set an Oracle DB hostname using the following command:

```
/opt/OV/bin/ovconfchg -ns opc -set \  
HA_ORACLE_VIRTUAL_HOST <remote_host>
```

where *<remote_host>* is the hostname of the remote host.

- Configure the Oracle database as described in “Setting Up an Independent Database-Server System” on page 141.
- After the Oracle database is configured, remove the previous configuration using the following command:

```
/opt/OV/bin/ovconfchg -ns opc -clear \  
HA_ORACLE_VIRTUAL_HOST
```

- *Additional cluster node*

Install the Oracle Net Services and Oracle client software on the local disk, all other Oracle configuration steps will be performed by the OVO server installation script.

After the Oracle server installation, we recommend that you enable the OVO management server monitoring of Oracle:

- Put the Oracle HA resource group name into the OVO management server configuration:

```
/opt/OV/bin/ovconfchg -ns opc -set \  
HA_ORACLE_RESOURCE_GROUP \  
<Oracle HA resource group name>
```

- Create a script or a binary named:

```
/opt/OV/bin/OpC/Utils/ha/ha_check_oracle
```

The exit code of this script/binary must be 0 if the Oracle database server is running, or other than 0 if it is not running. This script must be present on all OVO management server cluster nodes. With this script the OVO management server checks for the status of the Oracle database.

- Remove the following link:

```
/var/opt/OV/hacluster/ov-server/M300_ov_server
```

and create a new one with the same name pointing to:

```
/opt/OV/bin/OpC/Utils/ha/ha_mon_ovserver_3tier.
```

After installing the Oracle database server, continue with “To Install and Configure the OVO Management Server on Cluster Nodes” on page 265.

To Install and Configure the OVO Management Server on Cluster Nodes

Install the OVO management server as described in Chapter 2, “Installing OVO on the Management Server,” on page 55.

The OVO management server must be installed as a standalone system.

When installing OVO in a cluster environment, you *must* provide responses to some questions and specify some values differently than in the standalone OVO installation. The following lists the cluster-specific questions that are displayed on the screen and the information that you *must* enter:

- Configure OVO Server as HA resource group (y|n) :
[y]

Press **Enter** to continue.

- HA resource group name:
[ov-server]

CAUTION

If installing on the first cluster node, the entered HA Resource Group name must not be one of the already existing names.

If installing on an additional cluster node, the entered HA Resource Group must be configured and running on the first cluster node.

Press **Enter** to continue or specify an alternative name for the HA Resource Group.

NOTE

If you choose an alternative name for the HA Resource Group, use that name throughout the installation and configuration process.

- Short name of a valid virtual host:
[]

Enter the short name of the virtual host, for example, **virtual1**.

To Install and Configure the OVO Management Server on Cluster Nodes

- IP address of a valid virtual host:

[]

Enter the virtual host IP address, for example **192.168.0.1**

- Netmask address of a valid virtual host:

[]

Enter the netmask value of the virtual host, for example **255.255.0.0**.

- Network interface for virtual host:

[]

Enter the network interface for the virtual host; for Sun Cluster 3.0 enter the name of the NAFO group, and for Sun Cluster 3.1 enter the name of the IPMP group.

- Type for shared file systems:

[]

Enter the type of shared file systems, for example, **ufs**.

- Separate Oracle from OVO server (3Tier configuration):

[n]

If you would like to separate Oracle from the OVO server, choose **y** and answer the following question, otherwise press **Enter** to continue with the basic OVO management server installation.

- Configure Oracle as separate HA resource group:

[y]

If you choose to configure Oracle as a separate HA resource group, press **Enter** and answer the following questions, otherwise select **n** and continue with the OVO management server installation where Oracle is an independent database server.

- Oracle HA resource group name:

[ov-oracle]

Press **Enter** to continue or specify an alternative name for the Oracle HA Resource Group.

CAUTION

If installing on the first cluster node, the entered HA Resource Group name must not be one of the already existing names.

If installing on an additional cluster node, the entered HA Resource Group must be configured and running.

- ❑ Short name of a valid Oracle virtual host:
[]

Enter the short name of the virtual host, for example, **virtual1**.

- ❑ IP address of a valid Oracle virtual host:
[]

Enter the virtual host IP address, for example **192.168.0.1**

- ❑ Netmask address of a valid Oracle virtual host:
[]

Enter the netmask value of the Oracle virtual host, for example **255.255.0.0**.

- ❑ Network interface for Oracle virtual host:
[]

Enter the network interface for the Oracle virtual host; for Sun Cluster 3.0 enter the name of the NAFO group, and for Sun Cluster 3.1 enter the name of the IPMP group.

After the installation process is completed, the OVO management server should be running on the node as an HA resource group.

For more information about administration of OVO management server in a cluster environment, see the *OVO Administrator's Reference* manual.

Log Files

You can check the following log files for details about cluster-specific installation:

- ❑ `/tmp/HA_opcconfig.log` (for information about the success and eventual problems during the installation)
- ❑ `/var/opt/OV/hacluster/ov-server/trace.log1`

-
1. Only if previously enabled by entering the following:

```
/opt/OV/lbin/ovharg -tracing ov-server enable
```

The `trace.log` file is automatically updated with the information about starting the HA Resource Group during the installation on the first cluster node.

Installing the OVO Agent Software and Templates on Cluster Nodes

IMPORTANT

When installing the OVO software in a cluster environment, only the OVO management server is automatically installed. You *must* also install the OVO agent software and templates using the OVO Administrator's GUI.

To install the OVO agent software and templates on the first cluster node, the OVO management server *must* be running on this node.

To install the OVO agent software and templates on additional cluster nodes, the OVO management server must be running on one of the cluster nodes. After the installation of the OVO management server is finished on the additional cluster node, proceed with the installation of the OVO agent software and templates on this node.

On the node where the OVO management server is running, open the OVO Administrator's GUI and install the OVO agent software and templates on the cluster node. You will find the cluster node in the Holding Area. You can move it to the OVO Node Bank.

For more information on installing OVO agents on managed nodes, see the *OVO Administrator's Reference* manual.

Deinstalling the OVO Software from Cluster Nodes

The OVO software can be deinstalled:

❑ **Completely from a cluster environment.**

When deinstalling the OVO management server from a cluster environment, you *must* perform the deinstallation procedure in the following sequence:

1. Deinstall the OVO management server from the **passive cluster nodes**. These are the systems that are installed and configured to run the OVO management server, but are currently *not* running.

For details on how to deinstall the OVO server from the passive cluster nodes, see the section “Deinstalling OVO from Passive Cluster Nodes” on page 271.

2. When the OVO management-server software has been deinstalled from all passive nodes, deinstall the software from the **active cluster node**. This is the system on which the OVO management server is currently up and running as an HA resource group.

For details on how to deinstall the OVO management server from the active cluster node, see the section “Deinstalling OVO from the Active Cluster Node” on page 272.

❑ **From selected cluster nodes only.**

By deinstalling the OVO management-server software from a cluster node, this node will no longer be able to run the OVO management server. The cluster environment running the OVO server will be reduced by one node.

To deinstall OVO management-server software from a cluster node, this node must be in the passive state. For details on how to deinstall OVO management-server software from passive cluster nodes, see the section entitled “Deinstalling OVO from Passive Cluster Nodes” on page 271.

Deinstalling OVO from Passive Cluster Nodes

Before the OVO management-server software is deinstalled from a passive cluster node, the following requirements must be met:

1. The OVO Server HA Resource group `ov-server` must *not* be active on this node.
2. Virtual host *must not* be active.
3. Shared file systems *must not* be mounted.

After ensuring that all these requirements are met, proceed with the deinstallation:

1. Deinstall the OVO agent software from this node using the following command:

```
/opt/OV/bin/OpC/install/opc_inst -r
```

NOTE

Ignore possible dependency warnings during the OVO agent-software deinstallation.

2. When the OVO agent software is removed, remove the managed node from the Motif GUI Nodebank.
3. Deinstall the OVO management server as described in Chapter 6, “Software Administration on the Management Server,” on page 153.

CAUTION

Do *not* perform any agent-related operations described in the Chapter 6, “Software Administration on the Management Server.”

When asked for the name of the HA Resource group, enter the OVO Server HA resource group, this is normally `ov-server`.

When the deinstallation procedure is complete, remove the following files/directories (if they exist):

- `/opt/oracle/admin/<ORACLE_SID>`
- `/opt/oracle/product/9.2.0/dbs/init<ORACLE_SID>.ora`
- `/opt/oracle/product/9.2.0/dbs/lk<ORACLE_SID>`

- ❑ `/opt/oracle/product/9.2.0/network/admin/sqlplus.ora`
- ❑ `/opt/oracle/product/9.2.0/network/admin/listener.ora`
- ❑ `/opt/oracle/product/9.2.0/network/admin/tnsnames.ora`
- ❑ `/opt/oracle/product/9.2.0/network/admin/tnsnv.ora`

where `<ORACLE_SID>` is the value of the `ORACLE_SID` variable used for the configuration of the OVO management-server database. It is usually set to `openview`.

Deinstalling OVO from the Active Cluster Node

When the OVO management-server software is deinstalled from all passive cluster nodes, you can start the deinstallation process from the node on which the OVO management server is running.

1. Deinstall the OVO agent software from this node using the following command:

```
/opt/OV/bin/OpC/install/opc_inst -r
```

2. Deinstall the OVO management-server software from this node as described in Chapter 6, “Software Administration on the Management Server,” on page 153.

When asked for the name of the HA Resource group, enter the OVO Server HA resource group, this is normally `ov-server`.

After you have deinstalled OVO from this cluster node, check whether the HA Resource group is still present by entering:

```
/usr/cluster/bin/scstat -g
```

If the HA Resource group is still present on the node, remove it by entering:

```
/usr/cluster/bin/scrgadm -r -g ov-server
```

For more information about administration of OVO management server in a cluster environment, see the *OVO Administrator's Reference* manual.

Upgrading OVO to Version A.08.10 in a Cluster Environment

To upgrade the OVO management server running in a cluster environment from version A.07.1x to version A.08.10, you must first perform the upgrade procedure on all the passive nodes, and then on the active node.

Upgrading the OVO Management Server on the Active Cluster Node

To upgrade the OVO management server from version A.07.1x to version A.08.10 on the node where the OVO management server is currently running, perform the following steps:

1. Put the OVO management server represented as an HA Resource Group in maintenance mode to disable possible failover when the OVO management server is stopped.
2. Backup the current installation.
See the section entitled “Backing Up the Current OVO A.07.1x Installation” on page 179 for details.
3. Save the Administrator’s ovw map.
See the section entitled “Saving the Administrator’s ovw Map” on page 180 for details.
4. Stop the OVO management server by entering:

```
/opt/OV/bin/ovstop
```
5. Download the current OVO A.07.1x configuration.
See the section entitled “Downloading the Current OVO A.07.1x Configuration” on page 181 for details.
6. Clear the database.
See the section entitled “Clearing the Database” on page 183 for details.

7. Remove the OVO A.07.1x management server.
 See the section entitled “Deinstalling OVO A.07.1x” on page 185 for details.
8. Remove the HA Resource group representing the OVO management server from the cluster configuration.
9. Adapt the shared file system to match the requirements of the OVO 08.00 management server. Check the section entitled “Before You Install the OVO Management Server on the First Cluster Node” on page 231 for details.

The OVO 07.1x management server is using the shared file systems mounted on the following mount points:

```
/var/opt/OV/share
/etc/opt/OV/share
/opt/share
/opt/oradata
```

For the OVO 08.00 management server, the shared file systems are mounted on different mount points. The file system containing the Oracle database software is removed and used for shared configuration files.

Table 9-4 indicates the mount points required for the OVO A.07.1x management server and the OVO A.08.10 management server:

Table 9-4 Differences Between the Mount Points for A.07.1x and A.08.10

A.07.1x	A.08.10
/var/opt/OV/share	/var/opt/OV/share
/etc/opt/OV/share	/etc/opt/OV/share
/opt/oracle	/var/opt/OV/shared/server
/opt/oradata	/opt/oradata/<ORACLE_SID> ^a

a. where <ORACLE_SID> is the value of the ORACLE_SID variable used for the configuration of the OVO management-server database. It is usually set to openview.

10. Upgrade the Oracle database software.

If the Oracle software was installed on the local file system, you need to upgrade the Oracle database version as described in the section entitled “Upgrading the Oracle Database Version” on page 175. If the Oracle software was installed on the shared file system, you must install the Oracle database software on the local file system from the beginning, as described in Chapter 2, “Installing OVO on the Management Server,” on page 55.

If the OVO database was completely removed, check if `$ORACLE_BASE/admin/$ORACLE_SID` (for example, `/opt/oracle/admin/openview`) directory exists on the cluster node and remove it with all its contents.

11. Install the OVO management server.

To install the OVO management server, see “Before You Install the OVO Management Server on the First Cluster Node” on page 231 and use the procedure for installation, described in “To Install and Configure the OVO Management Server on Cluster Nodes” on page 265.

12. Disable the HA Resource group monitoring using the command

```
/opt/OV/lbin/ovharg -monitor ov-server disable
```

13. Upload the saved OVO A.07.1x configuration as described in the section entitled “Uploading the Saved OVO A.07.1x Configuration” on page 189.

14. Import the saved OVO management server A.07.1x configuration data as described in the section entitled “Importing Saved A.07.1x Management-Server Configuration Data” on page 195.

15. Upgrade the OVO Java Operator UI as described in the section entitled “Upgrading the OVO Java Operator UI” on page 196.

16. For each cluster node listed in the OVO Node Bank, open Modify Node window Actions -> Node -> Modify...

Select HTTPS type and close the window.

17. Enable the HA Resource group monitoring using the command

```
/opt/OV/lbin/ovharg -monitor ov-server enable
```

NOTE

Before enabling the HA Resource group monitoring, make sure that the OVO management server is running.

Upgrading the OVO Management Server on the Passive Cluster Node

To upgrade the OVO management server from version A.07.1x to version A.08.10 on the remaining cluster nodes on which the OVO management server is not currently running, perform the following steps:

1. Remove the OVO A.07.1x management server.

See the section entitled “Deinstalling OVO A.07.1x” on page 185 for details.

NOTE

You can expect some error messages during the deinstallation because the shared file systems are not mounted. These error messages can safely be ignored.

2. Upgrade the Oracle database software.

If the Oracle software was installed on the local file system, you need to upgrade the Oracle database version as described in the section entitled “Upgrading the Oracle Database Version” on page 175. If the Oracle software was installed on the shared file system, you must install the Oracle database software on the local file system from the beginning, as described in Chapter 2, “Installing OVO on the Management Server,” on page 55.

Check if the `$ORACLE_BASE/admin/$ORACLE_SID` (for example, `/opt/oracle/admin/openview`) directory exists on the cluster node and remove it with all its contents.

3. Install the OVO management server.

To install the OVO management server, see “Before You Install the OVO Management Server on Additional Cluster Nodes” on page 248 and use the procedure for installation, described in “To Install and Configure the OVO Management Server on Cluster Nodes” on page 265.

4. On the cluster node with the OVO Server running, assign the template to the current passive node using the following command:

```
/opt/OV/bin/OpC/utlis/opcnode -assign_tmpl \  
node_name=<passive node name> \  
templ_name="HA Physical Management Server" \  
templ_type=TEMPLATE_GROUP net_type=NETWORK_IP
```

5. Disable the HA Resource group monitoring using the command

```
/opt/OV/lbin/ovharg -monitor ov-server disable
```

6. Import the saved OVO management-server A.07.1x configuration data as described in the section entitled “Importing Saved A.07.1x Management-Server Configuration Data” on page 195.

7. Upgrade the OVO Java Operator UI as described in the section entitled “Upgrading the OVO Java Operator UI” on page 196.

8. Enable the HA Resource group monitoring using the command

```
/opt/OV/lbin/ovharg -monitor ov-server enable
```

NOTE

Before enabling the HA Resource group monitoring, make sure that the OVO management server is running.

Upgrading OVO From Version A.08.00 to Version A.08.10 in a Cluster Environment

To upgrade the OVO management server running in a cluster environment from version A.08.00 to version A.08.10, you *must* first perform the upgrade procedure on all the passive nodes, and then on the active node. The upgrade procedure is as follows:

1. To disable possible failovers when the OVO management server is stopped, put the OVO management server represented by an HA Resource Group, in maintenance mode on the active cluster node, where the OVO Server is running.

To put the OVO Server HA resource group in maintenance mode, disable the HA Resource group monitoring using the following command:

```
/opt/OV/sbin/ovharg -monitor ov-server disable
```

2. Perform an OVO Management-Server upgrade on *all* the passive cluster nodes, where the OVO Management server is not running.

- If you are installing OVO from a CD-ROM, enter the following:

```
/<mount_point>/ovinstall -t
```

where *<mount_point>* is the location where the OVO installation CD is mounted.

- If you are installing OVO using the CD images, enter the following:

```
/<master_directory>/OVCD1/ovinstall -t
```

3. When the OVO Management Server is upgraded on all passive cluster nodes, perform an OVO Management Server upgrade on the active cluster node, where the OVO Management Server is running.

Start the install process using one of the following commands as appropriate:

- If you are installing OVO from a CD-ROM, enter the following:

```
/<mount_point>/ovinstall -t
```

where *<mount_point>* is a location where the OVO installation CD is mounted.

- If you are installing OVO using the CD images, enter the following:

```
<master_directory>/OVOCd1/ovoinstall -t
```

4. When the OVO Management Server is running again on the active cluster node, put it back to the operational mode by enabling the OVO Management-Server HA Resource Group monitoring.

Enable the HA Resource group monitoring using the following command:

```
/opt/OV/lbin/ovharg -monitor ov-server enable
```

NOTE

Before enabling the HA Resource group monitoring, make sure that the OVO management server is running.

Stopping the OVO Management Server in a Cluster Environment for Maintenance

When there is a need to stop the OVO management server (in the case of a patch installation, an upgrade, maintenance, and so on), stop the OVO management server as follows:

1. Disable the HA Resource group monitoring using the command
`/opt/OV/sbin/ovharg -monitor ov-server disable`
2. Stop the OVO management server.

NOTE

The OVO management server *must not* be stopped by using the cluster-related commands; only the OVO native commands such as `ovstop`, `opcsv` may be used.

3. Perform the intended action (the patch installation, an upgrade, the maintenance, and so on).
4. Start the OVO management server.

NOTE

The OVO management server *must not* be started by using the cluster-related commands; only the OVO native commands such as `ovstart`, `opcsv` may be used.

5. Enable the HA Resource group monitoring using the command
`/opt/OV/sbin/ovharg -monitor ov-server enable`

NOTE

Before enabling the HA Resource group monitoring, make sure that the OVO management server is running.

For more information about administration of OVO management server in a cluster environment, see the *OVO Administrator's Reference* manual.

In This Chapter

This chapter describes the following:

- ❑ Installation and configuration of the OVO management server in a VERITAS cluster server environment.
- ❑ Deinstallation of the OVO management server from VERITAS cluster server nodes.
- ❑ Upgrade of the OVO management server in a VERITAS cluster server environment.

NOTE

Before proceeding with the installation and configuration of the OVO management server in a VERITAS cluster environment, read the chapter titled “Administration of the OVO Management Server in a Cluster Environment” in the OVO Administrator’s Reference manual.

About OVO in a VERITAS Cluster System

Glossary of VERITAS Cluster Terms

HA Resource Group

Application running in a cluster environment. An HA Resource Group can simultaneously be a cluster object that represents an application in a cluster.

Configuration Scenarios

When installing the OVO management server and the Oracle database server in a cluster environment, you can choose one of the following configuration scenarios:

❑ Basic management server configuration

This is the simplest cluster configuration. You can use all backup and maintenance commands without restrictions.

See Figure 10-1 on page 285 for graphical presentation of this scenario.

❑ Decoupled management server configuration

With this setup you can use both physical nodes with the OVO HA resource group running on one node and the Oracle database server resource group on the other node.

You *must* install patch ITOSOL_00386PHSS_32404 to use this scenario.

The automated backup scripts used by `ovbackup.ovpl` have been adapted to work even if the OVO and Oracle HA resource groups are running on different nodes. But to restore a backup with `ovresore.ovpl` and to use the offline backup scripts, the OVO and Oracle HA resource groups must run on the same node.

See Figure 10-2 on page 286 for graphical presentation of this scenario.

❑ **Independent database server configuration**

Following this scenario, you can use a remote database. The remote database should also run on a cluster, otherwise the high availability of the OVO setup is compromised. You may find this scenario useful, if you already have a central database server cluster that you also want to use for the OVO database.

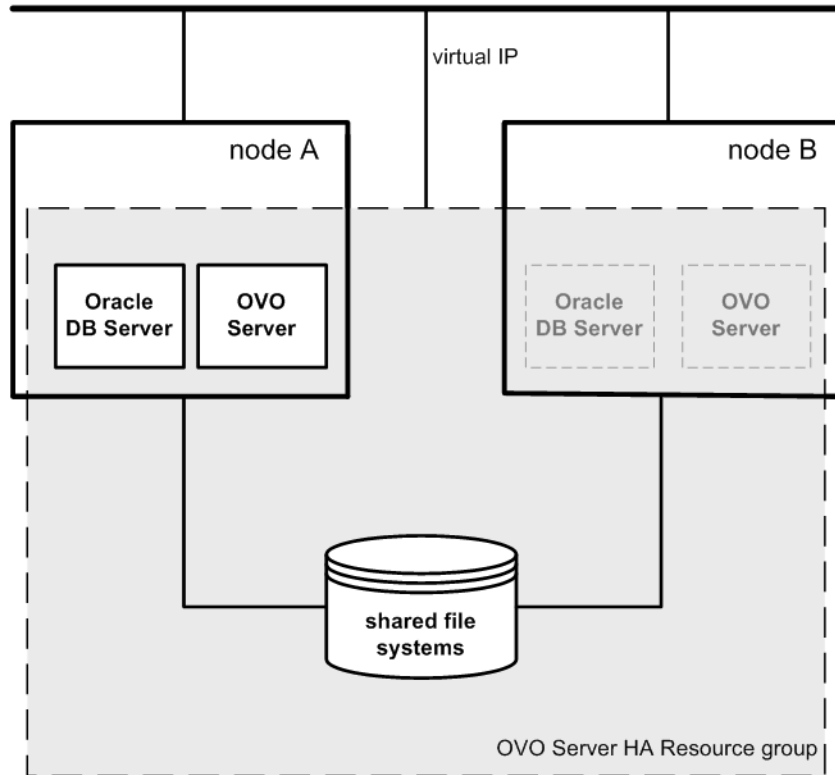
Following this scenario, you cannot use the OVO backup scripts.

See Figure 10-3 on page 287 for graphical presentations of this scenario.

❑ **Basic management server configuration**

The OVO management server and the Oracle database server are part of the same HA resource group.

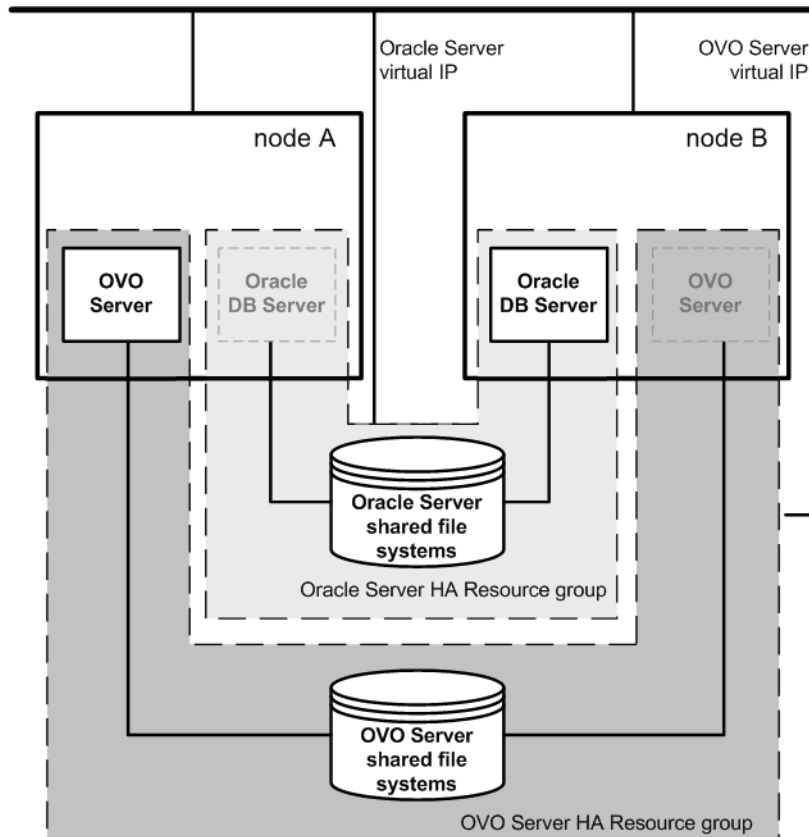
Figure 10-1 Basic management server configuration



❑ **Decoupled management server configuration**

The OVO management server and the Oracle database server are configured as separate HA resource groups by the OVO management server installation scripts. This configuration scenario is also known as 3Tier OVO management server configuration in a cluster environment.

Figure 10-2 Decoupled management server configuration



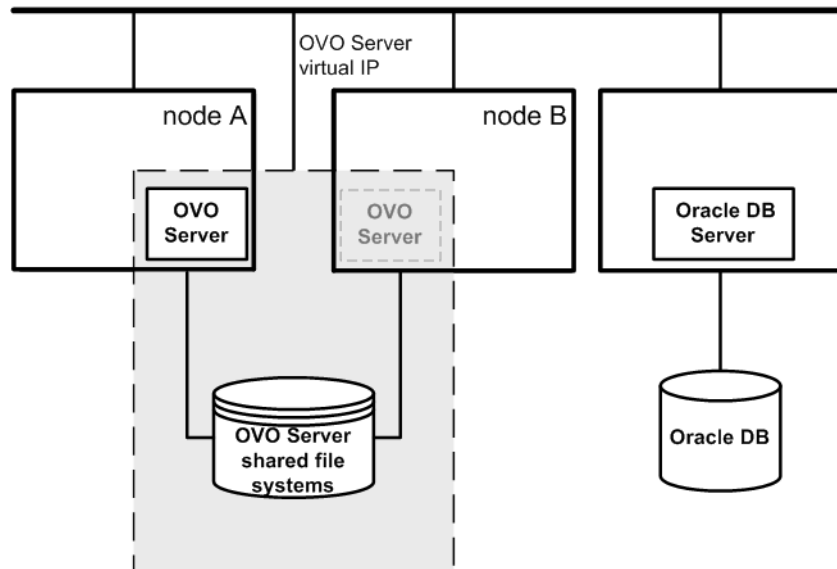
❑ **Independent database server configuration**

In exceptional cases, the Oracle database server can be configured as an independent database server:

- *Independent database server configuration*

Install the Oracle client software on the cluster nodes that are hosting the OVO management server. You can install the independent database as a standalone server or as an HA resource group on an independent cluster.

Figure 10-3 Independent database server configuration



Installation Requirements

To run OVO in a VERITAS cluster server environment, you *must* meet the following requirements:

- Solaris 7, 8, or 9.
- VERITAS Cluster Server for Solaris version 3.5.
- VERITAS Volume Manager for Solaris version 3.5.
-
-
-

NOTE

On Sun Solaris 10 management server, *only* VERITAS Cluster version 4.1 is supported.

For additional requirements about installing OVO, see Chapter 1, “Installation Requirements for the Management Server,” on page 25.

Installation Requirements for an Oracle Database

The Oracle database (the database binaries) should preferably be installed on a local disk.

In exceptional cases, you can decide to install the Oracle database server binaries on a shared disk. For the preparation of such an environment, you will need to perform the additional configuration steps that are marked as optional in the configuration procedures.

For more information on installing the Oracle database server binaries, see “Installing the Oracle Database Server for OVO in a Cluster Environment” on page 306.

Installing and Configuring the OVO Management Server on Cluster Nodes

To install and configure the OVO management server in a cluster environment, you *must* complete the following procedure first on the **first** cluster node, and then on each **additional** cluster node:

1. Preparation Steps

See “Before You Install the OVO Management Server on the First Cluster Node” on page 292 for information on preparing for the installation and configuration of the OVO management server on the first cluster node.

See “Before You Install the OVO Management Server on Additional Cluster Nodes” on page 304 for information on preparing for the installation and configuration of the OVO management server on additional cluster nodes.

2. Installation of the Oracle Database

See “Installing the Oracle Database Server for OVO in a Cluster Environment” on page 306 for details.

3. Installation and Configuration of the OVO Management Server

See “To Install and Configure the OVO Management Server on Cluster Nodes” on page 314 for details.

4. Installation of the OVO Agent Software and Templates

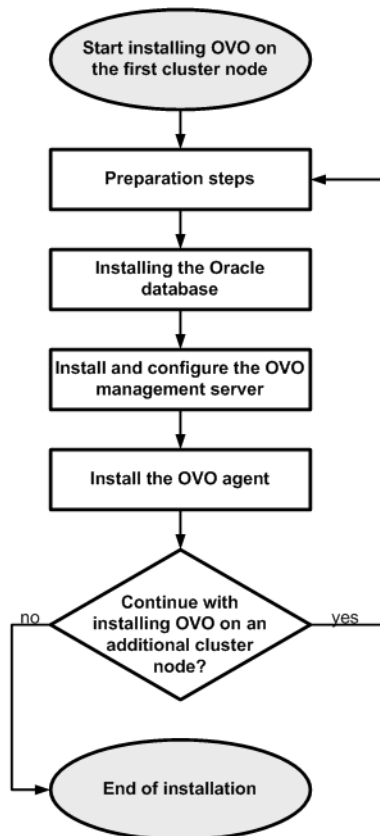
See “Installing the OVO Agent Software and Templates on Cluster Nodes” on page 318 for details.

WARNING

You *cannot* install OVO simultaneously on all the cluster nodes. When the installation process is completed on one cluster node, proceed with the installation on the next node, until OVO is installed on all the nodes in a cluster environment.

Figure 10-4 on page 290 shows the flow of the OVO management server installation and configuration steps.

Figure 10-4 **Flow of OVO Management Server Installation and Configuration Steps in a Cluster Environment**



For more information about administration of OVO management server in a cluster environment, see the *OVO Administrator's Reference* manual.

Preparation Steps

Before you start installing and configuring the OVO management server on a cluster node, perform the preparation steps. Follow these procedures for the first cluster node and for each additional cluster node:

1. Preparation steps for the first cluster node

See “Before You Install the OVO Management Server on the First Cluster Node” on page 292.

2. Preparation steps for an additional cluster node

See “Before You Install the OVO Management Server on Additional Cluster Nodes” on page 304.

Before You Install the OVO Management Server on the First Cluster Node

Before you install the OVO management server on the first cluster node, you have to perform appropriate preparation procedures depending on the cluster environment you want to configure. Choose one of the following scenarios:

❑ **OVO management server in a basic environment**

Using this scenario, Oracle and OVO Server are configured as part of a single HA resource group.

See “Preparation Steps for the First Cluster Node in a Basic Environment” on page 293.

❑ **OVO management server in a 3Tier environment**

Using this scenario, Oracle and OVO Server are separated, Oracle is configured as a separate HA resource group. In this case there are two independent resource groups, one for Oracle and one for the OVO management server.

See “Preparation Steps for the First Cluster Node in a Decoupled Environment” on page 297.

❑ **OVO management server uses an independent database server**

Using this scenario, the Oracle database is configured on a node that is not part of the cluster, or on a cluster node independently of the OVO management server installation.

See “Preparation Steps for the First Cluster Node in a Cluster Environment Using an Independent Database Server” on page 302.

Preparation Steps for the First Cluster Node in a Basic Environment

I. Installation Prerequisites

Before you install the OVO management server in a cluster environment, the following prerequisites *must* be met:

- ❑ The following *must* be defined:
 - Define the disk group `ov-dg`, consisting of at least one shared disk for the HA Resource group.
 - Define the following volumes within the `ov-dg` disk group:
 - `ov-volume-var`
 - `ov-volume-etc`
 - `ov-volume-lcore`
 - `ov-volume-ora-data`
 - `ov-volume-ora-core*`
- * If the Oracle database server binaries will be installed on a shared disk.

- ❑ The following file systems *must* be available:
 - file system for `/etc/opt/OV/share`
 - file system for `/var/opt/OV/share`
 - file system for `/var/opt/OV/shared/server`
 - file system for the OVO server database
 - file system for Oracle*
- * If you choose to install the Oracle database server binaries on a shared disk.

II. Pre-Installation Steps

You *must* perform the following preparation steps manually:

1. Prepare mount points for the shared file systems:
 - `/etc/opt/OV/share`
 - `/var/opt/OV/share`

Preparation Steps

- `/var/opt/OV/shared/server`
- Mount point for the OVO management-server database.
You may select an alternative mount point. The default is:
`/opt/oradata/<ORACLE_SID>`,
where `<ORACLE_SID>` is the value of the `ORACLE_SID` variable used for the configuration of the OVO management-server database. It is usually set to `openview`.
- Mount point for the Oracle database server binaries if they will be installed on a shared disk. The mount point is equal to the value of the `ORACLE_BASE` variable.

Table 10-1 Disk Space Required for Shared File Systems:

Shared File System	Recommended	Initial
<code>/etc/opt/OV/share</code>	150 MB	55 MB
<code>/var/opt/OV/share</code>	1 GB	550 MB ^a
<code>/var/opt/OV/shared/server</code>	100 MB	1 MB
<code>/opt/oradata/openview</code>	1 GB	420 MB ^b
Oracle database server binaries (<i>optional</i>)	3 GB	2 GB

- a. Further disk space will be required when SPIs are installed.
b. For small to medium sized installations. Larger installations and high numbers of messages will result in greater space requirements.

NOTE

When installing on additional cluster nodes, the disk space for `/etc/opt/OV/share`, `/var/opt/OV/share`, and `/var/opt/OV/shared/server` is needed only temporarily and can be removed after the installation, before the shared disks are switched to that node. For example, local volumes can be created and mounted to these locations before installing. These volumes can be deleted after installation is complete.

- Put the `ov-dg` disk group online on the current node by entering:

```
/usr/sbin/vxdg import ov-dg
```

- Start the volumes by entering:

```
/usr/sbin/vxvol -g ov-dg startall
```

- Check whether all the volumes of the `ov-dg` disk group are started by entering:

```
/usr/sbin/vxinfo -g ov-dg
```

If the volumes are started, an output similar to the following is displayed:

```
ov-volume-var Started  
ov-volume-etc Started  
ov-volume-lcore Started  
ov-volume-ora-data Started  
ov-volume-ora-core Started*
```

* If the Oracle database server binaries will be installed on a shared disk.

- Mount the shared file systems on the prepared mount points as follows:

```
a. /usr/sbin/mount -F <FSType> \  
   /dev/vx/dsk/ov-dg/ov-volume-etc /etc/opt/OV/share
```

```
b. /usr/sbin/mount -F <FSType> \  
   /dev/vx/dsk/ov-dg/ov-volume-var /var/opt/OV/share
```

```
c. /usr/sbin/mount -F <FSType> \  
   /dev/vx/dsk/ov-dg/ov-volume-lcore \  
   /var/opt/OV/shared/server
```

```
d. /usr/sbin/mount -F <FSType> \  
   /dev/vx/dsk/ov-dg/ov-volume-ora-data \  
   /<oracle_database_mount_point>
```

where `oracle_database_mount_point` is the mount point you have chosen for the OVO server database, and `FSType` is a file system type of shared file systems.

Preparation Steps

- e. *Optional:* If you choose to install Oracle database server binaries on a shared disk:

```
/usr/sbin/mount -F <FSType> \  
/dev/vx/dsk/ov-dg/ov-volume-ora-core \  
/<oracle_binaries_mount_point>
```

where *oracle_binaries_mount_point* is the mount point you have chosen for the Oracle database server binaries installation (equal to the value of the ORACLE_BASE variable).

- 6. Activate the Virtual Network IP using the `ifconfig` command:

```
ifconfig <network_interface>:1
```

For example, you can configure the IP address as follows:

- a. `ifconfig <network_interface>:1 plumb`
- b. `ifconfig <network_interface>:1 inet \
<IP> netmask 255.255.0.0 up,`

where

- *<network_interface>* is the physical network interface used for virtual IP. `hme0` is used as the network interface on Solaris.
- *<IP>* is the IP address of the virtual host that you previously selected.

NOTE

To configure the IP address, use decimal notation (for example, 255.255.0.0) instead of hexadecimal notation (for example, ffff0000).

Preparation Steps for the First Cluster Node in a Decoupled Environment

I. Installation Prerequisites

Before you install the OVO management server in a cluster environment, the following prerequisites *must* be met:

- ❑ The following *must* be defined:
 - Define the disk group `ov-dg`, consisting of at least one shared disk for the HA Resource group.
 - Define the following volumes within the `ov-dg` disk group:
 - `ov-volume-var`
 - `ov-volume-etc`
 - `ov-volume-lcore`
 - Define the disk group `ovoracle-dg`, consisting of at least one shared disk for the HA Resource group.
 - Define the following volumes within the `ovoracle-dg` disk group:
 - `ov-volume-ora-data`
 - `ov-volume-ora-core*`

* If you choose to install the Oracle database server binaries on a shared disk.
- ❑ The following file systems *must* be available:
 - file system for `/etc/opt/OV/share`
 - file system for `/var/opt/OV/share`
 - file system for `/var/opt/OV/shared/server`
 - file system for the OVO server database
 - file system for the Oracle database server binaries*

* If you choose to install the Oracle database server binaries on a shared disk (equal to the value of the `ORACLE_BASE` variable).

II. Pre-Installation Steps

You *must* perform the following preparation steps manually:

1. Prepare mount points for the shared file systems:

- /etc/opt/OV/share
- /var/opt/OV/share
- /var/opt/OV/shared/server
- Mount point for the OVO management server database.

You may select alternative mount point. The default is:

/opt/oradata/<ORACLE_SID>

where <ORACLE_SID> is the value of the ORACLE_SID variable used for the configuration of the OVO management server database. It is usually set to openview.

- Mount point for the Oracle database server binaries*

* If you choose to install the Oracle database server binaries on a shared disk. (equal to the value of the ORACLE_BASE variable).

Table 10-2

Disk Space Required for Shared File Systems:

Shared File System	Recommended	Initial
/etc/opt/OV/share	150 MB	55 MB
/var/opt/OV/share	1 GB	550 MB ^a
/var/opt/OV/shared/server	100 MB	1 MB
/opt/oradata/openview	1 GB	420 MB ^b
Oracle database server binaries (<i>optional</i>)	3 GB	2 GB

a. Further disk space will be required when SPIs are installed.

b. For small to medium sized installations. Larger installations and high numbers of messages will result in greater space requirements.

2. Put the `ov-dg` disk group online on the current node by entering:

```
/usr/sbin/vxdg import ov-dg
```

Put the `ovoracle-dg` disk group online on the current node by entering:

```
/usr/sbin/vxdg import ovoracle-dg
```

3. Start the volumes by entering:

```
/usr/sbin/vxvol -g ov-dg startall
```

```
/usr/sbin/vxvol -g ovoracle-dg startall
```

4. Check whether all the volumes of the `ov-dg` disk group are started by entering:

```
/usr/sbin/vxinfo -g ov-dg
```

If the volumes are started, an output similar to the following is displayed:

```
ov-volume-var Started
ov-volume-etc Started
ov-volume-lcore Started
```

Check whether all the volumes of the `ovoracle-dg` disk group are started by entering:

```
/usr/sbin/vxinfo -g ovoracle-dg
```

If the volumes are started, an output similar to the following is displayed:

```
ov-volume-ora-data Started
ov-volume-ora-core Started*
```

* If the Oracle database server binaries will be installed on a shared disk.

5. Mount the shared file systems on the prepared mount points:

```
a. /usr/sbin/mount -F <FSType> \
   /dev/vx/dsk/ov-dg/ov-volume-etc /etc/opt/OV/share
```

```
b. /usr/sbin/mount -F <FSType> \
   /dev/vx/dsk/ov-dg/ov-volume-var /var/opt/OV/share
```

Preparation Steps

- c.

```
/usr/sbin/mount -F <FSType> \  
/dev/vx/dsk/ov-dg/ov-volume-lcore \  
/var/opt/OV/shared/server
```
- d.

```
/usr/sbin/mount -F <FSType> \  
/dev/vx/dsk/ovoracle-dg/ovoracle-volume-ora-data \  
/<oracle_database_mount_point>
```

where *oracle_database_mount_point* is the mount point you have chosen for the OVO server database, and *FSType* is a file system type of shared file systems.

- e. *Optional:* If you choose to install Oracle database server binaries on a shared disk:

```
/usr/sbin/mount -F <FSType> \  
/dev/vx/dsk/ovoracle-dg/ovoracle-volume-ora-core \  
/<oracle_binaries_mount_point>
```

where *oracle_binaries_mount_point* is the mount point you have chosen for the Oracle database server binaries installation (equal to the value of the `ORACLE_BASE` variable).

6. Activate the OVO Server Virtual Network IP using the `ifconfig` command:

```
ifconfig <network_interface>:1
```

For example, you can configure the IP address as follows:

- a. `ifconfig <network_interface>:1 plumb`
- b. `ifconfig <network_interface>:1 inet \
<IP> netmask 255.255.0.0 up`

where

- *<network_interface>* is the physical network interface used for virtual IP. `hme0` is used as the network interface on Solaris.
- *<IP>* is the IP address of the virtual host that you previously selected.

NOTE

To configure the IP address, use decimal notation (for example, 255.255.0.0) instead of hexadecimal notation (for example, ffff0000).

7. Activate the Oracle Virtual Network IP using the `ifconfig` command:

```
ifconfig <network_interface>:2
```

For example, you can configure the IP address as follows:

- a. `ifconfig <network_interface>:2 plumb`
- b. `ifconfig <network_interface>:2 inet \
<IP> netmask 255.255.0.0 up`

where

- `<network_interface>` is the physical network interface used for virtual IP. `hme0` is used as the network interface on Solaris.
- `<IP>` is the IP address of the Oracle virtual host that you previously selected.

NOTE

To configure the IP address, use decimal notation (for example, 255.255.0.0) instead of hexadecimal notation (for example, ffff0000).

After completing the preparation steps, continue with installing the Oracle database server. See “Installing the Oracle Database Server for OVO in a Cluster Environment” on page 306.

Preparation Steps for the First Cluster Node in a Cluster Environment Using an Independent Database Server

I. Installation Prerequisites

Before you install the OVO management server in a cluster environment, the following prerequisites *must* be met:

- ❑ The following *must* be defined:
 - Define the disk device group `ov-dg`, consisting of at least one shared disk for the HA Resource group.
 - Define the following three volumes within the `ov-dg` disk device group:
 - `ov-volume-var`
 - `ov-volume-etc`
 - `ov-volume-lcore`
- ❑ The following file systems *must* be available:
 - file system for `/etc/opt/OV/share`
 - file system for `/var/opt/OV/share`
 - file system for `/var/opt/OV/shared/server`

II. Pre-Installation Steps

You *must* perform the following preparation steps manually:

1. Prepare mount points for the shared file systems:
 - `/etc/opt/OV/share`
 - `/var/opt/OV/share`
 - `/var/opt/OV/shared/server`
2. Import the `ov-dg` disk group by entering:

```
/usr/sbin/vxdg import ov-dg
```
3. Start the volumes by entering:

```
/usr/sbin/vxvol -g ov-dg startall
```

4. Check whether all the volumes of the `ov-dg` disk group are started by entering:

```
/usr/sbin/vxinfo -g ov-dg
```

If the volumes are started, an output similar to the following is displayed:

```
ov-volume-lcore Started
ov-volume-etc Started
ov-volume-var Started
```

5. Mount the shared file systems on the prepared mount points:

- a. `/usr/sbin/mount -F <FSType> \
/dev/vx/dsk/ov-dg/ov-volume-etc /etc/opt/OV/share`
- b. `/usr/sbin/mount -F <FSType> \
/dev/vx/dsk/ov-dg/ov-volume-var /var/opt/OV/share`
- c. `/usr/sbin/mount -F <FSType> \
/dev/vx/dsk/ov-dg/ov-volume-lcore \
/var/opt/OV/shared/server`

6. Activate the Virtual Network IP using the `ifconfig` command:

```
ifconfig <network_interface>:1
```

For example, you can configure the IP address as follows:

- a. `ifconfig <network_interface>:1 plumb`
- b. `ifconfig <network_interface>:1 inet \
<IP> netmask 255.255.0.0 up,`

where

- `<network_interface>` is the physical network interface used for virtual IP. `hme0` is used as the network interface on Solaris.
- `<IP>` is the IP address of the virtual host that you previously selected.

NOTE

To configure the IP address, use decimal notation (for example, 255.255.0.0) instead of hex notation (for example, ffff0000).

Before You Install the OVO Management Server on Additional Cluster Nodes

Before you install the OVO management server on additional cluster nodes, you have to perform appropriate preparation procedures. The preparation steps are identical for all OVO management server installation scenarios.

Preparation Steps for Additional Cluster Nodes

The following preconditions *must* be met before installing the OVO management server on an additional cluster node:

- ❑ The OVO management server *must* already be installed and running on one of the cluster nodes. This allows you to add a local node to the OVO management-server configuration and install and start the OVO agent software on the local node.
- ❑ On the node where OVO is running, enable remote-shell connection for user `root` to the node where you plan to install the OVO management-server software. You can do this by putting the following line into `.rhosts`:

```
<node> root
```

You can check if remote shell is enabled by using the following command:

```
remsh <active_node> -l root -n ls
```

A list of files on the `root` directory from the node where the OVO management server is running should be displayed.

In more secure environments, it is possible to setup a secure-shell (SSH) connection between the node where you plan to install an OVO Server, and the node where the OVO Server is running.

For the OVO Server installation, you have to enable passwordless SSH access for user `root` between these two nodes. `ssh` and `scp` are the two commands that are used during the installation. Both commands *must* be accessible from the main path.

You can check if the secure remote shell is enabled by using the following command:

```
ssh <active_node> -l root -n ls
```

The type of connection will be automatically detected. A secure connection has a higher priority if both types of connection are enabled.

- ❑ Shared file systems must *not* be mounted on this cluster node. They are already mounted on the cluster node where the OVO management server is running.
- ❑ Virtual IP must *not* be activated on this node, since it is already used on the node where the OVO management server is running.

Installing the Oracle Database Server for OVO in a Cluster Environment

The Oracle database server binaries must be installed on a local disk to enable the high availability of the Oracle database server and consequently of the OVO management server. If the Oracle database server binaries become corrupt, it is very important that the Oracle database server can be switched to another cluster node with intact Oracle database server binaries.

In exceptional cases, you may want to install the Oracle database server binaries on a shared disk. This way only one set of Oracle database server binaries is installed but there is a greater risk of losing Oracle availability. If you have chosen the decoupled scenario for installing OVO, a separate Oracle client installation will be needed also.

Table 10-3 Configuration scenarios based on file system location

		Oracle database server location		
		Local Filesystem	Shared Filesystem (Exceptional)	Remote Filesystem
Configuration scenarios	Basic	See "Oracle Database Server on a Local Disk" : "Basic OVO management server installation" on page 308.	See "Oracle Database Server on a Shared Disk (Exceptional)" : "Basic OVO management server installation" on page 309.	
	Decoupled	See "Oracle Database Server on a Local Disk" : "Decoupled OVO management server installation" on page 308.	See "Oracle Database Server on a Shared Disk (Exceptional)" : "Decoupled OVO management server installation" on page 310.	
	Independent	See "Oracle Database Server on a Local Disk" : "Independent database server installation" on page 308.		See "Oracle Database Server on a Remote Filesystem" : "Independent database server installation" on page 312

Oracle Database Server on a Local Disk

❑ Basic OVO management server installation

Install the Oracle database software as described in “Installing and Verifying an Oracle Database” on page 59.

After installing the Oracle database server, continue with “To Install and Configure the OVO Management Server on Cluster Nodes” on page 314.

❑ Decoupled OVO management server installation

Install the Oracle database software as described in “Installing and Verifying an Oracle Database” on page 59.

“To Install and Configure the OVO Management Server on Cluster Nodes” on page 314.

❑ Independent database server installation

• *First cluster node*

— Install Oracle database server binaries on the first cluster node.

— Before configuring the Oracle database, set an Oracle DB hostname using the following command:

```
/opt/OV/bin/ovconfchg -ns opc -set \  
HA_ORACLE_VIRTUAL_HOST <host>
```

where <host> is the hostname of the remote host.

— Configure the Oracle database as described in “Setting Up an Independent Database-Server System” on page 141.

— After the Oracle database is configured, remove the previous configuration using the following command:

```
/opt/OV/bin/ovconfchg -ns opc -clear \  
HA_ORACLE_VIRTUAL_HOST
```

• *Additional cluster node*

Install the Oracle Net Services and Oracle client software on the local disk, all other Oracle configuration steps will be performed by the OVO server installation script.

After the Oracle server installation, we recommend that you enable the OVO management server monitoring of Oracle:

- Create a script or a binary named:

```
/opt/OV/bin/OpC/utlils/ha/ha_check_oracle
```

The exit code of this script/binary must be 0 if the Oracle database server is running, or other than 0 if it is not running. This script must be present on all OVO management server cluster nodes. With this script the OVO management server checks for the status of the Oracle database.

- Remove the following link:

```
/var/opt/OV/hacluster/ov-server/M300_ov_server
```

and create a new one with the same name pointing to:

```
/opt/OV/bin/OpC/utlils/ha/ha_mon_ovserver_3tier.
```

After installing the Oracle database server, continue with “To Install and Configure the OVO Management Server on Cluster Nodes” on page 314.

Oracle Database Server on a Shared Disk (Exceptional)

The installation script automatically detects if Oracle database server binaries are located on a shared disk, or if the `ORACLE_BASE` directory is a mount point for an external file system containing the Oracle database server binaries (the file system *must* always be mounted on the `ORACLE_BASE` mount point).

The installation procedures for Oracle depend on the type of OVO server installation.

❑ Basic OVO management server installation

Install the Oracle database software as described in “Installing and Verifying an Oracle Database” on page 59.

After installing the Oracle database server, continue with “To Install and Configure the OVO Management Server on Cluster Nodes” on page 314.

❑ **Decoupled OVO management server installation**

When Oracle is separated from the OVO server, and Oracle database server binaries are installed on a shared disk, install Oracle client software on the local disk, so that OVO server can connect to the Oracle database server through the Oracle client. You *must* install the Oracle client software on a location other than `ORACLE_BASE`. The path to the Oracle client must be the same on all OVO management server cluster nodes.

- *First cluster node*

Install the Oracle client software on the local disk and then the Oracle server software on a shared disk as described in “Installing and Verifying an Oracle Database” on page 59.

NOTE

When installing and configuring OVO server, the `ORACLE_BASE` and `ORACLE_HOME` variables *must* be set to the Oracle database server location.

After installing the OVO management server, perform the following:

1. Copy the following configuration files from the Oracle database server location on the shared disk to the Oracle client location on the local disk:

```
— <Oracle_server_home>/network/admin/listener.ora  
  to  
  <Oracle_client_home>/network/admin/listener.ora  
— <Oracle_server_home>/network/admin/sqlnet.ora  
  to  
  <Oracle_client_home>/network/admin/sqlnet.ora  
— <Oracle_server_home>/network/admin/tnsnames.ora  
  to  
  <Oracle_client_home>/network/admin/tnsnames.ora  
— <Oracle_server_home>/network/admin/tnsnav.ora  
  to  
  <Oracle_client_home>/network/admin/tnsnav.ora
```

2. Modify the `ORACLE_HOME` variable in

```
/etc/opt/OV/share/conf/ovdbconf
```

to contain the location of the Oracle client software.

3. Stop the OVO management server as an HA resource group using the following command:

```
/opt/OV/bin/ovharg_config ov-server -stop \  
<local_hostname>
```

4. Remove the existing links in `/opt/OV/lib` to the libraries located in the Oracle database server directory, and replace them with links to Oracle client libraries:

```
— rm -f /opt/OV/lib/libclntsh.so  
  ln -s <Oracle_client_home>/lib32/libclntsh.so \  
    /opt/OV/lib/libclntsh.so  
  
— rm -f /opt/OV/lib/libclntsh.so.1.0  
  ln -s <Oracle_client_home>/lib32/libclntsh.so \  
    /opt/OV/lib/libclntsh.so.1.0  
  
— rm -f /opt/OV/lib/libclntsh.so.8.0  
  ln -s <Oracle_client_home>/lib32/libclntsh.so \  
    /opt/OV/lib/libclntsh.so.8.0  
  
— rm -f /opt/OV/lib/libclntsh.so.9.0  
  ln -s <Oracle_client_home>/lib32/libclntsh.so \  
    /opt/OV/lib/libclntsh.so.9.0  
  
— rm -f /opt/OV/lib/libopcora.so  
  ln -s <Oracle_client_home>/lib32/libclntsh.so \  
    /opt/OV/lib/libopcora.so  
  
— rm -f /opt/OV/lib/libwtc9.so  
  ln -s <Oracle_client_home>/lib32/libwtc9.so \  
    /opt/OV/lib/libwtc9.so  
  
— Start the OVO management server as an HA resource  
  group using the following command:  
  
  /opt/OV/bin/ovharg_config ov-server -start \  
  <local_hostname>
```

OVO management server will now connect to the Oracle database server through the Oracle client.

- *Additional cluster node*

Install the Oracle client software on a local disk, all other Oracle configuration steps will be performed by the OVO management server installation script.

NOTE

When installing and configuring OVO server, the `ORACLE_HOME` variable *must* be set to the client location.

After installing the Oracle database server, continue with “To Install and Configure the OVO Management Server on Cluster Nodes” on page 314.

Oracle Database Server on a Remote Filesystem

- ❑ Independent database server installation

If the Oracle database server will be running on a remote system that is not a part of the local node:

- *First cluster node*

- Install Oracle Net Service and Oracle Client on the first cluster node.
- Before configuring the Oracle database, set an Oracle DB hostname using the following command:

```
/opt/OV/bin/ovconfchg -ns opc -set \  
HA_ORACLE_VIRTUAL_HOST <remote_host>
```

where *<remote_host>* is the hostname of the remote host.

- Configure the Oracle database as described in “Setting Up an Independent Database-Server System” on page 141.
- After the Oracle database is configured, remove the previous configuration using the following command:

```
/opt/OV/bin/ovconfchg -ns opc -clear \  
HA_ORACLE_VIRTUAL_HOST
```

- *Additional cluster node*

Install the Oracle Net Services and Oracle client software on the local disk, all other Oracle configuration steps will be performed by the OVO server installation script.

After the Oracle server installation, we recommend that you enable the OVO management server monitoring of Oracle:

- Put the Oracle HA resource group name into the OVO management server configuration:

```
/opt/OV/bin/ovconfchg -ns opc -set \  
HA_ORACLE_RESOURCE_GROUP \  
<Oracle HA resource group name>
```

- Create a script or a binary named:

```
/opt/OV/bin/OpC/utils/ha/ha_check_oracle
```

The exit code of this script/binary must be 0 if the Oracle database server is running, or other than 0 if it is not running. This script must be present on all OVO management server cluster nodes. With this script the OVO management server checks for the status of the Oracle database.

- Remove the following link:

```
/var/opt/OV/hacluster/ov-server/M300_ov_server
```

and create a new one with the same name pointing to:

```
/opt/OV/bin/OpC/utils/ha/ha_mon_ovserver_3tier.
```

After installing the Oracle database server, continue with “To Install and Configure the OVO Management Server on Cluster Nodes” on page 314.

To Install and Configure the OVO Management Server on Cluster Nodes

Install the OVO management server as described in Chapter 2, “Installing OVO on the Management Server,” on page 55.

The OVO management server must be installed as a standalone system.

When installing OVO in a cluster environment, you *must* provide responses to some questions and specify some values differently than in the standalone OVO installation. The following lists the cluster-specific questions that are displayed on the screen and the information that you *must* enter:

- Configure OVO Server as HA resource group (y|n) :
[y]

Press **Enter** to continue.

- HA resource group name :
[ov-server]

CAUTION

If installing on the first cluster node, the entered HA Resource Group name must not be one of the already existing names.

If installing on an additional cluster node, the entered HA Resource Group must be configured and running on the first cluster node.

Press **Enter** to continue or specify an alternative name for the HA Resource Group.

NOTE

If you choose an alternative name for the HA Resource Group, use that name throughout the installation and configuration process.

- Short name of a valid virtual host :
[]

Enter the short name of the virtual host, for example, **virtual1**.

- ❑ IP address of a valid virtual host:
[]

Enter the virtual host IP address, for example **192.168.0.1**

- ❑ Netmask address of a valid virtual host:
[]

Enter the netmask value of the virtual host, for example
255.255.0.0.

- ❑ Network interface for virtual host:
[]

Enter the network interface for the virtual host; for Sun Cluster 3.0 enter the name of the NAFO group, and for Sun Cluster 3.1 enter the name of the IPMP group.

- ❑ Type for shared file systems :
[]

Enter the type of shared file systems, for example, **ufs**.

- ❑ Separate Oracle from OVO server (3Tier configuration) :
[n]

If you would like to separate Oracle from the OVO server, choose **y** and answer the following question, otherwise press **Enter** to continue with the basic OVO management server installation.

- ❑ Configure Oracle as separate HA resource group :
[y]

If you choose to configure Oracle as a separate HA resource group, press **Enter** and answer the following questions, otherwise select **n** and continue with the OVO management server installation where Oracle is an independent database server.

- ❑ Oracle HA resource group name:
[ov-oracle]

Press **Enter** to continue or specify an alternative name for the Oracle HA Resource Group.

CAUTION

If installing on the first cluster node, the entered HA Resource Group name must not be one of the already existing names.

If installing on an additional cluster node, the entered HA Resource Group must be configured and running.

- ❑ Short name of a valid Oracle virtual host :
[]

Enter the short name of the virtual host, for example, **virtual1**.

- ❑ IP address of a valid Oracle virtual host :
[]

Enter the virtual host IP address, for example **192.168.0.1**

- ❑ Netmask address of a valid Oracle virtual host :
[]

Enter the netmask value of the Oracle virtual host, for example **255.255.0.0**.

- ❑ Network interface for Oracle virtual host :
[]

Enter the network interface for the Oracle virtual host; for Sun Cluster 3.0 enter the name of the NAFO group, and for Sun Cluster 3.1 enter the name of the IPMP group.

After the installation process is completed, the OVO management server should be running on the node as an HA resource group.

For more information about administration of OVO management server in a cluster environment, see the *OVO Administrator's Reference* manual.

Log Files

You can check the following log files for details about cluster-specific installation:

- ❑ `/tmp/HA_opcconfig.log` (for information about the success and eventual problems during the installation)
- ❑ `/var/opt/OV/hacluster/ov-server/trace.log1`

-
1. Only if previously enabled by entering the following:
`/opt/OV/lbin/ovharg -tracing ov-server enable`
The `trace.log` file is automatically updated with the information about starting the HA Resource Group during the installation on the first cluster node.

Installing the OVO Agent Software and Templates on Cluster Nodes

IMPORTANT

When installing the OVO software in a cluster environment, only the OVO management server is automatically installed. You *must* also install the OVO agent software and templates using the OVO Administrator's GUI.

To install the OVO agent software and templates on the first cluster node, the OVO management server *must* be running on this node.

To install the OVO agent software and templates on additional cluster nodes, the OVO management server must be running on one of the cluster nodes. After the installation of the OVO management server is finished on the additional cluster node, proceed with the installation of the OVO agent software and templates on this node.

On the node where the OVO management server is running, open the OVO Administrator's GUI and install the OVO agent software and templates on the cluster node. You will find the cluster node in the Holding Area. You can move it to the OVO Node Bank.

Customizations of the OVO Management Server

After installing the OVO management server and the Oracle database server in a cluster environment, you can make the supported customizations.

Supporting Multi NIC B with OVO 8 and VERITAS Cluster Server

To support multi NIC B environment with OVO 8, complete the following steps:

1. Stop the `ov-server` HA Resource Group.
2. Add the `ov-nic` resource with type `MultiNICB` to the `ov-server` HA Resource Group and set all resource attributes according to the VCS system configuration.
3. Set the link (dependency) between the resources `ov-nic` and `ov-application` so that the `ov-application` resource is dependant on the `ov-nic` resource.
4. Enable the `ov-nic` resource.
5. Start the `ov-server` HA Resource Group.

Deinstalling the OVO Software from Cluster Nodes

The OVO software can be deinstalled:

❑ **Completely from a cluster environment.**

When deinstalling the OVO management server from a cluster environment, you *must* perform the deinstallation procedure in the following sequence:

1. Deinstall the OVO management server from the **passive cluster nodes**. These are the systems that are installed and configured to run the OVO management server, but are currently *not* running.

For details on how to deinstall the OVO server from the passive cluster nodes, see the section “Deinstalling OVO from Passive Cluster Nodes” on page 321.

2. When the OVO management-server software has been deinstalled from all passive nodes, deinstall the software from the **active cluster node**. This is the system on which the OVO management server is currently up and running as an HA resource group.

For details on how to deinstall the OVO management server from the active cluster node, see the section “Deinstalling OVO from the Active Cluster Node” on page 322.

❑ **From selected cluster nodes only.**

By deinstalling the OVO management-server software from a cluster node, this node will no longer be able to run the OVO management server. The cluster environment running the OVO server will be reduced by one node.

To deinstall OVO management-server software from a cluster node, this node must be in the passive state. For details on how to deinstall OVO management-server software from passive cluster nodes, see the section entitled “Deinstalling OVO from Passive Cluster Nodes” on page 321.

Deinstalling OVO from Passive Cluster Nodes

Before the OVO management-server software is deinstalled from a passive cluster node, the following requirements must be met:

1. The OVO Server HA Resource group `ov-server` must *not* be active on this node.
2. Virtual host *must not* be active.
3. Shared file systems *must not* be mounted.

After ensuring that all these requirements are met, proceed with the deinstallation:

1. Deinstall the OVO agent software from this node using the following command:

```
/opt/OV/bin/OpC/install/opc_inst -r
```

NOTE

Ignore possible dependency warnings during the OVO agent-software deinstallation.

2. When the OVO agent software is removed, remove the managed node from the Motif GUI Nodebank.
3. Deinstall the OVO management server as described in Chapter 6, “Software Administration on the Management Server,” on page 153.

CAUTION

Do *not* perform any agent-related operations described in the Chapter 6, “Software Administration on the Management Server.”

When asked for the name of the HA Resource group, enter the OVO Server HA resource group, this is normally `ov-server`.

When the deinstallation procedure is complete, remove the following files/directories (if they exist):

- `/opt/oracle/admin/<ORACLE_SID>`
- `/opt/oracle/product/<db_ver>/dbs/init<ORACLE_SID>.ora`
- `/opt/oracle/product/<db_ver>/dbs/lk<ORACLE_SID>`

- ❑ `/opt/oracle/product/<db_ver>/network/admin/sqlplus.ora`
- ❑ `/opt/oracle/product/<db_ver>/network/admin/listener.ora`
- ❑ `/opt/oracle/product/<db_ver>/network/admin/tnsnames.ora`
- ❑ `/opt/oracle/product/<db_ver>/network/admin/tnsnv.ora`

where `<ORACLE_SID>` is the value of the `ORACLE_SID` variable used for the configuration of the OVO management-server database (it is usually set to `openview`), and `<db_ver>` is a database version, 9.2.0 or 10.1.0.

Deinstalling OVO from the Active Cluster Node

When the OVO management-server software is deinstalled from all passive cluster nodes, you can start the deinstallation process from the node on which the OVO management server is running.

1. Deinstall the OVO agent software from this node using the following command:

```
/opt/OV/bin/OpC/install/opc_inst -r
```

2. Deinstall the OVO management-server software from this node as described in Chapter 6, “Software Administration on the Management Server,” on page 153.

When asked for the name of the HA Resource group, enter the OVO Server HA resource group, this is normally `ov-server`.

After you have deinstalled OVO from this cluster node, check whether the HA Resource group is still present by entering:

```
/opt/VRTSvcs/bin/hastatus -summary
```

If the HA Resource group is still present on the node, remove it by entering:

```
/opt/VRTSvcs/bin/hagrp -delete ov-server
```

Upgrading OVO to Version A.08.10 in a Cluster Environment

To upgrade the OVO management server running in a cluster environment from version A.07.1x to version A.08.10, you must first perform the upgrade procedure on all the passive nodes, and then on the active node.

Upgrading the OVO Management Server on the Active Cluster Node

To upgrade the OVO management server from version A.07.1x to version A.08.10 on the node where the OVO management server is currently running, perform the following steps:

1. Put the OVO management server represented as an HA Resource Group in maintenance mode to disable possible failover when the OVO management server is stopped.
2. Backup the current installation.
See the section entitled “Backing Up the Current OVO A.07.1x Installation” on page 179 for details.
3. Save the Administrator’s ovw map.
See the section entitled “Saving the Administrator’s ovw Map” on page 180 for details.
4. Stop the OVO management server by entering:

```
/opt/OV/bin/ovstop
```
5. Download the current OVO A.07.1x configuration.
See the section entitled “Downloading the Current OVO A.07.1x Configuration” on page 181 for details.
6. Clear the database.
See the section entitled “Clearing the Database” on page 183 for details.

7. Remove the OVO A.07.1x management server.
 See the section entitled “Deinstalling OVO A.07.1x” on page 185 for details.
8. Remove the HA Resource group representing the OVO management server from the cluster configuration.
9. Adapt the shared file system to match the requirements of the OVO 08.00 management server. Check the section entitled “Before You Install the OVO Management Server on the First Cluster Node” on page 292 for details.

The OVO 07.1x management server is using the shared file systems mounted on the following mount points:

```
/var/opt/OV/share
/etc/opt/OV/share
/opt/share
/opt/oradata
```

For the OVO 08.00 management server, the shared file systems are mounted on different mount points. The file system containing the Oracle database software is removed and used for shared configuration files.

Table 10-4 indicates the mount points required for the OVO A.07.1x management server and the OVO A.08.10 management server:

Table 10-4 Differences Between the Mount Points for A.07.1x and A.08.10

A.07.1x	A.08.10
/var/opt/OV/share	/var/opt/OV/share
/etc/opt/OV/share	/etc/opt/OV/share
/opt/oracle	/var/opt/OV/shared/server
/opt/oradata	/opt/oradata/<ORACLE_SID> ^a

a. where <ORACLE_SID> is the value of the ORACLE_SID variable used for the configuration of the OVO management-server database. It is usually set to openview.

10. Upgrade the Oracle database software.

If the Oracle software was installed on the local file system, you need to upgrade the Oracle database version as described in the section entitled “Upgrading the Oracle Database Version” on page 175. If the Oracle software was installed on the shared file system, you must install the Oracle database software on the local file system from the beginning, as described in Chapter 2, “Installing OVO on the Management Server,” on page 55.

If the OVO database was completely removed, check if `$ORACLE_BASE/admin/$ORACLE_SID` (for example, `/opt/oracle/admin/openview`) directory exists on the cluster node and remove it with all its contents.

11. Install the OVO management server.

To install the OVO management server, see “Before You Install the OVO Management Server on the First Cluster Node” on page 292 and use the procedure for installation, described in “To Install and Configure the OVO Management Server on Cluster Nodes” on page 314.

12. Disable the HA Resource group monitoring using the command

```
/opt/OV/lbin/ovharg -monitor ov-server disable
```

13. Upload the saved OVO A.07.1x configuration as described in the section entitled “Uploading the Saved OVO A.07.1x Configuration” on page 189.

14. Import the saved OVO management server A.07.1x configuration data as described in the section entitled “Importing Saved A.07.1x Management-Server Configuration Data” on page 195.

15. Upgrade the OVO Java Operator UI as described in the section entitled “Upgrading the OVO Java Operator UI” on page 196.

16. For each cluster node listed in the OVO Node Bank, open Modify Node window Actions -> Node -> Modify...

Select HTTPS type and close the window.

17. Enable the HA Resource group monitoring using the command

```
/opt/OV/lbin/ovharg -monitor ov-server enable
```

NOTE

Before enabling the HA Resource group monitoring, make sure that the OVO management server is running.

Upgrading the OVO Management Server on the Passive Cluster Node

To upgrade the OVO management server from version A.07.1x to version A.08.10 on the remaining cluster nodes on which the OVO management server is not currently running, perform the following steps:

1. Remove the OVO A.07.1x management server.

See the section entitled “Deinstalling OVO A.07.1x” on page 185 for details.

NOTE

You can expect some error messages during the deinstallation because the shared file systems are not mounted. These error messages can safely be ignored.

2. Upgrade the Oracle database software.

If the Oracle software was installed on the local file system, you need to upgrade the Oracle database version as described in the section entitled “Upgrading the Oracle Database Version” on page 175. If the Oracle software was installed on the shared file system, you must install the Oracle database software on the local file system from the beginning, as described in Chapter 2, “Installing OVO on the Management Server,” on page 55.

Check if the `$ORACLE_BASE/admin/$ORACLE_SID` (for example, `/opt/oracle/admin/openview`) directory exists on the cluster node and remove it with all its contents.

3. Install the OVO management server.

To install the OVO management server, see “Before You Install the OVO Management Server on Additional Cluster Nodes” on page 304.

Use the procedure for installation, described in “To Install and Configure the OVO Management Server on Cluster Nodes” on page 314.

4. On the cluster node with the OVO Server running, assign the template to the current passive node using the following command:

```
/opt/OV/bin/OpC/Utils/opcnode -assign_tmpl \  
node_name=<passive node name> \  
templ_name="HA Physical Management Server" \  
templ_type=TEMPLATE_GROUP net_type=NETWORK_IP
```

5. Disable the HA Resource group monitoring using the command

```
/opt/OV/lbin/ovharg -monitor ov-server disable
```

6. Import the saved OVO management-server A.07.1x configuration data as described in the section entitled “Importing Saved A.07.1x Management-Server Configuration Data” on page 195.

7. Upgrade the OVO Java Operator UI as described in the section entitled “Upgrading the OVO Java Operator UI” on page 196.

8. Enable the HA Resource group monitoring using the command

```
/opt/OV/lbin/ovharg -monitor ov-server enable
```

NOTE

Before enabling the HA Resource group monitoring, make sure that the OVO management server is running.

Upgrading OVO From Version A.08.00 to Version A.08.10 in a Cluster Environment

To upgrade the OVO management server running in a cluster environment from version A.08.00 to version A.08.10, you *must* first perform the upgrade procedure on all the passive nodes, and then on the active node. The upgrade procedure is as follows:

1. To disable possible failovers when the OVO management server is stopped, put the OVO management server represented by an HA Resource Group, in maintenance mode on the active cluster node, where the OVO Server is running.

To put the OVO Server HA resource group in maintenance mode, disable the HA Resource group monitoring using the following command:

```
/opt/OV/sbin/ovharg -monitor ov-server disable
```

2. Perform an OVO Management-Server upgrade on *all* the passive cluster nodes, where the OVO Management server is not running.

- If you are installing OVO from a CD-ROM, enter the following:

```
/<mount_point>/ovinstall -t
```

where *<mount_point>* is the location where the OVO installation CD is mounted.

- If you are installing OVO using the CD images, enter the following:

```
/<master_directory>/OVCD1/ovinstall -t
```

3. When the OVO Management Server is upgraded on all passive cluster nodes, perform an OVO Management Server upgrade on the active cluster node, where the OVO Management Server is running.

Start the install process using one of the following commands as appropriate:

- If you are installing OVO from a CD-ROM, enter the following:

```
/<mount_point>/ovinstall -t
```

where *<mount_point>* is a location where the OVO installation CD is mounted.

- If you are installing OVO using the CD images, enter the following:

```
<master_directory>/OVOCd1/ovoinstall -t
```

4. When the OVO Management Server is running again on the active cluster node, put it back to the operational mode by enabling the OVO Management-Server HA Resource Group monitoring.

Enable the HA Resource group monitoring using the following command:

```
/opt/OV/lbin/ovharg -monitor ov-server enable
```

NOTE

Before enabling the HA Resource group monitoring, make sure that the OVO management server is running.

Stopping the OVO Management Server in a Cluster Environment for Maintenance

When there is a need to stop the OVO management server (in the case of a patch installation, an upgrade, maintenance, and so on), stop the OVO management server as follows:

1. Disable the HA Resource group monitoring using the command:

```
/opt/OV/lbin/ovharg -monitor ov-server disable
```
2. Stop the OVO management server.

NOTE

The OVO management server *must not* be stopped by using the cluster-related commands; only the OVO native commands such as `ovstop`, `opcsv` may be used.

3. Perform the intended action (the patch installation, an upgrade, the maintenance, and so on).
4. Start the OVO management server.

NOTE

The OVO management server *must not* be started by using the cluster-related commands; only the OVO native commands such as `ovstart`, `opcsv` may be used.

5. Enable the HA Resource group monitoring using the command:

```
/opt/OV/lbin/ovharg -monitor ov-server enable
```

NOTE

Before enabling the HA Resource group monitoring, make sure that the OVO management server is running.

For more information about administration of OVO management server in a cluster environment, see the *OVO Administrator's Reference* manual.

In This Appendix

This appendix describes how to install the HP OpenView Operations (OVO) software package for a remote integration with Network Node Manager (NNM). For a list of system requirements and installation instructions for the NNM software, refer to the documentation supplied with NNM.

Installing the NNM Integration Software

When NNM is installed on the same system as the OVO management server (as is usually the case), the relevant integration files are automatically installed with the OVO installation package. To make use of the remote OVO integration with Network Node Manager (NNM), you *must* manually install the NNM-specific OVO bundle on one or more NNM systems. The OVORemoteOVw package supplied with OVO 8.0 is only suitable for the platforms on which the OVO management server is supported.

Before installation, ensure that:

- ❑ NNM is already installed before the installation of the OVO integration bundle.
For NNM installation and configuration instructions, consult the relevant NNM documentation.
- ❑ The OVO agent is installed on the NNM system.
For the prerequisites and installation instructions for the OVO agent, refer to *OVO DCE Agent Concepts and Configuration Guide*.
- ❑ An X-Window system (for example, Reflection-X on Windows 2000) is installed on the OVO GUI client system.

To install the OVO NNM integration software on the NNM system, run the following command:

```
swinstall -s .../OV OCD2/OV_DEPOT/HPOvOServer.depot \
OVORemoteOVw
```

Next, install and configure the OVO software as described in “Installing the OVO Software on the Management-Server System” on page 76.

Choose the following software bundle to install the remote NNM integration package: OVORemoteOVw.

NOTE

For the local-use case of NNM, where NNM is installed on the OVO management server, the relevant integration files are automatically installed with the normal OVO installation package.

Installing the Remote NNM Integration Package
Installing the NNM Integration Software

In This Appendix

The tables in this appendix list the contents of the various OVO software bundles.

- ❑ OVO Bundles
- ❑ OVO Products
- ❑ OVO Components in the Subproducts

OVO Product Bundles

The OVO principle bundle is a hierarchical structure made up of associated bundles, products, and filesets.

Table B-1 OVO Bundles

OVO Bundle	OVO Product	Description
OVEnglish	OVCHECK OVOPC-HA OVOPC-ORA OVOPC OVOPC-WWW OVOPC-OVW OVOPC-DOC OVOPC-SVC	HP OpenView OVO, with Documentation (English)
OVLocalized ^a	OVCHECK OVOPC-HA OVOPC-ORA OVOPC-ORA-JPN OVOPC OVOPC-JPN OVOPC-SPA OVOPC-WWW OVOPC-OVW OVOPC-DOC OVOPC-DOC-JPN OVOPC-SVC	HP OpenView OVO, with Documentation (for languages other than English)
OVRemoteOVw	OVOPC-OVW	Remote OVw Integration

- a. *Must* be installed on top of the OVOEnglish bundle for the following languages: Japanese, Spanish, Korean and Simplified Chinese.

Table B-2 OVO Products

OVO Products	Description
OVCHECK	OVO prerequisites.
OVOPC	Generic filesets for OVO in an English environment (for example, NLS, manpages, etc.). Database independent.
OVOPC-DEV ^a	OVO Developer's Toolkit fileset.
OVOPC-DEVDOC ^a	OVO Developer's Toolkit documentation (PDF).
OVOPC-DOC ^b	Contains the OVO documentation files (PDF).
OVOPC-DOC-JPN ^b	OVO Japanese Documentation.
OVOPC-DOC-SPA ^b	OVO Spanish Documentation.
OVOPC-DOC-KOR ^b	OVO Korean Documentation.
OVOPC-DOC-SCH ^b	OVO Simplified Chinese Documentation.
OVOPC-JPN ^b	OVO Generic Japanese product.
OVOPC-KOR ^b	OVO Generic Korean product.
OVOPC-ORA	Contains all the filesets for an Oracle database (English).
OVOPC-ORA-JPN ^b	OVO Japanese Oracle product.
OVOPC-OVW	Files for the remote OVO Integration Package for Network Node Manager.
OVOPC-SCH ^b	OVO Generic Simplified Chinese product.
OVOPC-WWW	Fileset for the OVO Java-based GUI.
OVOPC-SPA ^b	OVO Generic Spanish product.
OVOPC-SVC	OVO Service Navigator.

Table B-2 OVO Products (Continued)

OVO Products	Description
OVO-CLT	Generic HTTPS client filesets.
OVO-CLT-NLS ^c	Generic HTTPS client localization packages (message catalogs and help files).
OVOPC-CLT	OVO RPC clients.
OVOPC-CLT-ENG	OVO RPC clients - English.

- a. To have the OVO Developer's Toolkit available, it should be installed on top of OVO if not already installed by `ovoinstall`.
- b. Can be removed *after* OVO installation if you want to save disk space or if you *do not* need this product.
- c. Installed *only* if you choose localization packages to be installed during OVO installation with `ovoinstall`.

Table B-3 OVO Components in the Subproducts

OVO Product	Filesets in Product	Description of Fileset
OVCHECK	OVOENGLISH	OVO Prerequisites English with documentation.
OVOPC	OVOPC-COMPOSER ^a	ECS Composer integration.
	OVOPC-GUI	OVO GUI client - common files.
	OVOPC-GUI-ENG	OVO GUI client - English files.
	OVOPC-LIB	OVO common files - libraries.
	OVOPC-MAN	OVO manual pages.
	OVOPC-NLS	Management-server online help.
	OVOPC-UX-MGR78	Management-server bits for HP-UX 11.x.

Table B-3 OVO Components in the Subproducts (Continued)

OVO Product	Filesets in Product	Description of Fileset
OVO-CLT	OVO-LIN-CLT ^a	HTTPS Agent software for Intel-based PCs running Linux.
	OVO-WIN-CLT ^a	HTTPS Agent software for Intel-based PCs running MS Windows 2000/XP/2003.
	OVO-SOL-CLT ^a	HTTPS Agent software for Sun SPARC systems running Sun Solaris.
	OVO-UXIA-CLT ^a	HTTPS Agent software for Itanium systems running HP-UX 11.23.
	OVO-UX11-CLT ^a	HTTPS Agent software for HP 9000 Servers systems running HP-UX 11.x.
OVO-CLT-NLS	OVO-CLT-JPN ^a	Localization packages for HTTPS Agent Software (Japanese).
	OVO-CLT-SPA ^a	Localization packages for HTTPS Agent Software (Spanish).
	OVO-CLT-KOR ^a	Localization packages for HTTPS Agent Software (Korean).
	OVO-CLT-SCH ^a	Localization packages for HTTPS Agent Software (Simplified Chinese).
OVOPC-CLT	OVOPC-AIX-CLT	RPC Agent software for IBM RS/6000 systems running on AIX.
	OVOPC-LIN-CLT	RPC Agent software for Intel-based PCs running Linux.
	OVOPC-NT-CLT	RPC Agent software for Intel-based PCs running MS Windows 2000/XP/2003.
	OVOPC-OSF-CLT	RPC Agent software for Compaq systems running Tru64 UNIX.
	OVOPC-SOL-CLT	RPC Agent software for Sun SPARC systems running Sun Solaris.
	OVOPC-UXIA-CLT	RPC Agent software for Itanium systems running HP-UX 11.22.
	OVOPC-UX11-CLT	RPC Agent software for HP 9000 Servers systems running HP-UX 11.x.

Table B-3 OVO Components in the Subproducts (Continued)

OVO Product	Filesets in Product	Description of Fileset
OVOPC-CLT-ENG	OVOPC-MPE-CLT	RPC Agent software for HP 3000/900 systems running MPE/iX.
	OVOPC-NW-CLT	RPC Agent software for Intel-based PCs running Novell Netware.
	OVOPC-PTX-CLT	RPC Agent software for IBM Symmetry systems running ptx.
	OVOPC-SGI-CLT	RPC Agent software for Silicon Graphics systems running IRIX.
	OVOPC-SNM-CLT	RPC Agent software for SNI systems running SINIX.
OVOPC-DEV	OPVPC-DEV-MAN	OVO Developer's Toolkit manual pages.
	OVOPC-DEV-MGR	OVO Developer's Toolkit management server.
OVOPC-DEVDOC	OVOPC-DOC-DENG ^a	OVO Developer's Toolkit documentation (PDF).
OVOPC-DOC	OVOPC-DOC-RENG	OVO English documentation (PDF).
OVOPC-DOC-JPN	OVOPC-DOC-RJPN ^a	OVO Japanese documentation (PDF).
OVOPC-DOC-SPA	OVOPC-DOC-RSPA ^a	OVO Spanish documentation (PDF).
OVOPC-DOC-KOR	OVOPC-DOC-RKOR ^a	OVO Korean documentation (PDF).
OVOPC-DOC-SCH	OVOPC-DOC-RSCH ^a	OVO Simplified Chinese documentation (PDF).
OVOPC-JPN	OVOPC-GUI-JPN ^a	OVO Client - common files, Japanese.
	OVOPC-NLS-JPN ^a	OVO management-server Japanese messages.
OVOPC-KOR	OVOPC-GUI-KOR ^a	OVO Client - common files, Korean.
OVOPC-ORA	OVOPC-GUI-ORA	OVO Client - Oracle files
	OVOPC-UX-ORAA	Oracle-specific management-server bits for HP-UX (Part A)
	OVOPC-UX-ORAB	Oracle-specific management-server bits for HP-UX (Part B)

Table B-3 OVO Components in the Subproducts (Continued)

OVO Product	Filesets in Product	Description of Fileset
OVOPC-ORA-JPN	OVOPC-UX-ORAJ ^a	Oracle-specific management-server bits for HP-UX (Japanese))
OVOPC-OVW	OVOPC-OVW-MGR	Files for remote OVO GUI integration with Network Node Manager.
OVOPC-SCH	OVOPC-GUI-SCH ^a	OVO Client - common files, Simplified Chinese.
OVOPC-SPA	OVOPC-GUI-SPA ^a	OVO Client - common files, Spanish.
OVOPC-SVC	OVOPC-SVC-DOC OVOPC-SVC-JDOC ^a OVOPC-SVC-EDOC ^a OVOPC-SVC-KDOC ^a OVOPC-SVC-SDOC ^a OVOPC-SVC-ENG OVOPC-SVC-KOR ^a OVOPC-SVC-SCH ^a OVOPC-SVC-JPN ^a OVOPC-SVC-MGR OVOPC-SVC-SPA ^a	OVO Service Navigator English Documentation. OVO Service Navigator Japanese Documentation. OVO Service Navigator Spanish Documentation. OVO Service Navigator Korean Documentation. OVO Service Navigator Simplified Chinese Documentation. OVO Service Navigator Localized Files-English. OVO Service Navigator Localized Files-Korean. OVO Service Navigator Localized Files-Simplified Chinese. OVO Service Navigator Localized Files-Japanese. OVO Service Navigator Manager. OVO Service Navigator Localized Files-Spanish.

Table B-3 OVO Components in the Subproducts (Continued)

OVO Product	Filesets in Product	Description of Fileset
OVOPC-WWW	OVOPC-WWW-ENG	OVO Java-based web GUI—English online documentation and message catalogues.
	OVOPC-WWW-JPN ^a	OVO Java-based web GUI—Japanese online documentation and message catalogues.
	OVOPC-WWW-KOR ^a	OVO Java-based web GUI—Korean online documentation and message catalogues.
	OVOPC-WWW-SCH ^a	OVO Java-based web GUI—Simplified Chinese online documentation and message catalogues.
	OVOPC-WWW-SPA ^a	OVO Java-based web GUI—Spanish online documentation and message catalogues.
	OVOPC-WWW-GUI	OVO Java web GUI—language-independent files.
	OVOPC-WWW-ORA	OVO Java web GUI—database files and UI server.

a. Can be removed *after* OVO installation if you want to save disk space or if you *do not* need this component.

A

- A.08.xx, OVO
 - uploading configuration, 189–192
- additional documentation, 18
- administration, software, 159–165
- Adobe Portable Document Format. *See* PDF documentation
- after OVO installation, 102
- agent software
 - installing on Sun cluster nodes, 269
 - installing on VERITAS cluster nodes, 318
- analyzing system, 77–80
- automatically verifying requirements, 31

B

- backing up current OVO installation, 179
 - See also* installing
- basic cluster environment
 - additional cluster nodes, 304–305
 - additional Sun cluster nodes, 249–251
 - first cluster nodes, 293–296
 - first Sun cluster node, 232–238
- before installing
 - database, 62–64
 - installing in Sun Cluster environment management server, 230–256
 - installing in VERITAS cluster environment management server, 291–305
- browsers. *See* web browsers, GUI
- bundles
 - OVO, 95
 - English, 337
- bundling OVO for Sun Solaris software, 335–337

C

- CDE packages, required, 42
- CD-ROM
 - mounting, 70
 - unmounting, 70
- CERN server, configuring, 129
- changing Oracle database passwords, 102
- checking. *See* verifying
- clearing the database for upgrade, 183–184
- Cluster environment
 - upgrading OVO from version A.08.00 to version A.08.10, 278–279, 328–329
- cluster environment using remote database server

- additional Sun cluster nodes, 255–256
- first cluster nodes, 302–303
- first Sun cluster node, 245–247
- cluster nodes
 - additional
 - basic environment, 304–305
 - installation scenarios, 304–305
 - first
 - basic environment, 293–296
 - cluster environment using remote database server, 302–303
 - Decoupled cluster environment, 297–301
 - installation scenarios, 292–303
- components in subproducts
 - English, 339
- configuration
 - See also* configuring
 - database, 131–147
 - downloading OVO, 181–182
 - reinitializing, 164–165
 - uploading OVO A.08.xx, 189–192
- configuring
 - OVO
 - on management server, 103–106, 188
 - OVO in Sun cluster scenarios, 221–225
 - OVO in VERITAS cluster scenarios, 283–287
 - server
 - CERN/W3C, 129
 - HTTP, 127–129
 - Netscape, 128
- connecting to GUI through firewall, 126
- connectivity requirements, 38
- conventions, document, 13
- customizing database, 102

D

- database
 - before installing, 62–64
 - configuring manually, 131–147
 - customizing, 102
 - disk space requirements, 33–34
 - installation
 - preparing, 62–64
 - installation in Sun Cluster environment requirements, 226
 - installation in VERITAS cluster environment requirements, 288

- installing, 59–75
 - Oracle 9.2.0, 66–67
- locations, alternate, 140
- NLS support, 138
- Oracle, 59
- Oracle 9.2.0, 66–67
- passwords, changing, 102
- preparing installation, 62–64
- products required, 60
- reinitializing, 164–165
- requirements
 - disk space, 33–34
 - installation in Sun Cluster environment, 226
 - installation in VERITAS cluster environment, 288
 - products, 60
- server, separate, 141–147
- starting
 - automatically, 135
 - manually, 136–137
- stopping
 - automatically, 135
 - manually, 136–137
- using an existing, 61, 176
- variables, determining, 139
- verifying, 59–75
- versions
 - supported, 175
 - upgrading, 175–178
- database, clearing for upgrade, 183–184
- Decoupled cluster environment
 - first cluster nodes, 297–301
- decoupled cluster environment
 - additional Sun cluster nodes, 252–254
 - first Sun cluster node, 238–244
- deinstalling
 - Java GUI, 163
 - other UNIX based systems, 163
 - PC client, 163
 - Solaris client, 163
- OVO
 - A.07.1x, 185–187
 - OVO from active Sun cluster nodes, 272
 - OVO from active VERITAS cluster nodes, 322
 - OVO from passive Sun cluster nodes, 271–272

- OVO from passive VERITAS cluster nodes, 321
- OVO software from Sun cluster nodes, 270–272
- OVO software from VERITAS cluster nodes, 320–322
- deinstalling OVO
 - entire installation, 161–162
- delivery centers. *See* password, license
- determining database variables, 139
- Developer's Toolkit documentation, 18
- directory structure, management server, 149–157
- disk space requirements
 - management server, 33–34
- display redirection requirements, management server, 39
- document conventions, 13
- documentation, related
 - additional, 18
 - Developer's Toolkit, 18
 - ECS Designer, 18
 - Java GUI, 23–24
 - Motif GUI, 21–22
 - online, 19, 21–24
 - PDFs, 15
 - print, 16
 - SunMC, 18
- downloading current OVO configuration, 181–182

E

- ECS Designer documentation, 18
- English
 - components in subproducts, 339
 - OVO
 - product bundles, 337
 - products, 338
- environment
 - Java Runtime, 112
- Event Correlation Service Designer. *See* ECS Designer documentation
- existing database
 - using for OVO, 61, 176

F

- fax, requesting license through, 212
- File Transfer Protocol. *See* FTP, installing OVO through
- file tree, management server, 151–157

FTP, installing OVO through, 116–117

G

graphical user interface. *See* GUI

GUI

configuring HTTP server, 127–129

connecting through firewall, 126

documentation

Java, 23–24

Java-based operator, 125

Motif, 21–22

installing, 107–129

OVO Java Operator, 114–122

languages supported, 110

platforms supported, 109–110

requirements

hardware, 111

installation, 111–113, 114

software, 112

starting, 123–126

from web browser, 124

ito_op script, 123

on PC, 123–124

on UNIX, 124

online documentation, 125

upgrading, 196

web browsers

embedded, 113

installing from, 124

supported, 113

H

hardware requirements, GUI, 111

hostnames, resolving, 46–47

HP OpenView Event Correlation Service

Designer. *See* ECS Designer

documentation

HTTP

configuring server, 127–129

installing OVO through, 115

HyperText Transfer Protocol. *See* HTTP

I

Independent, 263, 312

installation

See also installing

after, 102

analyzing system, 77–80

backing up current OVO, 179

logfiles, viewing, 94

mounting CD-ROM, 70

OVO

CD images, 83

CD-ROM, 82

preparing database, 62–64

process, 28

requirements

GUI, 111–113, 114

management server, 25–54

OVO, 57

swap space, 36

script

description, 77–80

running, 81–84

starting Oracle Universal Installer, 70

starting root.sh script, 70

task summary, 27–30

unmounting CD-ROM, 70

verifying, 98–101

installing

See also deinstalling OVO; installation;

reinstalling

agent platforms on management server,

159–165

agent software on Sun cluster nodes, 269

agent software on VERITAS cluster nodes,

318

database

on management server, 59–75

Oracle 9.2.0, 66–67

DCE/NCS on management server, 96

GUI, 107–129

OVO Java Operator, 114–122

HTTPS on management server, 97

license, 209–218

management server

Sun Cluster environment, 228–229,

265–267

VERITAS cluster environment, 289–290,

314–316

NNM, 333

NNM remote integration package, 331–333

Oracle 9.2.0, 66–67

Oracle database

OVO for Sun Solaris, 51–53

Oracle database server for OVO in cluster

environment, 306–313

Oracle database server for OVO in Sun cluster environment, 257–264

OVO, 188

- in Sun Cluster environment, 219–280
- in VERITAS cluster environment, 281–330
- on management server, 55–106
- on Sun Solaris, 85–90
- through FTP, 116–117
- through HTTP, 115
- with swinstall, 118–119

requirements

- Sun Cluster environment, 226–227
- VERITAS cluster environment, 288

installing in Sun Cluster environment

- management server, 228–229, 265–267
- preparation steps for installing
 - management server, 230–256

installing in VERITAS cluster environment

- management server, 289–290, 314–316
- preparation steps for installing
 - management server, 291–305

integration package. *See* remote integration package, installing NNM

Internet, requesting license through, 211

J

Java Runtime Environment, 112

Java-based operator GUI. *See* GUI

L

languages

- Java GUI, 110

license

- checking, 208
- description, 207–208
- installing, 209–218
- password
 - delivery centers, 213
 - receiving, 214
- requesting
 - by fax, 212
 - by mail, 212
 - through Internet, 211
- required information, 210
- setting up, 205–218
- types, 207
- verifying, 215–216

locations, alternate database, 140

M

mail, requesting license through, 212

managed nodes

- A.07.1x compatibility, 197
- supported, 54
- upgrading
 - A.07.1x and A.08.00, 197–199
 - to A.07.00, 198–199

managed nodes, connectivity requirements, 38

management server

- directory structure, 149–157
- importing A.07.1x, 195
- installation
 - process, 28
 - tasks, 27–30
- installing
 - agent platforms, 159–165
 - OVO, 55–106
- installing in Sun Cluster environment, 228–229, 265–267
- installing in VERITAS cluster environment, 289–290, 314–316

kernel parameters, 48–50

OVO file tree, 151–157

requirements

- connectivity, 38
- disk space, 33–34
- display redirection, 39
- hardware, 32–39
- installation, 25–54
- operating system patches, 43–44
- performance, 37
- RAM, 35
- software, 41–53
- swap space, 35
- verifying, 31–54, 171–172

resolving hostnames, 46–47

software administration, 159–165

software sub-tree

- vendor-specific, 155, 157

stopping in Sun Cluster environment, 280

stopping in VERITAS cluster environment, 330

supported OS versions, 41

upgrading on active Sun cluster nodes, 273–276

upgrading on active VERITAS cluster nodes, 323–326

- upgrading on passive Sun cluster nodes, 276–277
- upgrading on passive VERITAS cluster nodes, 326–327
- verifying requirements
 - automatically, 31
 - manually, 31
- management server in Sun Cluster environment
 - before installing, 230–256
- management server in VERITAS cluster environment
 - before installing, 291–305
- managemet server
 - deinstalling old version, 185–187
- manual database configuration, 131–147
- manually verifying requirements, 31
- Motif GUI documentation, 21–22
- mounting CD-ROM, 70

N

- Native Language Support. *See* NLS support by Oracle database
- Netscape server, configuring, 128
- Network interface group, 226
 - for Sun cluster 3.0, 227
 - for Sun cluster 3.1, 227
- NLS support by Oracle database, 138
- NNM
 - before installing, 333
 - installing remote integration package, 331–333

O

- obsoleted
 - agent platforms, 197
- online documentation
 - description, 19
 - starting, 125
- OpenView Event Correlation Service Designer. *See* ECS Designer documentation
- operating system
 - patches, 43, 44
- operator GUI. *See* GUI
- Oracle
 - on Sun Solaris installing, 51–53
- Oracle database server
 - installing for OVO in cluster environment, 306–313

- installing for OVO in Sun cluster environment, 257–264
- local disk, 308–309
- remote filesystem, 312–313
- shared disk, 309–312
 - basic, 309
- Sun cluster local disk, 259
- Sun cluster remote filesystem, 263–264
- Sun cluster shared disk, 260–263
 - basic, 260
- Oracle Universal Installer, 70
- Oracle. *See* database
- ORACLE_HOME, changed setting, 177
- OVkey license. *See* license
- OVO
 - after upgrade, 194
 - bundling for Sun Solaris software, 335–337
 - deinstalling software from Sun cluster nodes, 270–272
 - deinstalling software from VERITAS cluster nodes, 320–322
 - installing agent software on Sun cluster nodes, 269
 - installing agent software on VERITAS cluster nodes, 318
 - loading semaphores and shared memory server, 48
 - product bundles, 337
 - English, 337
 - reinstalling, 164–165
 - software bundles, 95
 - supported agent platforms, 54
 - upgrading
 - A.08.10 licence migration, 203–204
 - upgrading in Sun Cluster environment, 273–277
 - upgrading in VERITAS cluster environment, 323–327
- ovw map, saving, 180

P

- packages, CDE, 42
- password. *See* database; license
- PDF documentation, 15
- performance requirements, 37
- platforms
 - GUI, 109–110
 - installing agent, 159–165

Portable Document Format. *See* PDF
documentation
post. *See* mail, requesting license through
preparation steps
additional cluster node
installation scenarios, 304–305
additional cluster nodes
basic environment, 304–305
additional Sun cluster nodes
basic environment, 249–251
cluster environment using remote
database server, 255–256
decoupled cluster environment, 252–254
first cluster node
basic environment, 293–296
cluster environment using remote
database server, 302–303
Decoupled cluster environment, 297–301
installation scenarios, 292–303
first Sun cluster node
basic environment, 232–238
cluster environment using remote
database server, 245–247
decoupled cluster environment, 238–244
installation scenarios, 231–247, 248–256
installing management server in Sun
Cluster environment, 230–256
installing management server in VERITAS
cluster environment, 291–305
preparing Oracle database, 62–64
prerequisites. *See* requirements
print documentation, 16
process, installation, 28
product bundles, OVO, 337
product license. *See* license
products
database, 60
English, 338

R

RAM requirements for management server,
35
reflection X setting requirements, 39
reinitializing
configuration, 164–165
database, 164–165
related documentation
additional, 18
Developer's Toolkit, 18
ECS Designer, 18

online, 19, 21–24
PDFs, 15
print, 16
SunMC, 18
remote integration package, installing NNM,
331–333
requesting product license. *See* license
requirements
CDE packages, 42
connectivity, 38
database
disk space, 33–34
products, 60
GUI, 111–113
license, 210
management server, 25–54
checking, 31–54
display redirection, 39
hardware, 32–39
software, 41–53
swap space, 36
verifying, 171–172
operating system patches, 43–44
OVO installation, 57
performance, 37
RAM, 35
reflection X settings, 39
Sun Cluster environment, 226–227
swap space, 35
verifying manually, 46
VERITAS cluster environment, 288
resolving hostnames, 46–47
restrictions, OVO upgrade, 169
root.sh script, 70
running OVO
installation script, 81–84

S

saving administrator's ovw map, 180
scenarios
configuring OVO in Sun cluster, 221–225
configuring OVO in VERITAS cluster,
283–287
script, installation
description, 77–80
running, 81–84
server
configuring
CERN/W3C, 129

- HTTP, 127–129
- Netscape, 128
- separate database, 141–147
- services
 - shutdown, 131–147
 - startup, 131–147
- setting up license, 205–218
- shutdown services. *See* services
- software
 - administration, management server, 159–165
 - bundling OVO for Sun Solaris, 335–337
 - requirements
 - GUI, 112
 - management server, 41–53
 - sub-tree on management server
 - vendor-specific, 155, 157
- Solaris. *See* Sun Solaris, installing OVO on
- starting
 - database
 - automatically, 135
 - manually, 136–137
 - GUI, 123–126
 - from web browser, 124
 - ito_op script, 123
 - on PC, 123–124
 - on UNIX, 124
 - online documentation, 125
 - OVO, 133–134
- starting Oracle Universal Installer, 70
- starting root.sh script, 70
- startup services. *See* services
- stopping
 - database
 - automatically, 135
 - manually, 136–137
 - management server in Sun Cluster environment, 280
 - management server in VERITAS cluster environment, 330
 - OVO, 133–134
- subproducts
 - English, 339
- sub-tree on management server
 - vendor-specific, 155, 157
- Sun Cluster environment
 - installation requirements, 226–227
 - installing OVO, 219–280
- Sun cluster environment
 - configuration scenarios, 221–225

- Sun cluster node
 - first
 - cluster environment using remote database server, 245–247
 - installation scenarios, 231–247
- Sun cluster nodes
 - active
 - upgrading management server, 273–276
 - additional
 - basic environment, 249–251
 - cluster environment using remote database server, 255–256
 - decoupled cluster environment, 252–254
 - installation scenarios, 248–256
 - deinstalling OVO software from, 270–272
 - first
 - basic environment, 232–238
 - decoupled cluster environment, 238–244
 - installing agent software, 269
 - passive
 - upgrading management server, 276–277
- Sun Solaris
 - See also* Sun Cluster environment
 - bundling OVO for, 335–??
 - bundling OVO for, ??–337
 - communication protocols, 45
 - installing OVO on, 85–90
- SunMC documentation, 18
- supported communication protocols, 45
- swap space requirements for management server, 35
- swinstall, installing OVO with, 118–119
- system, analyzing, 77–80

T

- tasks, installation, 27–30
- typographical conventions. *See* document conventions

U

- unmounting CD-ROM, 70
- upgrade
 - overview, 168
 - OVO A.08.10 licence migration, 200
 - OVO,after, 194
 - restrictions, OVO, 169
- upgrading
 - database version, 175–178
 - GUI, 196

- managed nodes, 197–199
- management server
 - from A.08.00 to A.08.10 in Cluster environment, 278–279, 328–329
- management server on active Sun cluster nodes, 273–276
- management server on active VERITAS cluster nodes, 323–326
- management server on passive Sun cluster nodes, 276–277
- management server on passive VERITAS cluster nodes, 326–327
- OVO
 - A.08.10 licence migration, 203–204
 - OVO in Sun Cluster environment, 273–277
 - OVO in VERITAS cluster environment, 323–327
- uploading OVO configuration
 - A.08.xx, 189–192

V

- variables
 - ORACLE_HOME, changing, 177
- vendor-specific sub-tree on management server, 155, 157
- verifying
 - management server requirements, 171–172
 - Oracle database, 59–75
 - OVO installation, 98–101
 - requirements manually, 46
- VERITAS cluster environment
 - configuration scenarios, 283–287
 - installation requirements, 288
 - installing OVO, 281–330
- VERITAS cluster nodes
 - active
 - upgrading management server, 323–326
 - deinstalling OVO software from, 320–322
 - installing agent software, 318
 - passive
 - upgrading management server, 326–327
- version, updating database, 175–178

W

- W3C server, configuring, 129
- web. *See* Internet, requesting license through
- web browsers for GUI, 113
- World Wide Web Consortium. *See* W3C server, configuring

