HP OpenView Operations

Installation Guide

Software Version: A.08.20

Edition 2

HP-UX Itanium

Manufacturing Part Number: None

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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:	OVO A.08.20	November 2005
Second Edition:	OVO A.08.20	August 2006

Conventions

The following typographical conventions are used in this manual.

Table 1 Typographical Conventions

Font	Meaning	Example
Italic	Book or manual titles, and man page names	Refer to the *OVO Administrator's Reference* and the *opc(1M)* manpage for more information.
	Emphasis	You *must* follow these steps.
	Variable that you must supply when entering a command	At the prompt, enter **`rlogin`** ***`username`***.
	Parameters to a function	The *`oper_name`* 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 `grep` command ...
	Function names	Use the `opc_connect()` function to connect ...
	File and directory names	`/opt/OV/bin/OpC/`
	Process names	Check to see if `opcmona` 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
OVO Installation Guide for the Management Server	Designed for administrators who install OVO software on the management server and perform the initial configuration. This manual describes: • Software and hardware requirements • Software installation and de-installation instructions • Configuration defaults	Hardcopy PDF
OVO Concepts Guide	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.	Hardcopy PDF
OVO Administrator's Reference	Designed for administrators who install OVO on the managed nodes and are responsible for OVO administration and troubleshooting. Contains conceptual and general information about the OVO DCE/NCS-based managed nodes.	PDF only
OVO DCE Agent Concepts and Configuration Guide	Provides platform-specific information about each DCE/NCS-based managed-node platform.	PDF only
OVO HTTPS Agent Concepts and Configuration Guide	Provides platform-specific information about each HTTPS-based managed-node platform.	PDF only
OVO Reporting and Database Schema	Provides a detailed description of the OVO database tables, as well as examples for generating reports from the OVO database.	PDF only
OVO Entity Relationship Diagrams	Provides you with an overview of the relationships between the tables and the OVO database.	PDF only

Table 2 OVO Manuals (Continued)

Manual	Description	Media
OVO Java GUI Operator's Guide	Provides you with a detailed description of the OVO Java-based 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
Service Navigator Concepts and Configuration Guide	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
OVO Software Release Notes	Describes new features and helps you: • Compare features of the current software with features of previous versions. • Determine system and software compatibility. • Solve known problems.	PDF only
OVO Supplementary Guide to MPE/iX Templates	Describes the message source templates that are available for the MPE/iX managed nodes. This guide is not available for OVO on Solaris.	PDF only
Managing Your Network with HP OpenView Network Node Manager	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
OVO Database Tuning	This ASCII file is located on the OVO management server at the following location: `/opt/OV/ReleaseNotes/opc_db.tuning`	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:		
OVO Application Integration Guide	Suggests several ways in which external applications can be integrated into OVO.	Hardcopy PDF
OVO Developer's Reference	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. Note that HP OpenView Event Correlation Composer is an integral part of NNM and OVO. OV Composer usage in the OVO context is described in the OS-SPI documentation.		
HP OpenView ECS Configuring Circuits for NNM and OVO	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 Motif 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-based 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	Manual pages available online for OVO. These manual pages are also available in HTML format. To access these pages, go to the following location (URL) with your web browser: `http://<management_server>:3443/ITO_MAN` In this URL, the variable <*management_server*> is the fully-qualified hostname of your management server. Note that the man pages for the OVO HTTPS-agent are installed on each managed node.

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 management server for HP OpenView HP OpenView Operations (OVO).

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 the installation path in Table 1-1 on page 28 that best 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.

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.08.20 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 OVO 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.08.20.

Table 1-1 Choosing the Correct Installation and Upgrade Path

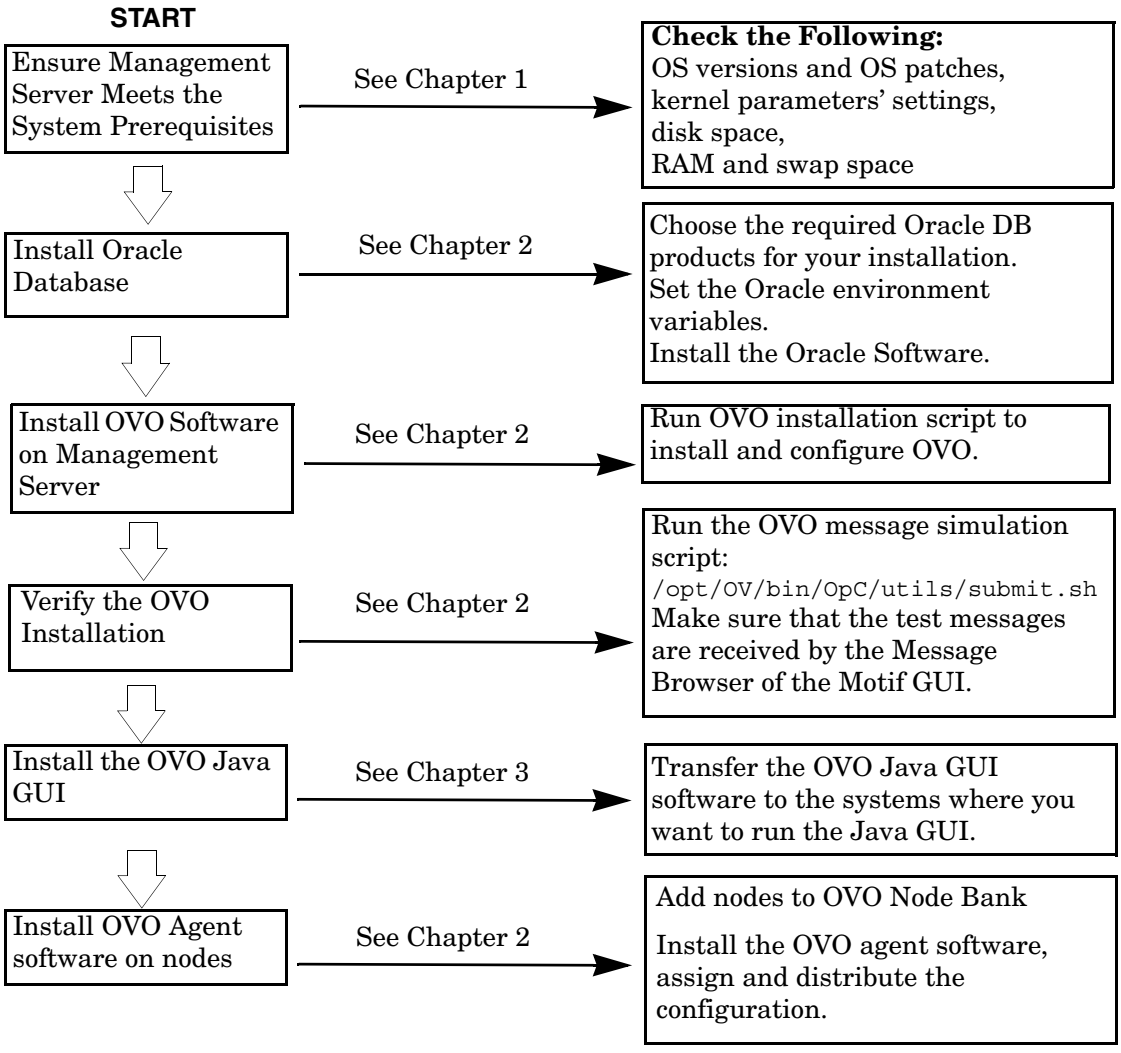
To...	You Need to...	Refer To...
1. Install OVO A.08.20 for HP-UX on the management server.	1. Have management-server hardware that conforms to *at least* the minimum system requirements for the OVO management server. 2. Check the OVO installation CDs' layout presented in Table 2-1 on page 67. 3. Select an OVO language. See also Table 2-2 on page 89 for information about available OVO bundles.	This Chapter. "Installing OVO on the Management Server" on page 51
2. Install additional OVO DCE/NCS-based agent software.	1. Have OVO version A.08.20 installed on the management server. 2. Install the DCE/NSC based agent software.	Chapter 2, "Installing OVO on the Management Server," on page 51 "Installing DCE/NCS Agent-Software Packages on the Management-Server System Manually" on page 90
3. Install the OVO Java GUI.	1. Have OVO version A.08.20 installed on the management server. 2. Install the OVO Java GUI software on the systems where the OVO Java GUI will be running.	Chapter 3, "Installing the Java Operator GUI," on page 93
4. Install OVO in an HP Serviceguard Cluster Environment[a]	1. Install the OVO filesets on the first HP Serviceguard Cluster node. 2. Install OVO on any additional HP Serviceguard Cluster nodes.	Appendix 10, "Installing OVO in an HP Serviceguard Cluster Environment," on page 225
5. Install OVO in an Veritas Cluster Environment[a]	1. Install the OVO filesets on the first Veritas Cluster node. 2. Install OVO on any additional Veritas Cluster nodes.	Appendix 11, "Installing OVO in a VERITAS Cluster Environment," on page 265

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

To...	You Need to...	Refer To...
6. Upgrade installation of OVO version A.08.10 (ARIES) to version A.08.20	1. Have management-server hardware and software that conforms to *at least* the minimum system requirements for the OVO A.08.20 management server. 2. Upgrade to OVO version A.08.20.	This Chapter. Chapter 8, "Upgrading OVO from Version A.08.10 HP-UX Itanium (ARIES) to Version A.08.20," on page 191
7. Install or update OVO agent software on the managed nodes.	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. 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.	*OVO Administrator's Reference Volume I and II* *OVO HTTPS Agent Concepts and Configuration Guide*

a. Not supported for OVO A.08.20.

Figure 1-1 Summary of Standard OVO Installation Tasks



Verifying the Installation Requirements

The OVO management server for HP-UX 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.

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 51”.

Hardware Requirements

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

- ❏ Itanium Processor Family (IPF) servers, with at least one HP-supported X terminal or workstation.
- ❏ Color bitmapped monitor with a minimum resolution of 1280 x 1024. The monitor *does not* need to be physically connected to the management-server system. You can use the X-redirection mechanism and run the OVO Motif GUI remotely.

  For information about display redirection to a Windows system, see "Configuration Required to Redirect Displays to Windows" on page 39.
- ❏ 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 127.

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. Installation requirements info file is 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.08.20 Installation CDs" on page 67.

   HP-UX 11.23 Itanium `ovo.info.HP-UX.B.11.23.txt`

   Also review the disk requirements of any other applications, such as HP OpenView Performance Manager, 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:

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

NOTE

Do *not* use NFS-mounted file systems. These systems can adversely affect the performance of OVO. For more information, see the section on agent-installation tips in the *OVO Administrator's Reference*.

   For details about the OVO directory structure, see Chapter 5, "Directory Structure on the Management Server," on page 135.

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

   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 binaries 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`

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 will perform. 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 your 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.

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

Individual requirements are listed in Table 1-2 on page 36.

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

Product	Required Swap Space
HP-UX Operating System	512 MB
Oracle database	1024 MB[a]
HP OpenView 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 on 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 run the command:

```
/usr/sbin/swapinfo
```

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.

   If required, adapt the kernel parameter `maxdsiz`. Details of this and other kernel parameters are written in installation requirements info files, which are supplied with the OVO product. For information about their location, see "About the OVO A.08.20 Installation CDs" on page 67.

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

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

Reserve enough physical memory to accommodate all the virtual-memory needs of OVO. This extra memory will eliminate 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 Connection 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 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 (at least while OVO operators are working)?

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

   If it is *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 as regards to network connectivity and network speed?

   To minimize the OVO response time, fast network (LAN) should be available between the management-server system and its managed nodes. For example, the management server *should not* be connected by 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 by 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 Motif GUI display redirection to a non-HP-UX system is only supported with a HP-UX font server. See the man page *xfs(1)* for more information about setting up a font server on HP-UX.

OVO supports WRQ Reflection X for Windows and Hummingbird Exceed which enable you to redirect a OVO display to a Windows system. See Table 1-3 and Table 1-4 for details.

Table 1-3 Required Display-redirection Configuration

Requirements	Configuration
Hardware requirements on a Windows PC	Minimum requirements: • 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	• Windows 2000, Windows XP or Windows 2003 • Reflection X Version 8.00 or higher for Windows 2000/XP, Hummingbird Exceed Version 9.0
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.
Mouse	Middle mouse button: emulation enabled

Software Requirements

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

Operating System

HP-UX *must* be installed on an Itanium system. (See Table 1-5.)

Table 1-5 Supported OS Versions for the OVO Management Server

Operating System	Platform	Supported Operating System Versions
HP-UX	Itanium Processor Family servers	11.23 September 2004

NOTE OVO A.08.20 on HP-UX 11.23 is a 32-bit application, built to run on Itanium systems with cleaner code and higher performance. OVO runs on the 64-bit HP-UX 11.23 operating system, but it *does not* support integrations with 64-bit applications on the API level. Oracle 10g is a 64-bit application and therefore *must* be installed on a system running a 64-bit HP-UX 11.23 operating system. OVO connects to the Oracle database through the 32-bit SQL interface.

Kernel Parameters

Several of the kernel parameters have to be increased on the OVO management server, since the OS default values are too small. The OVO installation utility `ovoinstall` checks your current settings.

If you want to familiarize yourself upfront, you can run `ovoinstall`, or have a look at the OVO installation requirement info file. Installation requirements info file is 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.08.20 Installation CDs” on page 67.

Supplementary Software for the Management Server

Table 0-1 on page HIDDEN lists the supplementary software required by OVO. It also lists the network communication services, X Windows, and the Common Desktop Environment (CDE) online help. The analysis phase of `swinstall(1M)` checks if all dependent supplementary software is installed.

To list all installed filesets and check which software is already installed, enter the following command:

```
/usr/sbin/swlist -l fileset
```

NOTE The `swlist` command with the `-l` option set to fileset does *not* list the fileset's subrelease, even if it is installed.

Table 1-6 Required Software Packages for HP-UX 11.23 Itanium

Prerequisite	Description	Available From [a]
Communication Services		
`DCE-Core.DCE-CORE-RUN` `DCE-Core.DCE-COR-IA-RUN`	HP DCE/9000 version 1.7 or higher	HP-UX Core OS
`DCE-CDS-Server` `DCE-SEC-Server`	Optional for DCE security. A DCE cell requires a CDS server and a security server. All other DCE nodes in the cell require only DCE-core.	HP-UX Application Software CD-ROMs.
`InternetSrvcs.INETSVCS-RUN` `InternetSrvcs.INETSVCS2-RUN`	ARPA Services/9000 (`remsh`, `rcp`, `rlogin`, `ftp`)	HP-UX Core OS
`NFS.NFS-CORE` `NFS.NFS2-CORE`	SunRPC port mapper (Novell NetWare managed nodes only)	HP-UX Core OS
`VT3K`	`VT3K` for MPE/iX managed nodes only	`VT3K` is available from the HP-UX Application Software CD-ROMs.
X Windows and OSF/Motif		

Table 1-6 Required Software Packages for HP-UX 11.23 Itanium

Prerequisite	Description	Available From [a]
X11.X11R6-SLIBS-IA X11.MOTIF-SHLIB-IA	X Windows and OSF/Motif version 2.1 or greater	HP-UX Core OS
X11-RUN-CL	hpterm, xterm	HP-UX Core OS
CDE.CDE-DTTERM	dtterm	HP-UX Core OS
CDE.CDE-HELP-RUN CDE.CDE-RUN	CDE help system	HP-UX Core OS
Native Language Support (NLS)		
OS-Core.NLS-AUX OS-Core.NLSZ-AUX	NLS support	HP-UX Core OS
Patches		
HP-UX OS	For a list of required HP-UX operating system patches, see OVO installation requirements info file ovo.info.HP-UX.B.11.23.txt. See "Operating-System Patches" on page 44 for more information. *Install the OS patches before you install all required supplementary software on the management server, and proceed with the installation of the OVO software.*	The HP-UX OS patches are available from OVO product CDs or from the following web site: http://www.hp.com See "About the OVO A.08.20 Installation CDs" on page 67 to learn more about the OVO CD layout.

a. Several products listed in Table 1-6 are shipped on the OVO product CD-ROMs for your convenience. These versions are the most recent software versions at the time of manufacturing. Before installing these products from the CD-ROMs, consult your Hewlett-Packard representative for the most recent versions.

Operating-System Patches

The OVO installation utility `ovoinstall` checks the OS patches that are currently installed on the OVO management server. For information about the required HP-UX OS patches, refer to the OVO installation requirements info file. Installation requirements info fileis 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.08.20 Installation CDs” on page 67.

HP-UX 11.23 Itanium `ovo.info.HP-UX.B.11.23.txt`

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/`

At the time of installation, these documented patches may be superseded. Use the latest patches from the `http://www.hp.com` website. Here you will find further information about the patches that you need.

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.HP-UX.B.11.23.txt`.

You can do this upon the first prompt from the `ovoinstall` installation script.

Oracle Database

OVO A.08.20 is certified to work with the following Oracle database versions:

- ❏ Oracle Database 10g Release 1 Enterprise/Standard Edition with 10.1.0.4 Patch Set for the Oracle Database Server for HP-UX Itanium
- ❏ Oracle Database 10g Release 2 Enterprise/Standard Edition with 10.2.0.2 Patch Set for the Oracle Database Server for HP-UX Itanium

Table 1-7 Required Oracle Products for OVO

HP-UX Version...	Oracle Version...	Required Products...
HP-UX 11.23	Oracle 10g Database Release 1 Standard and Enterprise Edition (64-bit) for HP-UX Itanium[ab] with 10.1.0.4 Patch Set for Oracle Database Server	• Oracle10.1.0.2.0 • Oracle Net Services 10.1.0.2.0
	Oracle 10g Database Release 2 Standard and Enterprise Edition (64-bit) for HP-UX Itanium[ab] with 10.2.0.2 Patch Set for Oracle Database Server	• 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.

For information about support of later versions of Oracle, refer to the latest edition of the OVO *Software Release Notes*.

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`:

   ```
   su - oracle
   ```

2. Run the Oracle Universal Installer:

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

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

NOTE 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.08.20 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 DCE/NCS based managed node on the OVO management server.

For a list of platforms and operating systems 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 also installed on SAN (Storage Area Network) attached disks.

2 Installing OVO on the Management Server

In This Chapter

This chapter describes:

- How to install HP OpenView HP OpenView Operations (OVO) for the **first time** on the management server using OVO installation program.
- How to set up the Oracle database for use with OVO.
- How to install DCE/NCS-based agent 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 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:

- ❏ HP-UX operating system with CDE *must* be installed.
- ❏ Kernel parameters on the management server *must* be adapted. See “Verifying the Installation Requirements” on page 31.
- ❏ HP-UX operating system patches *must* be installed. For more details on OVO installation CDs layout, see Table 2-1 on page 67.
- ❏ 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,, then complete the following steps:

1. Install and check your database.

   See “Installing and Verifying an Oracle Database” on page 53 for details.

2. Install the OVO software on the management server.

   See “Installing the OVO Software on the Management-Server System” on page 67 for details.

3. Verify the OVO installation.

   See “Starting OVO and Verifying the Installation” on page 83 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 45 for details about support for Oracle database versions on HP-UX 11.23 for Itanium.

- ❏ Oracle Database 10g Release 1 with 10.1.0.4 Patch Set for the Oracle Database Server for HP-UX Itanium
- ❏ Oracle Database 10g Release 2 with 10.2.0.2 Patch Set for the Oracle Database Server for HP-UX Itanium

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

NOTE **Oracle** 10g is a product of the Oracle Corporation and *cannot* be purchased directly from Hewlett-Packard.

Required Oracle Products

For a complete list of required Oracle products, see Table 1-7 on page 45.

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 from the OVO management server, you *must* additionally install the Oracle products on the management server as described in the section “Setting Up an Independent Database-Server System” on page 127. These enable remote access to the Oracle database.

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 10g (10.1.0 or 10.2.0).
2. Make sure the Oracle-environment variables are set as described in “Preparing an Oracle Database for Installation” on page 55.
3. Continue with “Installing the OVO Software on the Management-Server System” on page 67.

Before You Install an Oracle Database

Preparing an Oracle Database for Installation

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

1. Make sure that your system meets 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 `SAM` as user `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. 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. 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:

      `/home/oracle`
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>`

      Where the *`<version>`* is the Oracle database version, 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.

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

**chown -R oracle:oinstall /opt/oracle **
/opt/oracle/product /opt/oracle/product/<version>

Where the *<version>* is the Oracle database version, 10.1.0 or 10.2.0.

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

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

  This variable determines the location and the version of the Oracle installation. The subdirectory prefix /opt is just an example; replace it with the installation path you used for Oracle.

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

  Where the *<version>* is the Oracle database version, 10.1.0 or 10.2.0.

  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_TERM=hp**

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

  If you normally use dtterm, change the setting to ORACLE_TERM=ansi.

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

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

- **`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.

7. Install the Oracle database as described in the following section.

Installing an Oracle Database

IMPORTANT

Before you start with installation of Oracle database from CD, you *must* have Java Development Kit (JDK) installed on your system.

You need to install at least JDK 1.3.1 to install the Oracle database, though it is recommended to install JDK 1.4.2 or higher.

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

- Oracle Database 10g Release 1 with 10.1.0.4 Patch Set for the Oracle Database Server for HP-UX Itanium
- Oracle Database 10g Release 2 with 10.2.0.2 Patch Set for the Oracle Database Server for HP-UX Itanium

The following procedure installs Oracle 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 67.

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 Version 10g

NOTE

The *Oracle10g Database Release 1 Enterprise Edition (64-bit) for the HP-UX Itanium* is available on two CD-ROMs. *Oracle10g Database Release 2 Enterprise Edition (64-bit) for the HP-UX Itanium* as well as all required Patch Sets can be downloaded from the Oracle web site.

To install Oracle 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. If you use an `hpterm`, use **`hp`**. If you use a `dtterm`, use **`ansi`**. To check the setting, enter:

      ```
      echo $ORACLE_TERM
      ```

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

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

      Where the *`<version>`* is the Oracle database version, 10.1.0 or 10.2.0.

      ```
      export ORACLE_HOME
      ```

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

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

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

2. As user `root`, mount the CD-ROM:

   a. Start the Portable File System (PFS) mount request server as follows:

      `/usr/sbin/pfs_mountd &`

      For more information, see the man page *pfs_mountd(1M)*.

   b. Start the PFS daemon as follows:

      `/usr/sbin/pfsd &`

   c. Create a mount directory, for example:

      `mkdir /SD_CDROM`

   d. List all disk devices to locate the device file for your CD-ROM drive:

      `ioscan -funC disk`

      The additional command `diskinfo <raw_device_file>` describes the characteristics of a disk device.

   e. Use a system editor to add the following line to the `/etc/pfs_fstab` file. You may have to first create the file if it does *not* yet exist.

      Syntax:

      <device_file> <mount_point> <filesystem_type> <translation_method>

      For example:

      `/dev/dsk/c5t2d0 /SD_CDROM pfs-rrip xlat=unix 0 0`

   f. Insert the first CD-ROM into the drive and mount it as follows:

      `/usr/sbin/pfs_mount /SD_CDROM`

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

   `/SD_CDROM/install/hpunix/runInstaller &`

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

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

4. In the `Specify Inventory directory and credentials` window click `[Next]`.
   You are prompt to run certain actions with root privileges. As user root, run the utility `orainstRoot.sh` by entering:

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

5. The `Specify File Locations` window opens. If you have previously set all Oracle variables properly, click `[Next]`.

   The `Select Installation Type` window opens.

6. In the `Select Installation Type` window, choose `Enterprise Edition` or `Standard Edition` type according to your needs or your Oracle licence agreement. Click `[Next]`. The `Product-specific Prerequisite Checks` window opens.

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.

7. In the `Product-specific Prerequisite Checks` window, the result of checking requirements is displayed. If there were no problems reported, click `[Next]`.

   The `Select Database Configuration` window opens.

8. In the `Select Database Configuration` window, select `Do not create a starter database` option and click `[Next]`.

   The `Summary` window opens.

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

10. 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>
```

Where the `<version>` is the Oracle database version, 10.1.0 or 10.2.0.

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

11. When the `root.sh` utility has finished, click `[OK]` in the `Setup Privileges` window. The `End of Installation` window opens.
12. In the `End of Installation` window, you can verify installed Oracle products.
    Click `[Exit]` when you finish the verification.
13. Install the corresponding 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 Oraclle 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 and 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
```

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

   The `Specify File Locations` window opens.

4. 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`

5. 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.

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

7. 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 the `<version>` is the Oracle database version, 10.1.0 or 10.2.0.

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

8. 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 imposible 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` deamon, continue with the installation.

Installing and Verifying an Oracle 10g Database

The installation of Oracle 10g for OVO 8.1 differs from the installation of Oracle 9, described in the OVO 8.10 Installation Guide. Please follow the instructions in the following chapter instead of the Preparing an Oracle Database for Installation chapter in the OVO 8.1 Installation Guide.

Preparing an Oracle Database Version

Before installing an Oracle Database 10g on the management server, follow these steps:

1. Make sure that your system meets 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 `SAMadmintool` as user `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. 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. 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`

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>

Where the <version> is the Oracle database version, 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.

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. 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 /home/oracle/.profile of user oracle:

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

  This variable determines the location and the version of the Oracle installation. The subdirectory prefix /opt is just an example; replace it with the installation path you used for Oracle.

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

  Where the <version> is the Oracle database version, 10.1.0 or 10.2.0.

  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 opcconfig 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=hpxterm`**

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

  If you normally use `dtterm`, change the setting to `ORACLE_TERM=ansi`.

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

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

7. Continue with installing the Oracle Database 10g in the same manner as described in the Installing the Oracle Database section of the OVO 8.1 OVO Installation Guide for the Management Server for Oracle Database 9i.
8. After installing Oracle Database 10g, install all required Oracle patches listed in Table 1-7, “Required Oracle Products for OVO,” on page 45.

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.08.20 Installation CDs

OVO A.08.20 software is supplied as a set of 6 CDs. Table 2-1 lists the OVO A.08.20 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.08.20 Installation CDs

Installation CDs	Content of CDs
OVO 8 (1) CD	Includes OVO installation program, OVO software depot, installation requirements info file, 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	Network Node Manager software depot, including OVSNMP, and ECS runtime, and OV Composer.
NNM (2) CD	
SPI CDs	Includes HP OpenView smart plug-ins for OVO.

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 69.
- Upgrades the shared OV components installed by NNM.
- Checks for installed HP-UX 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 81.
- 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 OVO management server.

Also, it is *not* possible to install OVO from software depot 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

Running ovoinstall

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 `ovoinstall`, 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 `ovoinstall` 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 `ovoinstall` 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, `ovoinstall` 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 HP-UX 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, follow the steps:

1. Insert the first OVO Server Installation CD (OVO 8 (1) CD) into the CD-ROM drive.
2. Create a directory to mount the CD-ROM:

   mkdir /<*mount_point*>

   For example: `mkdir /cdrom`
3. Mount the CD-ROM:

   mount -r -F cdfs /dev/<*cdrom_drive_name*> /<*mount_point*>

   For example, for a local CD-ROM, you can enter:

   mount -r -F cdfs /dev/dsk/c0t2d0 /cdrom

   You can also run `SAM` and mount the CD-ROM to a specific path in the `Disks and File Systems` window.

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:
   - `OVOCD1`
   - `OVOCD2`
   - `OVOCD3`
   - `OVNNMCD1`
   - `OVNNMCD2`
   - `OVOSSPI`
3. Store the content of the OVO installation CDs in these directories. Use the following pattern:
   - ❏ `OVOCD1` for OVO 8 (1) CD content
   - ❏ `OVOCD2` for OVO 8 (2) CD content
   - ❏ `OVOCD3` 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:

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

Installing the OVO Software on the HP-UX Management Server

To install the OVO software on the HP-UX management server, complete the following steps:

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

   `umask 027`

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`

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 69 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 HP-UX 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 127.

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 88.

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. Press `[Enter]` to mount the new CD when inserted.

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 `opcconfig`, 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 `opcconfig` manually. See “Reconfiguring the OVO Software” on page 88 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:

   `umount /<mount_point>`

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.

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
```

OVO Software Bundles

Table 2-2 describes OVO Software bundles. See Appendix B, “OVO Software Bundles,” on page 313, for more information about OVO software bundles, products, and filesets.

Table 2-2 OVO Software Bundles

OVO Bundle	Version	Description
`OVOEnglish`	A.08.20	HP OpenView OVO, with Documentation (English)
`OVOLocalized`[a]	A.08.20	HP OpenView OVO, with Documentation (for non-English Languages)
`OVORemoteOVw`	A.08.20	Remote OVw Integration

a. *Must* be installed on top of the `OVOEnglish` 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 83 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.
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       opcmsgm     (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) opcmsgrb    (13015) is running
Message Receiver (DCE)  opcmsgrd     (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/utils/submit.sh`

   This program sends simulated messages to the `Message Browser`. The number of messages received depends on the configuration of your system. Under normal conditions, you will usually receive five or six messages.

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 processes:

   ❑ 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 the password field of `/etc/passwd`).

- Working as `opc_adm` in the OVO administrator's GUI, set the password for an Input/Output application.

  For example, set up 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.

     The system 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`**

  It is *not* recommended to keep the `.rhosts` entry in a production environment as it can represent a security risk.

- Make sure the file `/etc/hosts.equiv` exists on the managed node. If it *does not*, create it.

  Add the hostname of your management server to this file. For example:

  `<management_server>.<domain>`**`.com`**

  It is *not* recommended to keep the `/etc/hosts.equiv` entry in a production environment as it can represent a security risk.

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 `dbsnmp` and gives them default passwords. Depending on the installed Oracle components and version, additional database users can 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*.

- 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 `opcconfig` 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 127.

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 55 for instructions.

NOTE

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

4. To start `opcconfig`, enter:

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

   By default, if you execute only **`opcconfig`**, 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 automatically.

- 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 127.

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.

f. You are asked to choose an index directory for the OVO index table spaces.

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.

5. 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.

3 Installing the Java Operator GUI

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, 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 97. 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 99 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.

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.”
  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.” for more details.

NOTE

The OVO Java GUI client version A.07.xx is also fully compatible with an A.08.20 management server. You can also run an A.07.xx Java GUI client with an A.08.20 management server, but you will *not* be able to take advantage of the new features introduced with A.08.20.

- ❏ 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 98.

The OVO installation automatically installs and configures an Apache Web server on the management server. See “Configuring the HTTP Server” on page 113 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 97,
2. Make sure that an HTTP server is installed and running.

   See “Configuring the HTTP Server” on page 113 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 97.

   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. Transfering 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 the 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 97.
2. Enter the commands as stated below for the following languages:
   - *English*

     ```
     swinstall -s \
     /<mount_point>/OVOCD2/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>/OVOCD2/OV_DEPOT/HPOvOServer.depot\
     OVOPC-WWW.OVOPC-WWW-GUI OVOPC-WWW.OVOPC-WWW-SPA
     ```
   - *Japanese*

     ```
     swinstall -s \
     /<mount_point>/OVOCD2/OV_DEPOT/HPOvOServer.depot\
     OVOPC-WWW.OVOPC-WWW-GUI OVOPC-WWW.OVOPC-WWW-JPN
     ```
   - *Korean*

     ```
     swinstall -s \
     /<mount_point>/OVOCD2/OV_DEPOT/HPOvOServer.depot\
     OVOPC-WWW.OVOPC-WWW-GUI OVOPC-WWW.OVOPC-WWW-KOR
     ```

- *Simplified Chinese*

```
swinstall -s \
/<mount_point>/OVOCD2/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 108 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 Mozzila 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 110 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 `itooprc` 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 97.
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/httdp-<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.

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`

- For the shutdown

  `/sbin/rc1.d/K060ov900`

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 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 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 `opcconfig` 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 121.

  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 127.)	`DATABASE ov_net`	On the database server: • Oracle processes On the OVO management server: • 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 HP-UX version 11.00HP-UX version 11.23 is supported *only* if the OVO management server is also on a HP-UX version 11.00HP-UX version 11.23 system.

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

1. Install the following Oracle10g products on the *database server*:
   - Oracle10g (10.1.0.2.0 or 10.2.0.1.0)
   - Oracle Net Services 10g (10.1.0.2.0 or 10.2.0.1.0)
2. Install the following Oracle 10.1.0 products on the OVO *management server*:

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

NOTE For all Oracle database versions, sll subproducts are required.

To install these products, select `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 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`.
   The Group ID and the user ID must be same on the database-server system and the OVO management server system.

   You may use `SAM`, the HP-UX system administration tool.
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 51Chapter 2, “Installing OVO on the Management Server,” on page 49 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, and assign write access and access for the user `root`. Perform the following:

   - Edit the `/etc/exports` file and enter the following lines:

     ```
     /opt/OV -rw=<DB server>,root=<DB server>
     /var/opt/OV -rw=<DB server>,root=<DB server>
     /etc/opt/OV -rw=<DB server>,root=<DB server>
     ```

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

   - Execute the following command:

     ```
     exportfs -a
     ```

     or, if your `/etc/exports` file contains many directories, for performance reasons, execute the following:

     ```
     exportfs /opt/OV /var/opt/OV /etc/opt/OV
     ```

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
9. On the database server, link the files:
   - **ln -s /sbin/init.d/ovoracle /sbin/rc2.d/K060ov900**
   - **ln -s /sbin/init.d/ovoracle /sbin/rc3.d/S940ov300**
10. 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 10g (10.1.0 or 10.2.0).

    export ORACLE_SID=openview

    export NLS_LANG=american_america.WE8ISO8859P15
11. 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 10g (10.1.0 or 10.2.0).
12. Call opcdbsetup on the database server to create and configure the database:

IMPORTANT

DCE light-weight runtime environment

/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.

13. 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/tnsnav.ora`

    These files are required on both systems.

14. Unmount the `/opt/OV`, `/etc/opt/OV`, and `/var/opt/OV` directories.

15. 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.

16. The command `opcdbsetup` creates symbolic links from the OVO libraries to the Oracle shared library.

    If you use a different *ORACLE_HOME* on the OVO management server and on the database server, verify that they point to the following libraries:

```
ln -sf <ORACLE_HOME>/lib32/libclntsh.sl \
/opt/OV/lib/libclntsh.sl

ln -sf <ORACLE_HOME>/lib32/libclntsh.sl \
/opt/OV/lib/libclntsh.sl.1.0

ln -sf <ORACLE_HOME>/lib32/libclntsh.sl \
/opt/OV/lib/libclntsh.sl.8.0

ln -sf <ORACLE_HOME>/lib32/libclntsh.sl \
/opt/OV/lib/libclntsh.sl.9.0

ln -sf <ORACLE_HOME>/lib32/libclntsh.sl \
/opt/OV/lib/libopcora.sl
```

```
ln -sf <ORACLE_HOME>/lib32/libwtc9.sl \
/opt/OV/lib/libwtc9.sl
```

The `/opt/OV/lib/hpux32/libclntsh.so` should point to: `<ORACLE_HOME>/lib32/libclntsh.so`
The `/opt/OV/lib/hpux32/libclntsh.so.1.0` should point to:`<ORACLE_HOME>/lib32/libclntsh.so`
The `/opt/OV/lib/hpux32/libclntsh.so.8.0` should point to: `<ORACLE_HOME>/lib32/libclntsh.so`
The `/opt/OV/lib/hpux32/libclntsh.so.9.0` should point to: `<ORACLE_HOME>/lib32/libclntsh.so`
The `/opt/OV/lib/hpux32/libclntsh.so.10.1` should point to: `<ORACLE_HOME>/lib32/libclntsh.so`
The `/opt/OV/lib/hpux32/libopcora.so` should point to: `<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
```

17. 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).

18. Wait for the database-server system configuration to complete, then press `[Enter]` in the `ovoinstall` window to continue with the OVO installation.
19. 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 `mondbfile` template from the OVO management-server template group and, if an OVO agent is running on the database-server system, assign the `mondbfile` template there.

5 Directory Structure on the Management Server

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 layout of the 11.x file system conforms to the standard structure of UNIX System V Release 4 (SVR4).

The major OVO directories contain the following:

`/opt/OV`	All OVO binaries
`/etc/opt/OV`	Configuration data
`/var/opt/OV`	Run-time data

NOTE The file tree can 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)

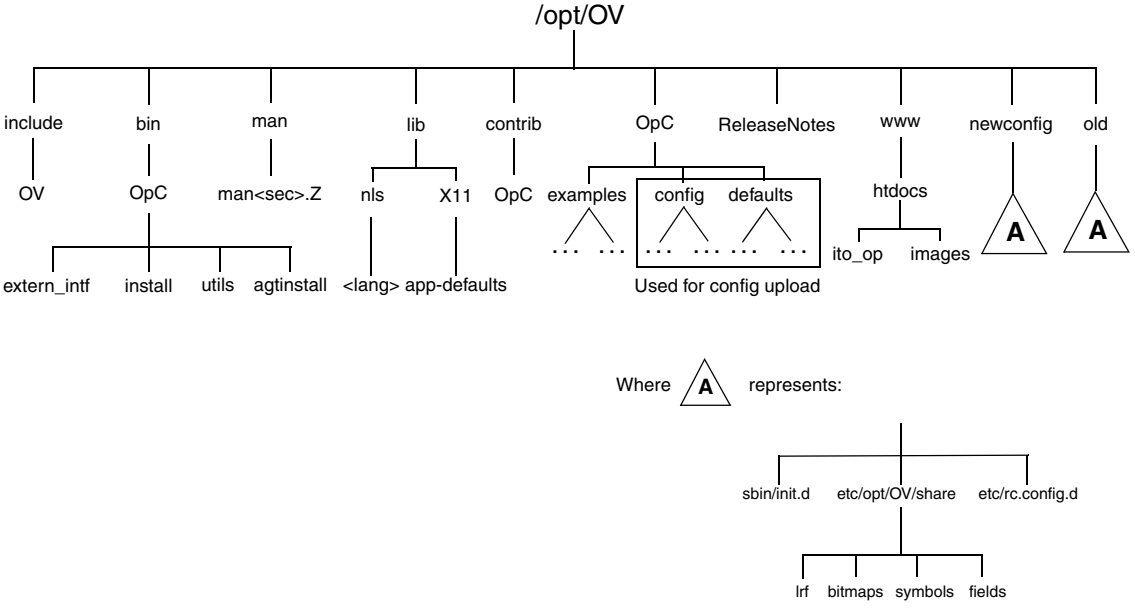


Figure 5-2 File Tree on the Management Server (/var/opt/OV Branch)

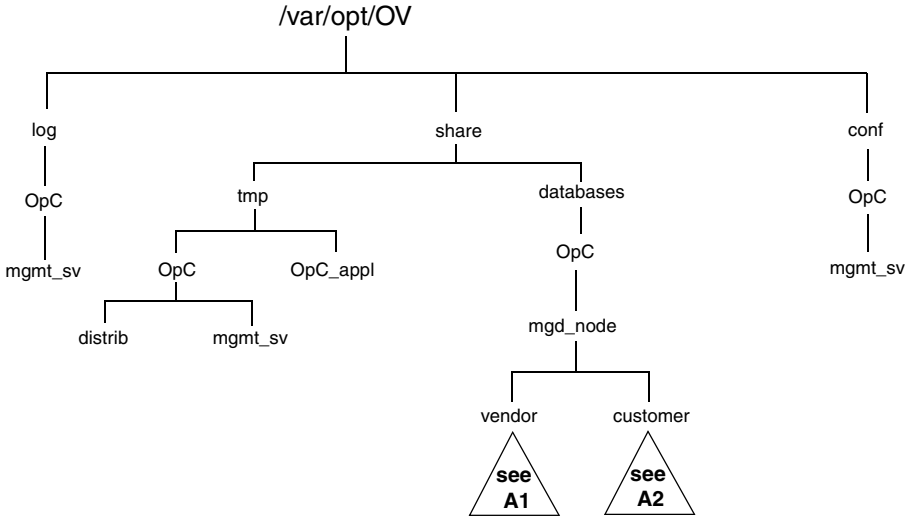
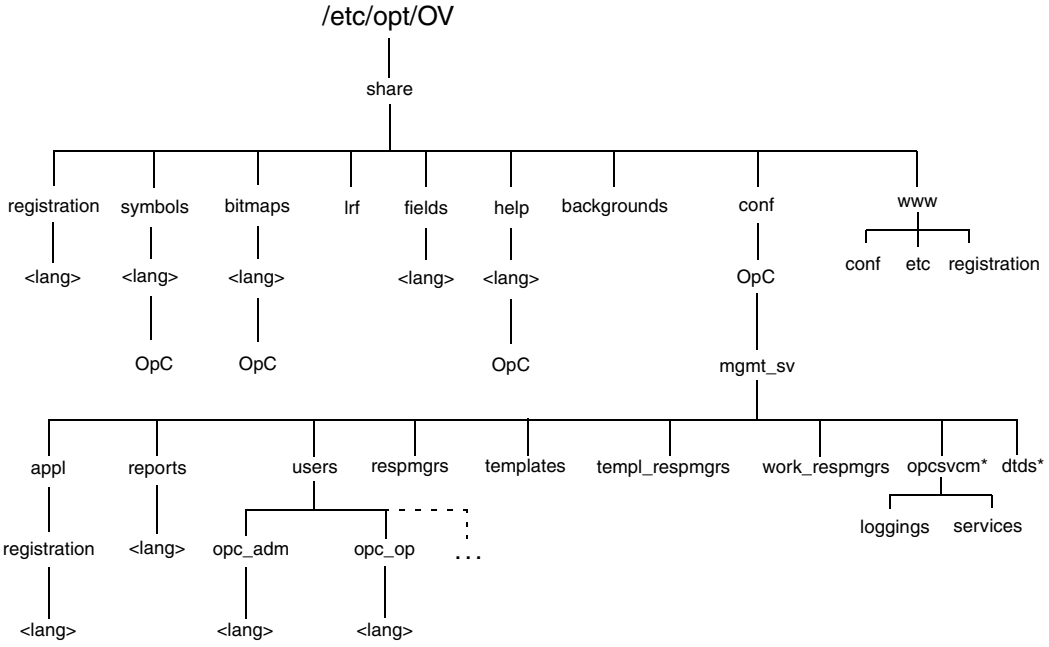
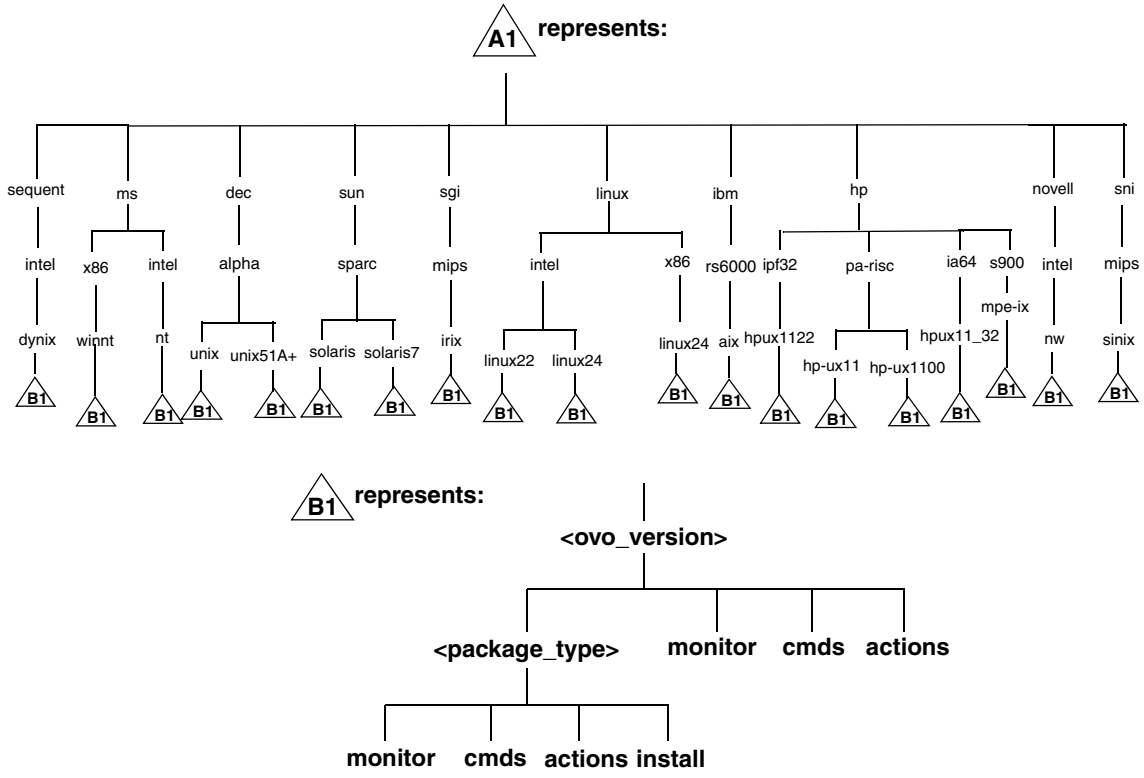


Figure 5-3 File Tree on the Management Server (/etc/opt/OV Branch)



* Only if HP OpenView Service Navigator is installed

Figure 5-4 Vendor-specific OVO Software Sub-tree on the Management Server



Where:

<*ovo_version*> Version of OVO that supports a particular agent platform (for example A.08.20).

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*.

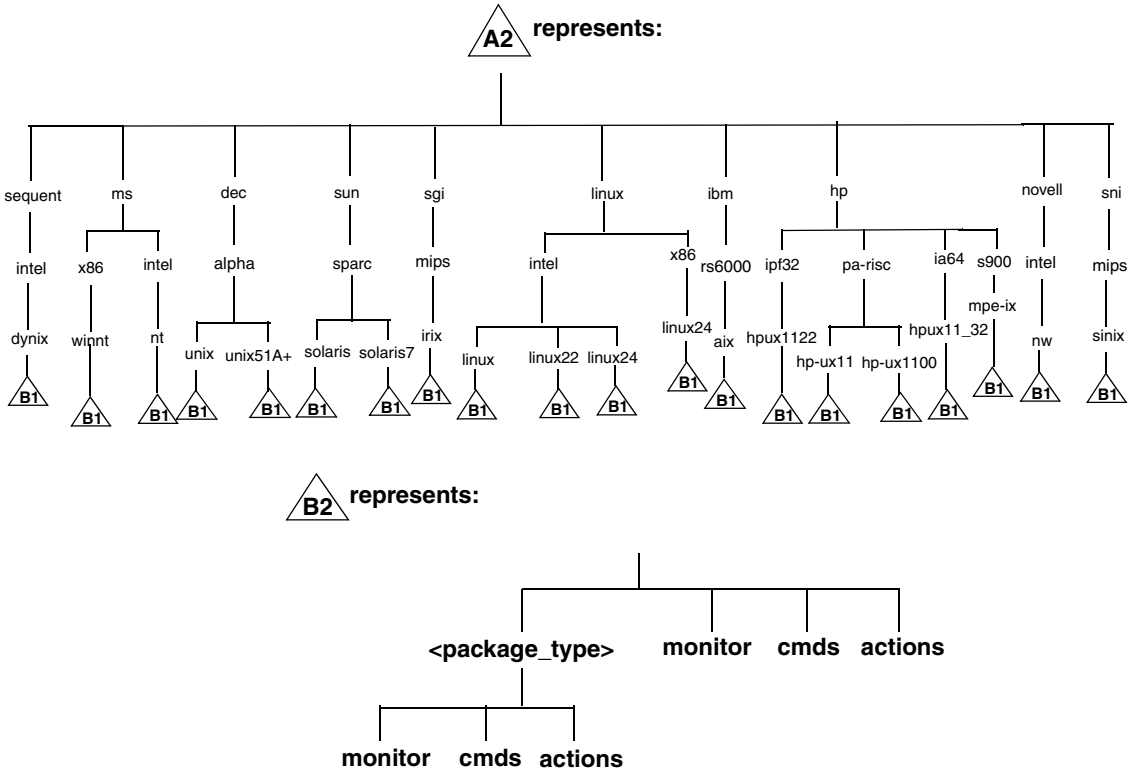
<*package_type*> Communication type used by the remote procedure calls (RPC) of a particular agent platform, for example:

- 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



System Resources Adapted by OVO

OVO makes changes in the following system resource files:

- `/etc/passwd`

  Entry for the default OVO operator.

- `/etc/group`

  Entry for the default OVO operator.

- `/sbin/init.d/opcagt`.

  OVO agent startup/shutdown script.

- `/etc/rc.config.d/opcagt`

  OVO agent startup/shutdown configuration script.

- `/sbin/rc3.d`

  Link `S941opcagt` to `/sbin/init.d/opcagt` is created. This determines when `opcagt` is started during the restart sequence.

- `/sbin/rc2.d`

  Link `K059opcagt` to `/sbin/init.d/opcagt` is created. This determines when `opcagt` is stopped during the shutdown sequence.

- `/etc/services`

  Service `ito-e-gui` is added for the Java-based operator GUI.

- `/etc/inetd.conf`

  Starts the process `/opt/OV/bin/OpC/opcuiwww` when requested.

- `/var/adm/inetd.sec`

  Allows, by default, all systems to use the service `ito-e-gui`. If you specify a system name, only this system is allowed to use the OVO Java-based GUI.

6 Software Administration 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.

To Deinstall 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, using 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. Check that all OVO GUIs are terminated by entering:

   ps -eaf | grep opcui

   If they are not terminated, terminate them by selecting `[Map: Exit]`, or by pressing **Ctrl** + **E** in any HP OpenView submap. Alternatively, use the `kill(1)` command.

NOTE

The `opcuiwww` process is not an OVO GUI process. It is an OVO management-server process. The process is stopped in the 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 a 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`
- `/tmp/ovoremove.log`

NOTE After deinstallation, the `ovoremove.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-based GUI

If you no longer need the OVO Java-based operator GUI, you can easily deinstall it.

To Deinstall the Java-based GUI from a PC Client

To deinstall the OVO Java-based operator GUI from a PC client, follow these steps:

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-based GUI from an HP-UX Client

To deinstall the OVO Java-based operator GUI from a HP-UX client, follow these steps:

1. Close all running GUIs on the client.
2. Deinstall the OVO Java-based GUI interactively, using the `swremove` GUI. Enter the following:

   `/usr/sbin/swremove`

3. Select the product `OVOEnglish.OVOPC-WWW` and proceed with the deinstallation as described by the HP SD-UX documentation.
4. Check the following logfiles for problems occurring during the deinstallation:

   - `/var/adm/sw/swagent.log`
   - `/var/adm/sw/swremove.log`

To Deinstall the Java-based GUI from Other UNIX-based Systems

To deinstall the OVO Java-based operator GUI from other UNIX-based systems, follow these steps:

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 "To Deinstall the Entire OVO Installation" on page 147 for details.

2. Install OVO.

   See Chapter 2, "Installing OVO on the Management Server," on page 51 for details.

Reinitializing the OVO Database and Configuration

If required, you can reinitialize the OVO database and configuration on the management server after reinstalling the OVO software.

To reinitialize the database and configuration, follow these steps:

1. If required, deinstall the OVO software from all the managed nodes, as described in the *OVO Administrator's Reference*.

CAUTION

After you have reinitialized 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 `opc_adm`, `itop`, `opc_op`, and `netop`.

5. If the software has been deinstalled, reinstall it as described in "Reinstalling the OVO Software" on page 151.

6. Stop the OVO and OpenAgent server processes:

   ```
   /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.

   Enter:

   ```
   su - root
   /opt/OV/bin/OpC/opcdbinit -c [-v]
   exit
   ```

   Where:

`-c`	cleans tables and loads default configuration
`-v`	verbose mode; used to show processing progress

8. Restart all the OVO management-server processes by entering:

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

7 Migrating OVO to Version A.08.20

In This Chapter

This chapter contains the migration steps from OVO on HP-UX and Solaris to OVO A.08.20 on Itanium systems. Depending on the OVO version from which the migration is performed, the following procedures are available:

- Migrating from OVO A.07.1x
- Migrating from OVO A.08.1x

Migrating from OVO A.07.1x

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 aquire the correct license for your requirements before the Instant-On licence expires.

NOTE

OVO documentation is now automatically installed into the following web-server directory:

`http://<management_server>:3443/ITO_DOC/<lang>/manuals/`

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.
For Node Network Manager (NNM) migration refer to the *Migration Guide for Network Node Manager 7.5*.

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 10.1.0.4 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 10.1.0.4.

   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 “After Migration” on page 165 section.

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.

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.08.20, 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 opcui
   ```

4. *In cluster environment*: Put the OVO management server in maintenance mode.

5. Stop the HP OpenView platform processes by entering:

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

6. Stop the local agent on the management server:

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

7. 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
```

8. 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
   ```

9. 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
   ```

10. 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.08.20 in the section “Importing Saved A.07.1x Management-Server Configuration Data”.

11. 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.

12. If ANS from OV Advanced Security is installed:

    If you have installed OV Advanced Security, you must deactivate and deinstall OVAS. OVAS is *not* supported with OVO A.08.xx. For more information, see the *HP OpenView Operations Advanced Security Installation and Concepts Guide*.

13. *In cluster environment*: In case you do not want to configure the new management server as a backup server, stop the OVO HA Resource group.

Installing the OVO Software

To install the OVO management-server software, do the following:

Install the OVO version A.08.20 software, as described in Chapter 2, “Installing OVO on the Management Server.”

IMPORTANT Make sure your system meets the hardware and software requirements for the OVO A.08.20 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.”

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 following command:
   `/opt/OV/lbin/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 execlude 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>
```

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. Unacknowledge the “active” messages in the `History Message Browser` and disown them in the `Message Browser` using the OVO administrator GUI.

   c. 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 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.

Upgrading Message Filters

Instead of upgrading a complete administration configuration, it is possible to upgrade only message filters.

Download the administration configuration from both servers (A and B). Update the new configuration with the old one. Upload modified configuration to the new server.
To transfer only message filters from A to B server, follow the procedure:

1. From the A server GUI, choose `Edit/Server/Download Configuration` and perform the download of the administration configuration.
2. On the B server, repeat step 1.
3. Copy the contents of `BROWSER_SETTING` section of the `/var/opt/OV/share/tmp/OpC_appl/cfgdwn/C/ \ ADMIN/admin.dat` file on the B server, to the file with the same name on the A server.
4. On the A server, execute the following command:
opccfgupld -replace/var/opt/OV/share/tmp/ \ OpC_appl/cfgdwn

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 be 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 Migration” on page 175 section.

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
```

NOTE After changing `OPC_MGMT_SERVER` entry in the `opcinfo` file, all agent processes must be restarted.

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 and import the data from `opcsvinfo` to OVO A.08.20 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 Managed Nodes

Version A.08.20 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.08.20 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.08.20 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.08.20 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.08.20.

Obsoleted A.07.xx Agent Platforms

With OVO A.08.20, 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

Upgrading Managed Nodes to A.08.20 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.08.20 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.08.20 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.08.20 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.08.20.
      - `Templates`: Installs A.08.20 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.08.20. 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.08.20, you *must* reinstall the agent patches with the SD option `-x reinstall=true` if you want to use the newer versions.

License Migration to OVO A.08.20

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:

- `/etc/opt/OV/share/conf/.itolicense`
- `/etc/opt/OV/share/conf/.license`

To install these licenses, add them with the OVO A.08.20 license tools:

1. Transfer the license files to the machine where management server has been installed.
2. *In cluster environment*: Disable the HA Resource group monitoring using the following command:

   `/opt/OV/lbin/ovharg -monitor ov-server disable`
3. Stop the OVO and NNM processes:

   `ovstop -v`
4. Add the OVO 7.x license passwords:

   `/opt/OV/bin/opclic -add /tmp/.itolicense`
5. Add the NNM license passwords:

   `/opt/OV/bin/ovnnmInstallLic /tmp/.license`
6. Check the installed passwords:

   `/opt/OV/bin/opclic -report`
7. *In cluster environment*: Enable the HA Resource group monitoring using the following command:

   `/opt/OV/lbin/ovharg -monitor ov-server enable`
8. Start the OVO and NNM processes:

   `ovstart -v`

NOTE It is *not* possible to run NNM 7.5 with an OVO license password. With OVO A.08.20 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.

Migrating from OVO A.08.1x

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,

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 aquire the correct license for your requirements before the Instant-On licence expires.

NOTE OVO documentation is now automatically installed into the following web-server directory:

`http://<management_server>:3443/ITO_DOC/<lang>/manuals/`

If you have a product installed that is integrated into or certified with OVO 8.1x (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.
For Node Network Manager (NNM) migration refer to the *Migration Guide for Network Node Manager 7.5*.

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 10.1.0.4 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 10.1.0.4 .

   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.

How to setup a backup server refer to the *HTTPS Agent Concepts and Configuration Guide*.

Downloading the Current OVO A.08.1x Configuration

To download the current OVO configuration, follow these steps:

1. Rename the default templates or applications that you have changed.

   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 opcui
   ```

4. *In cluster environment*: Put the OVO management server in maintenance mode.

5. Stop the HP OpenView platform processes by entering:

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

6. Stop the local agent on the management server:

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

7. 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
      ```

8. 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
      ```

9. 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
      ```

10. If you want to migrate your configuration database settings, make copies of the following files:
    `/var/opt/OV/datafiles/xpl/config/settings.dat`
    `/var/opt/OV/shared/server/datafiles/xpl/config/ \`
    `settings.dat`

11. 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.

Backing Up Server Certificates

NOTE Skip this procedure if you have a MoM environment.

To backup server certificates and OvCoreId use the following utility on the OVO management:
`/opt/OV/bin/OpC/opcsvcertbackup -backup`

A tar archive file is created at the following default address:
`/tmp/opcsvcertbackup.<date_time>.tar`

Installing the OVO Software

To install the OVO management-server software, do the following:

Install the OVO version A.08.20 software, as described in Chapter 2, Installing OVO on the Management Server,

IMPORTANT Make sure your system meets the hardware and software requirements for the OVO A.08.20 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.”

Restoring Server Certificates

NOTE Skip this procedure if you have a MoM environment.

1. Transfer the saved certificates file to the machine where management server has been installed.
2. Stop the HP OpenView platform processes.

   To stop the HP OpenView platform processes, enter:
   `/opt/OV/bin/ovstop`
3. Install the backup from the old OVO management server installation onto the newly installed system with the command:
   `/opt/OV/bin/OpC/opcsvcertbackup -restore \`
   `-file <archive> -pass <password> -force`

NOTE The `-force` option must be used because the server installation has automatically created a Certificate Authority, OVO management server, and node certificates. These certificates are unsuitable because the managed nodes are configured to use the existing ones from the first installation.

4. Start the HP OpenView platform processes.

   To start the HP OpenView platform processes, enter:
   `/opt/OV/bin/ovstart`
5. Check, that all OVO Management Server processes are running using the commands:
   `opcsv -status`

   All registered processes must be in the state running.
   `ovc -status`

   All registered core processes must be in state running.

IMPORTANT

Local agent OvCoreId in the database must be updated accordingly:

```
/opt/OV/bin/OpC/utils/opcnode -chg_id node_name=<local \
agent hostname> id=<new OvCoreId>
```

You can verify that the OvCoreId has been correctly updated in the databases by executing the following commands:

```
opcnode -list_id node_list=<local agent hostname>
```

Uploading the Saved OVO A.08.1x 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 following command:
   `/opt/OV/lbin/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. If you have made copies of configuration database settings files before, restore them at the same locations.
   Use `ovconfchg`(1) to adopt these files according to the current environment.

NOTE Skip this procedure if you have a MoM environment.

5. Upload the configuration data.

   To upload the configuration data, enter:

   `opccfgupld -add -subentity -configured \`
   `<download_directory>`

   For example:

   `opccfgupld -add -subentity -configured /tmp/cfgdwn`
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. Unacknowledge the “active” messages in the `History Message Browser` and disown them in the `Message Browser` using the OVO administrator GUI.

c. 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 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.

Upgrading Message Filters

Instead of upgrading a complete administration configuration, it is possible to upgrade only message filters.

Download administration configuration from both servers (A and B). Update the new configuration with the old one. Upload modified configuration to the new server.
To transfer only message filters from A to B server, follow the procedure:

1. From the A server GUI, choose `Edit/Server/Download Configuration` and perform the download of the administration configuration.
2. On the B server, repeat step 1.
3. Copy the contents of `BROWSER_SETTING` section of the `/var/opt/OV/share/tmp/OpC_appl/cfgdwn/C/ \ ADMIN/admin.dat` file on the B server, to the file with the same name on the A server.
4. On the A server, execute the following command:
   `opccfgupld -replace/var/opt/OV/share/tmp/ \ OpC_appl/cfgdwn`

After Migration

NOTE If the new server has the same hostname and IP address this step can be skipped.

If flexible management concept is used for migration, 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

In all other cases, when the new server has a hostname and IP address different from the old server, the managed nodes must be notified and updated so that they start communicating with the new management server instead of with the old one. With DCE agents, you basically just have to change the `OPC_MGMT_SERVER` entry in the `opcinfo` file.

NOTE After changing `OPC_MGMT_SERVER` entry in the `opcinfo` file, all agent processes must be restarted.

With HTTPS agents, the following command must be executed:

```
opcragt -set_config_var sec.cm.client:CERTIFICATE_SERVER= \
<server hostname> <node hostname>
```

```
opcragt -set_config_var sec.core.auth:MANAGER= \
<server hostname> <node hostname>
```

Where *<server hostname>* is the old server's hostname.

If the hostname and the IP address are different on the new and the old management server, these commands must be executed on the old server.

See the man page opcragt(1M) for more information.

Upgrading Managed Nodes

Version A.08.20 of the OVO management server can manage nodes for version A.07.1x and A.08.10. However, you should upgrade your managed nodes to OVO version A.08.20 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 and A.08.10 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.08.20 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.08.20 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.08.20.

Obsoleted A.08.10 Agent Platforms

With OVO A.08.20, the following OVO A.08.1x DCE Agent Platforms have been obsoleted:

- MPE/iX 6.x, 7.x
- IBM/sequent ptx

Upgrading Managed Nodes to A.08.20 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.08.20 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.08.20 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.08.20 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.08.20.

- `Templates`: Installs A.08.20 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.08.20. 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.08.20, you *must* reinstall the agent patches with the SD option `-x reinstall=true` if you want to use the newer versions.

License Migration to OVO A.08.20

If IP address is not changed, most of the OVO 7.x licenses can be reused. The OVO 8.x license password file can be found at the following locations:

- `/var/opt/OV/HPOvLic/LicFile.txt`

To install these licenses, add them with the OVO A.08.20 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 8.1x license passwords:

   ```
   /opt/OV/bin/opclic -add /tmp/LicFile.txt
   ```

4. Check the installed passwords:

   ```
   /opt/OV/bin/opclic -report
   ```

NOTE It is *not* possible to run NNM 7.5 with an OVO license password. With OVO A.08.20 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.

8 Upgrading OVO from Version A.08.10 HP-UX Itanium (ARIES) to Version A.08.20

In This Chapter

This chapter describes the upgrade procedure from OVO version A.08.10 HP-UX on Itanium using ARIES dynamic translation to OVO version A.08.20 HP-UX on native Itanium system.

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.”

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 aquire the correct license for your requirements before the Instant-On licence expires.

NOTE

OVO documentation is now automatically installed into the following web-server directory:

`http://<management_server>:3443/ITO_DOC/<lang>/manuals/`

If you have a product installed that is integrated into or certified with OVO 8.1x ARIES (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.
For Node Network Manager (NNM) migration refer to the *Migration Guide for Network Node Manager 7.5*.

Backing Up Server Certificates

To backup server certificates and OvCoreId use the following utility on the OVO management:

/opt/OV/bin/OpC/opcsvcertbackup -backup

A tar archive file is created at the following default address:

/tmp/opcsvcertbackup.<date_time>.tar

Downloading the Current OVO A.08.1x Configuration

To download the current OVO configuration, follow these steps:

1. Rename the default templates or applications that you have changed.

   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 opcui
   ```

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. If you want to migrate your configuration database settings, make copies of the following files:
   `/var/opt/OV/datafiles/xpl/config/settings.dat`
   `/var/opt/OV/shared/server/datafiles/xpl/config/ \`
   `settings.dat`

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.

Deinstalling OVO A.08.1x on HP-UX 11i v2 Itanium/ARIES

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 a user root do the following:

1. Start the deinstallation script by entering **`/opt/OV/bin/OpC/ovoremove`**
2. Check the following logfiles for problems occurring during deinstallation:
   - `/var/adm/sw/swagent.log`
   - `/tmp/ovoremove.log`

NOTE After deinstallation, the `ovoremove.log` file is located in the `/tmp` directory.

Restore the `uname` files that were replaced during the installation of OVO A.08.1x using Aries dynamic translation with the following commands:

```
cp /bin/uname.orig /bin/uname
cp /sbin/uname.orig /sbin/uname
```

NOTE After deinstalling OVO A.08.1x ARIES, make sure you manually remove the `/.ariesrc` file, which is created during the NNM installation.

Upgrading the Oracle Database

Before upgrading the OVO software you must upgrade the current Oracle database to Oracle 10.1.0.4.
For details on how to upgrade to Oracle 10.1.0.4, refer to the Oracle product documentation.

Installing the OVO Software

To install the OVO management-server software, do the following:

Install the OVO version A.08.20 software, as described in Chapter 2, “Installing OVO on the Management Server.”

IMPORTANT Make sure your system meets the hardware and software requirements for the OVO A.08.20 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 8.20 (1) CD. For more information about the installation CDs’ layout, refer to Chapter 2, “Installing OVO on the Management Server.”

Restoring Server Certificates

1. Stop the HP OpenView platform processes.

   To stop the HP OpenView platform processes, enter:
   /opt/OV/bin/ovstop

2. Install the backup from the old OVO management server installation onto the newly installed system with the command:
   /opt/OV/bin/OpC/opcsvcertbackup -restore -file\ <filename> -pass <password> -force

NOTE

The **-force** option must be used because the server installation has automatically created a Certificate Authority, OVO management server, and node certificates. These certificates are unsuitable because the managed nodes are configured to use the existing ones from the first installation.

3. Start the HP OpenView platform processes.

   To start the HP OpenView platform processes, enter:
   opt/OV/bin/ovstart

4. Check, that all OVO Management Server processes are running using the commands:
   opcsv -status

   All registered processes must be in the state running.
   ovc -status

   All registered core processes must be in state running.

IMPORTANT

Local agent OvCoreId in the database must be updated accordingly:

/opt/OV/bin/OpC/utils/opcnode -chg_id node_name=<local \ agent hostname> id=<new OvCoreId>

You can verify that the OvCoreId has been correctly updated in the databases by executing the following commands:

```
opcnode -list_id node_list=<local agent hostname>
```

Uploading the Saved OVO A.08.1x Configuration

To upload the previously saved configuration with `opccfgupld`, follow these steps:

1. In cluster environment, disable the HA Resource group monitoring using the command:
   `/opt/OV/lbin/ovharg -monitor ov-server disable`
2. Stop the HP OpenView platform processes.

   To stop the HP OpenView platform processes, enter:

   `/opt/OV/bin/ovstop`
3. If you have made copies of configuration database settings files before, restore them at the same locations.
   Use `ovconfchg`(1) to adopt these files according to the current environment.
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. Start the HP OpenView platform processes.

   To start the HP OpenView platform processes, enter:

   `/opt/OV/bin/ovstart`
6. 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. Unacknowledge the “active” messages in the `History Message Browser` and disown them in the `Message Browser` using the OVO administrator GUI.

c. Upload the history messages:

```
/opt/OV/bin/OpC/opchistupl /tmp/history
```

7. If you have downloaded audit data, upload it now by entering:

```
/opt/OV/bin/OpC/opcaudupl /tmp/audit
```

8. 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.

9. 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.

Upgrading Managed Nodes

Version A.08.20 of the OVO management server can manage nodes for version A.07.1x and A.08.10. However, you should upgrade your managed nodes to OVO version A.08.20 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 and A.08.10 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.08.20 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.08.20 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.08.20.

Obsoleted Agent Platforms

With OVO A.08.20, the following OVO A.08.1x DCE Agent Platforms have been obsoleted:

- MPE/iX 6.x, 7.x
- IBM/sequent ptx

Upgrading Managed Nodes to A.08.20 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.08.20 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.08.20 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.08.20 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.08.20.

- `Templates`: Installs A.08.20 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.08.20. 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.08.20, you *must* reinstall the agent patches with the SD option `-x reinstall=true` if you want to use the newer versions.

License Migration to OVO A.08.20

When an OVO A.08.1x installation is upgraded to OVO A.08.20, most of the OVO 8.x licenses can be reused as long as the IP address is not changed on that system. The OVO 8.x license password file is saved by the ovoremove.sh script and stored at the following locations:

- `/tmp/save810/LicFile.txt`

To install these licenses, add them with the OVO A.08.20 license tools:

1. Stop the OVO and NNM processes:

   ```
   ovstop -v
   ```

2. Add the OVO 8.1x license passwords:

   ```
   /opt/OV/bin/opclic -add /tmp/save810/LicFile.txt
   ```

3. Check the installed passwords:

   ```
   /opt/OV/bin/opclic -report
   ```

NOTE It is *not* possible to run NNM 7.5 with an OVO license password. With OVO A.08.20 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.

9 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 217 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 216.

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 217 for details.

3. Receive a license from the HP Password Delivery Center.

   See “Receiving Your License Password” on page 220 for details.

4. Install and verify the OVO Product License.

   See “Installing Product Licenses” on page 221, and “Verifying Product Licenses” on page 223.

Getting the Required License Information

You can get the information specified in Table 9-1 from documents included with your product.

Table 9-1 Information Required to Get Licenses

Information Required	Where to Find It:
HP Order Number (Permanent passwords *only*)	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: `/usr/bin/nslookup <OVO_mgt_server_name>`
Hostname[b]	On the OVO management server, enter: `hostname`
Operating System Version	On the OVO management server, enter: `uname -a`
Number of Licenses (Permanent passwords *only*)	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`

   - **Evaluations**

     `evaluation.OVO`

   - **Server IP Address Changes**

     `server_move.OVO`

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 9-2.

Table 9-2 HP Password Delivery Centers

Your Location	Password Center Location	Email Address	Phone/Fax Number	Service Hours (Local Time)
North/South America	USA	americas_password @cnd.hp.com	+1 (801) 431-1597 +1 (801) 431-3654	08:00-20:00 (EST)[a]
Asia/Pacific	Japan	asia_password @cnd.hp.com	+81 (3) 3227-5264 +81 (3) 3227-5238	09:00-17:00 (JST)[b]
Europe & Africa	Netherlands	europe_password @cnd.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 9-2 on page 219.

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:

   `opclic -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 opclic 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 `opclic` 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:

  ```
  opclic -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.

```
opclic - 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:

  ```
  opclic -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 licences, warning messages are displayed.

❑ **Check whether OVO Runs in a Licensed State.**

Enter the following:

```
opclic -check [-quiet]
```

One of the following values is returned:

`0` (Licensed)

`4` (Server not licensed)

`8` (Missing agent licenses)

10 Installing OVO in an HP Serviceguard Cluster Environment

In This Chapter

This chapter describes the following:

- Installation and configuration of the OVO management server in an HP Serviceguard environment.
- Deinstallation of the OVO management server from cluster nodes.
- Upgrade of the OVO management server in an HP Serviceguard environment.

NOTE

Before proceeding with the installation and configuration of the OVO management server in an HP Serviceguard 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 an HP Serviceguard Cluster System

Glossary of HP Serviceguard 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. HA Resource Group is equivalent to a package in the MC/SG environment.

Volume Group One or more disk drives that are configured to form a single large storage area.

Logical Volume An arbitrary-size space in a volume group that can be used as a separate file system or as a device swap space.

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 229 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 PHSS_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 230 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.

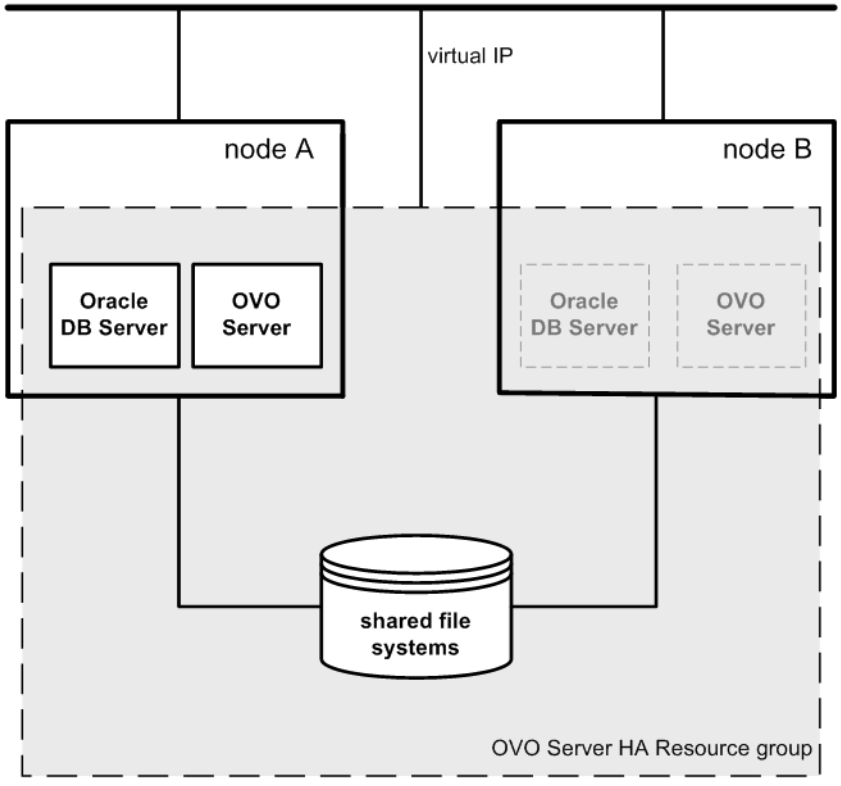
  Following this scenario, you cannot use the OVO backup scripts.

  See Figure 10-3 on page 231 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.

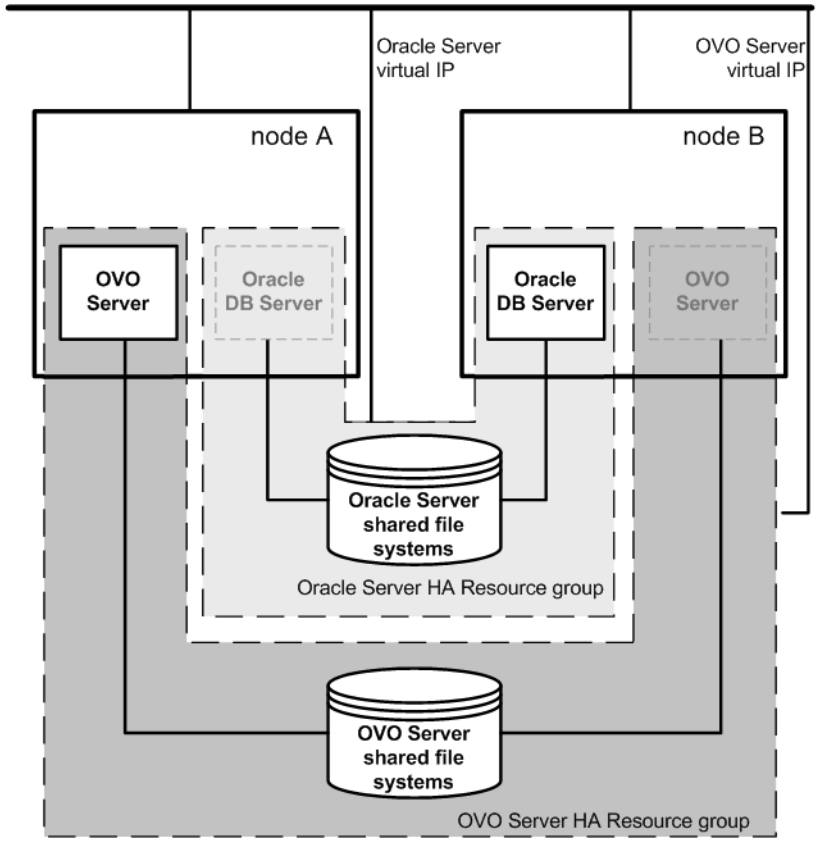
Figure 10-1 Basic management server configuration



❑ **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



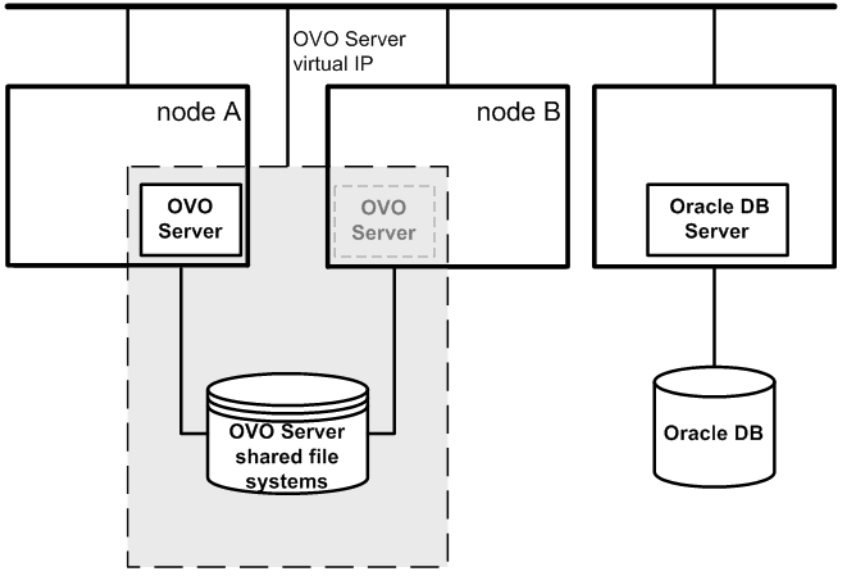
❑ **Independent database server configuration**

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 an HP Serviceguard environment, you *must* meet the following requirements:

- ❏ HP-UX 11.23.
- ❏ HP Serviceguard versions A.11.13, A.11.14, A.11.15 or A.11.16

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 247.

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 236 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 245 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 247 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 255 for details.

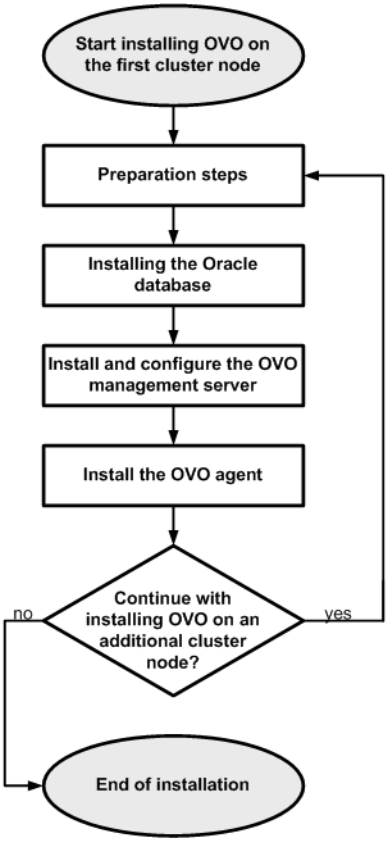
4. **Installation of the OVO Agent Software and Templates**

   See "Installing the OVO Agent Software and Templates on Cluster Nodes" on page 260 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 234 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 236.

2. **Preparation steps for an additional cluster node**

   See “Before You Install the OVO Management Server on Additional Cluster Nodes” on page 245.

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 237.

- **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 240.

- **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 244.

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 volume group `ov-vg`, consisting of at least one shared disk for the HA Resource group.
- Define the following volumes within the `ov-vg` volume 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`

- /var/opt/OV/shared/server
- Mount point for the OVO management-server database.

  You may select an alternative mount point. The default is: /u01/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
/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
/u01/oradata/openview	1 GB	420 MB[b]
Oracle database server binaries (*optional*)	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.

2. Start the ov-vg volume group by entering:

   vgchange -a e ov-vg

3. Mount the shared file systems on the prepared mount points as follows:

   a. **mount /dev/ov-vg/ov-volume-var \ /var/opt/OV/share**

   b. **mount /dev/ov-vg/ov-volume-etc \ /etc/opt/OV/share**

   c. **mount /dev/ov-vg/ov-volume-lcore \ /var/opt/OV/shared/server**

   d. **mount /dev/ov-vg/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.

   e. *Optional*: If you choose to install Oracle database server binaries on a shared disk:

      mount /dev/ov-vg/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).

4. Start Virtual Network IP using the cmmodnet command:

   cmmodnet -a -i <IP> <subnet>

   where

   - <*IP*> is the IP address of the virtual host that you previously selected.
   - <*subnet*> is the subnet address of the virtual host 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 247.

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 volume group `ov-vg`, consisting of at least one shared disk for the HA Resource group.
  - Define the following volumes within the `ov-vg` volume group:
    - `ov-volume-var`
    - `ov-volume-etc`
    - `ov-volume-lcore`
  - Define the volume group `ovoracle-vg`, consisting of at least one shared disk for the HA Resource group.
  - Define the following volumes within the `ovoracle-vg` volume 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:

     /u01/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
/u01/oradata/openview	1 GB	420 MB[b]
Oracle database server binaries (*optional*)	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. Start the `ov-vg` volume group by entering:

   `vgchange -a e ov-vg`

   Start the `ovoracle-vg` volume group by entering:

   `vgchange -a e ovoracle-vg`

3. Mount the shared file systems on the prepared mount points:

   a. **`mount /dev/ov-vg/ov-volume-var \`**
      `/var/opt/OV/share`

   b. **`mount /dev/ov-vg/ov-volume-etc \`**
      `/etc/opt/OV/share`

   c. **`mount /dev/ov-vg/ov-volume-lcore \`**
      `/var/opt/OV/shared/server`

   d. **`mount /dev/ovoracle-vg/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.

   e. *Optional*: If you choose to install Oracle database server binaries on a shared disk:

      `mount /dev/ovoracle-vg/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).

4. Activate the OVO Server Virtual Network IP using the `cmmodnet` command:

   `cmmodnet -a -i <IP> <subnet>`

   where

   - *<IP>* is the IP address of the virtual host that you previously selected.

- <*subnet*> is the subnet address of the virtual host 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).

5. Activate the Oracle Virtual Network IP using the `cmmodnet` command:

   `cmmodnet -a -i <IP> <subnet>`

   where

   - <*IP*> is the IP address of the virtual host that you previously selected.
   - <*subnet*> is the subnet address of the virtual host 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 247.

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 volume group `ov-vg`, consisting of at least one shared disk for the HA Resource group.
  - Define the following three volumes within the `ov-vg` volume 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. Start the `ov-vg` volume group by entering:

   ```
   vgchange -a e ov-vg
   ```
3. Mount the shared file systems on the prepared mount points:

   a.
   ```
   mount /dev/ov-vg/ov-volume-var \
   /var/opt/OV/share
   ```

b. `mount /dev/ov-vg/ov-volume-etc \ /etc/opt/OV/share`

c. `mount /dev/ov-vg/ov-volume-lcore \ /var/opt/OV/shared/server`

4. Start Virtual Network IP using the `cmmodnet` command:

   `cmmodnet -a -i <IP> <subnet>`

   where

   - *<IP>* is the IP address of the virtual host that you previously selected.
   - *<subnet>* is the subnet address of the virtual host 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).

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 loosing 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

Configuration scenarios	Oracle database server location: Local Filesystem	Oracle database server location: Shared Filesystem (Exceptional)	Oracle database server location: Remote Filesystem
Basic	See "Oracle Database Server on a Local Disk" : “Basic OVO management server installation” on page 249.	See "Oracle Database Server on a Shared Disk (Exceptional)" : “Basic OVO management server installation” on page 250.	
Decoupled	See "Oracle Database Server on a Local Disk" : “Decoupled OVO management server database installation” on page 249.	See "Oracle Database Server on a Shared Disk (Exceptional)" : “Decoupled OVO management server database installation” on page 251.	
Independent	See "Oracle Database Server on a Local Disk" : “Independent database server installation” on page 249.		See "Oracle Database Server on a Remote Filesystem" : “Independent database server installation” on page 253

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 53.

After installing the Oracle database server, continue with “To Install and Configure the OVO Management Server on Cluster Nodes” on page 255.

❑ **Decoupled OVO management server database installation**

Install the Oracle database software as described in “Installing and Verifying an Oracle Database” on page 53.

After installing the Oracle database server, continue with “To Install and Configure the OVO Management Server on Cluster Nodes” on page 255.

❑ **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 127.
  - — 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/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 255.

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 53.

After installing the Oracle database server, continue with “To Install and Configure the OVO Management Server on Cluster Nodes” on page 255.

❑ **Decoupled OVO management server database 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. 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/libclntsh.so.10.0**
   **ln -s <*Oracle_client_home*>/lib32/libclntsh.so **
   /opt/OV/lib/libclntsh.so.10.0

   — **rm -f /opt/OV/lib/libopcora.so**
   **ln -s <*Oracle_client_home*>/lib32/libclntsh.so **
   /opt/OV/lib/libopcora.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` variable *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 255.

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 127.

  — 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 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 255.

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 49.

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]`

NOTE The HA Resource Group name `[ov-server]`, is going to be a Serviceguard package.

NOTE HA Resource Groups (packages) are created during the installation of OVO. `ovoinstall` will build the package control file and the configuration file automatically. Do not create packages manually and do not use your own configuration files. If you have already created the cluster packages manually, remove them before starting the installation of OVO.

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, **`virtual`**.

- `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, **`virtual`**.

- `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.log`[1] and `/etc/cmcluster/ov-server/ov-server.cntl.log` (for information about managing the HA Resource Group)

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`.

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 262.

  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 263.

- **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 262.

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 145.

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/10.1.0/dbs/init<ORACLE_SID>.ora`
- ❏ `/opt/oracle/product/10.1.0/dbs/lk<ORACLE_SID>`

- /opt/oracle/product/10.1.0/network/admin/sqlnet.ora
- /opt/oracle/product/10.1.0/network/admin/listener.ora
- /opt/oracle/product/10.1.0/network/admin/tnsnames.ora
- /opt/oracle/product/10.1.0/network/admin/tnsnav.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 is deinstalled from all the 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 145 .

   When asked for the name of the HA Resource group, enter the OVO Server HA resource group, this is normally ov-server.

After you deinstalled OVO from this cluster node, check whether the HA Resource group is still present by entering:

/usr/sbin/cmviewcl -p ov-server

If the HA Resource group is still present on the node, remove it by entering:

/usr/sbin/cmdeleteconf -f -p ov-server

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.

11 Installing OVO in a VERITAS Cluster Environment

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 11-1 on page 269 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.

  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 11-2 on page 270 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.

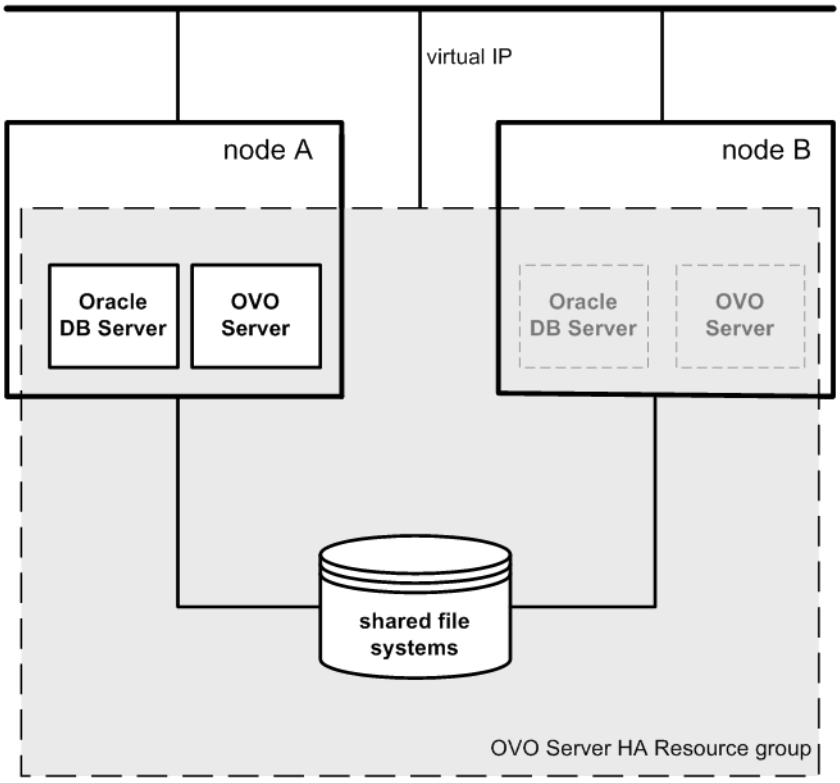
  Following this scenario, you cannot use the OVO backup scripts.

  See Figure 11-3 on page 271 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.

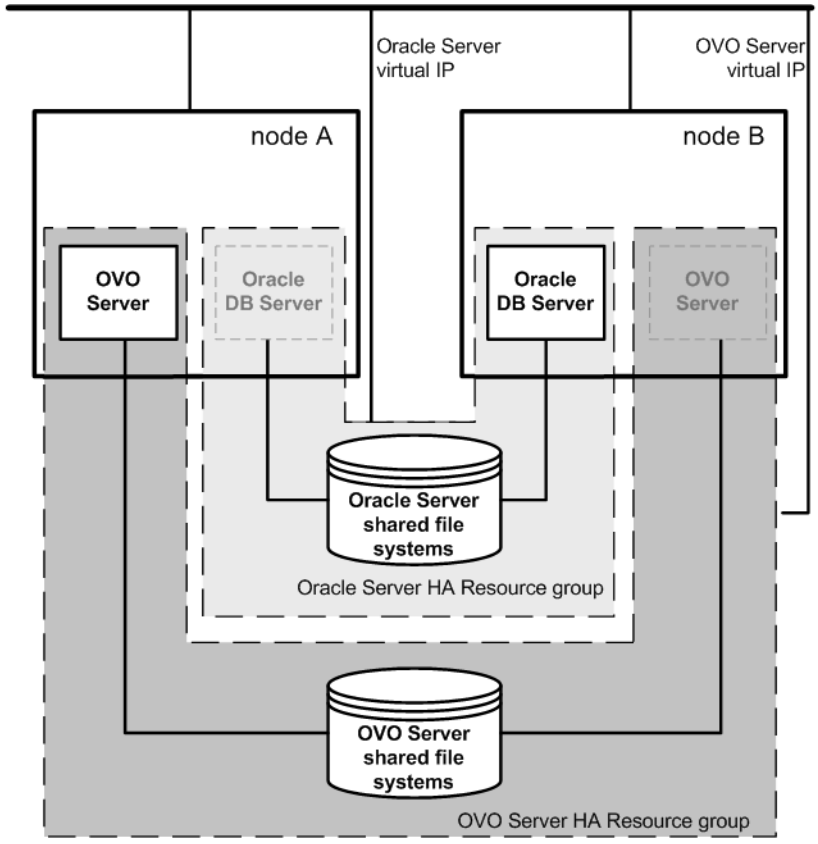
Figure 11-1 Basic management server configuration



- **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 11-2 Decoupled management server configuration



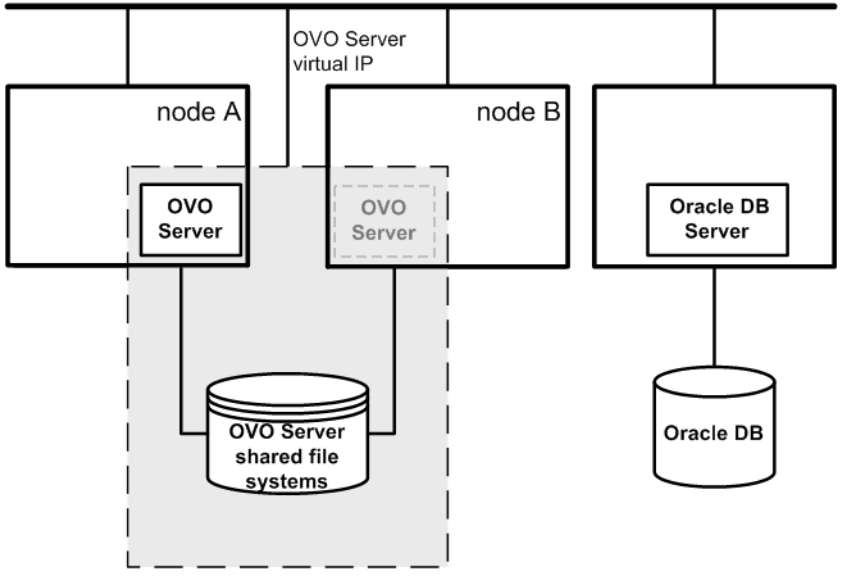
❑ **Independent database server configuration**

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 11-3 Independent database server configuration



Installation Requirements

To run OVO in a VERITAS cluster server environment, you *must* meet the following requirements:

- ❏ HP-UX 11.23 Itanium.
- ❏ VERITAS Cluster Server for HP-UX version 4.1.
- ❏ VERITAS Volume Manager for HP-UX version 4.1.

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 290.

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 276 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 288 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 290 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 298 for details.

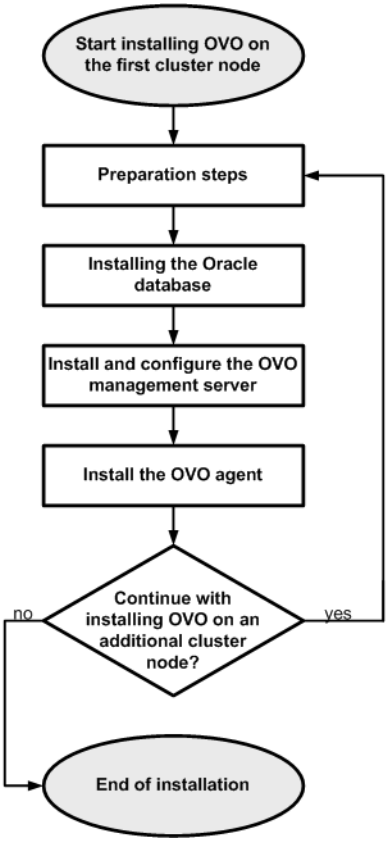
4. **Installation of the OVO Agent Software and Templates**

   See “Installing the OVO Agent Software and Templates on Cluster Nodes” on page 302 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 11-4 on page 274 shows the flow of the OVO management server installation and configuration steps.

Figure 11-4 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 276.

2. **Preparation steps for an additional cluster node**

   See “Before You Install the OVO Management Server on Additional Cluster Nodes” on page 288.

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 277.

- **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 281.

- **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 286.

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`

- /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 11-1 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
/u01/oradata/openview	1 GB	420 MB[b]
Oracle database server binaries (*optional*)	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.

2. Put the `ov-dg` disk group online on the current node 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-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.

5. 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).

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 11-2 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
`/u01/oradata/openview`	1 GB	420 MB[b]
Oracle database server binaries (*optional*)	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`

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 290.

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 loosing Oracle availability. If you have chosen the decoupled scenario for installing OVO, a separate Oracle client installation will be needed also.

Table 11-3 Configuration scenarios based on file system location

Configuration scenarios	Oracle database server location: Local Filesystem	Oracle database server location: Shared Filesystem (Exceptional)	Oracle database server location: Remote Filesystem
Basic	See "Oracle Database Server on a Local Disk" : “Basic OVO management server installation” on page 292.	See "Oracle Database Server on a Shared Disk (Exceptional)" : “Basic OVO management server installation” on page 293.	
Decoupled	See "Oracle Database Server on a Local Disk" : “Decoupled OVO management server installation” on page 292.	See "Oracle Database Server on a Shared Disk (Exceptional)" : “Decoupled OVO management server installation” on page 294.	
Independent	See "Oracle Database Server on a Local Disk" : “Independent database server installation” on page 292.		See "Oracle Database Server on a Remote Filesystem" : “Independent database server installation” on page 296

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 298.

- ❏ **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 298.

- ❏ **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 127.

    — 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/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 298.

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 298.

❏ **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.sl**
   **ln -s <*Oracle_client_home*>/lib32/libclntsh.sl **
   /opt/OV/lib/libclntsh.sl

   — **rm -f /opt/OV/lib/libclntsh.sl.1.0**
   **ln -s <*Oracle_client_home*>/lib32/libclntsh.sl **
   /opt/OV/lib/libclntsh.sl.1.0

   — **rm -f /opt/OV/lib/libclntsh.sl.8.0**
   **ln -s <*Oracle_client_home*>/lib32/libclntsh.sl **
   /opt/OV/lib/libclntsh.sl.8.0

   — **rm -f /opt/OV/lib/libclntsh.sl.9.0**
   **ln -s <*Oracle_client_home*>/lib32/libclntsh.sl **
   /opt/OV/lib/libclntsh.sl.9.0

   — **rm -f /opt/OV/lib/libopcora.sl**
   **ln -s <*Oracle_client_home*>/lib32/libclntsh.sl **
   /opt/OV/lib/libopcora.sl

   — **rm -f /opt/OV/lib/libwtc9.sl**
   **ln -s <*Oracle_client_home*>/lib32/libwtc9.sl **
   /opt/OV/lib/libwtc9.sl

   — 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 298.

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 127.

  — 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 298.

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, **`virtual`**.

- `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, **`virtual`**.

- `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.log`[1]

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 305.

  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 306.

- **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 305.

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 145.

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/10.1.0/dbs/init<ORACLE_SID>.ora`
- `/opt/oracle/product/10.1.0/dbs/lk<ORACLE_SID>`

- /opt/oracle/product/10.1.0/network/admin/sqlplus.ora
- /opt/oracle/product/10.1.0/network/admin/listener.ora
- /opt/oracle/product/10.1.0/network/admin/tnsnames.ora
- /opt/oracle/product/10.1.0/network/admin/tnsnav.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 145.

   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

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.

A Installing the Remote NNM Integration Package

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 managment 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 `swinstall(1M)` utility of SD-UX and use the following command:

```
swinstall -s .../OVOCD2/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.

B OVO Software Bundles

In This Appendix

The tables in this appendix list the contents of the various HP OpenView Operations (OVO) software bundles. You can also check the contents of these bundles in the “Software Selection” window of `swinstall(1M)`.

- ❏ 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
OVOEnglish	OVCHECK OVOPC-HA OVOPC-ORA OVOPC OVOPC-WWW OVOPC-OVW OVOPC-DOC OVOPC-SVC	HP OpenView OVO, with Documentation (English)
OVOLocalized[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)
OVORemoteOVw	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, and so on). 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	OVO Service Navigator English Documentation.
	OVOPC-SVC-JDOC[a]	OVO Service Navigator Japanese Documentation.
	OVOPC-SVC-EDOC[a]	OVO Service Navigator Spanish Documentation.
	OVOPC-SVC-KDOC[a]	OVO Service Navigator Korean Documentation.
	OVOPC-SVC-SDOC[a]	OVO Service Navigator Simplified Chinese Documentation.
	OVOPC-SVC-ENG	OVO Service Navigator Localized Files-English.
	OVOPC-SVC-KOR[a]	OVO Service Navigator Localized Files-Korean.
	OVOPC-SVC-SCH[a]	OVO Service Navigator Localized Files-Simplified Chinese.
	OVOPC-SVC-JPN[a]	OVO Service Navigator Localized Files-Japanese.
	OVOPC-SVC-MGR	OVO Service Navigator Manager.
	OVOPC-SVC-SPA[a]	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.

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