HP OpenView Telecom Extensions

Installation Guide

HP-UX, Solaris, Windows NT®

Manufacturing Part Number : J5121-90010
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Training Information

For customer training on OV Telecom Extensions for OV Operations and OV Topology Server, contact your HP consulting representative.

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Document Conventions

The following typographical conventions are used in the manuals provided with this product.

Font	What the Font Represents	Example
Italic	Book or manual titles and manpage names	See the *HP OpenView Telecom Extensions and Topology Server Concepts Guide* and the *ovsadc*(1M) manpage for more information.
	Emphasis	You *must* follow these steps.
	Variables that you must supply when entering a command	At the prompt type: **`rlogin` *`your_name`*** where you supply your login name.
	Parameters to a method	The *assigned_criteria* parameter returns an ACSE response.
Bold	New terms	The **distinguishing attribute** of this class...
`Computer`	Text and items on the computer screen	The system replies: `Press Enter`
	Command names	Use the `grep` command ...
	Method names	The `get_all_replies()` method does the following...
	File and directory names	`/usr/bin/X11`
	Process names	Verify that `pmd` is running.
	Window/dialog box names	In the `Active Messages` window...
	Menu commands	Select `Actions:Messages->Acknowledge All Messages`.
`Computer Bold`	Text that you must enter	At the prompt, type: **`ls -l`**

Font	What the Font Represents	Example
Keycap	Keyboard keys	Press **Return**.
`[Button]`	Buttons on the user interface.	Click `[NET]`.

In This Book

This book describes the process of installing OV Telecom Extensions. It describes how to:

- Install the product based on your configuration.
- Perform the initial setup of the product.
- Troubleshoot problems in the installation.

Audience

This manual is intended for a system integrator or network administrator responsible for initial configuration of the OVISACN solution. It assumes that you have user-level knowledge of the HP-UX operating system and are familiar with using GUI-based applications with mouse and menu-driven interfaces on UNIX workstations.

Manual Organization

This book contains the following chapters:

Chapter 1: Overview of installation options, prerequisites to installation, and hardware and software requirements.

Chapter 2: Describes how to install OV Telecom Extensions for entry solutions.

Chapter 3: Describes procedures to common OVO tasks needed during the installation process.

Chapter 4: Describes techniques to troubleshoot the different HP OpenView Integrated Service Assurance for Communication Networks components.

1 Before the Installation

Introduction

The forward looking OpenView Foundation strategy integrates existing products to form compatible software components and solutions, enabling customers to quickly implement and efficiently provide end to end service management. HP OpenView Integrated Service Assurance for Communication Networks is the first of the OpenView Foundation structures, integrating HP OpenView Operations, HP OpenView Service Navigator, HP OpenView Network Node Manager, and OV Telecom Extensions to provide integrated management of IP, telecom, systems, and applications.

The core component of HP OpenView Integrated Service Assurance for Communication Networks is HP OpenView Operations (OVO) with HP OpenView Network Node Manager (NNM).

To manage alarms generated by telecom devices, you should install the add-on product OV Telecom Extensions for OV Operations, which provides the code that forwards telecom alarms to the OVO GUI.

It is recommended that you also purchase and install HP OpenView Service Navigator to manage services.

This document describes the steps necessary to install each of these components and the initialization steps needed to get the components up and running.

Deployment

An OV Telecom Extensions level configuration consists of deploying the OV Telecom Extensions for OV Operations and HP OpenView Operations. This approach is appropriate for small and moderately sized networks that need only a means to acquire alarms from telecom equipment.

Installation

HP OpenView Integrated Service Assurance for Communication Networks (OVISACN) supports a single server model with an OV Telecom Extensions configuration.

Single Server Model

With OV Telecom Extensions configurations, HP OpenView Operations and OV Telecom Extensions for OV Operations can be installed on a single machine running either HP-UX 11.X or Solaris 7 and 8.

Multiple Agents

One or more agents can be deployed. Agents are installed on separate OVO agent machines. OVO agent machines are supported on HP-UX 11.X or Solaris 7 and 8 for OV Telecom Extensions configurations depending on the platform of the OVO server.

iNOC console

The iNOC console is a set of graphical user interfaces that are delivered with the products. The GUIs help administrators and NOC operators monitor and manage an entire network.

The iNOC console consists of the following GUIs:

- OVO operator GUI
- OVO admin GUI
- NNM admin GUI

Installation Prerequisites

You can install all of the HP OpenView Integrated Service Assurance for Communication Networks components on a single machine or you can separate the components across an OVO server and agent machines. Chapter 2, “Installing OV Telecom Extensions Configurations,” on page 35 presents the order that you *must* install each component to ensure a successfully working OVISACN solution.

You must make sure your systems meet all of the prerequisites, including hardware and software requirements, before installing the product components. See “OS Requirements” on page 20, “Hardware Requirements” on page 21, and “Software Requirements” on page 30 before proceeding.

OS Requirements

HP-UX 11.X and system patches are required to be installed and configured prior to installing the OVO server.

Solaris 7 or 8 and systems patches are required to be installed and configured on the OVO server system prior to installing OVO components.

NOTE For Solaris 7 or 8, the OV Telecom Extensions installation scripts require X/Open XPG4 to be available on the system in the `/usr/xpg4 directory`.

Hardware Requirements

Disk space and kernel settings *must* be configured prior to installing the product components.

Systems running HP-UX have different disk space and kernel setting requirements than systems running Solaris.

This section describes the disk space and kernel setting requirements for single server model with an OV Telecom Extensions configuration running either Solaris or HP-UX 11.X. See page 22.

For instructions on how to apply the disk space and kernel parameters, see “Modifying Disk Space Values” on page 28 and “Modifying Kernel Parameters Values” on page 28.

For HP-UX 11.X systems, two options are available to modify kernel parameter settings:

- Use SAM to modify kernel parameter settings.
- Edit `/stand/system` directly, using the recommended kernel parameter settings from the provided tuneable file.

For Solaris systems, you can modify the kernel parameter settings directly in `/etc/system`, using the recommended kernel parameter settings from the provided tuneable file.

NOTE HP OpenView Integrated Service Assurance for Communication Networks is supported only on PA Risc 2.0 Hewlett-Packard hardware.

Single Server Model with OV Telecom Extensions Configuration

For single server models with OV Telecom Extensions configurations, HP OpenView Operations and OV Telecom Extensions for OV Operations are installed on a single machine running either HP-UX 11.X or Solaris 7 and 8. All components of an OV Telecom Extensions configuration must be running HP-UX or Solaris.

Disk Space Requirements for Single Server, OV Telecom Extensions Configuration

The following disk space sizes are suggested running either HP-UX 11.X or Solaris 7 and 8, prior to installation. Be aware that disk space requirements can increase depending on the size of your managed network.

Table 1-1 Disk Space Requirements for HP-UX 11.X Management Server

File System	Suggested Disk Space
`/opt`	4 GB
`/var`	1 GB (OS and application files)
`/var/opt/oracle/oradata`	Depends on your database sizing
`/etc`	256 MB
`/usr`	500 MB
`/swap`	3 GB minimum

Table 1-2 Disk Space Requirements for Solaris 7 and 8 Management Server

File System	Suggested Disk Space
/opt	1.5 GB
/var	1 GB
/var/opt/oracle/oradata	Depends on your database sizing
/etc	256 MB
/usr	500 MB

Table 1-3 Disk Space Requirements for Agents

File System	Suggested Disk Space
/var/opt/OV	150 MB

NOTE The placement of the Oracle database for OVO in /var/opt/oracle/oradata is suggested, not required.

Kernel Settings for Single Server, OV Telecom Extensions Configuration

The following kernel parameters are required by the systems running either HP-UX 11.X or Solaris 7 and 8, prior to installation.

For HP-UX 11.X: See the chapter *Installation Prerequisites for Management Server* in *HP OpenView VantagePoint Operations for UNIX Installation Guide* for more details on the required kernel settings for the management server.

Table 1-4 provides suggested kernel parameter values. The suggested kernel parameter values should increase if:

- Service Navigator is to be installed.
- Your managed network has more than thirty five nodes.
- More than ten operator GUIs are to be open at once, and so on.

NOTE The values of some kernel parameters on your management system may be higher than the value shown in the following table. Do not decrease any kernel parameter value. Adding additional software on the management system may require increasing some of the values.

Table 1-4 Kernel Settings for HP-UX 11.X (OV Telecom Extensions Configuration)

Parameter	Description	Minimum Value
dbc_max_pct	Disk buffer cache	10
default_disk_ir	Enables asynchronous disk writes and disk write caching	1
fs_async	Enables asynchronous writing of file system data structures to disk	0
max_thread_proc	Maximum number of threads allowed in each process	1024
maxdsiz	Maximum process data segment size in bytes	0XC0000000
maxfiles	Maximum number of open files per process	2048
maxfiles_lim	Hard file limit per process	2048
maxssiz	Maximum process stack size in bytes	0X4FB3000
maxswapchunks	Maximum number of swap chunks; value based on swap space value (256 MB)	2048
maxuprc	Maximum number of processes a user can have	256

Table 1-4 Kernel Settings for HP-UX 11.X (OV Telecom Extensions Configuration) (Continued)

Parameter	Description	Minimum Value
nfile	Maximum number of open files	5000
nflocks	Maximum number of file locks	200
nproc	Maximum number of processes which may simultaneously exist	700
nkthread	Maximum number of kernel threads supported by the system	6000
sema	Enable sys V semaphores	1
semmni	Maximum number of semaphore sets in the system	140
semmns	Maximum number of semaphore	400
shmem	Enable sys V shared memory	1
shmmax	Maximum number of bytes in a shared memory segment	0X40000000 (1 GB)
shmmni	Maximum number of shared memory segments	512
shmseg	Maximum number of shared memory segments that can be attached by a process	120

For Solaris 7 and 8: See the *HP OpenView VantagePoint Operations for Sun Solaris Installation Guide*, in the section *Management Server Requirements*, for more details about configurable kernel parameters and values for the management server.

Table 1-5 Kernel Settings for Solaris (OV Telecom Extensions Configuration)

Parameter	Description	Suggested Value
shminfo_shmmax	Maximum shared memory segment size in bytes	100000000 (4 GB)
shminfo_shmseg	Maximum number of shared memory segments per process	20
shminfo_shmmin	Minimum size of a shared memory segment	1
shminfo_shmmni	Number of shared memory identifiers to pre-allocate	100
seminfo_semmni	Number of semaphore identifiers	100
seminfo_semaem	Adjust on exit maximum value	16384
seminfo_semmap	Number of entries in semaphore map	66 (Solaris 7 only)
seminfo_semmns	Number of semaphores in system	200
seminfo_semmnu	Number of undo structures in system	30
seminfo_semume	Maximum number of undo entries per process	10
seminfo_semvmx	Semaphore maximum value	32767

Table 1-5 Kernel Settings for Solaris (OV Telecom Extensions Configuration) (Continued)

Parameter	Description	Suggested Value
`seminfo_semmsl`	Maximum number of semaphores per ID	100
`seminfo_semopm`	Maximum number of operations, per semaphore call	100
`rlim_fd_cur`	The number of file descriptors	120

Modifying Disk Space Values

For HP-UX 11.X: The disk space sizes can be achieved by extending the volume size (assuming the disk space exists). Use SAM to configure the disk space sizes.

For Solaris 7 and 8: The disk space sizes can be achieved by extending the volume size (assuming the disk space exists).

Modifying Kernel Parameters Values

For HP-UX 11.X: Use SAM to configure the kernel parameters. Alternatively, edit directly the `/stand/system` file to apply the required kernel parameter settings.

When editing directly, a tuneable parameters file, `tuneable.te.hp11`, is provided for your convenience, and is located on the OV Telecom Extensions CD-ROM.

NOTE Make sure these settings don't supersede settings required by other applications on your system.

The commands to apply the tuneable parameters file are as follows:

1. Log on as user `root`.
2. `cd /stand`
3. `cp system system.bak`
4. Edit the `system` file.
   a. Add the kernel settings to the `system` file if they do not exist. If they are already present, modify them accordingly. These are the minimal suggested values. You may need to increment them to match your configuration.
   b. Save the `system` file.
5. `mk_kernel -s system -o vmunix.ovsa`
6. `kmupdate vmunix.ovsa`
7. `cd /`
8. `/etc/shutdown -r 0`

For Solaris 7 and 8: Edit `/etc/system` directly to apply the required kernel parameter settings. A tuneable kernel parameters file, `tuneable.te.sun5`, is provided for your convenience, and is located on the OV Telecom Extensions CD-ROM.

To modify the kernel parameter values on a Solaris system:

1. `cp /etc/system /etc/system.orig`
2. Edit `/etc/system`
   a. Add the kernel settings to `/etc/system` if they do not exist. If they are already present, modify them accordingly. These are the minimal suggested values. You may need to increase them to match your configuration.
   b. Save `etc/system`
3. Reboot the system. Execute: `sync; sync; reboot`

NOTE After modifying kernel parameters on the management server, you must reboot your system in order to make the new kernel values active.

Software Requirements

This section describes the components that comprise HP OpenView Integrated Service Assurance for Communication Networks. Many components are optional add-on products that are designed to work with HP OpenView Integrated Service Assurance for Communication Networks to help you form a complete network management solution.

Table 1-6 lists the major components that comprise HP OpenView Integrated Service Assurance for Communication Networks.

Table 1-6 Core Components

Component	Role	Version
HP OpenView Operations	Provides the software needed to manage an IDC domain and display messages in a GUI.	7.1
HP OpenView Network Node Manager	Provides the software needed to manage your IP network.	6.2
OV Telecom Extensions for OV Operations	Allows the collection of alarms from telecom devices. Integrates OVO and Telecom devices	7.1

Table 1-7 lists the additional components needed to support HP OpenView Integrated Service Assurance for Communication Networks that are not provided by Hewlett-Packard.

NOTE HP strongly recommends that you install the Oracle 8.1.7.3 patch. This patch resolves a problem with shared memory that heavily impacts OV Telecom Extensions functionality.

Table 1-7 Additional Components Not Provided with Product

Component	Role	Version
Oracle Database	Required. Provides the database structure needed to store and retrieve messages, etc.	8.1.7
Web Browser	Optional. Enables downloading of iNOC console components, browsing in online documentation, and viewing of online help.	Netscape 6.0 or higher with Java enabled; Internet Explorer 5.0 or higher

Helpful Hints

The HP OpenView Integrated Service Assurance for Communication Networks installation is composed of various installation and configuration steps. Most steps are automated through scripts. Some steps require interactivity by the user with the OVO administrator GUI.

Saving Transcripts of Install Scripts

When running the automated scripts, it is strongly recommended to capture the output to assist with troubleshooting. To capture the output of the automated scripts, run the command `script` followed by a file name. Afterwards, enter the command to complete the installation step. When the installation step is complete, exit the shell. The output from the installation step is captured in the file you specified. The commands to execute are as follows. This example uses the OV Telecom Extensions installation script.

```
script /tmp/ovtelco.install.output
./ovtelco.install -b
exit
```

To monitor an installation step, view the file `/var/adm/sw/swinstall.log`. To do this,

1. Start an installation script.
2. Open a new window.
3. Use the command: `tail -f /var/adm/sw/swinstall.log` to monitor the installation process.

Common Install Tasks using the OVO GUI

Chapter 3, “Quick Steps for OVO Tasks,” on page 49 provides detailed explanations of required steps for particular tasks, such as deploying agents, launching the GUIs, and enabling a message stream interface.

Starting and Stopping OVISACN

The script `ovsa_admin` assists in the stopping and starting of all of the processes associated with HP OpenView Integrated Service Assurance for Communication Networks. The script is located in `/opt/OV/Telco/bin` on the OVO server. The output of `ovsa_admin` is written to a log file in `/tmp` called `ovsa_admin.log`.

To stop all associated processes of OV Telecom Extensions for OV Operations, run the following command:

```
./ovsa_admin -stop
```

To start all associated processes of OV Telecom Extensions for OV Operations, run the following command:

```
./ovsa_admin -start
```

To check the status all associated processes of OV Telecom Extensions for OV Operations, run the following command:

```
./ovsa_admin -status
```

The `ovsa_admin` commands stop, start, and check the status of the following components:

- OVO
- OVO agent
- Telecom agent

Content of Product CD-ROMs

There are three CD-ROMs associated with HP OpenView Integrated Service Assurance for Communication Networks:

- OV Telecom Extensions for OV Operations CD-ROM
- User Documentation CD-ROM
- Patch CD-ROM

Table 1-8 lists the components installed with the associated product CD-ROMs.

Table 1-8 CD-ROMs and Their Content

Product	CD-ROM Title	Content on CD-ROM
OV Telecom Extensions for OV Operations	OV Telecom Extensions CD	• Telecom agent system • Install script
	User Documentation CD	• OVISACN user documentation • Install script
	Patch CD	• Patches for OVO 7.1 and NNM 6.2 • Install script • Patch content text file

2 Installing OV Telecom Extensions Configurations

Installing Single Server, OV Telecom Extensions Configuration

To install all of the HP OpenView Integrated Service Assurance for Communication Networks components for an OV Telecom Extensions configuration on a single machine, install each component in the order listed below.

1. “Installing Oracle” on page 37
2. “Installing and Configuring OVO Server” on page 39
3. “Installing OV Telecom Extensions for OV Operations” on page 42
4. “Setting Up OV Telecom Extensions for OV Operations” on page 43
5. “Installing iNOC console” on page 45
6. “Installing GPRS Demo Content” on page 47 (optional)
7. “Installing User Documentation” on page 48 (optional)

IMPORTANT See Chapter 1, “Before the Installation,” on page 15 for OS requirements, disk space requirements, and kernel settings.

Installing Oracle

Installing and setting up Oracle 8.1.7 for use with HP OpenView Integrated Service Assurance for Communication Networks is a customer responsibility.

NOTE HP strongly recommends that you install the Oracle 8.1.7.3 patch. This patch resolves a problem with shared memory that heavily impacts OV Telecom Extensions functionality.

This section provides brief instructions for installing Oracle. For more detailed instructions, see the *Oracle Installation and Configuration Guide* provided with the Oracle database product.

NOTE Oracle 8i™ is a product of Oracle Corporation and cannot be purchased directly from Hewlett-Packard.

Before Installing Oracle

Before installing Oracle, do the following:

- Make sure your system meets the hardware and software requirements.
- Create a user `oracle` and user group `dba` in the system. Make sure the user `oracle` as a member of the group `dba`. We suggest using `/home/oracle` as the home directory of the `oracle` user.
- Set umask to allow users to access the Oracle binaries: **`umask 022`**

Installing Oracle

An Oracle database system must be installed and configured for each management server system. For single server installation models, only one Oracle database system is required.

Oracle for the Management Server System

Oracle can be installed directly on the management server system. You should follow the guidelines provided in *HP OpenView VantagePoint Operations for UNIX Installation Guide* or *HP OpenView VantagePoint Operations for Sun Solaris Installation Guide* to install an Oracle database system for the OVO management server system.

Three environment variables are important to note, and are listed in Table 2-1. While the values of these environment variables are not fixed, they are important to remember. These values must be entered during the installation of the OVO server.

Table 2-1 Oracle Parameters and Suggested Values

Environment Variables	Suggested Value
ORACLE_BASE	/opt/oracle
ORACLE_HOME	/opt/oracle/product/8.1.7
ORACLE_SID	openview

Installing and Configuring OVO Server

NOTE This step must be performed after Oracle database is installed.

To install HP OpenView Operations successfully, follow the instructions outlined in the *HP OpenView VantagePoint Operations for UNIX Installation Guide* or *HP OpenView VantagePoint Operations for Sun Solaris Installation Guide*.

To aid in installing OVO, HP OpenView Integrated Service Assurance for Communication Networks has included the required product patches for OVO on the Patch CD-ROM.

To install and configure OVO:

1. Install the OVO software on the management server.

   See *HP OpenView VantagePoint Operations for UNIX Installation Guide* or *HP OpenView VantagePoint Operations for Sun Solaris Installation Guide* for instructions.

2. Install required OVO product patches on management server.

   HP OpenView Integrated Service Assurance for Communication Networks requires specific OVO and NNM patches to be installed to insure all applications operate as documented. The Patch CD-ROM contains the necessary patches.

   To install these patches after installing OVO, execute:

   ```
   cd <Patch CD Directory>
   ./patch.install -b -ovo -nnm
   ```

NOTE You can run this command interactively by executing:
`./patch.install -i -ovo -nnm`

NOTE Make sure you review the special installation instructions for the NNM and OVO patches after they are installed. The `patch.install` script lists the files to be reviewed when the patches are installed.

3. Configure the OVO server.

NOTE During the installation of the OVO software, you are prompted to enter the location of Oracle. You should refer to the information you entered during the Oracle installation process.

Set the Oracle environment variables for user `root`.

```
export ORACLE_BASE=<location defined during Oracle
installation>

export ORACLE_HOME=<location defined during Oracle
installation>

export ORACLE_SID=<value entered during Oracle
installation>
```

Then, as user `root`, execute: `/opt/OV/bin/OpC/install/opcconfig`

4. Deploy the OVO agent to the OVO management server.

   HP OpenView Operations must have the OVO agent deployed on the OVO management system, meaning the local node, before messages can be processed.

   To enable OVO to receive default messages, deploy the OVO agent. For an example on how to deploy an agent, see “Deploying an Agent” on page 51.

NOTE You must deploy the agents before installing and configuring other components.

To install and configure an OVO managed node:

1. Install the OVO software on the managed node.

   See *HP OpenView VantagePoint Operations for UNIX Installation Guide* or *HP OpenView VantagePoint Operations for Sun Solaris Installation Guide* for requirements for a managed node. See *HP OpenView VantagePoint Operations for UNIX Administrator's Reference - Vol 1* for installation instructions for a managed node.

2. Install DCE-KT-Tools on each agent system.

NOTE DCE-KT-Tools is required to be installed on a managed node prior to deploying the OVO agent software.

   DCE-KT-Tools is available on the OVO product CD-ROM and on the HP-UX Application Software CD-ROM.

   To install the product from the HP-UX Application Software CD-ROM, start the Swinstall GUI of SD-UX, change the software view to `Start with Products`, and choose `DCE-KT-Tools` to begin the installation.

   For additional information on installing DCE-KT-Tools, refer to the *HP OpenView VantagePoint Operations for UNIX Installation Guide* or *HP OpenView VantagePoint Operations for Sun Solaris Installation Guide*.

3. Deploy the OVO agent to a managed node.

   OVO agents can also be deployed on remote managed nodes. To enable OVO to receive messages from agent systems, deploy the OVO agent on a remote managed node. For instructions on how to deploy an agent, see "Deploying an Agent" on page 51.

NOTE You must deploy the OVO agent before installing and configuring other components.

Installing OV Telecom Extensions for OV Operations

NOTE You must perform this step after the OVO server is installed and set up.

Install the OV Telecom Extensions for OV Operations components targeted for the OVO server using the `ovtelco.install` script located on the OV Telecom Extensions CD-ROM. The commands to execute are as follows:

```
cd <OV Telecom Extensions Directory>
./ovtelco.install -b
```

NOTE You can also run `ovtelco.install` interactively. For more information, execute **`ovtelco.install -?`**

Setting Up OV Telecom Extensions for OV Operations

NOTE You must perform this step after the OVO server is installed, configured, and an OVO agent is deployed.

IMPORTANT For a non-US-English locale, execute:

`ovsa_locale.setup <ll>_<tt>.<codeset>`

where, `ll` is the language, `tt` is the territory, and `codeset` is the encoding format. This command must be run on the OVO server prior to running `ovtelco.setup`. Run `locale -a` to view a list of acceptable arguments to this command. Note that this is the same as the `$LANG` format.

The process of setting up OV Telecom Extensions for OV Operations involves three steps:

1. Setting up OV Telecom Extensions with an OV Telecom Extensions configuration.
2. Deploying the subagent.
3. Enabling the message stream interface.

Set Up OV Telecom Extensions Configurations

OV Telecom Extensions uses default settings defined in an answer file. The answer file `ovtelco.answers` is located under `/etc/opt/OV/share/conf/Telco`. The default setting assumes you are installing an OV Telecom Extensions configuration; therefore, you do not need to modify anything before setup.

To execute the OV Telecom Extensions for OV Operations configuration setup, run the following command.

`/opt/OV/Telco/bin/ovtelco.setup`

NOTE `ovtelco.setup` runs with a umask of 022 so that files will be created with the appropriate permissions for the Telecom Extensions processes.

IMPORTANT Logoff and login as user `root` to update the .profile for the OV Telecom Extensions for OV Operations environment.

NOTE If you are a CDE or VUE user, and you wish `.profile` to be automatically sourced when `root` logs in, see the instructions in `.dtprofile` or `.vueprofile` about setting the `DTSOURCEPROFILE` or `VUESOURCEPROFILE` environment variables.

If you want to remove OV Telecom Extensions data from the OVO database, you need to run the `ovtelco.unsetup` script under `/opt/OV/Telco/bin`.

Deploy the Subagent

The data collectors are deployed to agent systems, meaning managed nodes, through the OVO subagent mechanism. Within OVO, deploy `Telco Sub-Agent` to the target managed nodes. For an example on how to deploy subagents, see “Deploying Telco Sub-Agent” on page 52.

If you need to redeploy the subagent due to errors, then you must stop the data collectors. From the OVO admin GUI, double-click `Stop` from the `Telco Subagent` application group to stop the subagent.

Enable the Message Stream Interface (MSI)

For OV Telecom Extensions configurations, the Message Stream Interface (MSI) must be enabled in order for the telecom diverter to function as documented.

Within OVO, enable the message stream interface. For instructions on how to enable the MSI, see “Enable Message Stream Interface” on page 53.

Installing iNOC console

NOTE You must perform this step after the OV Telecom Extensions for OV Operations is installed and configured.

The iNOC console consists of the following GUIs:

- OVO operator GUI
- OVO admin GUI
- NNM admin GUI

The OVO admin GUI and NNM admin GUI are installed when the OVO component is installed. These GUIs run on the platform of the OVO management server; either Solaris 7 and 8 or HP-UX 11.X.

OVO Operator GUI Installation

Install the OVO operator GUI from the OVO web server. See instructions on installing the OVO operator GUI found at the following URL:

`http://<OVO_servername>:8880/Telco/index.html`

Select the link `OVO Operator GUI Installation` under iNOC Client Installation from this web page.

NOTE The OVO operator GUI is recommended to be installed on a PC.

For HP-UX 11.X:

1. Download `jre_HP-UX11.tar` to the `/opt` directory.
2. Unpackage the tar file with the `tar` command.
3. Download and untar `ito_op_install.tar`.
4. Launch the OVO operator GUI by executing **`/opt/OV/www/htdocs/ito_op/ito_op`**.

For Solaris:

1. Download `jre_SunOS5.tar` to the `/opt` directory.
2. Unpackage the tar file with the `tar` command.
3. Download and untar `ito_op_install.tar`.
4. Launch the OVO operator GUI by executing **`/opt/OV/www/htdocs/ito_op/ito_op`**.

For Windows NT:

1. Download and execute `ITO_JAVA.exe`.
2. Launch the OVO operator GUI from the **`Start`** menu.

Installing GPRS Demo Content

The GPRSSample setup script provides data and scripts that demonstrate how the integrated features add value for managing multiple domains.

Installed and configured demo data is needed to follow along with the *HP OpenView Telecom Extensions Tutorial*.

Setting up the GPRS demo content is a two-step process:

1. Load the demo data on the OVO server.
2. Apply the demo data to the OVO agent.

Load Demo Data on OVO Server

The GPRSSample setup script loads templates, commands, and applications for the OV Telecom Extensions for OV Operations as well as setting up the associated services and configuration.

To load the GPRS demo content on the OVO server, execute:

```
/opt/OV/Telco/contrib/GPRSDemo/GPRSSample.setup
```

Apply Demo Data on OVO Agent

NOTE The GPRS demo must be applied to the OVO agent located on the OVO management server. The GPRS demo will not function properly when installed on a remote agent.

To apply the demo configuration to the OVO agent, execute:

```
/opt/OV/Telco/bin/ovagt.apply GPRS -n <node1 node2...>
```

Installing User Documentation

This step needs to be performed on the OVO server after OV Telecom Extensions for OV Operations is installed.

When you install the set of user documentation on the OVO server, you can download and view all of the user documentation via the main web page. See "Software Requirements" on page 30 for acceptable web browser versions to view the online documentation.

Install the user documentation files using the `doc.install` script located on the User Documentation CD-ROM. The commands to execute are:

```
cd <User Documentation Directory>
./doc.install -b
```

NOTE `doc.install` can be run interactively. For more information, execute **`doc.install -?`**

Once the user documentation is installed, it can be viewed from the OVO web server at `http://<OVO_hostname>:8880/Telco/user_doc/index.htm`

NOTE If you have viewed this page before installing the user documentation, you will need to refresh your web browser to view the installed user documentation.

NOTE The user documentation files are in PDF format. They can be browsed using Adobe Acrobat Reader. If you do not have Acrobat Reader, you can download a free version from Adobe's web site: `www.adobe.com`.

3 Quick Steps for OVO Tasks

This chapter provides procedures to common OVO tasks needed during the installation process.

Deploying an Agent

1. Start HP OpenView Operations.
2. Go to the `ITO Node Bank window`.
3. Select the managed node you wish to deploy the agent onto.
4. Click `Actions:Agents ->Install/Update SW & Config...`. The `Install/Update ITO Software and Configuration` dialog box opens.
5. Make sure the correct managed nodes are listed in the `Target Nodes` window.
6. Check `Agent Software`, `Templates`, `Actions`, `Monitors`, and `Commands`. (You may also check `Force Update` to force an update).
7. Click `[OK]` to cause the templates to be deployed onto the managed node. Afterwards, you should see a message in the message browser indicating that the agent system has been updated.

Deploying Telco Sub-Agent

1. Start HP OpenView Operations.
2. Go to the `ITO Node Bank` window.
3. Select the managed node you wish to deploy the subagents onto.
4. Click `Actions:Subagents ->Install/Update SW & Config...` to open the `Install/Update Subagents` dialog box.
5. Make sure the targeted managed node is correct in the dialog box, then select `Telco Sub-Agent`.
6. If you are sure you wish to proceed, click `[OK]`. A dialog box displays informing you what is about to occur. You can select to continue or discontinue.
7. Select `yes` to install the subagent software on the agent system.

Enable Message Stream Interface

1. Start HP OpenView Operations.
2. Go to the `ITO Node Bank` window.
3. Select the managed node on which to enable the MSI.
4. Right-click on the managed node to display its menu.
5. Click `Modify...` to open the `Modify Node` dialog box.
6. Click `Advanced Options...` to open the `Node Advanced Options` dialog box.
7. Under the `Message Stream Interface` option area, check `Enable Output`.
8. Click `Close`.
9. Click `[OK]` to enable the MSI. Shortly after this point you should see a message in the message browser indicating that the agent system has been updated.

4 Troubleshooting

This section provides techniques to troubleshoot the different HP OpenView Integrated Service Assurance for Communication Networks components.

Useful Log Files

Table 4-1 provides the location and description of some of the log files associated with HP OpenView Integrated Service Assurance for Communication Networks.

Table 4-1 Useful Log Files

Log File	Description
`/var/opt/OV/log/Telco/ovtopodivertor.log`	Diverter log file.
`/var/opt/OV/log/Telco/ovsadc.log`	Data collector log file.
`/var/opt/OV/log/OpC/opcmsglg`	OpC message log.
`/var/opt/OV/share/log/Telco/svc2map.log`	Service to element map navigation log file.
`/var/opt/OV/share/log/Telco/ovtelco.setup.log`	Contains output from `ovtelco.setup`.

OVO Server Installation and Configuration

If you receive an error while attempting to configure the OVO server that says `HP OpenView Platform could not start correctly`, then stop OVO (`/opt/OV/bin/ovstop`) and rerun the OVO configuration script. Also, echo the Oracle environment variables (`ORACLE_SID`, `ORACLE_HOME`, and `ORACLE_BASE`) and verify that they are entered as required.

OV Telecom Extensions Configuration

OV Telecom Extensions Setup

Consult the OV Telecom Extensions setup log file for any errors. The log file is located in `/var/opt/OV/log/Telco/ovtelco.setup.log`.

Subagent Setup

- Consult the data collector log file for any errors. The log file is located in `/var/opt/OV/log/Telco/ovsadc.log`
- Consult the telecom diverter log file for any errors. The log file is located in `/var/opt/OV/log/Telco/ovtopodiverter.log`

iNOC Installation and Configuration

Table 4-2 provides the location of additional log files for the iNOC console.

Table 4-2 iNOC Log File Directories

Platform	Log File Directory
OVO Management Server	`/var/opt/OV/log/Telco/<machine_name>`

Glossary

acknowledge An action that causes a message or other notification to be removed from the OVO message browser.

action An operation that can be carried out within an OpenView application. Actions are typically performed on managed objects and can be executed by users through menu items or toolbar buttons. Actions can also be configured to automatically occur in response to an event or notification.

admin group A system-defined user group. Users belonging to this group have supervisory rights over other users.

administrator A user who has privileges and responsibilities to configure and maintain a managed network.

agent A program or process running on a device or computer system that responds to management requests, performs management operations, or sends performance and event notifications.

alarm An announcement of an event that occurred on the network. Alarms are collected from a network element or system and forwarded to the management system for processing.

annotation Text entered by operators, administrators, or automatically after actions that describes actions and tasks that have occurred to solve a given problem.

application A packaged software that provides functionality to accomplish a set of related tasks.

attribute A characteristic or property of an object that can be described through a name-value pair.

authentication A process of determining whether someone or something is who or what it is declared to be. Authentication is commonly done through the use of logon passwords.

automatic action A preconfigured program instruction that is executed in response to an alarm without operator control or intervention.

circuit See correlation circuit.

CMIP (Common Management Information Protocol) A connection-oriented protocol that allows network elements, such as switches, routers, and management agents, to be manipulated via sophisticated messages.

CMISE The services defined for CMIP protocol are known as CMISE.

component A physical object contained within a network element. Components may or may not emit alarms.

configuration The process of customizing the software to a specific managed network.

control agent Also known as `opcctla` in OVO. An agent on each managed node that is responsible for starting and stopping all other agents and processing requests from the management server.

correlation circuit In ECS, a collection of interconnected primitive and compound nodes configured to perform a filtering or correlation activity. Each correlation node is configured appropriately to the correlation requirement. The configuration includes the specification of the event types and the allowed transit delays for those events. A correlation circuit can be loaded into the ECS correlation engine.

correlation engine The ECS component that reads an input event stream, decodes the input events, performs the event correlation, encodes the output events, and returns the output events to the event stream. The rules of event correlation are specified by one or more correlation circuits loaded into the correlation engine.

data collector A process that receives alarms emitted by network elements and forwards these alarms to the agent.

device A piece of equipment that generates alarms when any of its components fails.

discharge An action that causes a message or other notification associated with a problem or situation to be removed from the browser. Messages are usually discharged when the operator has resolved the situation that led to the message.

diverter A process on the telecom subagent that provides additional message translation capabilities, such as table lookup conversions and time base arithmetic.

ECS See Event Correlation Services (ECS).

ECS circuit See Correlation Circuit.

ECS Designer OpenView software product that is used to create and test correlation circuits. It works in two modes: build and simulate.

ECS Engine See Correlation Engine.

element management system (EMS)

Vendor- or device-specific components that provide device-specific interfaces for receiving alarms and monitoring device status.

event An unsolicited notification, such as an SNMP trap or WMI notification generated by an agent or process in a managed object or by a user action. Also known as an alarm.

event correlation The evaluation of multiple events or notifications that are related to a single incident or problem in order to produce a single message. Event correlation is used to reduce the number of messages that are presented to an operator in a message browser.

Event Correlation Services (ECS) The HP Open View Event Correlation Services product, which uses correlation circuits and the ECS engine to filter events.

explodable Describes map icons that result in the display of another map upon double-clicking.

host A server or workstation.

host name The name of the server in the network.

icon One or more on-screen images combined as a unit. Icons represent objects that can be monitored or manipulated by the user or actions that can be executed by the user.

inheritance An object-oriented concept that says when a class of objects is defined, any subclass that is defined can inherit the definitions of one or more general classes.

interceptor An agent process dedicated to collecting alarms from a particular source. The `logfile` encapsulator collects alarms from log files. The `opcmsg` interceptor collects alarms injected using the `opcmsg`(3) API.

IP (Internet Protocol) A network layer protocol used by TCP and UDP protocols. Its main function is to route datagrams among nodes in different networks.

log file Files that store received alarms emitted by managed network elements.

lookup table Information used by the telecom diverter to translate raw alarm fields into readable strings. Lookup tables are configured per telecom subagent.

managed node A computer system or device in a network that is both monitored for status and messages and is manipulated by means of actions in the management software.

management server Provides management services, processes, and a management user interface to clients. The OVO software and relational database reside on the management server.

map A graphical representation of objects in the management environment in a format that shows one or more topological relationships among the objects.

message A structured, readable piece of information that is generated as a result of an event, the evaluation of one or more events relative to specified conditions, or a change in application, system, network, or network element status.

message agent Also known as `opcmsga` in OVO. An agent on a managed node that receives messages from the message sources, and processes and forwards the messages to the management server.

message group A collection of messages that belong to the same task or have some logical relationship and can be treated as a unit.

name-value pair A combination of an attribute identifier and the value of that attribute for a specific object.

network element (NE) A piece of manageable telecommunications equipment that generates alarms when any of its components fails. For example, a network element can be a digital cross connect, an add-drop multiplexer, or a digital loop carrier.

NNM (Network Node Manager) An OpenView software product that discovers and manages IP and IPX networks.

NOC (Network Operations Center) A place from which a network is supervised, monitored, and maintained.

node A connection point for data transmissions.

node group A collection of nodes that can be treated as a unit.

Open Systems Interconnection (OSI) A systems management model that defines the rules for processing and transferring data over networks.

operator-initiated action A preconfigured program instruction that requires user interaction to initiate. Operator actions are often provided to users in relation to an event, message, or other notification.

OSF/Motif GUI A graphical user interface standard that conforms to Open Software Foundation's recommendations.

outstanding alarms Alarms, both unassigned and owned, that have not yet been dismissed.

OV Operations (OVO) An OpenView software product that provides a generic framework for system, applications, and network management. Formerly known as VantagePoint Operations (VPO) and ITO.

ovstart The program that starts up the OpenView processes. This program is (normally) run automatically on system startup and can only be run by the superuser.

ovstop The program that stops OpenView processes. This program is (normally) run automatically on system shutdown and can only be run by the superuser.

OVW HP OpenView Windows is a GUI for integrating network management and system management applications.

own The act of taking or assigning responsibility for resolving a problem or situation associated with a message or other notification.

PDU (Protocol Data Unit) The package used for SNMP requests and responses.

profile A collection of tasks, applications, capabilities, and responsibilities that can be assigned to a user.

project A collection of configuration files and preference definitions that defines a telecom network management solution. The information stored in a project is applied to the OVO server and agent computers.

radio buttons Radio buttons are typically used for setting states or modes. Depressed button state indicates that the parameter is selected.

raw alarms Alarm messages that are emitted from network elements in a managed network, and are not formatted or correlated.

server A computer system that provides a service to other computer systems (clients) on the network.

severity A property of an object indicating the status of the object. Severity is based on the impact of alarms or messages associated with the object.

SNMP (Simple Network Management Protocol) The ARPA network management protocol running above TCP/IP used to communicate network management information between a manager and an agent.

TCP (Transmission Control Protocol) A method or protocol used along with the internet protocol to send data in the form of message units between computers over the Internet.

telecom subagent A process that can be installed on an OVO agent computer to receive events from telecom network elements and element management systems.

template A predefined object with default settings that is used for creating new instances of objects.

UDP (User Datagram Protocol) A communications method or portal that offers a limited amount of service when messages are exchanged between computers in a network that uses the internet protocol. An alternative to TCP.

X.733 A standard alarm format understood by HP OpenView Integrated Service Assurance for Communication Networks. X.733 specifies a well-defined set of alarm fields and values.

XML (Extensible Markup Language) A programming language similar to HTML that provides a common way to describe any kind of data.

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