

HP OpenView Service Assurance for Communication Networks

Quick Start Guide

HP-UX, Solaris, Windows NT®



Manufacturing Part Number: J5119-90003

October 2001

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Contents

1. Introduction

Introduction to OVSACN	9
Product Benefits	11

2. Hands-On Demonstration

Introduction to the Hands-On Demonstration.....	15
Logging on to the Network Management System	15
Configuring the Demonstration.....	16
Using the Demonstration.....	21
Using the iNOC Console	22
Managing the IDC Domain.....	28
Managing the Telecom Domain	31
Managing Services.....	36
Managing Operator Access	40
Managing Outages.....	42

Contents

Introduction

This chapter describes the value of HP OpenView Service Assurance for Communication Networks.

Introduction to OVSACN

Traditionally, each HP OpenView product has managed one specific network domain.

- HP OpenView Operations (OVO) manages application servers and the internet data center domain.
- HP OpenView Network Node Manager (NNM) manages data networks and the IP domain.
- HP OpenView Communications/Service Assurance (OVC/Assurance) manages mobile networks and the telecom domain.

While each OpenView product is a leader in its area, getting them to work together has been challenging for both the integrator and the operator.

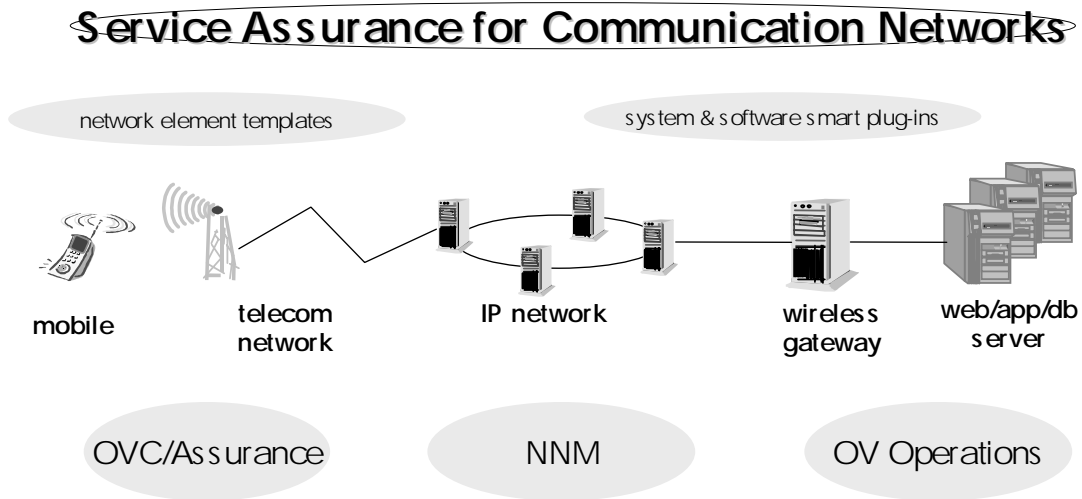
HP OpenView Service Assurance for Communication Networks is the first product on the market that provides cross-domain management. OVSACN includes three user interfaces with cross-launching capabilities. It combines the three market-leading network management products into one solution that covers all three domains. This product merger enables you to quickly implement and efficiently provide end-to-end service management.

See Figure 1-1.

This cross-domain management is of particular interest to:

- Small- to mid-sized communications service providers focused on wireless.
- Service providers who are integrating management of voice and IP services.
- IT customers who need to manage telecommunications equipment.
- Service providers who need integrated IT management.

Figure 1-1 Three leading network management products integrated into one solution



Product Benefits

The benefits of OVSACN include:

- **Graphical User Interface**—The iNOC Console integrates the OVO and NNM user interfaces with the OVC/Assurance user interface for one logon process and many information windows. Navigation capabilities handle the task of switching among the GUI components. Operators can focus on network management instead of remembering the reasons and procedures to launch the different GUIs. (The OVC/Assurance GUI, also known as the topology GUI, is only available with the optional OV Topology Server product. This product is part of the standard-level deployment for OVSACN.)
- **Systems and Application Management**—Tools specific to the IDC domain simplify system management.
- **IP Communications Management**—Tools specific to the IP domain simplify network management.
- **Telecom Management**—Tools specific to the telecom domain simplify network management.
- **Cross-Domain Management**—Elements from one or more managed domains can be incorporated into services that display and reflect a collective status. Know immediately when a condition in any of the managed domains is affecting the quality of service your customers see.
- **Wealth of Data Views**—The user interface provides many detail windows for event history. Move quickly from messages and services to topology views and from topology views to messages and services.
- **Ease of Configuration**—OVSACN configuration is an additive process with visible results at each step. Data collector definitions enable the receipt of telecom events from those data sources in the OVO message browser. Each new managed object instance definition creates an object on a map in the topology GUI. Further refinement of event definitions and topology mappings increases the level of detail available in the message browser.
- **Event Correlation**—The optional OV Topology Server correlates telecom events into higher level problems that reduce the number of messages each operator must consider.

Product Benefits

- **Outage Plans**—OVO supports the creation of outage plans for system applications and IP devices. The optional OV Topology Server supports the creation of outage plans for telecom equipment. These outage plans identify devices that are known to be in maintenance mode. Events from devices in an outage state are suppressed, thereby further reducing the number of messages each operator must consider. At this time, OVO and OV Topology Server outage data are managed separately. This is, outages are not integrated in OVSACN.
- **Operation Profiles**—Operation profiles partition the network according to the way operators manage the network objects. Each operation profile limits the network objects and management applications visible to the associated operator(s). Operators see the information that relates to their job functions but are not inundated with extraneous information.
- **Third-Party Products**—Optional add-on products from HP and other vendors expand your network management capabilities.
- **Smart Plug-ins**—Optional Smart Plug-ins provide preconfigured templates for specific devices, saving you the configuration time and effort and allowing you to manage those specific devices almost immediately.

Hands-On Demonstration

This chapter provides a hands-on demonstration of ways an operator might use the product for day-to-day network management.

Introduction to the Hands-On Demonstration

This demonstration describes in detail the most important operator features of this product as they relate to managing your network across multiple domains. It works on both UNIX systems and the Windows NT operating system. It assumes that the optional OV Topology Server is installed. If you do not have access to an installed HP OpenView Service Assurance for Communication Networks system that includes the OV Topology Server, you can read this chapter in conjunction with the Self-Paced Web Demonstration. This demonstration is available from your Hewlett-Packard sales representative.

Logging on to the Network Management System

Before using OVSACN, you must start the GUI client on your system and connect to the product server. Additionally, the OVSACN administrator must perform some initial configuration as described in “Configuring the Demonstration” on page 16.

To log on to the network management system:

1. Start the OVO operator GUI:
 - **Windows NT:** Double-click the HP VP Java Console icon on the desktop.
 - **UNIX:** In a terminal window, type `ito_op &`.
2. In the logon window, enter the following information:
 - **Username:** `opc_adm` (This is the default logon name for the demonstration. Your system administrator may have assigned a different user name.)
 - **Password:** `opc_adm` (This is the default password. Your system administrator may have assigned a different password.)
 - **Management Server:** The hostname of the machine on which the OVO server is installed.
 - **Display:** The name of the display on which the GUI should run. Normally, this is your hostname followed by `:0.0`. This value is preset. Verify that it is correct.

3. Click [OK].

The OVO operator GUI appears.

Configuring the Demonstration

Before you can run this demonstration, the OVSACN administrator must perform some initial configuration to ensure that the referenced features exist on your system. This configuration must be done only once per OVSACN installation.

NOTE

These configuration steps assume that all operators running the hands-on demonstration log on as user `opc_adm` with the default administration operation profile. If you choose to use a different user name for demonstration purposes, that operation profile must include:

- All of the functionality of the `Telco_Op` operation profile.
- Access to the `Database` message group.
- Access to the `Network` message group.
- Access to the `OS` message group.
- Access to the `Tools` application group.

To configure the demonstration with the expected default settings:

1. Log on to the system as described in “Logging on to the Network Management System” on page 15.
2. If there are any messages in the message browser, remove them before starting the demonstration (messages remain in the message history database):

Click `Actions:Messages->Acknowledge All Messages`.

3. Start the topology GUI:

- **Windows NT:** In the OVO operator GUI, click
Actions:Start->Telco iNOC->Launch NT GUI.
- **UNIX:** In the OVO operator GUI, click
Actions:Start->Telco iNOC->Launch UX GUI.

After a few seconds, the `home_map` appears. This topology GUI window may come up behind the OVO operator GUI window.

4. Navigate to the `GPRSNetwork` map within the map presenter:

- a. In the `home_map` map, double-click the `root_domain` symbol.

The `root_domain` map appears.

- b. Double-click the `GPRSNetwork` symbol.

The `GPRSNetwork` map appears.

5. Optionally, acquire background image files to use in the maps. NNM ships a wide variety of background images that also work with OVSACN. This demonstration assumes the use of the `canada.gif` and `ontario.gif` background files.

- a. On the OVO server machine, change to the
`/etc/opt/OV/share/backgrounds/` directory.
- b. Copy the files `canada.gif` and `ontario.gif` to the machine on which you are configuring the topology GUI. Place these files in the directory:
- **Windows NT:** `C:\Program Files\HP OVCA 1.02\data/gif\`
 - **UNIX:** `/etc/opt/OV/share/backgrounds/`

6. Optionally, set the background image and arrange the symbols on the `GPRSNetwork` map:

- a. On the `GPRSNetwork` map, right-click and click `Editable`.
- b. Click [OK] to make a personal layout of this map.

The `Editable` box on the `Details` tab of the map is selected. This marking means that you can make changes to this map.

- c. Right-click and click `Set Background`.

Hands-On Demonstration
Introduction to the Hands-On Demonstration

- d. Select the background image file:
 - **Windows NT:** In the File Chooser, enter the filename `C:\Program Files\HP OVCA 1.02\data/gif/canada.gif`.
 - **UNIX:** In the File Chooser enter the filename `/etc/opt/OV/share/backgrounds/canada.gif`.
- e. Click [Apply].
- f. Move each symbol on the map to the location of its corresponding city as shown in Figure 2-1.
- g. Click File:Save to save your changes to the map.

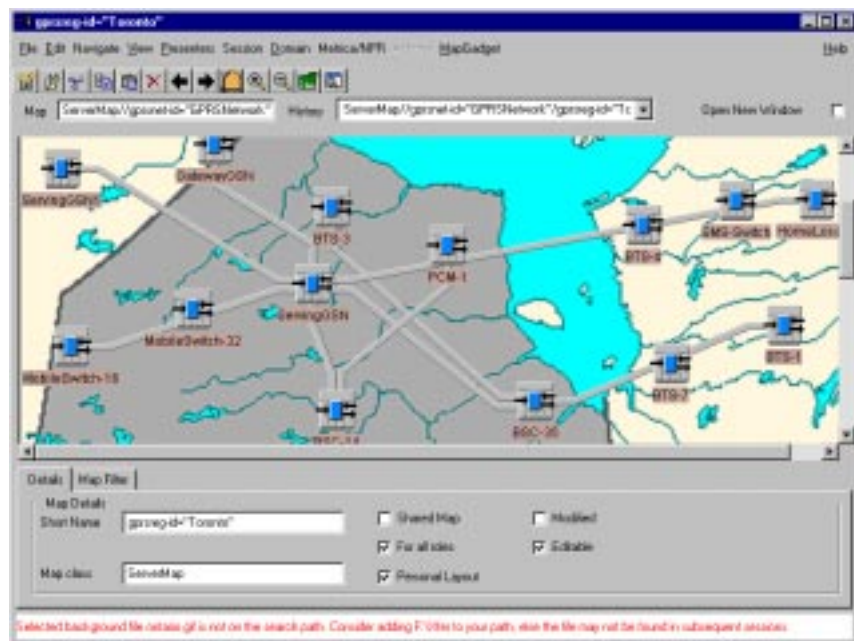
Figure 2-1 Configured GPRSNetwork Map



7. Optionally, set the background image and arrange the symbols on the Toronto map:
 - a. On the GPRSNetwork map, double-click the Toronto symbol.
The Toronto map appears.
 - b. On the Toronto map, right-click and click Editable.

- c. Click [OK] to make a personal layout of this map.
The Editable box on the Details tab of the map is selected. This marking means that you can make changes to this map.
- d. Right-click and click Set Background.
- e. Select the background image file:
 - **Windows NT:** In the File Chooser, enter the filename
C:\Program Files\HP OVCA 1.02\data/gif\ontario.gif.
 - **UNIX:** In the File Chooser enter the filename
/etc/opt/OV/share/backgrounds/ontario.gif.
- f. Click [Apply].
- g. Move the symbols on the map to the locations shown in Figure 2-2.
- h. Click File:Save to save your changes to the map.

Figure 2-2 Configured Toronto Map



Introduction to the Hands-On Demonstration

8. In the problems presenter, move the NE Shortname column to the left so that it is easily visible without scrolling:

- a. Scroll to the right until the NE Shortname column head is visible.
- b. Click in the NE Shortname column head.
- c. Click and hold the NE Shortname column head.

The cursor changes to a crosshair.

- d. Drag the cursor onto the Severity column head.
- e. Release the cursor.

The NE Shortname column head is now to the left of the Severity column head.

NOTE

The problems presenter does not scroll during the drag operation. Therefore, it may take several drag iterations to move the NE Shortname column head all of the way to the Severity column head.

9. Set the session default for this user:

- a. Ensure that the GPRSNetwork map is open.
- b. Ensure that the problems presenter you just customized is still open.
- c. Click `Session:Set Home Session`.

All future topology GUI sessions for this user will start with the GPRSNetwork map and the customized problems presenter open.

Using the Demonstration

The remaining sections in this chapter are independent of each other and can be followed in any order after some initial administrative configuration (“Logging on to the Network Management System” on page 15) and after you have logged on (“Configuring the Demonstration” on page 16). Each section describes one approach to using OVSACN for managing your cross-domain network. These sections are:

- “Using the iNOC Console” on page 22.
- “Managing the IDC Domain” on page 28.
- “Managing the Telecom Domain” on page 31.
- “Managing Services” on page 36.
- “Managing Operator Access” on page 40.
- “Managing Outages” on page 42.

Using the iNOC Console

The iNOC Console consists of two graphical user interfaces (GUIs):

- **The OVO operator GUI.** This is the main GUI used to manage the assigned nodes, applications, messages, and services. You must log on to the OVO operator GUI before opening the topology GUI. See Figure 2-3.
- **The topology GUI.** This optional GUI shows maps of the telecom equipment and displays telecom problems in more detail than is available in the OVO operator GUI. The topology GUI is part of the optional OV Topology Server. See Figure 2-4 on page 26 and Figure 2-5 on page 27.

To become acquainted with the iNOC Console:

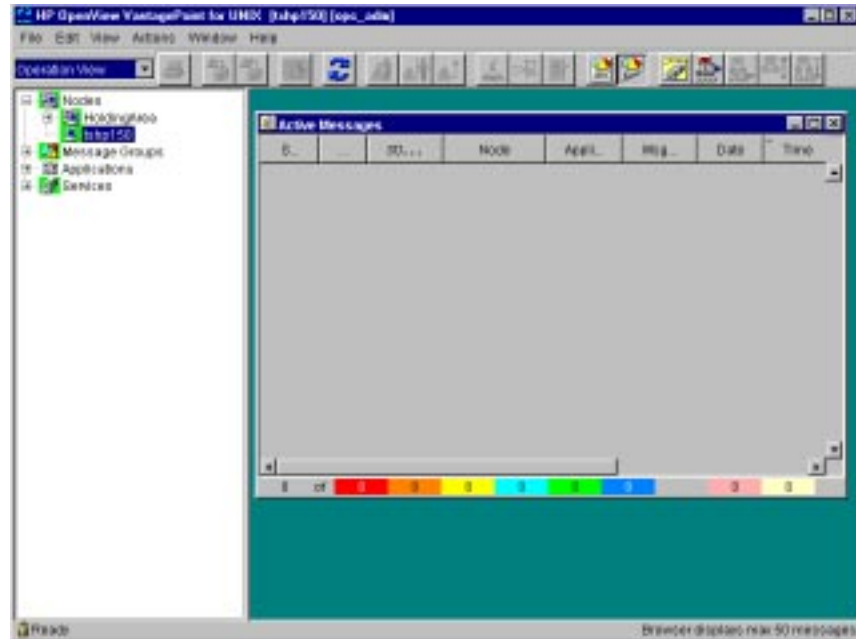
1. Log on to the system as described in “Logging on to the Network Management System” on page 15.

The OVO operator GUI appears as shown in Figure 2-3.

The scoping pane on the left lists the nodes, message groups, applications, and services the current user is responsible for managing.

The content pane contains the default message browser. Currently, the message browser is empty.

Figure 2-3 OVO Operator GUI



2. In the scoping pane, expand the node bank:

Click the + sign to the left of the word `Nodes`.

The node bank contains nodes that correspond to actual network equipment. These nodes indicate the specific devices for which the current user has management responsibility. Some actions require that you select a node from the node bank as the target for the action. Before configuration, the only node visible is that of the network management server, the machine on which OVSACN has been installed.

Hands-On Demonstration
Using the iNOC Console

3. In the scoping pane, expand the message group bank:

Click the + sign to the left of the words `Message Groups`.

Each incoming message is assigned to one message group. The message browser only displays messages that correspond to the message groups listed in the message group bank. Many operators may see messages from the same message group for the same or different network equipment.

The default message groups for telecom equipment events are:

- **Telco**—Used for messages originating from telecom equipment.
- **Telco-NOKIA**—Used for messages from Nokia telecom equipment.
- **Topology State Changes**—Used for services that are affected by the state of topology equipment.

4. Collapse the message group bank:

Click the - sign to the left of the words `Message Groups`.

5. In the scoping pane, expand the applications bank:

Click the + sign to the left of the word `Applications`.

The applications bank contains integrated applications for diagnosing and fixing network problems. These applications are also available in the `Actions:Start` menu.

The default telecom application groups are:

- **Telco GPRS Demo**—Contains applications for simulating the sending of events for demonstration purposes.
- **Telco Sub-Agent**—Contains applications for starting, stopping, and testing the telecom subagent.
- **Telco iNOC**—Contains applications for launching the topology GUI.

6. Expand each of the telecom application groups and examine their contents.

7. Collapse the applications bank:

Click the - sign to the left of the word `Applications`.

8. In the scoping pane, expand the services bank:

Click the + sign to the left of the word `Services`.

The services bank contains a hierarchy of the services the current user is responsible for managing.

9. Examine the short message service:

a. Select `Services`.

b. Right-click and click `Show Graph`.

The `Service Graph` shows all services in the services hierarchy. Before configuration, the short message service is the only service available.

c. Expand each of the services within the short message service.

d. Right-click and click `Expand Complete Tree`.

Notice that when the service bank is fully expanded, it shows the same view as the fully expanded `Service Graph`.

This short message service is interesting because it includes services defined in all three managed domains.

- The wireless servers are managed with `Service Assurance` technology.
- The application servers and managed with `OpenView Operations` technology.
- The data network is managed with `Network Node Manager` technology.

10. Collapse the services bank.

Click the - sign to the left of the word `Services`.

11. Close the `Service Graph`.

12. Start the topology GUI:

- **Windows NT:** In the OVO operator GUI, click `Actions:Start->Telco iNOC->Launch NT GUI`.
- **UNIX:** In the OVO operator GUI, click `Actions:Start->Telco iNOC->Launch UX GUI`.

Hands-On Demonstration
Using the iNOC Console

After a few seconds, the map and problems presenter appear as shown in Figure 2-4 and Figure 2-5. This topology GUI window may come up behind the OVO operator GUI window.

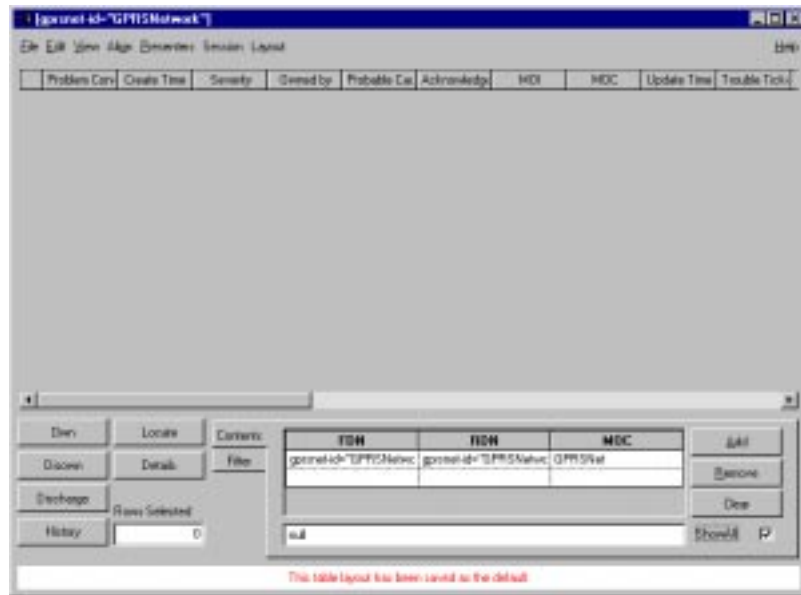
Figure 2-4 Optional Topology GUI map presenter



13. The map presenter shows the telecom equipment the current user is responsible for managing. In this case, the GPRSNetwork map contains symbols for the cities represented in the topology.

Navigate through the map hierarchy to become familiar with the maps in this demonstration network.

Figure 2-5 Optional Topology GUI problems presenter



14. The problems presenter is similar to the message browser. The problems presenter has fields that are specific to telecom management and are not currently available in the message browser.

Begin familiarizing yourself with the problems presenter.

The problems presenter is highly customizable. Your administrator has rearranged the columns for ease of use during this demonstration. You may rearrange columns, adjust column widths, and hide columns according to your preferences.

Managing the IDC Domain

Internet Data Center events originate from applications and systems throughout the network. These events indicate network conditions that are currently limiting or will soon limit the effectiveness of your network. Manage the IDC domain from the OVO operator GUI.

Many operators use the OVO operator GUI message browser as their primary view. The status of each incoming message shows the relative priority of each situation. There are many useful debugging tools within OVSACN that can help you narrow the scope of the particular problem.

To manage IDC events:

1. Log on to the system as described in “Logging on to the Network Management System” on page 15.
2. Use the Send IDC Alarms application to simulate the sending of application and system events:
 - a. In the node bank, select the name of your network management server.
 - b. Click `Actions:Start->Telco GPRS Demo->Send IDC Alarms`.

After a few seconds, the message browser contains four messages.

- One message refers to the Oracle subsystem and indicates that a table is getting full. This message has Warning status. It indicates a condition that will eventually cause a failure. In this case, cleaning the database table to free unused records or increasing the table size would prevent a failure.
- One message refers to HP-UX, the operating system for the node, and indicates that the swap space is being over utilized. This message has Major status. It indicates a condition that should be addressed soon. In this case, increasing the swap space or reducing the number of running processes would improve system performance.
- One message refers to the ReflectionX application and indicates that the application is failing because it cannot access a tty resource. This message has Minor status. This application failure does not affect overall system performance. In this case, you would use the configuration and debug tools provided by

the ReflectionX application to isolate and correct the problem.

- One message refers to the Microsoft Exchange Server and indicates that the Exchange Server has failed. This message has Critical status. It indicates that the network is not functioning properly for one or more users. In this case, you would use the tools provided by the Microsoft Exchange Server to isolate and correct the problem.
3. Open a message browser showing only the messages pertaining to the OS message group:
 - a. In the scoping pane, expand the message group bank.
 - b. Click on the OS message group to select it.
 - c. Right-click and click `Filter Active Messages`.

A message browser containing only the message from the HP-UX operating system.

4. Investigate the HP-UX message:
 - a. In either message browser, click anywhere on the message from the HP-UX application to select it.
 - b. Double-click the message to view the message details.
 - c. In the `Message Properties` window, click the `Message Text` tab.
This tab gives the complete message text, which may not be entirely visible in the message browser.
 - d. Close the `Message Properties` window.
5. Take ownership of the HP-UX message to indicate that you are working on this situation:
 - a. In either message browser, select the message from the HP-UX application.
 - b. Click `Actions:Messages->Own`.

An O appears in the `SUIAONE` column to indicate to all operators that this message is being handled.

Hands-On Demonstration
Managing the IDC Domain

6. Use an application to troubleshoot the condition that caused the HP-UX message:
 - a. In the node bank, select the node for your network management system.
 - b. Click `Actions:Start->Tools->Processes`.
A window displays the list of current processes.
If this were a real situation, you might stop unnecessary processes and/or use a system administration tool to increase the available swap space.
7. Close the `Processes Output` window.
8. After correcting the swap space situation, acknowledge the message:
 - a. In either message browser, select the HP-UX message.
 - b. Click `Actions:Messages->Acknowledge`.
The message is removed from both message browsers. It is still available in the message history database.
9. Close the `Filtered Active Messages` window.
10. Delete all remaining messages from the message browser:
 - a. Click `Actions:Messages->Acknowledge All Messages`.

Managing the Telecom Domain

Telecom events originate from the telecom equipment in the network. Each event indicates a condition that is currently limiting or will soon limit the effectiveness of the device that sent the event. With the optional OV Topology Server, OVSACN correlates the telecom events into problems. The same telecom problems appear in the problems presenter and the message browser. The problems presenter contains more information about each problem than does the message browser. Depending on your needs, you might choose to manage your assigned portion of the telecom domain from the message browser, the problems presenter, or both in combination. Because the viewers are synchronized, they always show current data.

To manage the telecom domain:

1. Log on to the system as described in “Logging on to the Network Management System” on page 15.
2. Start the topology GUI:
 - **Windows NT:** In the OVO operator GUI, click
Actions:Start->Telco iNOC->Launch NT GUI.
 - **UNIX:** In the OVO operator GUI, click
Actions:Start->Telco iNOC->Launch UX GUI.

After a few seconds, the GPRSNetwork map and the problems presenter appear.

With the problems presenter, you can sort using different fields, you can re-position columns, you can set colors and preferences.

The Contents tab of the problems presenter contains a list of origins of problems to show in the problems presenter. Currently, the Contents tab is empty; therefore, no problems are displayed.

3. On the Contents tab of the problems presenter, select the Show All check box.

The problems presenter now displays all open problems in the user's management domain, as constrained by the current operation profile.

4. Position the message browser and problems presenter such that you can see both of them at the same time.

Hands-On Demonstration
Managing the Telecom Domain

5. Use the Send FIFO DC Alarms application to simulate the sending of events from telecom equipment.
 - a. Click on the name of your network management server in the node bank.
 - b. Click `Actions:Start->Telco GPRS Demo->Send FIFO DC Alarms`.

An application window displays the events being sent.

After a few seconds, the problems presenter and message browser each contain several problems. The problems appear first in the problems presenter and then appear in the message browser.

Each problem refers to a different network element, indicated by the value of NE Shortname in the problems presenter and the Object in the message browser.

6. Wait one or two minutes.
7. Run the Send FIFO DC Alarms application again.

The values in the `PC Hist.` column of the problems presenter change to show that each problem has been updated by information in a new incoming event. Additionally, the `Update Time` column contains the time of the more recent events.

This is an example of how the OV Topology Server adds value to your network management processes. Because the telecom equipment alarms are correlated into problems, your message browser does not fill up with extraneous messages from telecom equipment.

8. Limit the problems displayed in the problems presenter:
 - a. On the `Contents` tab, click `[Clear]`.
 - b. Set the origin of the problems presenter to `BTS-3`:

1. In the text field at the bottom of the `Contents` tab, replace null with:

```
gprsnet-id="GPRSNetwork"/gprsreg-id="Toronto"/nbts-id="BTS-3"
```

2. Click `[Add]`.

OR

1. On the `Toronto` map, select the `BTS-3` icon.
2. Shift-click and drag the `BTS-3` icon to the problem presenter.

The problems for BTS-1 and BTS-7 are no longer visible in the problems presenter.

Notice that the message browser still shows all known messages. Changing the origin in the problems presenter changes the number of problems displayed but does not affect the existence of the problems.

9. On the `Contents` tab of the problems presenter, select the `Show All` check box.

The problems for BTS-1 and BTS-7 reappear.

10. You can work with a problem in the problems presenter. Select the problem for BTS-3:

Click the box at the left of the problem for BTS-3.

11. Own the problem:

Click `[Own]`.

Notice the `O` in the `SUIAONE` column for the corresponding problem in the message browser.

By taking ownership of the problem, you have indicated that you are working to change the condition that caused the problem message. Your ownership ensures that other operators focus on solving other network problems instead of duplicating your efforts.

12. After solving the problem, delete it from the problems presenter:

- a. Select the problem for BTS-3.
- b. Click `[Discharge]`.

Notice that the corresponding problem message is deleted from the message browser.

13. You can work with a problem message in the message browser. In the message browser, problem messages are identifiable by a topology application name and the message group name starting with the text: `Telco`. In the message browser, own the problem message for BTS-7:

- a. Click anywhere in the problem message entry for BTS-7.
- b. Click `Actions:Messages->Own`.

Notice that the `Owned by` field in the problems presenter reflects your user name for this message.

Managing the Telecom Domain

14. After solving the problem, delete it from the message browser:

- a. Select the problem message for BTS-7.
- b. Click `Actions:Messages->Acknowledge`.

Notice that the corresponding problem is deleted from the problems presenter.

15. From either viewer, you can open the map that contains the object causing the problem. Open the map from the problems presenter:

- a. In the problems presenter, select the problem for the NE shortname BTS-1.
- b. Click `[Locate]`.

The map presenter displays the map showing BTS-1, the source of the problem, selected.

16. Close the map:

In the open map, click `File:Close`.

17. Open the map from the message browser:

- a. In the message browser, select the problem message for the object BTS-1.
- b. Click `Actions:Start->Telco iNOC->Highlight in Map`.

The map presenter displays the map showing BTS-1, the source of the problem, selected. This is the same map that you saw when navigating from the problems presenter to the topology.

18. Observe the distinction between the way telecom events and other events are handled:

- a. In the node bank of the OVO operator GUI, select the network management system.
- b. Click `Actions:Start->Telco GPRS Demo->Send IDC Alarms`.

Four additional messages appear in the message browser. Because these messages are not related to telecom equipment, they do not appear in the problems presenter. The topology server only processes messages in a Telco message group; therefore, only the Telco messages appear in the problems presenter.

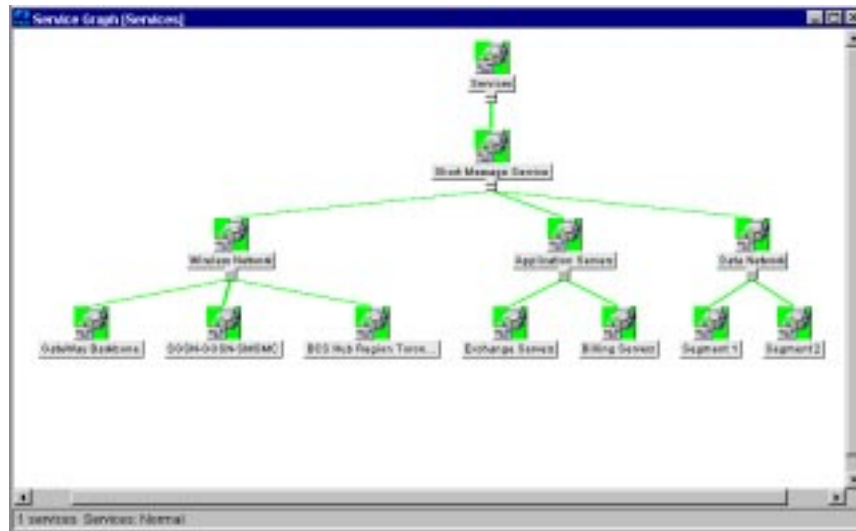
19. Delete all remaining messages from the message browser. Because the viewers are synchronized, you only need to delete the messages from one viewer.

Click Actions:Messages->Acknowledge All Messages.

Managing Services

With OVSACN you can create interesting service definitions that cross management domains. The short message service is such a service. The mobile telecom domain, the IP network domain, and the systems and applications domain are all represented in the short message service. The short message service hierarchy is shown in Figure 2-6.

Figure 2-6 Short Message Service Hierarchy



To manage services:

1. Log on to the system as described in “Logging on to the Network Management System” on page 15.
2. For the purpose of illustration, start the topology GUI:
 - **Windows NT:** In the OVO operator GUI, click Actions:Start->Telco iNOC->Launch NT GUI.
 - **UNIX:** In the OVO operator GUI, click Actions:Start->Telco iNOC->Launch UX GUI.

The GPRSNetwork map and the problems presenter appear.

3. On the `Contents` tab of the problems presenter, select the `Show All` check box.

The problems presenter now displays all open problems in the user's management domain, as constrained by the current operation profile.

Having the problems presenter open while managing services is not required.

4. Use the `Send IDC Alarms` application to simulate the sending of events, one of which affects the short message service:
 - a. Click on the name of your network management server in the node bank.
 - b. Click `Actions:Start->Telco GPRS Demo->Send IDC Alarms`.

An application window displays the events being sent.

After a few seconds, the message browser contains four additional messages.

5. Notice that the `Services` icon in the scoping pane has now turned red. This color indicates that at least one service is in critical condition.
6. You can manage services from the scoping pane in the OVO operator GUI. Quickly identify the lowest failure for the short message service:
 - a. Select the service bank.
 - b. Right-click and click `Get Root Causes`.

The `Service Root Cause Graph` shows the hierarchy of services involved in this critical service outage. The `Exchange Server` is at the lowest level in the hierarchy. Because this service is the lowest level failure, it should be corrected before performing any further work on the service.

7. Before working to solve the `Exchange Server` situation, own the message:
 - a. Click anywhere in the `Exchange Server` message.
 - b. Click `Actions:Messages->Own`.

Notice that the `Owned by` field in the problems presenter reflects your user name for this message.

Managing Services

8. Resolve the Exchange Server error.
 - a. If this were a real-time message, you would use the tools in the applications bank and/or the tools provided by your supplier to identify and correct the problem with the Exchange Server.
 - b. Select the Exchange Server message in the message browser.
 - c. Click `Actions:Messages->Acknowledge` to acknowledge the message.
 - d. Notice that the `Services` icon no longer shows critical status.
9. Use the Send TCP DC Alarms application to simulate the sending of events, one of which affects the short message service:
 - a. Click on the name of your network management server in the node bank.
 - b. Click `Actions:Start->Telco GPRS Demo->Send TCP DC Alarms`.

An application window displays the events being sent.

After a few seconds, the message browser and problems presenter each contain several messages.

10. In the OVO operator GUI, notice the message from the Topology application.

This message was generated by OV Topology Server. It communicates that the equipment failure indicated by the problem affects the short message service. This message caused the `Services` icon in the scoping pane to turn orange for major status.

11. Locate the service affected by the topology object:
 - a. Select the message from the Topology application.
 - b. Right-click and click `Select Service` in Tree.

The service bank expands with the `BCS Hub Region Toronto NW` service highlighted. This is the service impacted by `BTS-4`, the topology object listed in the Topology application message.

12. Launch the map that shows the relative location of the object affecting the service:

- a. Select the message for BTS-4 from the GSM application.

The message from the Topology application is for object BTS-4. The topology application is only involved with services. The GSM application manages the topology objects. So, to connect with the map presenter, we use the message from the GSM application.

- b. Click `Actions:Start->Telco iNOC->Highlight in Map`.

The map that contains the topology object listed in the message appears.

13. You can manage services from the topology GUI. List the services that an object affects:

- a. In the Toronto map, select BTS-4.

- b. Right-click and click `Show Services`.

An information window shows that the object BTS-4 is mapped to the BSC Hub Region Toronto NW service.

- c. Click `[OK]` to close the window.

- d. In the Toronto map, select BTS-7.

- e. Right-click and click `Show Services`.

An information window shows that the object BTS-7 is not mapped to any services.

- f. Click `[OK]` to close the window.

14. Delete all remaining messages from the message browser:

Click `Actions:Messages->Acknowledge All Messages`.

Managing Operator Access

Operation profiles define an operator's network management scope. This scope includes:

- The nodes to manage. You can only act on the nodes that appear in the node bank.
- The message groups of interest. The message browser contains only those messages that are in the configured message groups.
- The applications available. The applications bank and OVO operator GUI menus contain only those commands that apply to the nodes and message types to be managed.
- The services to manage. You can only act on the services that appear in the services bank.

Additionally, if the optional OV Topology Server is configured, the operator's scope includes the actions available in the topology GUI. The menus contain only those commands that apply to the objects to be managed.

The administrator configures operation profiles based on the tasks each operator is assigned.

To examine the effect of using operation profiles:

1. Log on to the system as described in "Logging on to the Network Management System" on page 15. `opc_adm` is the default user name for an OpenView software administrator's session.
2. Start a second OVSACN session as described in "Logging on to the Network Management System" on page 15 with the following changes to the information entered into the logon window:
 - Username: `telco_op`
 - Password: `telco_op`

This is the default telecom operator's network management session.

3. Arrange the two OVO operator GUI windows such that you can see both of them on your computer monitor.
4. In each window, expand the node bank. Compare the nodes available for management.

5. In each window, expand the message group bank.

Notice that the telecom operator session focuses only on telecom message groups when compared to the administrator session. In this way, you can receive only the messages that are applicable to your job function.

6. In each window, expand the applications bank.

Notice that the telecom operator session has fewer applications available when compared to the administrator session. By limiting the available applications, you can easily find the tools you need without sorting through extraneous information.

7. In each window, expand the services bank.

The telecom operator session and administrator session both include the short message service.

8. Use the Send IDC Alarms application to simulate the sending of application and system events:

- a. In the node bank for the telecom operator, click on the name of your network management server.
- b. Click `Actions:Start->Telco GPRS Demo->Send IDC Alarms`.

Four events appear in the administrator session message browser while only one event appears in the telecom operator message browser.

9. Compare the message groups of the received messages to those listed in the message group bank.

The message that the telecom operator received is from a message group that is not part of this operation profile. Because the sending application is involved in the short message service, which is in the telecom operator's operation profile, this message is visible to the telecom operator.

10. Delete all remaining messages from the message browser:

Click `Actions:Messages->Acknowledge All Messages`.

Managing Outages

With the optional OV Topology Server, you can create outage plans that specify the telecom equipment that is known to be in an outage state. The OV Topology Server processes messages from network elements when they are on outage but does not change the status on the corresponding object in the map presenter. Thus, the operator can focus on identifying and solving problems that are not expected.

To see how outages affect messages and problems:

1. Log on to the system as described in “Logging on to the Network Management System” on page 15.
2. Start the topology GUI:
 - **Windows NT:** In the OVO operator GUI, click `Actions:Start->Telco iNOC->Launch NT GUI.`
 - **UNIX:** In the OVO operator GUI, click `Actions:Start->Telco iNOC->Launch UX GUI.`

After a few seconds, the GPRSNetwork map and the problems presenter appear.
3. Use the Send TCP DC Alarms application to simulate the sending of events:
 - a. Click on the name of your network management server in the node bank.
 - b. Click `Actions:Start->Telco GPRS Demo->Send TCP DC Alarms.`

An application window displays the events being sent.

After a few seconds, the message browser contains several messages. The Toronto icon in the map presenter shows a status change.
4. Drill down to determine the cause of the status change.
 - a. In the GPRSNetwork map, double-click the Toronto icon.

The Toronto map appears.
 - b. Notice that several icons show non-normal status.

5. Delete the messages from the message browser:
Click `Actions:Messages->Acknowledge All Messages`.
The icons on the `Toronto` map all show normal status.
6. Create an outage plan for the telecom object `BTS-3`:
 - a. In the map presenter, click `Presenters:Outages`.
An empty outage plan presenter appears.
 - b. Set the origin for the outage plan presenter:
 1. In the `Toronto` map, select the `BTS-3` object.
 2. Shift-click and drag the object to the outage plan presenter.
`BTS-3` becomes the origin of the outage plan presenter.
 - c. In the outage plan presenter, click `[Submit]`.
A `Submit Outage` window appears.
 - d. Input data for the outage:
 1. Enter start and end times for the outage.
 2. Select the `Auto Restore` check box to automatically reset the object outage state at the outage end time.
 3. Click `[Submit]`.
The submitted outage appears in the outage plan presenter.
When the outage start time occurs, a lock symbol appears on the `BTS-3` icon on the `Toronto` map. This symbol indicates the state change.
7. While `BTS-3` is on outage, run the `Send TCP DC Alarms` application again.
All of the messages appear in the message browser.
8. Notice the `BTS-3` icon on the `Toronto` map.
It still shows normal status because the object is in the outage state.
9. Look at the problems presenter.
The problem for `BTS-3` shows that this object is in the `Locked` state.

Hands-On Demonstration

Managing Outages

10. Wait for the outage end time to pass.

The outage is removed from the outage plan presenter.

The lock symbol is removed from the BTS-3 icon on the Toronto map.

11. Delete the messages from the message browser:

Click Actions:Messages->Acknowledge All Messages.