Symmetricom

Open System Management Framework (OSMF)

for NT

Release 3.0

Administrator's Guide

This guide provides information necessary to manage and maintain the 55451A open synchronization management framework (OSMF) hardware and software. The information in this manual applies to OSMF software having the software version number listed below.

SOFTWARE VERSION NUMBER: 3.0

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Warning Symbols That May Be Used In This Book

Instruction manual symbol; the product will be marked with this symbol when it is necessary for the user to refer to the instruction manual.

Indicates hazardous voltages.

Indicates earth (ground) terminal.

or

Indicates terminal is connected to chassis when such connection is not apparent.

Indicates Alternating current.

Indicates Direct current.

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Introduction and General Information

1.1 In This Guide

1.1.1 The 55451A open synchronization management framework (OSMF) System Administrator's Guide provides information necessary to manage and maintain the OSMF hardware and software. It makes the assumption you have experience with the Windows NT operating system, HP OpenView, and Oracle database administration.

1.1.2 This guide includes the following topics:

- Features supported in the current version of the software as well as a modular description of the software
- Responsibilities of the system administrator
- Basic system administration tasks, such as starting and stopping the software, and routine system administration
- OSMF user management
- System backup and recovery
- Installation of OSMF software and software upgrades
- Commissioning of SSUs

1.1.2.1 Naming Conventions Used in this Guide

This guide uses several names to refer to the same objects. The usage of multiple terms for the same object helps define the relationship between objects in different situations. To establish naming conventions, the objects and their corresponding names are listed in the following table:

Object	Names Used for the Object
55451A open synchronization management framework software	OSMF software for Windows NT, OSMF software, OSMF
Personal Computer hardware	OSMF Management Server, OSMF Management Client, OSMF Management Console, OSMF workstation, OSMF computer, OSMF system, management system, element manager
55400A synchronization supply unit	SSU, NSU, network element, network object
55300A primary reference source	PRS, GPS, network element, network object

1.2 Description of the OSMF Software

1.2.1 The OSMF software provides an easy-to-use graphical user interface (GUI) for the management of SSUs that make up the synchronization network. SSUs are managed via a network connection between the management system and each SSU. Once this connection is established, the OSMF software can be used to modify the topology of the synchronization network, and manage the configuration of the individual SSUs in the network. Version 3.0 of the OSMF software also provides limited capacity to manage primary reference sources (GPSs) in the network.

1.2.1.1 Features of the OSMF Software - Version 3.0

Standard Edition - The following features are included in the standard edition of version 3.0 of the OSMF software for Windows NT:

- Support for up to four Management Consoles (also referred to as Management Clients).
- Network communications with SSUs using either the TCP/IP network protocol or the X.25 network protocol.
- Single-screen graphical representation of the synchronization network topology, with color coding to indicate the severity of alarms originating at SSU nodes within the network.
- Limited capacity to manage primary reference sources (GPSs) in the network. GPSs can be symbolically represented on the topology maps, with color coding to indicate the severity of alarms originating from them. Alarms emanating from GPS nodes will also be viewable in the Alarm Viewer. The total number of network elements (GPSs *and* SSUs) that can be managed by the OSMF software is 50.
- Display of synchronization trails that represent the connectivity between network elements. If a problem exists with the signal path represented by the sync trail symbol, the color of the symbol will change to indicate the nature of the problem.
- The ability to manage multiple system users in three different user classes, which determine the level of capability that each user has when using the system.
- A Network Element Status display, which can be used to remotely view the status of selected panel indicators on the various boards of a specified SSU.
- An Alarm Viewer, which provides alarm/event sorting and filtering capabilities and the ability to obtain more detail on alarms or events emanating from SSUs.
- Alarm auto-synchronization tasks that ensure that the list of alarms displayed in the Alarm Viewer dialog box match the outstanding alarms in the SSUs.
- The ability to collect and graphically display performance data for a variety of SSU input channel measurement types, including the ability to set masks and measurement thresholds.
- The ability to produce formatted event reports and performance reports that can be printed on a system printer.
- Inventory management, that allows for the management of a master database of the various hardware resources available in the network.
- The ability to modify the configuration of any SSU that is actively being managed by the software.
- A heartbeat task, which provides automatic, periodic checking of the connectivity to all managed SSUs.
- An auto-alignment task which ensures that the SSU configuration information contained in the OSMF database is aligned with the actual configuration of the SSUs.
- An event forwarder, which allows Element Manager integration with upper-layer management systems.
- On-line help, which affords easy access to task, feature, and troubleshooting information via an on-screen display.

Deluxe Edition - The following *additional* features are included in the deluxe edition of version 3.0 of the OSMF software for Windows NT:

- A choice of either HP OpenView Windows (OVW) or OSMF status propagation rules to indicate changes in status of network elements at the lower levels of the containment hierarchy.

- Management domains, which specify the network elements that a given user can access.

- A transaction log, which includes a record of transactions between users and the system, as well as certain internal system transactions. The Security-class user has the ability to view the transaction log and produce formatted transaction log reports that can be printed on a printer.

- The ability to create SSU users, and set the date and time on SSUs, remotely from the OSMF system.

- The ability to create and store one or more default SSU configurations. These default configurations, which are stored in the database, can then be downloaded to SSUs when the SSUs are managed or remanaged.

- The ability to download the configuration of a previously managed SSU to another SSU when that SSU is managed or remanaged.

- The ability to download firmware code from the OSMF system to the EPROMs within targeted SSUs.

1.3 OSMF Software System Overview

1.3.1 The OSMF software is integrated with the HP OpenView Network Node Manager (NNM) platform to present a graphical user interface (GUI) to the topology of the synchronization network as well as to the management of those network elements (SSUs and GPSs) that comprise the network. A Windows NT-based OSMF system installation can consist of one *Management Server* (required) and up to four *Management Consoles* (also known as *Management Clients*).

Management Servers and Management Consoles both provide GUI services as well as TL1 Request/Response communications (*transaction handling*) between themselves and network elements in the synchronization network.

In addition, the Management Server contains the OSMF database, and provides synchronization services (configuration alignment, hardware alignment, and alarm synchronization), Event receiving and processing services (*event handling*), and status handling. The Management Server acts as the repository for System Information (topology, event, inventory, user domain, and configuration information), and this information is shared between the Management Server and Management Consoles via the network connection.

The following figure shows a simplified block diagram of an installed OSMF system consisting of one Management Server and two Management Consoles:
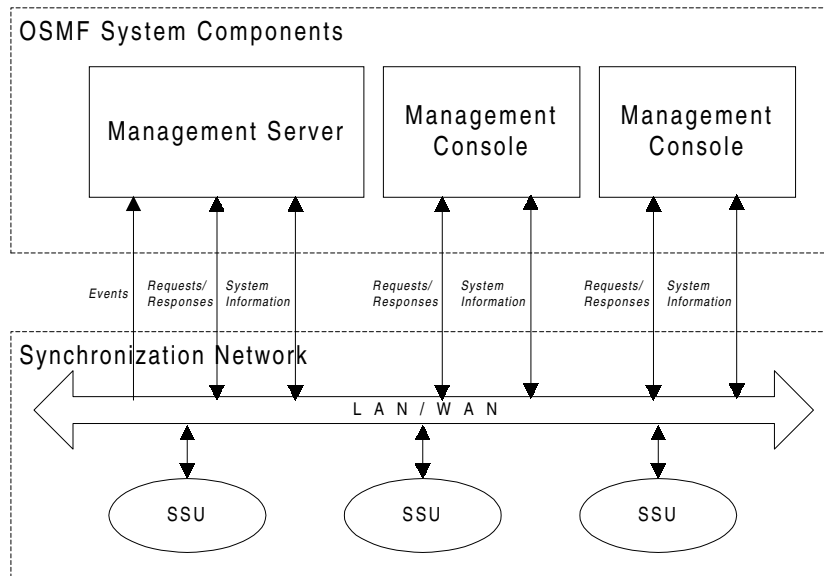
Following is a block diagram of the Management Server software.
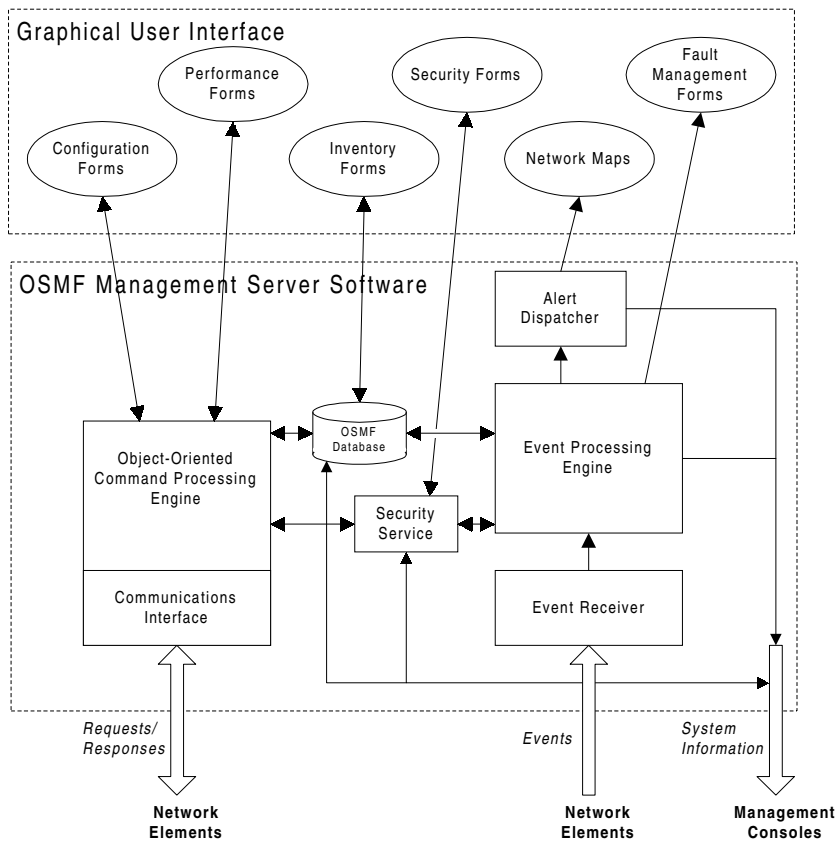
Following is a block diagram of the Management Client software.
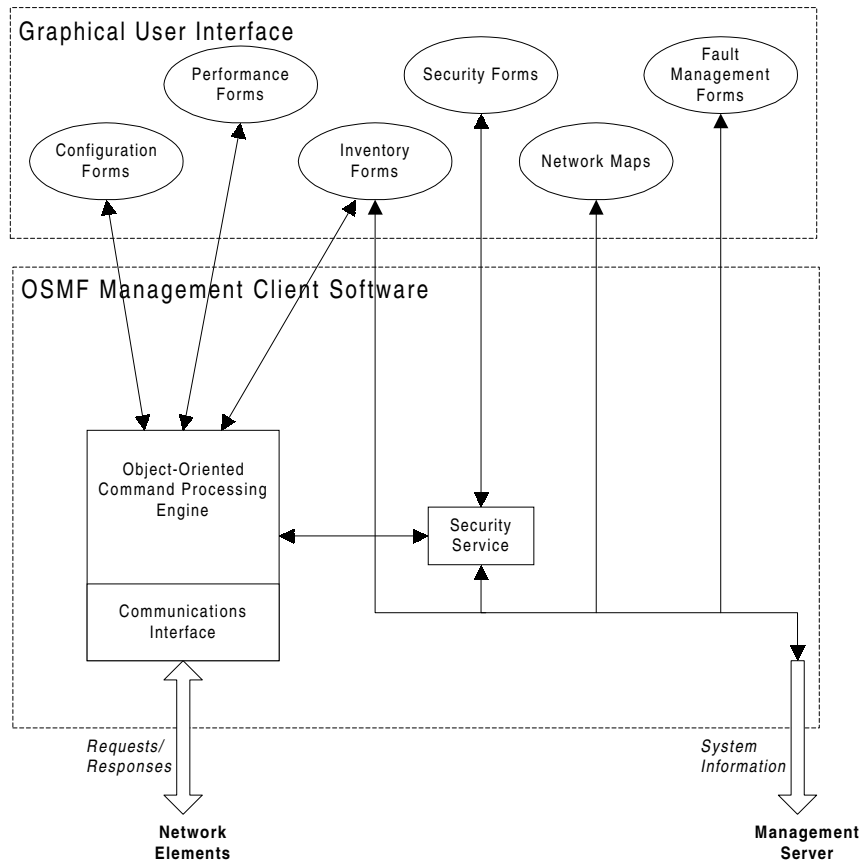
The software modules shown in the block diagrams above and described below do not necessarily represent actual OSMF software processes.

1.3.1.1 Transaction and Event Handling

The OSMF system software can be thought of as having two main functions: transaction handling and event handling. Transaction handling takes place on Management Clients as well as the Management Server, and involves the processing of command transactions (request-and-response actions) between the OSMF software and the SSUs in the synchronization network. Event handling takes place on the Management Server and involves the processing of alarms and other events from the SSUs and GPSs.

The software modules involved in Event Handling include the Event Receiver, Event Processing Engine, Alert Dispatcher, Fault Management Forms, and Network Map. The following describes the function of these modules.

• **Event Receiver -** The Event Receiver receives events from the managed as well as unmanaged SSUs and GPSs in the synchronization network and forwards only valid events from managed SSUs and GPSs to the Event Processing Engine.

- **Event Processing Engine -** The Event Processing Engine receives events from the Event Receiver and determines their status and type. Depending on the status and type of an event, the Event Processing Engine logs the event into the appropriate event database table and if necessary sends an alert message to the Alert Dispatcher (alert messages result from events that signal a change of status in SSUs or GPSs). The Event Processing Engine also passes events on to the appropriate Fault Management Forms, and to Management Clients, so that the events can be displayed in the client's Fault Management Forms.

- **Alert Dispatcher -** The Alert Dispatcher receives alert messages from the Event Processing Engine. It then sends status update information as appropriate to the Network Maps in each of its registered sessions of OSMF software, and passes status update information to Management Clients, so that status can be updated in the client's Network Maps.

- **Network Maps -** These are graphical representations of the synchronization network. Network Maps are created using the OSMF software and are comprised of either actively managed or unmanaged SSU and GPS objects (icons). Management Servers as well as Management Clients display and provide map modification services, however, the topology information that is displayed in the maps is managed on the Management Server.

- **Fault Management Forms -** These are the user interfaces to the fault management functions of the OSMF software. The fault management forms are the Network Element Status, Alarm Viewer, and Event History Log, and Transaction Log forms. Fault management information is typically processed by the Management Server, and passed on to Management Clients for presentation. Since there can be several registered sessions of the OSMF software, there can be multiple active fault management forms. Specifically, there can be up to two Alarm Viewers or Event History Logs open per OVW session (note that the Alarm Viewer can be invoked via the Network Element Status form). There is no limit on the number of Network Element Status forms open per OVW session, however, no more than one per SSU is recommended.

The software modules involved in Transaction Handling include the Communications Interface, Object-Oriented Command Processing Engine, Security Service, Security Forms, Configuration Forms, Performance Forms, and Inventory Forms. The following describes the function of these modules.

- **Communications Interface -** The Communications Interface handles the connection and message transport operations between the OSMF platform and the remote interface of the SSUs. It receives TL1 requests from the Command Processing Engine and sends them to the SSUs as well as receives TL1 responses from the SSUs and sends them to the Command Processing Engine.

- **Object-Oriented Command Processing Engine -** The Command Processing Engine handles transactions (request/response actions) between OSMF software processes and SSUs. On Management Clients, the Command Processing Engine interfaces directly between various OSMF forms or processes and SSUs, and passes any resultant database change information to the Management Server. On the Management Server, the Command Processing Engine might interface with the configuration database, or with SSUs, depending on the nature of the transaction. As an example, if a Management Server process requests the current configuration of an SSU, the Command Processing Engine will extract the necessary information from the database if it's available, or it will generate and pass the necessary TL1 commands to the Communications Interface in order to retrieve the configuration informa-

tion from the SSU. When handling a response, the Command Processing Engine receives the TL1 response from the Communications Interface, extracts the necessary information, and appropriately processes it (passes the response data to the requesting process, updates the database, etc.).

- **Security Service -** The Security Service provides security management functions for the OSMF software.

- **Security Forms -** These are the user interfaces to the security management functions of the OSMF software. The current software release contains one security form, called the Management Domain form. Management domains can be created or modified on any system (Management Clients or the Management Server), but user verification takes place on the Management Server. There can be no more than one Management Domain form open per OVW session.

- **Configuration Forms -** These are the user interfaces to the configuration management functions of the OSMF software. The configuration forms include the current SSU configuration forms, the default configuration management forms, and the Firmware Download form.

  Since there can be several registered sessions of the OSMF software, there can be multiple active Configuration forms. Specifically, there can be no more than one Configuration:Modify form open per SSU (no more than two per OVW session is recommended). No more than two Configuration:View forms per OVW session is recommended.

- **Performance Forms -** These are the user interfaces to the performance management functions of the OSMF software. The software contains one performance form, called the Performance Monitor. Since there can be several registered sessions of the OSMF software, there can be multiple active Performance forms.   Specifically, there should be no more than one Performance Monitor form open per SSU (no more than two per OVW session is recommended).

- **Inventory Forms -** These are the user interfaces to the inventory management functions of the OSMF software. The inventory forms include the Inventory, Output Card Inventory, and Rack Inventory form. Since there can be several registered sessions of the OSMF software, there can be multiple active Inventory forms. Specifically, it is recommended that there be no more than two Inventory forms open per OVW session (note that the Rack Inventory form can be invoked via the Configuration forms).

1.3.1.2 Synchronization Processes

One of the key functions of the OSMF software is the continued assurance that the SSU and GPS information as stored in the OSMF database is synchronized with the relevant information in the SSUs and GPSs that comprise the synchronization network. The OSMF software uses several software processes to assure that this synchronization is maintained. Synchronization processes run on the Management Server. These processes ensure synchronization is maintained by monitoring the four flags described below:

Flag	Description
available	This flag is set to TRUE when the OSMF software's Heartbeat Daemon (explained below) is able to send a command to and receive a response from the SSU or GPS. (If an SSU or GPS is found to be unavailable, it is also assumed that it is unaligned, and both the "available" and "aligned" flags are set to FALSE.)
managed	This flag is set to TRUE when the OSMF software is currently managing the SSU or GPS. Network elements are managed and unmanaged from the "OSMF" menu.
aligned	This flag is set to TRUE when the SSU's configuration information is aligned with its configuration information as stored in the OSMF database.
hw_aligned	This flag is set to TRUE when the hardware configuration of the SSU is aligned with its hardware configuration as stored in the OSMF database

The following paragraphs explain the configuration synchronization processes used by the OSMF software:

Heartbeat Daemon

A Heartbeat task, also known as the *Heartbeat daemon*, periodically checks each network element, that is each SSU and GPS, to determine the following:

* Whether or not the SSU or GPS is available.
* For SSUs, Whether or not the hardware configuration of the SSU is aligned with its hardware configuration as stored in the database.
* For SSUs, Whether or not the SSU's configuration information is aligned with its configuration information as stored in the database.

In operation, the Heartbeat task sequentially goes through the list of managed network elements (NEs) in the OSMF database and performs the following functions on each NE in sequence:

1 If the NE is an SSU, The Heartbeat task *first* checks whether or not the "hw_aligned" flag for the SSU is set to TRUE. If the flag is set to TRUE, it continues on with step 2 (below) for the *same* SSU. If it discovers that the "hw_aligned" flag is set to FALSE, it invokes a process called

"check_hw_align" (refer to *Hardware Alignment*, below), then performs step 1 for the *next* NE record stored in the database.

If the NE is a GPS, the Heartbeat task sends it the "RTRV-HDR" TL1 command to determine if it is available. If the GPS responds to the "RTRV-HDR" command, the Heartbeat task sets the "available" flag in the database for the GPS to TRUE, then performs step 1 for the *next* NE record in the database. If the GPS does not respond to the "RTRV-HDR" command, the Heartbeat task sets the "available" flag in the database for the GPS to FALSE, then performs step 1 for the *next* NE record in the database.

2 If the "hw_aligned" flag for the SSU is set to TRUE, the Heartbeat task attempts to retrieve the time that the SSU was last configured (the last_config_time) from the SSU. If it is successful in retrieving the last_config_time, it then compares this value to the last_config_time that is stored in the database for the SSU. The following table explains the SSU condition ascertained by the Heartbeat task from the comparison, as well as the action taken by the Heartbeat task:

Heartbeat Task can Retrieve last_config_time from the SSU?	The last_config_time in Database Matches last_config_time from the SSU?	Condition and Action
Yes	Yes	*Network Element is Available and Aligned.* The Heartbeat task goes to the next NE record stored in the database, and performs step 1 as explained above.
Yes	No	*Network Element is Available, but Unaligned.* The Heartbeat task sets the "aligned" flag in the database for the SSU to FALSE, then goes to the next NE record stored in the database, and performs step 1 as explained above.
No	*N/A*	*Network Element is Unavailable.* The Heartbeat task sets the "available" flag as well as the "aligned" flag in the database for the SSU to FALSE, then goes to the next NE record stored in the database, and performs step 1 as explained above.

The "aligned" and "available" database flags that are set by the Heartbeat task are subsequently used by the Alignment daemon (refer to *Alignment Daemon*, below).

NOTE In the current version of the OSMF software, the heartbeat is sent out to all Network Elements every 20 seconds.

Alignment Daemon

An SSU Alignment task, also known as the *Alignment daemon*, periodically goes through the list of SSUs in the OSMF database identifying SSUs for which the "aligned" flag is set to FALSE, and the "available" and "managed" flags are set to TRUE.

When an SSU is identified as having its "aligned" flag set to FALSE and its "available" and "managed" flags set to TRUE, the Alignment task acquires a database lock on the SSU to prevent other processes from attempting to realign it or modify its configuration during the realignment process. After the database lock is procured, the Alignment task goes through the following sequence:

• The local port on the SSU is disabled.
• The SSU's configuration is uploaded to the database.
• The "aligned" flag is set to TRUE for the SSU.
• The last_config_time is set at the SSU, then uploaded to the database.
• The local port is re-enabled if it was enabled before the start of re-alignment.
• The database lock is released for the SSU.

NOTE   If, during the database walkthrough, the Alignment task discovers unaligned SSUs that are either unmanaged or unavailable, it does not act on them, however, they are checked again the next time the database is walked through by the Alignment task.

If the Alignment task cannot procure a database lock because the SSU has already been locked, it returns an error which explains the reason for the failure (whether it is already being re-aligned, or modified). In this case, the SSU will be aligned as soon as the Alignment task walks through the database and discovers that the SSU is available, managed, and not locked.

Alarm Synchronization

The OSMF software obtains a list of active alarms from each SSU and GPS and compares these with the alarms in its database, which are the alarms shown in the Alarm Viewer dialog box. During this comparison, any alarms that are in the database (still active in the Alarm Viewer) but are no longer active in an SSU or GPS are considered *expired*. Once alarms have expired, they are transferred from the Alarm Viewer dialog box to the Event History Log dialog box.

NOTE   In the current version of the OSMF software, the alarm synchronization process repeats every 12 hours.

Hardware Alignment

Whenever the hardware configuration of an SSU is modified (as when certain boards are either added or removed), the following events are generated by the SSU, as relevant:

• OPCDIN (an output card has been inserted into a slot)
• OPCDNP (a previously-detected output card has been removed from its slot)
• ITHGONE (an ITH card is missing)

Whenever any of these events are received by the OSMF software for a given SSU, the OSMF software sets the "hw_aligned" flag for the SSU to FALSE.

As previously stated under *Heartbeat Daemon*, above, the Heartbeat task checks the state of the "hw_aligned" flag, and if it discovers that the flag is set to FALSE, it invokes a process called "check_hw_align." The "check_hw_align" process determines the actual state of hardware for the SSU, and acts accordingly.

- If "check_hw_align" determines that the hardware is unaligned because of the addition of boards, it updates the rack inventory and output card inventory database tables accordingly with the relevant information, and then sets the "hw_aligned" flag to TRUE.

- If "check_hw_align" determines that the hardware is unaligned because output cards have been deleted, it does not change the "hw_aligned" flag, so it remains set to FALSE. Instead, it generates a secondary event, called "Secondary Event - Configurable Units Removed," or SE-CFGRM (which has a severity of Critical).

In the case where the SE-CFGRM event is generated, the "Configuration:Modify" dialog box presents a warning dialog box to the user informing that a reduction in the number of output cards has been detected, and prompts the user as to whether or not the output card records should be deleted from the database. When the user elects to delete the cards from the database, the rack inventory and output card inventory database tables are updated, commands are issued to the SSU to remove the cards from its inventory, the SE-CFGRM event is cleared, and the "hw_aligned" flag is set to TRUE.

1.4 System Requirements

1.4.1 The following is required to run the 55451A OSMF software.

1.4.1.1 OSMF Management Server System Requirements

The OSMF Management Server software requires a Pentium-class computer system running the Microsoft Windows NT operating system. The following is the recommended configuration:

- Pentium-class computer system with 200 MHz processor (or above - Pentium-II processor recommended)
- 192 MB RAM (256 MB RAM recommended)
- 600 MB of hard disk space
- Hard drive partitioned as an NTFS file system
- CD-ROM Drive (if software installation will take place from a CD)
- Microsoft Windows NT Server version 4.0 operating system, configured as a Primary Domain Controller
- Microsoft Windows NT version 4.0 Service Pack 3
- HP OpenView Network Node Manager version B.05.02
- Patch "NNM_00085" for the HP OpenView Network Node Manager
- Oracle 8 release 8.0.4.0.0 for Windows NT (typical installation)
- Oracle Developer/2000 release 2.1 for Windows NT (typical installation)
- Oracle Developer/2000 patches (patch index 573), as follows:
  - Oracle Forms Runtime Version 5.0.6.10.0 for Windows NT

- Oracle Reports Runtime Version 3.0.5.9.0 for Windows NT
- Microsoft Internet Explorer version 4.0 (*for On-Line Help*)
- Adobe Acrobat Reader version 4.0 (*for On-Line Help*)

1.4.1.2 OSMF Management Console System Requirements

The OSMF Management Console ("Management Client") software requires a Pentium-class computer system running the Microsoft Windows NT operating system. The following is the recommended configuration:

- Pentium-class computer system with 200 MHz processor (or above - Pentium-II processor recommended)
- 64 MB RAM (128 MB RAM recommended)
- 50 MB of hard disk space
- Hard drive partitioned as an NTFS file system
- CD-ROM Drive (if software installation will take place from a CD)
- Microsoft Windows NT Workstation version 4.0 operating system
- Microsoft Windows NT version 4.0 Service Pack 3
- HP OpenView Network Node Manager (Client Console) version B.05.02
- Patch "NNM_00085" for the HP OpenView Network Node Manager
- Oracle Developer/2000 release 2.1 for Windows NT (typical installation)
- Oracle Developer/2000 patches (patch index 573), as follows:
  - Oracle Forms Runtime Version 5.0.6.10.0 for Windows NT
  - Oracle Reports Runtime Version 3.0.5.9.0 for Windows NT
- Microsoft Internet Explorer version 4.0 (*for On-Line Help*)
- Adobe Acrobat Reader version 4.0 (*for On-Line Help*)

1.4.1.3 Hardware Requirements for SSUs

To be managed by the 55451A OSMF software, an 55400A Synchronization Supply Unit must include one of the following Network Information Management (NIMC) cards:

- 55452A NIMC card (standard configuration) to support TCP/IP connectivity.
- 55452A Option 002 NIMC card to support X.25 connectivity.

NOTE   The current version of 55451A OSMF software does not support TP-4 connectivity.

1.5 System Performance

1.5.1 In general, system performance will be adequate for most situations when the OSMF software is the only application running on the system. There are, however, several ways in which system performance can be boosted if that becomes necessary or is desired.

1.5.1.1 Memory

The RAM specifications shown in the *System Requirements* section above are considered minimum requirements for normal system installations. If other applications will be running on the system concurrently with the OSMF application, or if a large number of network elements will be managed by the system, more memory likely will be needed for optimum performance.

In general, enough memory should be installed such that the system does not memory-swap. You can monitor how much memory-swapping is occurring using the system's performance monitor. To monitor memory-swapping:

1 Choose **Start ⇒ Programs ⇒ Administrative Tools ⇒ Performance Monitor**.

2 Choose **Add to Chart...** from the Performance Monitor's "Edit" menu.

3 In the "Add to Chart" dialog box, select **Memory** in the "Objects" drop-down list, then while holding down the **Ctrl** key, select both **Pages/sec** and **Available Bytes** in the "Counter" scroll-box, and click the **Add** button.

   The graphs displayed in the performance monitor will help you determine the amount of memory-swapping going on, and how much memory is available (for an explanation of the data being displayed in the performance monitor, double-click on the legend at the bottom of the performance monitor, then click the **Explain >>** button in the dialog box that appears).

1.5.1.2 Tasking Model

Foreground applications should be given highest performance priority, as this will make the Graphical User Interfaces most responsive:

1 Choose **Start ⇒ Settings ⇒ Control Panel**, then double-click on the "System" icon.

2 In the "System Properties" dialog box, click the "Performance" tab, then slide the "Application Performance" slider to "Maximum."

1.5.1.3 Video Performance

The OSMF application is a very graphical application. Installation of a high quality video card will yield better performance for operations like panning and zooming.

1.5.1.4 Network Throughput

On Management Servers, you can maximize network throughput for network applications.

1 Choose **Start ⇒ Settings ⇒ Control Panel**, then double-click on the "Network" icon.

2 In the "Network" dialog box, click the "Services" tab, select **Server** under "Network Services," then click the **Properties...** button.

3 Click on the "Maximize Throughput for Network Applications" radio button so that it is selected, then click **OK**.

This setting optimizes the server's memory for distributed applications that do their own memory caching.

1.5.1.5 Additional Information

A good discussion on tuning a Windows NT system can be found on the Microsoft TechNet CDs. The article, entitled *Optimizing and Tuning of Windows NT*, discusses using the operating system's performance monitor, optimizing system memory, the processor, and I/O system resources. The Microsoft TechNet service, which includes the TechNet CDs, is available from Microsoft.

1.6 Responsibilities of the System Administrator

1.6.1 The system administrator is responsible for maintenance of the OSMF system. This requires the system administrator to understand both the hardware and the software installed in the system.

1.6.2 The main responsibilities of the system administrator are as follows:

- Creation and management of OSMF system users.
- Periodic backup of system files and the system database.
- Archival of event log, transaction log, and performance data files.
- Updates to the operating system and OSMF software when necessary.
- Implementation of system security measures.

CAUTION The security-level ("svsec") user has the potential to cause data loss or corruption of the network topology. Users of the security-level class have the ability to modify network topology, configuration settings, management status of SSUs, etc. It is the responsibility of the system administrator to secure the OSMF system against unintentional and unauthorized operation.

1.7 Prerequisite Knowledge

1.7.1 As stated previously, the procedures in this manual assume you have Windows NT, HP OpenView, and Oracle database administration experience.

1.8 Related Documentation

1.8.1 In some cases, procedures in this guide might refer you to procedures or other information contained in documentation that includes the SSU documentation (*55400 Synchronization Supply Unit Site Preparation Guide* and *55400 Synchronization Supply Unit User's Manual*), GPS documentation, Windows NT documentation, and HP OpenView documentation.

2

Starting and Stopping the OSMF Software

2.1 In this Chapter

2.1.1 The procedures in this chapter explain how to start and stop an OSMF software session. Performing these tasks are often necessary prior to performing other system administration tasks.

2.2 To Start an OSMF Software Session

2.2.1 Use the following procedure when initiating a session of the OSMF software. Note that all steps might not be necessary, for example, the OSMF system might already be powered on. The general procedure is as follows:

- Power up the OSMF system and log into Windows NT.
- Start the Oracle database, if necessary.
- Ensure that all necessary OSMF software daemons are active.
- Start the OSMF software operator session.

CAUTION   Once you have initiated an OSMF software session using the following procedure, be aware that you must correctly stop the session using the procedure in this chapter. Failure to correctly end the session might result in corruption of system data or data loss.

2.2.1.1 Power up the OSMF system.

If the OSMF system has already been powered up, go to *Start the Oracle database (if necessary)*. Note that you must be logged into Windows NT as "svroot" to start the Oracle database.

1 Set the power switches on the monitor and OSMF system to on. The power indicators light when power is switched on.

As the system starts up, it runs a series of checks during which numerous messages and screen changes occur. Once the start-up sequence is complete, a box containing the message "`Press Ctrl + Alt + Delete to log on`" appears.

2 Simultaneously press the **Ctrl**, **Alt**, and **Del** keys, then enter the following information in the "Logon Information" box that appears:

- *User Name field* - Enter **svroot** if it does not already appear in this field.
- *Password field* - Enter the password of the svroot user.
- *Domain* - Ensure that the domain name of the Management Server is selected.

NOTE   Initially, user svroot does not have a password assigned. If you have not yet assigned a password to user svroot, leave the Password field blank for this step.

It is advisable to assign a password as soon as possible. Refer to the procedure entitled *To Modify a System User* in the chapter entitled *Routine OSMF System Administration* for details on assigning a password to the svroot user as well as other users.

3 Click **OK** to start the log-in process.

After the login is complete, the Windows NT desktop appears.

2.2.1.2 Start the Oracle database (if necessary).

The Oracle database is normally started upon power-up of the OSMF system, however, if the system had previously been powered up, the Oracle database might have subsequently been shut down. The following procedure can be used to check if it is running, and start it if necessary.

1   Choose **Start ⇒ Programs ⇒ OSMF ⇒ System Administration ⇒ System Monitor** to check if the Oracle database is running.

The information in the System Monitor should suggest that the Oracle database is running. If the Oracle database is running, "`Oracle TNSListner80`" and "`OracleServiceSV30`" will have an indicated status of `RUNNING`.

If the System Monitor indicates the status of "`Oracle TNSListner80`" and "`OracleServiceSV30`" as `RUNNING`, go to *Start HP OpenView and the necessary OSMF software processes*. If the System Monitor indicates the status of "`Oracle TNSListner80`" and "`OracleServiceSV30`" as `STOPPED`, continue with the next step.

2   Choose **Start ⇒ Programs ⇒ OSMF ⇒ System Administration ⇒ Database Services - Start** to start the Oracle database.

As the database is starting, a "svdbstart" terminal window appears which displays some status messages. After the database startup process is complete, the "svdbstart" terminal window closes.

3   Re-check the status of "`Oracle TNSListner80`" and "`OracleServiceSV30`" in the System Monitor.

They should now have a status of `RUNNING`.

2.2.1.3 Start HP OpenView and the necessary OSMF software processes.

The HP OpenView and OSMF software processes normally are started upon power-up of the OSMF system, however, if the system had previously been powered up, they might have subsequently been shut down. The following procedure can be used to check if they are running, and start them if necessary.

NOTE   The Oracle database must be running before the OSMF software processes are started. If an attempt was made to start the OSMF software processes while the Oracle database was down, the following procedure will need to be performed again to start them *after* the Oracle database is started.

1   Check the status of the OSMF software processes in the System Monitor.

If the OSMF software processes are running, *and they were started after the Oracle database was started*, the following will be shown in the System Monitor:

```
OpenView/Oracle Service Status:
    OpenView Process Manager    RUNNING
    OracleServiceSV30                   RUNNING
    Oracle TNSListner80                 RUNNING

OSMF Daemon Status:
    ovwdb         RUNNING
    pmd           RUNNING
    svalert       RUNNING
    svalign       RUNNING
    sveht         RUNNING
    svgpsfea      RUNNING
    svhb          RUNNING
    svovwcom      RUNNING
    svss          RUNNING
```

If the System Monitor indicates that "OpenView Process Manager" and *all* OSMF daemons are RUNNING, go to *Start the OSMF Software Operator Session*. If the System Monitor indicates that "OpenView Process Manager" is STOPPED, or if "OpenView Process Manager" is RUNNING but some daemons are NOT_RUNNING, continue with this procedure.

NOTE   The Oracle database must be running before performing the next step.

2 Choose **Start ⇒ Programs ⇒ OSMF ⇒ OSMF Manager ⇒ OSMF Services - Start** to start the HP OpenView and OSMF software processes.

When the OSMF Services startup procedure commences, an "OSMF Services - Start" dialog box appears. Note that the **Restart** button in the dialog box is de-emphasized ("grayed out") at that point. As each process starts, it appears in the dialog box. After all processes have started, the **Restart** button becomes active (emphasized).

3 After the HP OpenView and OSMF software processes start, click the **Close** button in the "OSMF Services - Start" dialog box to close it.

4 Re-check the status of the HP OpenView and OSMF software processes.

The System Monitor should now indicate that "OpenView Process Manager" and *all* OSMF daemons are now RUNNING.

5 Close the System Monitor.

2.2.1.4 Start the OSMF Software Operator Session.

1 Perform the following steps to log into Windows NT as either a "Security," "Administrator," or "User" class user:

a. Choose **Start ⇒ Shut Down...**

b. In the "Shut Down Windows" box that appears, select the "`Close all programs and log on as a different user`" radio button, then click the **Yes** button.

c. When the box containing the message "`Press Ctrl + Alt + Delete to log on`" appears, simultaneously press the **Ctrl**, **Alt**, and **Del** keys.

d. Log in with the appropriate user name and password.

The user group (Security, Administrator, or User) to which the user logon belongs determines the level of capability that the user is granted when using the system. The section entitled *User Classes* in Chapter 1 of the *55451A OSMF Software User's Guide* explains in more detail exactly which tasks can be performed by users of given user classes.

NOTES   The OSMF system ships with one Security-class user created, and this user has the logon name "svroot." All subsequent users need to be created in the appropriate user group before they can log in. If a given user has not yet been created, refer to the section entitled *OSMF User Administration* in the *Routine OSMF System Administration* chapter of this manual for information on how to create the user.

   If a Windows NT user that is not a member of one of the three OSMF user groups attempts to start an OSMF operator session, a FATAL error ("`Failed to connect to Oracle database`") will occur.

---

2 Choose **Start ⇒ Programs ⇒ OSMF ⇒ User Map Session** to start the OSMF operator session.

When the OSMF session starts, the main "Root" map will be displayed on the monitor. It might appear similar to the following.

NOTE   When the map first appears, its menus, etc., will not be synchronized. Do not begin using the OSMF software until after synchronization is complete. Synchronization is complete after the word "Synchronizing" appears in the status area at the bottom of the map window, for example:

```
default [Read-Write] [Synchronizing]      For the "svroot" user.
    or
default [Read-Only] [Synchronizing]       For other users.
```

   then disappears.
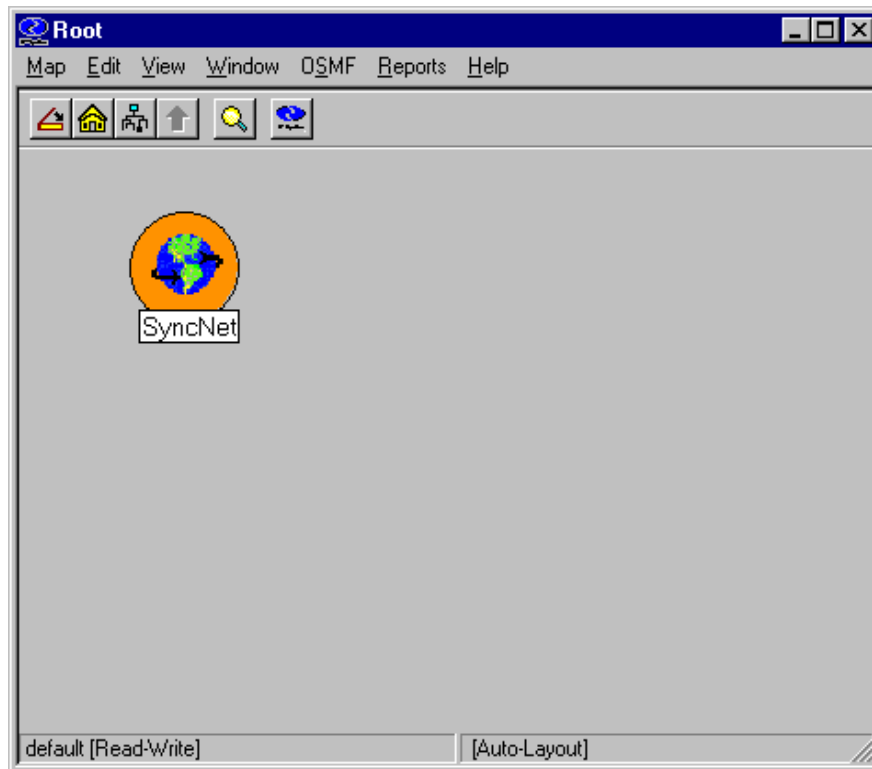
2.3 To Stop an OSMF Software Operator Session

2.3.1 Use the following procedure to stop an OSMF operator session.

CAUTION You must correctly end the session using the following procedure. Failure to correctly end the session might result in corruption of system data or data loss.

- In the main operator session screen, choose **Exit** from the "Map" menu, then click **OK** in the "OpenView Windows WARNING" box when it appears.

  After the OSMF operator session ends, the operator session screens disappear.

2.4 To Stop the OSMF Software and Database

To perform system maintenance, such as system backup, you might need to shut down the OSMF software and related Oracle processes. When the system is properly shut down using the **Start ⇒ Shut Down...** menu, the software and related processes are brought down gracefully. If you need to shut down the software and related processes, but not the system, you can use the following steps:

1 Perform the following steps to log in as user **svroot**:

   a. Choose **Start ⇒ Shut Down...**

   b. In the "Shut Down Windows" box that appears, select the "`Close all programs and log on as a different user`" radio button, then click the **Yes** button.

   c. When the box containing the message "`Press Ctrl + Alt + Delete to log on`" appears, simultaneously press the **Ctrl**, **Alt**, and **Del** keys.

   d. Log in as the **svroot** user, and enter the svroot password.

2 Choose **Start ⇒ Programs ⇒ OSMF ⇒ OSMF Manager ⇒ OSMF Services - Stop** to shut down the software and related processes.

   When the OSMF Services shutdown procedure commences, an "OSMF Services - Stop" dialog box appears. Note that the **Restart** button in the dialog box is de-emphasized ("grayed out") at that point. As each process is shut down, it appears in the dialog box. After all processes have been shut down, the **Restart** button becomes active (emphasized).

3 After the HP OpenView and OSMF software processes have been shut down, click the **Close** button in the "OSMF Services - Stop" dialog box to close it.

4 Choose **Start ⇒ Programs ⇒ OSMF ⇒ System Administration ⇒ Database Services - Stop** to stop the Oracle database.

As the database is being shut down, a "svdbshut" terminal window appears which might display some status messages. After the database shutdown process is complete, the "svdbshut" terminal window closes.

5 Choose **Start** ⇒ **Programs** ⇒ **OSMF** ⇒ **System Administration** ⇒ **System Monitor** to check the status of the OSMF software processes.

The Status Monitor should indicate that "OpenView Process Manager," "OracleServiceSV30," and "Oracle TNSListner80" are STOPPED.

6 Close the System Monitor.

3

Routine OSMF System Administration

3.1 In this Chapter

3.1.1 The following procedures are included in this chapter:

- To Create a System User
- To Modify a System User
- To Delete a System User
- To View the System Monitor
- To View or Print the System Monitor Event log
- To Start One of the Windows NT Troubleshooting Tools
- To Archive Performance History Data, Events, and Transactions

3.2 OSMF User Administration

3.2.1 The "User Manager" dialog box is used to manage (create, modify, or delete) OSMF system users. The following figure and accompanying descriptions briefly explain the "User Manager" dialog box:
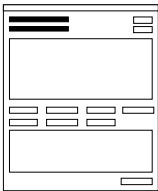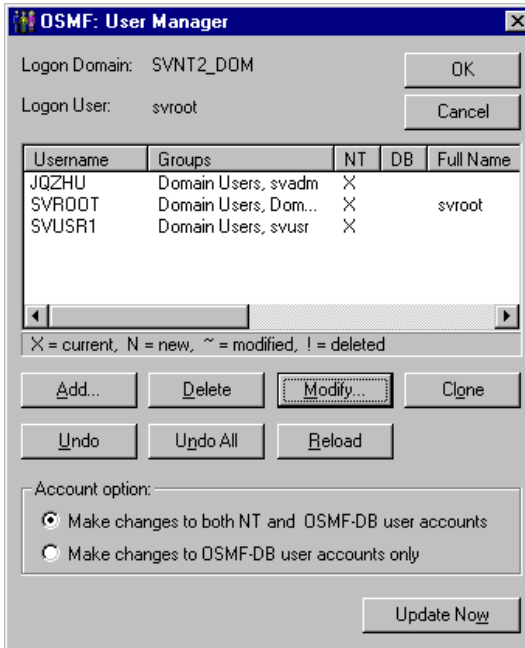
This area shows the user that is currently logged on and the logon domain name. Note that only the "svroot" user has OSMF user administration privileges.
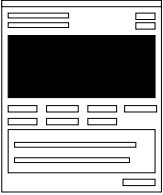
This area displays information on the users that are currently created for the system. The presence of one of the four symbols (below) in the "NT" or "DB" column indicates that the corresponding user exists in some capacity for the operating system (NT) and OSMF database (DB). The symbol type indicates the current status of the user. No symbol in the column indicates that the user is not created for the corresponding entity. The legend below explains the meaning of the symbols:

X = User is committed to the database.
N = User has been created but is not yet committed to the database.
~ = User profile has been modified, but modifications are not yet committed.
! = User has been deleted, but deletion is not yet committed.

These buttons are used to create, modify, or delete the system users. Clicking the **Add...** button invokes a sub-box in which you enter information for a user to be created for the system. To modify a system user, select the user in the user list, click the **Modify...** button, and enter the modifications in the sub-box that appears. To delete a system user, select the user in the user list, and click the **Delete** button. Clicking the **Clone** button clones the NT user selected in the user list as a database user, or vice-versa.

The radio buttons under "Account option" are used to specify whether the user administration operation takes place for both the NT and database users, or for database users only.
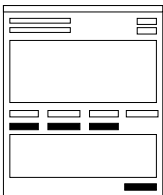
Clicking the **Update Now** button, then **Yes** in the confirmation box that follows, commits changes that have been made in the dialog box to the database. The **Undo** button is used to undo changes made to the user selected in the user list, *if* those changes have not been committed to the database. Clicking the **Undo All** button rolls back all changes that have not been committed to the database. The **Reload** button is used to reload the user information that is stored in the database to the user list area.

The procedures in this section explain how to create new system users, modify user profiles, and delete users from the system.

3.2.1.1 To Create a System User

NOTE   The OSMF database must be running in order to perform the following task. If the database is not currently running, choose **Start** ⇒ **Programs** ⇒ **OSMF** ⇒ **System Administration** ⇒ **Database Services - Start** to start it.

1 Choose **Start** $\Rightarrow$ **Programs** $\Rightarrow$ **OSMF** $\Rightarrow$ **System Administration** $\Rightarrow$ **User Manager** to call up the User Manager dialog box.

When the dialog box first appears, the message "`Loading user... Please wait`" appears in the user list area. Eventually, the list of users appears in the user list area.

2 Choose the appropriate account option.

Select the "Make changes to both NT and OSMF-DB user accounts" radio button to create the user for both Windows NT and the database, or the "Make changes to OSMF-DB user accounts only" radio button to create the user only for the database.

3 Click the **Add...** button to call up the Add New User dialog box. The Add New User dialog box appears as follows:

4 Enter the following information into the Add New User dialog box:

Field	Description
Username	Enter a unique user name. The user name is used to identify the user account. The user name can contain up to 8 upper-case or lower-case characters, except for the following characters: " / \\ [ ] : ; | = , + * ? < >
Full Name	Enter the account user's complete (full) name. *Entry in this field is optional.*
Description	Enter a description of the user or user account. *Entry in this field is optional.*
Password	Enter the password that the user must use to log on. The password can contain up to 14 characters.
Confirm Password	Re-enter the password exactly as it was entered into the "Password" field.

Field	Description
Groups	Select the group that the user will belong to. The group selected will determine the privileges that the user has when using the system.

> • *User* - Users in this user group can view the network map as well as view the synchronization management information in the Alarm Viewer, Event History Log, Performance Monitor, Inventory, and configuration dialog boxes. Users in this group can also create and print event and performance reports.
>
> • *Administrator* - Users in this user group have all of the capabilities of the "User" group, and can additionally modify the inventory database and current configuration of SSUs.
>
> • *Security* - Users in this user group have all of the capabilities of the "User" and "Administrator" groups, and can modify the network topology, manage default SSU configurations and manage or unmanage SSUs, view the transaction log[1] and produce transaction log reports[1], download firmware upgrades to SSUs[1], set the date and time on SSUs[1], create users on SSUs[1], and configure management domains for users[1].

> **NOTE**   Only one user can exist in the Security user group. This user, the "svroot" user, is created when the OSMF software is installed. The "svroot" logon name cannot be changed.

1 These features are available only if the Deluxe Edition of the OSMF software is enabled.

5 Click **OK** in the Add New User dialog box.

6 Perform one of the following actions:

- Make other changes as necessary in the User Manager dialog box. The user just created will remain uncommitted to the database.

- *To commit all modifications (including the user just created) to the database*, click the **Update Now** button, then **Yes** in the confirmation box that follows.

- *To cancel all uncommitted modifications (including the user just created)*, click the **Undo All** button (note that there is no way to cancel just the user addition).

- *To commit the modifications and close the dialog box*, click **OK**, then **Yes** in the confirmation box that follows.

- *To cancel all uncommitted modifications and close the dialog box*, click **Cancel**.

3.2.1.2 To Modify a System User

NOTE   The OSMF database must be running in order to perform the following task. If the database is not currently running, choose **Start** $\Rightarrow$ **Programs** $\Rightarrow$ **OSMF** $\Rightarrow$ **System Administration** $\Rightarrow$ **Database Services - Start** to start it.

1 Choose **Start** $\Rightarrow$ **Programs** $\Rightarrow$ **OSMF** $\Rightarrow$ **System Administration** $\Rightarrow$ **User Manager** to call up the User Manager dialog box.

When the dialog box first appears, the message "Loading user... Please wait" appears in the user list area. Eventually, the list of users appears in the user list area.

2 Select the user that you wish to modify in the user list that appears in the User Manager dialog box.

NOTE The "Account option" selection does not apply for user modifications.

3 Click the **Modify...** button to call up the Edit User dialog box. The Edit User dialog box appears as follows:

4 Modify the user account information as is appropriate in the Edit User dialog box:

Field	Description
Full Name	Enter or modify the account user's complete (full) name. *Entry in this field is optional.*
Description	Enter or modify the description of the user or user account. *Entry in this field is optional.*
Password	Double click to select the existing password (shown as a string of asterisks), then enter the new password. The password can contain up to 14 characters.
Confirm Password	Double click to select, then re-enter the new password exactly as it was entered into the "Password" field.

Field	Description
Groups	Select the group that the user will belong to. The group selected will determine the privileges that the user has when using the system.
	• *User* - Users in this user group can view the network map as well as view the synchronization management information in the Alarm Viewer, Event History Log, Performance Monitor, Inventory, and configuration dialog boxes. Users in this group can also create and print event and performance reports.
	• *Administrator* - Users in this user group have all of the capabilities of the "User" group, and can additionally modify the inventory database and current configuration of SSUs.
	• *Security* - Users in this user group have all of the capabilities of the "User" and "Administrator" groups, and can modify the network topology, manage default SSU configurations and manage or unmanage SSUs, view the transaction log[1] and produce transaction log reports[1], download firmware upgrades to SSUs[1], set the date and time on SSUs[1], create users on SSUs[1], and configure management domains for users[1].
	NOTE Only one user can exist in the Security user group. This user, the "svroot" user, is created when the OSMF software is installed. The "svroot" logon name cannot be changed.

1 These features are available only if the Deluxe Edition of the OSMF software is enabled.

5 Click **OK** in the Edit User dialog box.

6 Perform one of the following actions:

- Make other changes as necessary in the User Manager dialog box. The user modifications just made will remain uncommitted to the database.

- *To commit all modifications (including the modifications just made) to the database*, click the **Update Now** button, then **Yes** in the confirmation box that follows.

- *To cancel the user modifications just made*, select the user in the user list, then click the **Undo** button.

- *To cancel all uncommitted modifications (including the modifications just made)*, click the **Undo All** button.

- *To commit the modifications and close the dialog box*, click **OK**, then **Yes** in the confirmation box that follows.

- *To cancel all uncommitted modifications and close the dialog box*, click **Cancel**.

3.2.1.3 To Delete a System User

NOTE The OSMF database must be running in order to perform the following task. If the database is not currently running, choose **Start ⇒ Programs ⇒ OSMF ⇒ System Administration ⇒ Database Services - Start** to start it.

1 Choose **Start** $\Rightarrow$ **Programs** $\Rightarrow$ **OSMF** $\Rightarrow$ **System Administration** $\Rightarrow$ **User Manager** to call up the User Manager dialog box.

When the dialog box first appears, the message "`Loading user... Please wait`" appears in the user list area. Eventually, the list of users appears in the user list area.

2 Select the user that you wish to delete in the user list that appears in the User Manager dialog box.

3 Choose the appropriate account option.

Select the "Make changes to both NT and OSMF-DB user accounts" radio button to delete the user from both Windows NT and the database, or the "Make changes to OSMF-DB user accounts only" radio button to delete the user only from the database.

4 Click the **Delete** button to delete the system user.

5 Perform one of the following actions:

- Make other changes as necessary in the User Manager dialog box. The user deletion just made will remain uncommitted to the database.
- *To commit all modifications (including the user deletion just made) to the database*, click the **Update Now** button, then **Yes** in the confirmation box that follows.
- *To cancel the user deletion just made*, select the user in the user list, then click the **Undo** button.
- *To cancel all uncommitted modifications (including the user deletion just made)*, click the **Undo All** button.
- *To commit the modifications and close the dialog box*, click **OK**, then **Yes** in the confirmation box that follows.
- *To cancel all uncommitted modifications and close the dialog box*, click **Cancel**.

3.3 Monitoring System Status

3.3.1 The "System Monitor" dialog box displays the status of various system parameters. The following figure and accompanying descriptions explain the "System Monitor" dialog box:
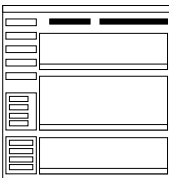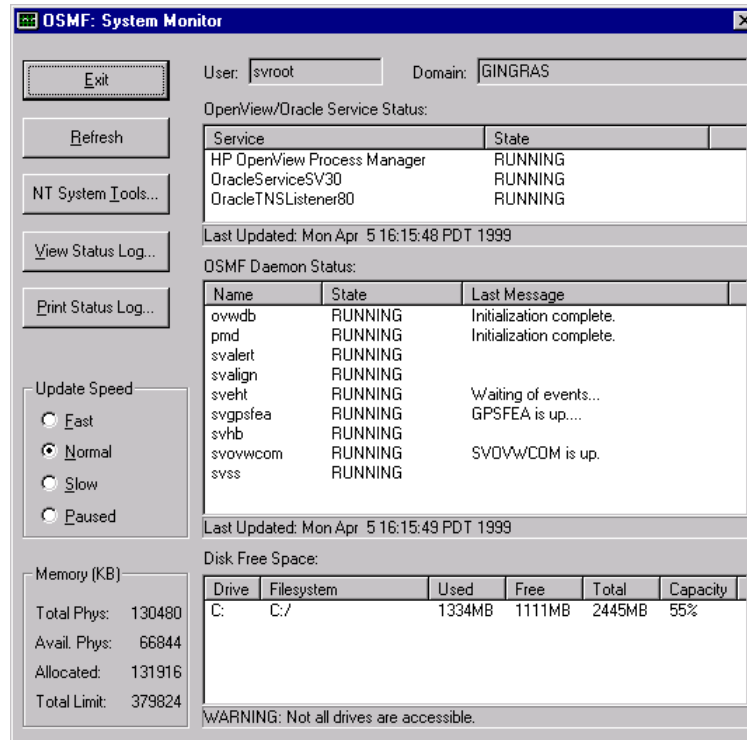
This area shows the user that is currently logged on and the logon domain name.
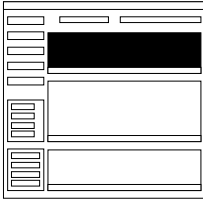
This area shows the state of the HP OpenView and Oracle services as of when the display area was last updated (as indicated by "Last Updated," which appears below the display area). If a given service is running, RUNNING will appear in the "State" column. If it has been shut down, STOPPED will appear in the "State" column.

NOTE   Other transient-type state messages might also be displayed (for example STOP_PENDING while a service is shutting down).
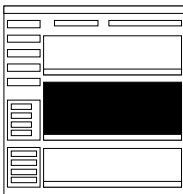
This area shows the state of the various OSMF daemons as of when the display area was last updated (as indicated by "Last Updated," which appears below the display area). If a given daemon is running, RUNNING will appear in the "State" column. If a daemon has been shut down or is otherwise not running, NOT_RUNNING will appear in the "State" column.

NOTE   If the HP OpenView Process Manager is not running, and all daemons are not running, this area will be blank.
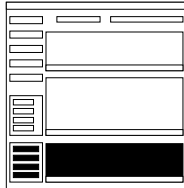
The information under "Disk Free Space" shows the total disk space, as well as the amount of disk space used and free, for each drive/file system. The Capacity column shows the percentage of space currently used in each drive/file system.

NOTE   If free disk space decreases below 50M for any drive/file system, a disk space WARNING message will appear in place of the "Last Updated" message that normally appears below the display area.

The information under "Memory (KB)" shows various system RAM statistics. The "Total Phys" field shows the total number of kilobytes of physical memory installed. The "Avail. Phys" field shows the number of kilobytes of physical memory that are available. The "Allocated" field shows the number of kilobytes of memory currently paged to disk. The "Total Limit" field shows the maximum amount of memory that had been paged since bootup.
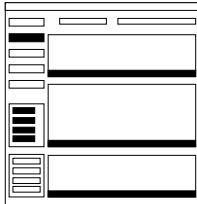
The information in the System Monitor is updated automatically at a rate determined by the radio button selected under "Update Speed." The display is updated approximately every five seconds when "Fast" is selected, approximately every twelve seconds when "Normal" is selected, and approximately every 80 seconds when "Slow" is selected. If "Paused" is selected, the System Monitor will not be updated automatically.

The System Monitor can be updated at any time by clicking the **Refresh** button. The last time each display area was refreshed is shown in the "Last Updated" message that appears below the display area.
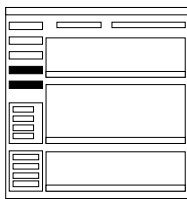
Clicking the **View Status Log...** button opens a copy of the System Monitor log. The System Monitor log is a running log of each event message that has been written to the System Monitor, along with the date and time when each was posted. It is displayed using the Windows NT "Notepad." Logging starts when the System Monitor is opened, and ends when the System Monitor is closed, as evidenced by the "date/time started" and "date/time ended" entries in the log. Each time the System Monitor is closed and reopened, the log is flushed and restarted.

NOTE   The System Monitor log is stored in the "Temp" folder as file "svsysmon.log."

Clicking the **Print Status Log...** button calls up the System Monitor log and immediately prints it to the system default printer.
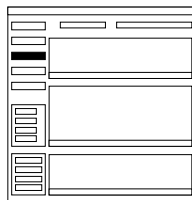
Clicking the **NT System Tools...** button invokes the Windows NT Troubleshooting Tools dialog box, from which you can select any of four troubleshooting programs that can be used to troubleshoot problems with the system. The tools are standard Windows NT applications, so help on using them can be found by accessing the help systems that are available within the applications.

3.3.1.1 To View the System Monitor

• Choose **Start ⇒ Programs ⇒ OSMF ⇒ System Administration ⇒ System Monitor**.

The System Monitor shows a variety of system parameters, which are updated at a rate determined by the radio button selected under "Update Speed." The update speed can be changed by selecting another radio button, or automatic updating can be paused by selecting the "Paused" radio button. The System Monitor can be updated at any time by clicking the **Refresh** button.

- To close the System Monitor, click the **Exit** button.

3.3.1.2 To View or Print the System Monitor log

The System Monitor log is a running log of each event message that has been written to the System Monitor. Logging starts when the System Monitor is opened, and ends when the System Monitor is closed.

- With the System Monitor opened, click the **View Status Log...** button.

    When the **View Status Log...** button is clicked, the Windows NT "Notepad" program starts, and a copy of the System Monitor log is displayed within it. The System Monitor log lists each event message that has been written to the System Monitor, along with the date and time when each was posted. The messages are listed in chronological order. The following shows an example System Monitor log:

```
##### OSMF: System Monitor Log ######
date/time started: Wed Dec  2 08:19:29 PST 1998

Wed Dec  2 08:22:05 PST 1998 - ERROR: Unable to retrieve OSMF daemon status.
Wed Dec  2 08:22:15 PST 1998 - Service: OpenView Process Manager   State: STOPPED
Wed Dec  2 08:22:15 PST 1998 - ERROR: Unable to retrieve OSMF daemon status.
Wed Dec  2 08:22:26 PST 1998 - Service: OpenView Process Manager   State: STOPPED
Wed Dec  2 08:22:27 PST 1998 - ERROR: Unable to retrieve OSMF daemon status.
Wed Dec  2 08:22:38 PST 1998 - Service: OpenView Process Manager   State: STOPPED
Wed Dec  2 08:22:39 PST 1998 - ERROR: Unable to retrieve OSMF daemon status.
Wed Dec  2 08:22:50 PST 1998 - Service: OpenView Process Manager   State: STOPPED
Wed Dec  2 08:22:51 PST 1998 - ERROR: Unable to retrieve OSMF daemon status.
Wed Dec  2 08:23:02 PST 1998 - Service: OpenView Process Manager   State: STOPPED
Wed Dec  2 08:23:02 PST 1998 - ERROR: Unable to retrieve OSMF daemon status.
Wed Dec  2 08:23:13 PST 1998 - Service: OpenView Process Manager   State: STOPPED
Wed Dec  2 08:23:14 PST 1998 - ERROR: Unable to retrieve OSMF daemon status.
Wed Dec  2 08:23:25 PST 1998 - Service: OpenView Process Manager   State: STOPPED
Wed Dec  2 08:23:25 PST 1998 - ERROR: Unable to retrieve OSMF daemon status.
Wed Dec  2 08:23:36 PST 1998 - Service: OpenView Process Manager   State: STOPPED
Wed Dec  2 08:23:37 PST 1998 - Service: OracleTNSListener80   State: STOPPED
Wed Dec  2 08:23:37 PST 1998 - ERROR: Unable to retrieve OSMF daemon status.
Wed Dec  2 08:24:01 PST 1998 - Service: OpenView Process Manager   State: STOPPED
Wed Dec  2 08:24:01 PST 1998 - ERROR: Unable to retrieve OSMF daemon status.
Wed Dec  2 08:24:12 PST 1998 - Service: OpenView Process Manager   State: STOPPED
Wed Dec  2 08:24:13 PST 1998 - ERROR: Unable to retrieve OSMF daemon status.
date/time ended: Wed Dec  2 08:25:10 PST 1998
```

    The data in the log can be cut, pasted, or otherwise manipulated as the "Notepad" program is a standard word processing application. Note that once "Notepad" opens, the log is not automatically updated in the "Notepad" window, although the log file (/temp/svsysmon.log) does continue to get updated.

    It is important to note that once the System Monitor is closed, logging stops, and when the System Monitor is reopened, the /temp/svsysmon.log file is purged before logging restarts. If you wish to save a copy of the current instance of the log, you must save it to another file name or folder before reopening the System Monitor.

•   If the System Monitor log is already opened, you can print it to a printer using the menu selections available within the "Notepad" window. To otherwise print the System Monitor log to the default system printer, click the **Print Status Log...** button.

3.3.1.3 To Start One of the Windows NT Troubleshooting Tools

Any of four troubleshooting programs can be started from the System Monitor. These programs can be useful when troubleshooting system problems, or planning for future system needs.

•   With the System Monitor opened, click the **NT System Tools...** button.

When the **NT System Tools...** button is clicked, the Windows NT Troubleshooting Tools dialog box opens. This dialog box contains four buttons, which can be clicked to start the following four Windows NT Troubleshooting applications:

Button	Description
Event Viewer...	Invokes the Windows NT Event Viewer, in which you can view and manage System, Security, and Application event logs.
Performance Monitor...	Invokes the Windows NT Performance Monitor, which is a graphical tool for monitoring the computer's efficiency. It allows you to view and monitor the behavior of various objects such as the processor, memory, threads, processes, etc.
Task Manager...	Invokes the Windows NT Task Manager, which allows you to monitor applications and processes that are running on the computer, various system parameters, and display a dynamic overview of the computer's CPU and memory usage. Applications and processes can also be started and stopped using the Task Manager.
Windows NT Diagnostics	Invokes the Windows NT Diagnostics dialog, which allows you to view hardware information in the Registry, such as currently loaded device driver and IRQ values.

The troubleshooting tools are standard Windows NT applications, so help on using them can be found by accessing the help systems that are available within the applications.

3.4 To Archive Performance History Data, Events, and Transactions

3.4.1 An OSMF software process copies events and performance history data that is older than 14 days to special *archive tables* in the database. This software process also copies transactions that are older than 30 days to the archive tables. These archive tables have pre-allocated space for 200,000 performance entries, 100,000 event entries, and 15,000 transaction entries. Software functionality problems might occur if the tables fill up. The archive tables, therefore, should periodically be cleaned. The procedure in this section can be used to archive the data contained in the archive tables, and consequently clean them out.

3.4.2 In the procedure that follows, an archive script is run. This script does the following:

- Copies performance history data, events, and transactions from the archive tables to a report file.
- Names the report file to reflect the range of the data it contains.
- Deletes the information from the archive tables.
- Removes any entries that have accumulated in the event error log (which contains any events that could not be processed due to an error).

3.4.3 To complete the archive process, the system administrator should copy the report file to an offline storage device, such as a local tape drive, and then delete the report file from the system.

NOTES   Your tape drive should be cleaned on a regular basis. Please refer to the tape drive manual for cleaning frequency and instructions. If a proper cleaning schedule is not maintained, data integrity might be compromised.

The following procedure must be performed as part of regularly-scheduled system maintenance to ensure that the system continues to operate efficiently. *It is recommended that the procedure be performed at least once every week*.

1 If not logged on as user **svroot**, perform the following steps:

a. Choose **Start ⇒ Shut Down...**

b. In the "Shut Down Windows" box that appears, select the "`Close all programs and log on as a different user`" radio button, then click the **Yes** button.

c. When the box containing the message "`Press Ctrl + Alt + Delete to log on`" appears, simultaneously press the **Ctrl**, **Alt**, and **Del** keys.

d. Log in as the **svroot** user, and enter the svroot password.

2 Choose **Start ⇒ Programs ⇒ OSMF ⇒ System Administration ⇒ Database System Archive**.

When **Database System Archive** is selected, a "SVARCHIVE" window opens, which displays the following messages as the archive process proceeds:

```
Suspending archive daemons...
Retrieving the minimum date associated with the archived files...
Retrieving the maximum date associated with the archived files...
Copying the archived events to file...
Truncating the archive table and event error log table...
Resuming the database background processes...
```

When the archive process completes, a message box containing the message "`Archive data has been placed in drive:/osmf/Oracle/admin/Sv30/arch/expolddate_mrdate.TXT`" appears (where *drive* is the OSMF install drive, such as "c:").

NOTE   If there is no information to archive, the message "`No events found for archiving, Exiting...`" will be displayed.

3 Click **OK** in the message box to close it and the "SVARCHIVE" window.

The archive process produces a report file in the *drive*:/osmf/Oracle/admin/Sv30/arch directory with the name "`expolddate_mrdate.TXT`" where *olddate* is the date of the oldest data in the file, and *mrdate* is the date of the most recent data in the file. As an example, if the oldest data in the file was generated on March 15, 1997 and the most recent data in the file was generated on March 24,1997, the file name would be `exp970315_970324.TXT`.

The report file is a text file that can be viewed using any text editor. Refer to the *Example Archive Report File,* below, for an example of a report file.

NOTE   The report file should be copied to a local tape drive or other offline storage device, then it should be deleted from the /osmf/Oracle/admin/Sv30/arch directory.

Example Archive Report File

```
PERFORMANCE DATA
----------------
"15.1.1.1","0","FFOFF","192S","98-03-23 08:58:59",".000012"
"15.1.1.1","0","TDEV","256S","98-03-23 08:58:59",".000012"
"15.1.1.1","0","MRTIE","2H","98-03-23 08:58:59",".000012"
"15.1.1.1","0","LMRTIE","2H","98-03-23 08:58:59",".000012"
"15.1.1.1","0","FFOFF","768S","98-03-23 08:58:59",".000012"
"15.1.1.1","0","TDEV","1024S","98-03-23 08:58:59",".000012"
"15.1.1.1","0","MRTIE","8H","98-03-23 08:58:59",".000012"
"15.1.1.1","0","LMRTIE","8H","98-03-23 08:58:59",".000012"
"15.1.1.1","0","FFOFF","3072S","98-03-23 08:58:59",".000012"
"15.1.1.1","1","TDEV","1S","98-03-23 08:58:59",".000023"
"15.1.1.1","1","MRTIE","1S","98-03-23 08:58:59",".000023"
"15.1.1.1","1","LMRTIE","1S","98-03-23 08:58:59",".000023"
"15.1.1.1","1","FFOFF","3S","98-03-23 08:58:59",".000023"
"15.1.1.1","1","TDEV","4S","98-03-23 08:58:59",".000023"
"15.1.1.1","1","MRTIE","15M","98-03-23 08:58:59",".000023"
```

```
"15.1.1.1","1","LMRTIE","15M","98-03-23 08:58:59",".000023"
"15.1.1.1","1","FFOFF","12S","98-03-23 08:58:59",".000023"
"15.1.1.1","1","TDEV","16S","98-03-23 08:58:59",".000023"
"15.1.1.1","1","MRTIE","30M","98-03-23 08:58:59",".000023"
"15.1.1.1","1","LMRTIE","30M","98-03-23 08:58:59",".000023"
**

   Fields are separated by commas
           Field 1: IP Address
           Field 2: Channel no. (0-8)
           Field 3: Performance type
           Field 4: time interval
           Field 5: time stamp
           Field 6: value

EVENTS/ALARMS DATA
------------------
"1","SSU-9","OUT4B","MINOR","Y","98-03-23 08:56:52","Output Card Not Present"
"2","SSU-9","OUT4B","MINOR","Y","98-03-23 08:56:52","Output Card Not Present"
"3","SSU-9","OUT4B","MINOR","Y","98-03-23 08:56:52","Output Card Not Present"
"4","SSU-9","OUT4B","MINOR","Y","98-03-23 08:56:52","Output Card Not Present"
"5","SSU-9","OUT4B","MINOR","Y","98-03-23 08:56:52","Output Card Not Present"
"6","SSU-9","OUT4B","MINOR","Y","98-03-23 08:56:52","Output Card Not Present"
"7","SSU-9","OUT4B","MINOR","Y","98-03-23 08:56:52","Output Card Not Present"
"8","SSU-9","OUT4B","MINOR","Y","98-03-23 08:56:52","Output Card Not Present"
"9","SSU-9","OUT4B","MINOR","Y","98-03-23 08:56:52","Output Card Not Present"
"10","SSU-9","OUT4B","MINOR","Y","98-03-23 08:56:52","Output Card Not Present"
"11","SSU-9","OUT4B","MINOR","Y","98-03-23 08:56:52","Output Card Not Present"
"312","SSU-9","OUT4B","MINOR","Y","98-03-23 08:56:54","Output Card Not Present"
"313","SSU-9","OUT4B","MINOR","Y","98-03-23 08:56:54","Output Card Not Present"
"314","SSU-9","OUT4B","MINOR","Y","98-03-23 08:56:54","Output Card Not Present"
"315","SSU-9","OUT4B","MINOR","Y","98-03-23 08:56:54","Output Card Not Present"
"316","SSU-9","OUT4B","MINOR","Y","98-03-23 08:56:54","Output Card Not Present"
"317","SSU-9","OUT4B","MINOR","Y","98-03-23 08:56:54","Output Card Not Present"
"318","SSU-9","OUT4B","MINOR","Y","98-03-23 08:56:54","Output Card Not Present"
"319","SSU-9","OUT4B","MINOR","Y","98-03-23 08:56:54","Output Card Not Present"
"320","SSU-9","OUT4B","MINOR","Y","98-03-23 08:56:54","Output Card Not Present"
"321","SSU-9","OUT4B","MINOR","Y","98-03-23 08:56:54","Output Card Not Present"
"322","SSU-9","OUT4B","MINOR","Y","98-03-23 08:56:54","Output Card Not Present"


**

   Fields are separated by commas
           Field 1: event number
           Field 2: selection name
           Field 3: aid
           Field 4: severity
           Field 5: sa
           Field 6: event time
           Field 7: event message

TRANSACTION LOG DATA
-------------------
"1","Add","SVROOT","98-09-28 12:09:23","S-221","SSU","","",""
"2","Add","SVROOT","98-09-28 12:09:23","S-222","SSU","","",""
"3","Remove","SVROOT","98-09-28 12:09:23","S-222","SSU","","",""
```

```
"4","Add","SVROOT","98-09-28 12:09:23","S1$1->S2$0$D$8","SYNC-TRAIL","","",""
"5","Remove","SVROOT","98-09-28 12:09:23","S1$1->S2$0$D$8","SYNC-TRAIL",
   "","",""
"6","Edit","SVROOT","98-09-28 12:09:23","S-221","OUTA","MANAGED","Y","N"
"7","Edit","SVROOT","98-09-28 12:09:23","S-221","OUTA","HW_ALIGNED","Y","N"
"8","Edit","SVROOT","98-09-28 12:09:23","S-221","ITH","PIRANGE","4600","10000"
"9","Edit","SVROOT","98-09-28 12:09:23","S-221","IMC","LCLBAUD","2400","9600"
"10","Edit","SVROOT","98-09-28 12:09:23","S-221","S0-OUTA","SSMBIT","SA4",
   "SA7"
"11","Edit","SVROOT","98-09-28 12:09:23","S-221","S4-OUTE","SABITS","223",
   "150"
"12","Edit","SVROOT","98-09-28 12:09:23","S-221","S2-OUTC","HLDACT",
   "CONTINUE","AIS"
"13","Edit","SVROOT","98-09-28 12:09:23","S-221","S2-OUTC-1","SQUELCH","Y","N"
"14","Edit","SVROOT","98-09-28 12:09:23","S-221","S2-OUTC-16","SQUELCH","N",
   "Y"
"15","Edit","SVROOT","98-09-28 12:09:23","S-221","ITH-0","ENABLE","N","Y"
"16","Edit","SVROOT","98-09-28 12:09:23","S-221","ITH-1","FORMAT","E1","SQW"
"17","Edit","SVROOT","98-09-28 12:09:23","S-221","ITH-9","CURRSSM","128","210"
"18","Edit","SVROOT","98-09-28 12:09:23","S-221","ITH-1-SPRD-3S","THR",
   "12.9878","3.43874"
"19","Edit","SVROOT","98-09-28 12:09:23","S-221","ITH-8-LMRTIE-3071S","THR",
   "12.9878","3.43874"
"20","Edit","SVROOT","98-09-28 12:09:23","S-221","ITH-8-MRTIE-1S","PM","Y","N"
"21","Un-Ack","SVROOT","98-09-28 12:09:23","S-221","SSU","INPDISQ","",""
"22","Un-Ack","SVROOT","98-09-28 12:09:23","S-221","SSU","SE-CFGRM","",""
"23","Cut-Off","SVROOT","98-09-28 12:09:23","S-221","SSU","","",""
"24","Dw-F/w","SVROOT","98-09-28 12:09:23","S-221","SSU","3724 firmware","",""
"25","Dw-Cfg","SVROOT","98-09-28 12:09:23","S-221","SSU","Standard Config",
   "",""

**


   Fields are separated by commas
           Field 1: Transaction serial number
           Field 2: Transaction type
           Field 3: User ID
           Field 4: Date/time stamp
           Field 5: Object name
           Field 6: Object class (AID)
           Field 7: Attribute name
           Field 8: Old value
           Field 9: New value
```

3.4.3.1 Backup and Recovery

The purpose of the archive process explained above is to maintain the database within limits under normal operating conditions. Backup and recovery utilities are provided to backup the database so that it can be recovered in the event of a failure. Refer to the *System Backup and Recovery* chapter in this manual for more information.

3.5 To Synchronize the Date and Time of SSUs with the OSMF System

3.5.1 The OSMF software contains a utility that sources the current date and time as it occurs on the OSMF system to every SSU indicated as "managed" in the OSMF database.   In succession for each managed SSU, the current date and time is fetched from the system and then downloaded to the SSU. This allows for very accurate time synchronization between all SSUs in the network, notwithstanding slight inaccuracies resulting from network delays, which are typically very small (typically within milliseconds).

1 If not logged on as user **svroot**, perform the following steps:

   a. Choose **Start** ⇒ **Shut Down...**

   b. In the "Shut Down Windows" box that appears, select the "`Close all programs and log on as a different user`" radio button, then click the **Yes** button.

   c. When the box containing the message "`Press Ctrl + Alt + Delete to log on`" appears, simultaneously press the **Ctrl**, **Alt**, and **Del** keys.

   d. Log in as the **svroot** user, and enter the svroot password.

2 Choose **Start** ⇒ **Programs** ⇒ **OSMF** ⇒ **System Administration** ⇒ **Set SSU Date**.

When **Set SSU Date** is selected, the date and time of the SSUs is synchronized with the date and time of the OSMF system. As the utility runs, a "Set SSU Date" terminal window temporarily opens, then closes when the utility finishes running.

4

System Backup and Recovery

4.1 In this Chapter

4.1.1 The procedures in this chapter can be used to perform regularly scheduled backups of the OSMF system. If a disaster occurs, such as a database crash that leads to data corruption, the recovery information in this chapter can be used to recover from the failure.

The following sections are included in this chapter:

- System Backup
- Backup Procedures
- System Recovery

NOTES Your tape drive should be cleaned on a regular basis. Please refer to the tape drive manual for cleaning frequency and instructions. If a proper cleaning schedule is not maintained, data integrity might be compromised.

4.2 System Backup

4.2.1 It is important to maintain a recent backup of the OSMF system. In the event of hardware failure, operator error, or other disaster, the backup will provide the most direct path to restoration of the system and user data.

4.2.1.1 Backup Categories

The OSMF software system-level backup can be divided into four broad backup categories:

- **NT Core System Backup**

  The core system backup is an offline image backup of the entire system boot disk, which provides a complete path to recovery from the time the backup was performed. Third-party NT system backup products are available to assist the System Administrator in preparing a core system backup. It is recommended that an NT Core Backup media should always be prepared.

- **System Backup**

  This is an online backup of all files except for the OSMF database. (in other words, excluding the "/OSMF/ORACLE/data" directory which contains the OSMF database files). This will backup the entire system, applications, and user files needed to recover from a system that is already running. This backup does not provide the low level formatting of the disk drive as the NT core system backup does.

  There are many methods that can be used to produce a System Backup. One method of performing the online System Backup is with the Windows NT Backup tool, which is a standard part of the Windows NT operating system/environment. Files can be included or excluded when defining the scope of the backup or recovery.

  Full and Incremental backups may be performed using the backup tool. Full backup will backup the entire system. Incremental backups will backup any file that has changed since the last Full backup.

  It is best if all applications as well as HP OpenView, Oracle, and the OSMF software processes are not running for this backup. HP OpenView, Oracle, and the OSMF software have processes which will have file locks. This should not inhibit the backup from completing, however, for best results the HP OpenView, Oracle, and OSMF applications should be shut down. It is still possible to depend on the NT Core System Backup for the system recovery at this level, if the applications cannot be interrupted. Even though the OSMF software's associated applications can be running during the backup, they *should not* be running during a system recovery.

- **OSMF Database Hot Backup**

  The OSMF system can be set up to automatically perform regularly-scheduled backups of database-related files using the Database Backup Scheduler. These are hot backups, meaning they are run while the OSMF software and related processes are running.

- **OSMF Database Backup Plus HP OpenView**

    This backup is similar to the database backup, but it cannot be set up to run automatically. It backs up the database-related files, but also backs up HP OpenView data, such as map background graphics. The OSMF software and related processes must be shut down while this backup is run. This backup can be run less frequently than the OSMF Database Hot Backup.

4.2.1.2 Special Considerations

Special considerations should be observed when backing up an online database. The database will have active files and locks that may prevent some backup programs from accessing certain files. It is strongly recommended that the OSMF database be excluded from any System Backup. The backup of the OSMF database files should be performed using the OSMF Database Hot Backup procedure, which takes online backups ("hot backups") and is designed specifically for the OSMF database.

4.2.1.3 Backup Requirements

Based on different needs and configurations, backup requirements and methods will vary. As part of the OSMF software management solution, the following backup scenario is recommended:

- **NT Core System Backup** - Off-line core system backup should be done every 3 months, or whenever hardware additions or software changes are made. This backup will ensure a properly bootable system in the event of a disk replacement. This backup must be scheduled and users notified since the system likely will be offline.

- **System Backup** - Complete backup of system (excluding the OSMF database) should be done once every 1 week using a system backup tool, such as Windows NT Backup.

NOTES   To exclude the OSMF database from the system backup, exclude the "/OSMF/ORACLE/data" directory.

It is recommended that you shutdown the OSMF software, HP OpenView, and Oracle processes during a System Backup. This is not required, however, a greater level of data integrity is possible while the applications are not running.

- **OSMF Database Hot Backup** - The OSMF database hot backup should be done at least once a day. It can be set up to run automatically on a daily basis.

- **OSMF Database Backup Plus HP OpenView -** The OSMF database backup plus HP OpenView can be run less frequently than the OSMF Database Hot Backup.

The NT Core System Backup should be considered very important and be kept current. Based on needs, the System Backup may be performed more or less frequently. If no changes are made to the system or user files between backups, the System Backup cycle time may be increased. If frequent changes are made to user files, then incremental backups may also be scheduled in the System Backups. The OSMF database should be backed up at least once a day, and the Database Backup Scheduler should be used to schedule backups to run automatically.

4.3 Backup Procedures

4.3.1 The following backup procedures are included as part of the OSMF software management solution.

4.3.1.1 NT Core System Backup

Third-party NT system backup products are available to assist the System Administrator in preparing a core system backup. Consult the documentation supplied with the NT system backup product for information on performing a core system backup.

4.3.1.2 System Backup

Third-party NT backup products are available to assist the System Administrator in preparing a System Backup. One such tool, the Windows NT Backup, is a standard part of the Windows NT operating system/environment, and as such is typically installed along with the operating system.

When preparing a System Backup, be aware that certain files might have read locks which will prevent them from being backed up. Your file system might have several partitions which you might want to back up. You also might want to exclude certain files from the backup, if it is not important that they be backed up.

In the following example, all files on the "c:" drive except for the OSMF database are backed up using the Windows NT Backup (in other words, the "/OSMF/ORACLE/data" directory, which contains the OSMF database files, is excluded).

1 If not logged on as user **svroot**, perform the following steps:

   a. Choose **Start ⇒ Shut Down...**

   b. In the "Shut Down Windows" box that appears, select the "`Close all programs and log on as a different user`" radio button, then click the **Yes** button.

   c. When the box containing the message "`Press Ctrl + Alt + Delete to log on`" appears, simultaneously press the **Ctrl**, **Alt**, and **Del** keys.

   d. Log in as the **svroot** user, and enter the svroot password.

2 Choose **Start ⇒ Programs ⇒ OSMF ⇒ OSMF Manager ⇒ OSMF Services - Stop** to shut down the software and related processes.

   When the OSMF Services shutdown procedure commences, an "OSMF Services - Stop" dialog box appears. Note that the **Restart** button in the dialog box is de-emphasized ("grayed out") at that point. As each process is shut down, it appears in the dialog box. After all processes have been shut down, the **Restart** button becomes active (emphasized).

3 After the HP OpenView and OSMF software processes have been shut down, click the **Close** button in the "OSMF Services - Stop" dialog box to close it.

4 Choose **Start ⇒ Programs ⇒ OSMF ⇒ System Administration ⇒ Database Services
- Stop** to stop the Oracle database.

As the database is being shut down, a "svdbshut" terminal window appears which displays some status messages. After the database shutdown process is complete, the "svdbshut" terminal window closes.

5 Insert a tape into the local tape drive.

6 Choose **Start ⇒ Programs ⇒ Administrative Tools (Common) ⇒ Backup**

When **Backup** is chosen, the Backup dialog box appears. This dialog box contains two sub-windows: one labeled "Drives" and one labeled "Tapes."

7 If the Drives window is not maximized, maximize it, then select the check-box that is adjacent to the icon of the drive or drives that contain the database files to be backed up, as in the following for the "c:" drive:

This action selects all files on the disk for backup.

8 Double-click on the drive symbol to expand it, then drill down to the "data" folder by first double-clicking the OSMF folder, then the ORACLE folder.

9 Click the check-box that is adjacent to the "data" folder so that it is deselected, as shown in the following example:
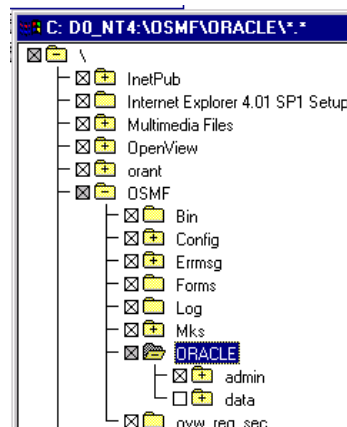
10 Click the **Backup** button to invoke the Backup Information dialog box.

11 Click **OK** in the Backup Information dialog box.

A Backup Status dialog box appears and the backup progresses.

12 When the message "`The operation was successfully completed`" appears in the Backup Status dialog box, click **OK**, then close the Backup dialog box.

13 Remove the backup tape from the tape drive and store it in a secure place.

4.3.1.3 OSMF Database Hot Backup

NOTE   The following procedure can be used at any time to perform a hot backup manually. It is strongly suggested that database hot backups be set up to run automatically on a daily basis using the Database Backup Scheduler. The procedure entitled *Scheduling Database Backups* at the end of this section explains how to schedule backups to run automatically.

The following procedure backs up all of the OSMF database files. It is a hot backup, that is to say, it can be run while the OSMF software and related processes are running. This procedure should be run at least once a day.

1 If not logged on as user **svroot**, perform the following steps:

    a. Choose **Start ⇒ Shut Down...**

    b. In the "Shut Down Windows" box that appears, select the "`Close all programs and log on as a different user`" radio button, then click the **Yes** button.

    c. When the box containing the message "`Press Ctrl + Alt + Delete to log on`" appears, simultaneously press the **Ctrl**, **Alt**, and **Del** keys.

    d. Log in as the **svroot** user, and enter the svroot password.

2 Insert a tape into the local tape drive.

3 Choose **Start ⇒ Programs ⇒ OSMF ⇒ System Administration ⇒ Database System Backup**.

When **Database System Backup** is chosen, the OSMF Database Backup dialog box appears:
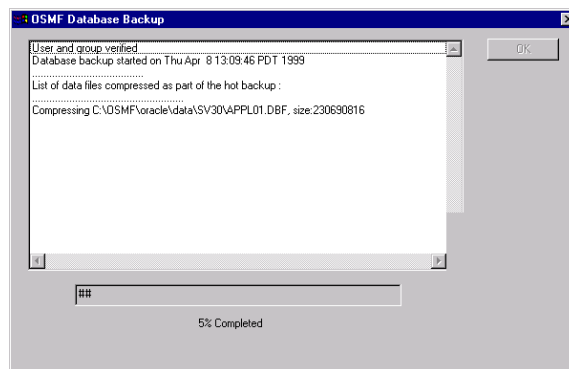
The database backup process compresses the database-related files and places the compressed files into the /Temp/backup folder. As the backup process progresses, messages similar to the following appear in the OSMF Database Backup dialog box:

```
User and group verified
Database backup started on Thu Apr 8 13:09:46 PDT 1999
......................................
List of data files compressed as part of the hot backup :
...............................................................
Compressing d:\OSMF\oracle\data\sv30\APPL01.DBF, size:272633856
Compressing d:\OSMF\oracle\data\sv30\APPL02.DBF, size:272633856
Compressing d:\OSMF\oracle\data\sv30\IND01.DBF, size:62918656
Compressing d:\OSMF\oracle\data\sv30\IND02.DBF, size:62918656
Compressing d:\OSMF\oracle\data\sv30\SYSTEM01.DBF, size:52432896
Compressing d:\OSMF\oracle\data\sv30\TEMP01.DBF, size:41947136
Compressing d:\OSMF\oracle\data\sv30\RBS01.DBF, size:31461376
Compressing d:\OSMF\oracle\data\sv30\TOOLS01.DBF, size:10489856
List of log files compressed before backup along with their size
.................................................
Compressing SV30_01A.LOG,size:2097664
Compressing SV30_01B.LOG,size:2097664
Compressing SV30_02A.LOG,size:2097664
Compressing SV30_02B.LOG,size:2097664
Compressing SV30_03A.LOG,size:2097664
Compressing SV30_03B.LOG,size:2097664
List of archive redo log files compressed before backup along with
their size
.................................................................
Compressing SV30T0001S0000000052.ARC,size:1652736
Compressing SV30T0001S0000000053.ARC,size:2097664
List of control files compressed before backup along with their size
.............................................................
Compressing SV30_01.CTL,size:643072
Compressing SV30_02.CTL,size:643072
Compressing SV30_03.CTL,size:643072
```

After all files are compressed and stored in the /Temp/backup directory, the portion of the backup process that copies the files to tape automatically starts, and the following dialog box appears:
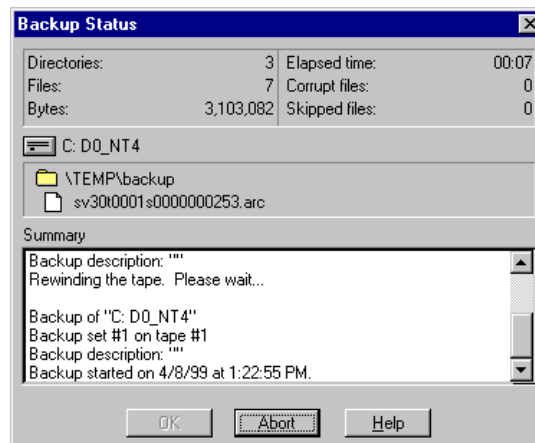
The following three items indicate that the OSMF database backup has completed successfully with no errors:

*   The Backup Status and Verify Status dialog boxes close.
*   The message "DATABASE BACKUP COMPLETED SUCCESSFULLY" appears in the OSMF Database Backup dialog box.
*   The progress gauge in the OSMF Database Backup dialog box reads 100% Completed.

4 Click **OK** in the OSMF Database Backup dialog box to close it.

5 Remove the backup tape from the tape drive and store it in a secure place.

4.3.1.4 OSMF Database Backup Plus HP OpenView

The following procedure backs up all of the OSMF database files and also HP OpenView data, such as map background graphics. Recovery of a backup performed using this procedure will yield a more accurate rendition of the HP OpenView maps, if much customization had been performed.

The disadvantage of backing up the HP OpenView data along with the database files is that the OSMF software and related processes must be shut down while the backup is run. The OSMF Database Hot Backup (explained above) should be run on a daily basis. The following procedure, however, can be run less frequently.

1 If not logged on as user **svroot**, perform the following steps:

a. Choose **Start** ⇒ **Shut Down...**

b. In the "Shut Down Windows" box that appears, select the "Close all programs and log on as a different user" radio button, then click the **Yes** button.

c. When the box containing the message "Press Ctrl + Alt + Delete to log on" appears, simultaneously press the **Ctrl**, **Alt**, and **Del** keys.

    d. Log in as the **svroot** user, and enter the svroot password.

2 Choose **Start** $\Rightarrow$ **Programs** $\Rightarrow$ **OSMF** $\Rightarrow$ **OSMF Manager** $\Rightarrow$ **OSMF Services - Stop** to shut down the software and related processes.

When the OSMF Services shutdown procedure commences, an "OSMF Services - Stop" dialog box appears. Note that the **Restart** button in the dialog box is de-emphasized ("grayed out") at that point. As each process is shut down, it appears in the dialog box. After all processes have been shut down, the **Restart** button becomes active.

3 After the OSMF software and related processes shut down, insert a tape into the local tape drive.

4 Choose **Start** $\Rightarrow$ **Programs** $\Rightarrow$ **OSMF** $\Rightarrow$ **System Administration** $\Rightarrow$ **Database System Backup & OpenView**.

After the OSMF Database Backup dialog box opens, the indications given are similar to those given for the OSMF database hot backup, as explained after step 3 of the above procedure.

4.3.1.5 Scheduling Database Backups

Database hot backups should be set up by the system administrator to run automatically on a regular basis using the Database Backup Scheduler. The database backup should be scheduled during a time when system resource use will normally be low. The following procedure explains how to schedule database backups to run nightly at 12:30 am:

1 Choose **Start** $\Rightarrow$ **Programs** $\Rightarrow$ **OSMF** $\Rightarrow$ **System Administration** $\Rightarrow$ **Database Backup Scheduler.**

When **Database Backup Scheduler** is chosen, the OSMF:Database Backup Scheduler dialog box appears:
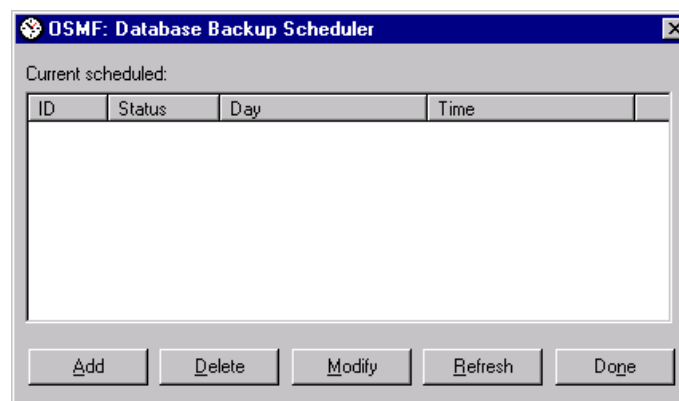
2 Click the **Add** button to invoke the Add Schedule dialog box:
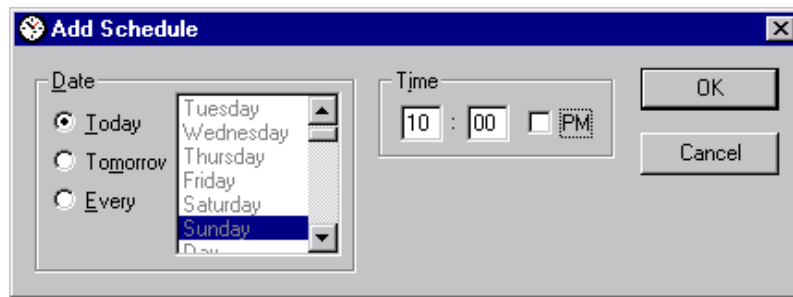
3 In the "Date" area of the dialog box, select the "Every" radio button, then select "Day" in the scroll box.

4 Enter 12:30 into the time fields, and de-select the "PM" check-box if it is selected.

5 Click **OK** in the Add Schedule dialog box.

6 Click **Done** in the OSMF:Database Backup Scheduler dialog box to close it.

4.4 System Recovery

4.4.1 In the event of data loss, data can be recovered from the backup archive. Different levels of recovery may exist depending on the amount of data loss.

4.4.1.1 Complete System Recovery

This level of recovery includes if the boot disk is replaced. It is broken into three main steps, or sub-procedures.

NOTE   There may be different variations of the following steps depending on how much data was lost. If the system is able to run the recovery process, *Step 1* is not required. If only the database recovery is required, *Step 1* and *Step 2* are not needed.

 Step 1 - This involves recovery of the NT Core System.

Third-party NT system backup products are available to assist the System Administrator in preparing the core system backup. The core system backup thus produced can now be used to recover the system using the process supplied with the NT system backup product.

In any case, if the system disk was damaged, it will need to be replaced before core system recovery can take place. Replace the bad disk and assure the new disk's address is set the same as the old disk. Refer to the manufacturer's hard drive documentation for setting the address.

After the core system is recovered, the data is restored onto your new disk drive. You can then exit the program and cycle the system's power off and then on. When the power is cycled, the system will boot from the new installed disk.

If there were no major changes to the system since the last core system backup was performed, then the following procedure (*Step 2*) can be bypassed. If any application or user files need to be recovered, perform *Step 2* to recover them.

NOTE   All application and user files are included on the NT Core Backup. You might not need to restore any other system files once *Step 1* is complete.

 Step 2 - This involves restoring any application or user files to the system from the System Backup tape.

The following procedure gives an example of how to do this using the Windows NT Backup tool. Note that this process is only needed if the data restored in *Step 1* is not current. *Step 1* produces a fully functional system. *Step 2* allows restoration of changes made since *Step 1*.

In the following example procedure, assume a portion of the /Openview/bin directory was removed or lost, in which case just that directory needs to be recovered.

1 If not logged on as user **svroot**, perform the following steps:

   a. Choose **Start ⇒ Shut Down...**

   b. In the "Shut Down Windows" box that appears, select the "`Close all programs and log on as a different user`" radio button, then click the **Yes** button.

   c. When the box containing the message "`Press Ctrl + Alt + Delete to log on`" appears, simultaneously press the **Ctrl**, **Alt**, and **Del** keys.

   d. Log in as the **svroot** user, and enter the svroot password.

2 Insert the tape containing the files to be recovered into the local tape drive.

3 Choose **Start ⇒ Programs ⇒ Administrative Tools (Common) ⇒ Backup**

When **Backup** is chosen, the Backup dialog box appears. This dialog box contains two sub-windows: one labeled "Drives" and one labeled "Tapes."

4 If the Tapes window is not maximized, maximize it, then de-select the check-box that is adjacent to the tape icon in the left side of the Tapes window if it is selected (see the following example):

5 *In the right pane of the Tapes window*, drill down to the "bin" folder by double-clicking the root folder, then the "OpenView" folder.

NOTE   If the Tapes window does not contain two panes, select "Tree and Directory" from the "View" menu to set the view to show the tree in the left pane, and the directory structure in the right pane.

6 Click the check-box that is adjacent to the "bin" folder so that it is selected, as shown in the following example:

7 Click the **Restore** button to invoke the Restore Information dialog box.

8 Click **OK** in the Restore Information dialog box.

A Restore Status dialog box appears and the restoration progresses.

NOTE   If a "Confirm File Replace" question box appears, click **Yes to All**.

9 When the message "`The operation was successfully completed`" appears in the
Restore Status dialog box, click **OK**, then close the Backup dialog box.

> **Step 3 - This involves restoring the OSMF database backup and HP OpenView files from
> tape produced using the database backup procedures.**

In this procedure, the OSMF database is brought to the level of the backup from which the
recovery is being done.

If a backup tape was prepared using the *OSMF Database Backup Plus OpenView* procedure, and
it is more recent than the tape produced using the hot database backup procedure, you will want
to restore from it. If you have backup tapes that were produced using both the *OSMF Database
Backup Plus OpenView* procedure and the *OSMF Database Hot Backup* procedure, and the hot
backup tape is more recent, you might want to recover first from the tape containing the HP
OpenView data, then recover the most recent database from the hot backup tape. The following
procedure can be run twice to recover from both of these tapes.

1 If not logged on as user **svroot**, perform the following steps:

  a. Choose **Start ⟹ Shut Down...**

  b. In the "Shut Down Windows" box that appears, select the "`Close all programs and
  log on as a different user`" radio button, then click the **Yes** button.

  c. When the box containing the message "`Press Ctrl + Alt + Delete to log on`"
  appears, simultaneously press the **Ctrl**, **Alt**, and **Del** keys.

  d. Log in as the **svroot** user, and enter the svroot password.

2 Ensure that no OSMF, HP OpenView NNM, or Oracle processes are running.

If these processes are *not* running, the Status Monitor will indicate that "`OpenView Process
Manager`" and "`Oracle TNSListner80`" are `STOPPED`. If no OSMF, HP OpenView
NNM, or Oracle processes are running, continue with the next step. If any of these processes are
running, perform the procedure entitled *To Stop the OSMF Software and Database* in the chapter
entitled *Starting and Stopping the OSMF Software* before continuing with the next step.

3 Insert the tape containing the files to be recovered into the local tape drive.

If you need to recover the database as well as the HP OpenView data, recover the tape that
contains the most recent data last. If the tape that contains the HP OpenView data is the most
recent backup, you only need to recover it.

4 Choose **Start ⟹ Programs ⟹ Administrative Tools (Common) ⟹ Backup**

When **Backup** is chosen, the Backup dialog box appears. This dialog box contains two sub-
windows: one labeled "Drives" and one labeled "Tapes."

5 If the Tapes window is not maximized, maximize it, then select the check-box that is adjacent to the tape icon in the left side of the Tapes window, as in the following example:

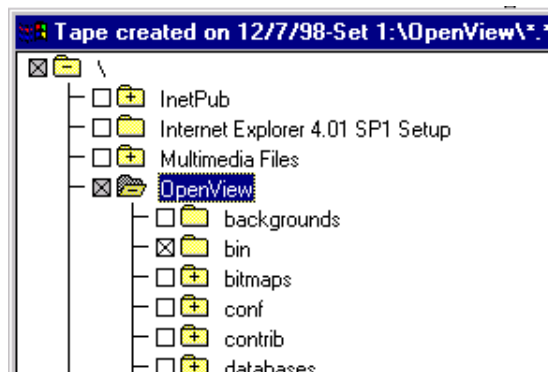**6** Click the **Restore** button to invoke the Restore Information dialog box.

7 Click **OK** in the Restore Information dialog box.

A Restore Status dialog box appears.

NOTE   If a "Confirm File Replace" question box appears, click **Yes to All**.

---

8 When the message "The operation was successfully completed" appears in the Restore Status dialog box, click **OK**, then close the Backup dialog box.

9 Choose **Start ⇒ Programs ⇒ OSMF ⇒ System Administration ⇒ Database System Recovery**.

When **Database System Recovery** is selected, the Recover Database From Tape dialog box is invoked. This dialog box provides a listing of all of the files to be recovered. The last column shows if the respective file has been recovered. At this point, this column ("Recovered") should indicate "No" for all files, as in the following example:
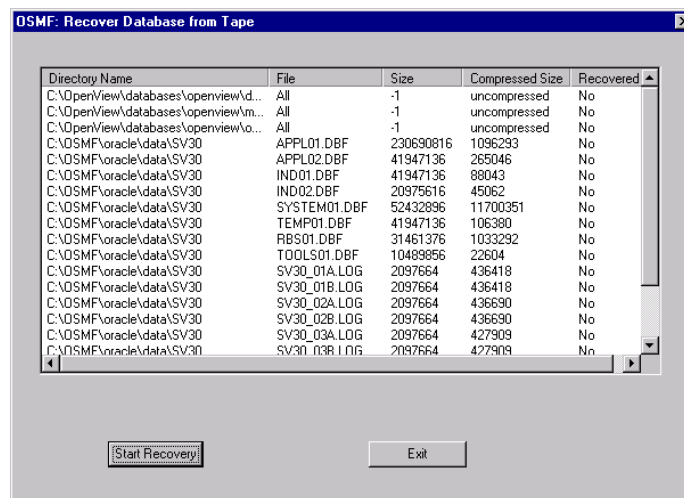
10 Click the **Start Recovery** button in the Recover Database From Tape dialog box.

An "SVDBRECOVER - MESSAGE" box appears, which contains the question "Do you wish to proceed with the recovery process?".

11 Click the **Yes** button to start the recovery process.

A "Yes" indication will appear in the "Recovered" column of the Recover Database From Tape dialog box as each file is recovered. When all files have been recovered and Oracle Recovery is complete, an "SVDBRECOVER - MESSAGE" box appears, which contains the message "OSMF database recovery completed successfully".

12 Click **OK** in the "SVDBRECOVER - MESSAGE" box.

5

OSMF Software Installation

5.1 Overview

5.1.1 The OSMF software is shipped on a Compact Disk (CD) that contains the current version of the both the *standard edition* and *deluxe edition* of the following software:

- **OSMF Management Server Software** - This software package should be installed on the system acting as the Management Server, that is, the system that contains the OSMF database. There is typically one Management Server per installation.

- **OSMF Management Client Software** - This software package should be installed on each system acting as a Management Console. There can be up to four Management Consoles per installation.

NOTE   The chapter entitled *Introduction and General Information* explains the features provided in both the standard edition and deluxe edition of the software.

The procedures in this chapter explain how to install the software. The installation procedure that you use depends on the current status of your OSMF system's database, and whether the installation is on a Management Server, or Management Console:

- If you are installing the OSMF Management Server software on a system for the first time, or you are upgrading the OSMF software from version 2.0 to 3.0, use the procedure *To Install the OSMF Management Server Software - Initial installations and Upgrades*.

- If you are reinstalling the same version of OSMF Management Server software, and that system contains an existing OSMF database, use the procedure *To Install the OSMF Management Sever Software - Reinstallations*.

- If you are installing the OSMF Management Client software (either for the first time or as an upgrade), use the procedure *To Install the OSMF Management Client Software*.

5.2 To Install the OSMF Management Server Software - Initial Installations and Upgrades

5.2.1 If you are installing the OSMF Management Server software on your system for the first time, or upgrading the OSMF software from version 2.0 to version 3.0, use the following procedure.

CAUTION   If the following procedure is used to upgrade the OSMF Management Server software, or reinstall it, the entire OSMF database will be destroyed. If you are upgrading the OSMF Management Server software, or reinstalling the same version of software, go to the procedure entitled *To Install the OSMF Management Server Software - Software Upgrades*.

NOTE   Before beginning the OSMF Management Server software installation, certain system requirements must be met, and the HP OpenView software and Oracle software must be properly installed and configured on your system.

Refer to the *System Requirements* section in the chapter entitled *Introduction and General Information* in this manual for a listing of the current hardware and software system requirements for a Management Server. Refer to the appropriate HP OpenView and Oracle documentation for information on how to install the HP OpenView and Oracle software.

5.2.1.1 Remove the Existing Version of OSMF Software (software upgrades only)

1 Log into the system as **svroot** (if necessary).

2 Choose **Start** ⇒ **Programs** ⇒ **OSMF** ⇒ **System Administration** ⇒ **System Monitor** to ensure that no OSMF, HP OpenView NNM, or Oracle processes are running.

If these processes are *not* running, the Status Monitor will indicate that "OpenView Process Manager" and "Oracle TNSListner80" are STOPPED. If no OSMF, HP OpenView NNM, or Oracle processes are running, close the System Monitor, then continue with the next step. If any of these processes are running, perform the procedure entitled *To Stop the OSMF Software and Database* in the chapter entitled *Starting and Stopping the OSMF Software* before continuing with the next step.

3 Close all OSMF application windows, and exit all Windows programs that are currently running on the system (although closing all Windows programs is not required, it is strongly recommended).

4 Choose **Start** ⇒ **Programs** ⇒ **OSMF** ⇒ **Uninstall**.

An Uninstall dialog box appears. The uninstall process will automatically remove all OSMF application files, but you can also have the process remove newly created database files and all OSMF application log files by selecting the appropriate check-boxes in the dialog box.

5 After you have made any necessary selections in the Uninstall dialog box, click **OK**.

6 Answer **Yes** to the question `Are you sure you want to uninstall OSMF now?`

Several terminal windows open and then close, then a "Confirm File Deletion" box appears which contains the message "`Are you sure you want to completely remove the selected application and all of its components?`".

7 Select **Yes** in the "Confirm File Deletion" box.

8 When the box containing the message "`Uninstall successfully completed`" appears, click **OK**.

5.2.1.2 Install the Software

1 Log into the system as **administrator**, and enter the administrator password.

2 Exit all Windows programs that are currently running on the system (although this is not required, it is strongly recommended).

3 Insert the OSMF software install CD into the system's local CD-ROM drive.

4 Start the Setup program:

    a. Choose **Start ⇒ Programs ⇒ Windows NT Explorer**.

    b. Double-click on "`Setup.exe`" to start the OSMF setup program.

    When the setup program (`setup.exe`) starts, it's "Welcome" screen appears.

5 Read the information in the "Welcome" screen, click the **Next >** button and read the information in the "Information" screen that appears, then click the **Next >** button again to continue.

NOTE   The "Information" screen might contain important information that does not appear in this manual.

6 Follow the instructions in the dialog boxes that ensue.

You will be prompted for the following information:

- *Your Name* and *Company Name* - The default in both fields for initial installations is `HP`, and these can be changed.
- *Destination Folder* - The default is `sys_drive:/osmf`, and this can be changed if desired (`sys_drive` is typically the "c:" drive).
- *Type Selection* - You must choose **Management Server** for this installation.

After the above information has been entered, a "Check Setup Information" screen appears which contains a "Current Settings" scroll-box. You can verify the setup information in this scroll-box.

7 After you have verified the setup information in the "Current Settings" scroll-box, click the
Next > button to start the install process.

When the install process starts, progress gauges appear which show the progress of the
installation. When the file installation completes, several message boxes appear, the last of
which reads "`Setup is Preparing Post Configuration...`"

This message box might be followed by a question box which requires user action, or it might be
followed by several terminal windows. If a question box appears, continue with the next step. If
the question box does not appear, skip the next step and continue with step 9 after the terminal
windows stop appearing.

8 If the svsec, svadm, svusr, svroot, or ora_dba groups exist on the system, you will be asked in a
series of question boxes if you want to recreate each group. You must click the appropriate
button (**Yes** or **No**) in each question box.

NOTE These groups typically shouldn't exist on a system on which you are performing an initial
installation. If they do exist, however, note that if you choose to recreate any group, all custom
profile information for that group will be lost.

9 Remove the OSMF software install CD from the system's local CD-ROM drive, as well as any
other floppy disks or tapes that might be in the other system drives.

10 As the last step in the setup process, you will be asked if you want to reboot (restart) the system.
Ensure that the "`Yes, I want to restart my computer now`" radio button is
selected, then click **Finish**, to reboot the system.

NOTE After the system reboots, the `sveht` process might generate an exception error. This is because
the database has not yet been set up. Ignore this error, and click **OK** in the message box to close
it.

5.2.1.3 Set up the Database

CAUTION If you create a new database on a system that contains an existing OSMF database by performing
the following steps, the entire existing database will be destroyed. If you are upgrading or
reinstalling the OSMF Management Server software, perform the procedure entitled *To Install
the OSMF Management Server Software - Software Upgrades,* rather than this one.

1 Choose **Start ⇒ Programs ⇒ OSMF ⇒ System Administration ⇒ Database Setup** to
start the database setup process.

When the process starts, a "svdbsetup" terminal window appears, and the following "SVdbsetup-
WARNING" message appears:

```
This operation will create a fresh database for OSMF 3.0.  In the
process it will delete all the files and data belonging to
earlier installation of database for OSMF 3.0.

Do you want to continue this process?
```

2 Click the **Yes** button in the "SVdbsetup-WARNING" message box, then click **Yes** to the question "`Are you really sure?,`" to continue the database setup process.

As the database setup process starts, a "SVdbsetup - MESSAGE" box appears which shows the environments that are currently set in the registry table.

3 Click **Yes** in the "SVdbsetup - MESSAGE" box to continue.

Numerous messages appear in the "svdbsetup" terminal window as the database creation process proceeds. Database creation can take a half hour or more. As the database creation process nears completion, an "NNM Console Output Display" window appears, then an "SVdbsetup - MESSAGE" box appears which displays the message "`Database setup is complete.`"

4 Click **OK** in the "SVdbsetup - MESSAGE" box and close the "NNM Console Output Display" window.

5.2.1.4 Add Management Consoles to the Management Server's Domain (if applicable)

1 Choose **Start ⇒ Programs ⇒ Administrative Tools (Common) ⇒ Server Manager**.

2 Perform the following steps for each Management Console in the installation:

   a. Choose the **Add to Domain...** menu item from the Server Manager's "Computer" menu to invoke the "Add Computer to Domain" dialog box.

   b. Select the "Windows NT Workstation or Server" radio button.

   c. Enter the name of the Management Console into the "Computer Name" field.

   d. Click the **Add** button.

3 Close the Server Manager.

NOTE   The domain name as well as the computer name should have been assigned as part of Windows NT installation and configuration on each computer. If you do not know the name of a particular computer, perform the following on the computer:

- Choose **Start ⇒ Settings ⇒ Control Panel**, then double-click on the "Network" icon.
- Click the "Identification" tab.

The Computer Name and Domain name is shown on the "Identification" tab.

5.2.1.5 Build the OSMF Graphics Modules

The following steps must be done in order for the OSMF software to correctly display the performance management-related screens.

1 Ensure that you are logged into the system as **svroot**.

2 Choose **Start ⇒ Programs ⇒ Developer 2000 R2.1 ⇒ Graphics Builder** to start the Oracle Graphics Builder.

3 In the Graphics Builder main window, choose `Connect...` from the `File` menu to invoke the Connect dialog box.

4 Enter the following information into the Connect dialog box, then click **Connect**:

- *User Name* - enter **system**
- *Password* - enter **manager**
- *Database* - enter **sv30.*servername*.smartview.com**

Where *servername* is the name of your computer.

5 In the Graphics Builder main window, choose `Open...` from the `File` menu, and click **OK** in the Filter dialog box that appears.

6 In the Open dialog box, choose the file `perf_all.ogd` in the OSMF\FORMS directory as the file to open.

7 If any Alert question boxes appear, click **Yes**. The Layout Editor window will eventually appear.

8 In the Graphics Builder window, choose `Compile All` from the `File` menu.

If any errors appear in the Compile dialog box, click **OK**, close the file, save it, then perform steps 5 through 8 again until no errors appear.

9 After the file compiles with no errors, save it, close it, and perform steps 5 through 8 with files `perf_cols.ogd`, `perf_curve.ogd`, and `perf_table.ogd`.

5.2.1.6 Unlock the Deluxe Edition Functionality (if applicable).

The OSMF software that has now been installed contains the code for "Standard Edition" as well as "Deluxe Edition" features. In order to use the software's "Deluxe Edition" functionality, however, a license certificate must be obtained from HP. The license certificate includes an alphanumeric license key code, which must be correctly entered in the following procedure in order to unlock the "Deluxe Edition" functionality.

NOTE   The chapter entitled *Introduction and General Information* explains the features provided in both the standard edition and deluxe edition of the software.

1 Choose **Start** $\Rightarrow$ **Programs** $\Rightarrow$ **OSMF** $\Rightarrow$ **System Administration** $\Rightarrow$ **Install License** to invoke the "Install License" dialog box.

2 Enter the alphanumeric license key code exactly as it is shown on your license certificate into the "Enter New License Key" field, then click the **Add** button.

3 Verify that the key code is entered correctly by checking it in the "Installed Licenses" field of the dialog box, then click the **Done** button to close the dialog box.

5.3 To Install the OSMF Management Server Software - Reinstallations

5.3.1 If you are reinstalling the same version of the OSMF Management Server software on your system, use the following procedure.

NOTES   If you are reinstalling the software, perform the following procedure rather than the procedure for initial installations and upgrades, as the following procedure ensures that the database is preserved.

Before beginning the OSMF Management Server software installation, certain system requirements must be met, and the HP OpenView software and Oracle software must be properly installed and configured on your system.

Refer to the *System Requirements* section in the chapter entitled *Introduction and General Information* in this manual for a listing of the current hardware and software system requirements for a Management Server. Refer to the appropriate HP OpenView and Oracle documentation for information on how to install the HP OpenView and Oracle software.

5.3.1.1 Back up the OSMF Database and HP OpenView Files

1   Log into the system as **svroot**.

2   Back up the current OSMF database and HP OpenView files.

Refer to the procedure entitled *OSMF Database Backup Plus OpenView* that is in the *Backup Procedures* section of the *System Backup and Recovery* chapter of this manual for more information.

3   Choose **Start** ⇒ **Programs** ⇒ **OSMF** ⇒ **System Administration** ⇒ **Database Services - Stop** to shut down the OSMF database.

As the database is being shut down, a "svdbshut" terminal window appears which displays some status messages. After the database shutdown process is complete, the "svdbshut" terminal window closes.

5.3.1.2 Remove the Existing Version of OSMF Software

1   Log into the system as **svroot** (if necessary).

2   Choose **Start** ⇒ **Programs** ⇒ **OSMF** ⇒ **System Administration** ⇒ **System Monitor** to ensure that no OSMF, HP OpenView NNM, or Oracle processes are running.

If these processes are *not* running, the Status Monitor will indicate that "OpenView Process Manager" and "Oracle TNSListner80" are STOPPED. If no OSMF, HP OpenView NNM, or Oracle processes are running, close the System Monitor, then continue with the next step. If any of these processes are running, perform the procedure entitled *To Stop the OSMF Software and Database* in the chapter entitled *Starting and Stopping the OSMF Software* before continuing with the next step.

3 Close all OSMF application windows, and exit all Windows programs that are currently running on the system (although closing all Windows programs is not required, it is strongly recommended).

4 Choose **Start ⇒ Programs ⇒ OSMF ⇒ Uninstall**.

An Uninstall dialog box appears. The uninstall process will automatically remove all OSMF application files, but you can also have the process remove newly created database files and all OSMF application log files by selecting the appropriate check-boxes in the dialog box.

5 After you have made any necessary selections in the Uninstall dialog box, click **OK**.

6 Answer **Yes** to the question `Are you sure you want to uninstall OSMF now?`

Several terminal windows open and then close, then a "Confirm File Deletion" box appears which contains the message "`Are you sure you want to completely remove the selected application and all of its components?`".

7 Select **Yes** in the "Confirm File Deletion" box.

8 When the box containing the message "`Uninstall successfully completed`" appears, click **OK**.

5.3.1.3 Install the Software Upgrade

1 Insert the OSMF software install CD into the system's local CD-ROM drive.

2 Start the Setup program:

a. Choose **Start ⇒ Programs ⇒ Windows NT Explorer**.

b. Double-click on "`Setup.exe`" to start the OSMF setup program.

When the setup program (`setup.exe`) starts, it's "Welcome" screen appears.

3 Read the information in the "Welcome" screen, click the **Next >** button and read the information in the "Information" screen that appears, then click the **Next >** button again to continue.

NOTE   The "Information" screen might contain important information that does not appear in this manual.

---

4 Follow the instructions in the dialog boxes that ensue.

You will be prompted for the following information:

• *Your Name* and *Company Name* - These fields will contain the information previously entered during initial installation. They can be changed now if desired.

• *Destination Folder* - This field will contain the folder previously specified during initial installation. It can be re-specified now if desired.

• *Type Selection* - You must choose **Management Server** for this installation.

After the above information has been entered, a "Check Setup Information" screen appears which contains a "Current Settings" scroll-box. You can verify the setup information in this scroll-box.

5 After you have verified the setup information in the "Current Settings" scroll-box, click the **Next >** button to start the install process.

When the install process starts, progress gauges appear which show the progress of the installation. When the file installation completes, several message boxes appear, the last of which reads "`Setup is Preparing Post Configuration...`"

This message box is then followed by a question box which requires user action.

6 You will be asked if you want to recreate each existing user group (svsec, svadm, svusr, svroot, and ora_dba) via a series of question boxes. You must click the appropriate button (**Yes** or **No**) in each question box.

NOTE These user groups likely will already exist on a system that is being upgraded, and you therefore will likely be asked if you want to recreate all of them. Note that if you choose to recreate any of these groups, all custom profile information for the group will be lost.

7 Remove the OSMF software install CD from the system's local CD-ROM drive, as well as any other floppy disks or tapes that might be in the other system drives.

8 As the last step in the setup process, you will be asked if you want to reboot (restart) the system. Ensure that the "`Yes, I want to restart my computer now`" radio button is selected, then click **Finish**, to reboot the system.

5.3.1.4 Build the OSMF Graphics Modules

The following steps must be done in order for the OSMF software to correctly display the performance management-related screens.

1 Ensure that you are logged into the system as **svroot**.

2 Choose **Start** ⇒ **Programs** ⇒ **Developer 2000 R2.1** ⇒ **Graphics Builder** to start the Oracle Graphics Builder.

3 In the Graphics Builder main window, choose `Connect...` from the `File` menu to invoke the Connect dialog box.

4 Enter the following information into the Connect dialog box, then click **Connect**:

• *User Name* - enter **system**
• *Password* - enter **manager**
• *Database* - enter **sv30.***servername***.smartview.com**

Where *servername* is the name of your computer.

5 In the Graphics Builder main window, choose `Open...` from the `File` menu, and click **OK** in the Filter dialog box that appears.

6 In the Open dialog box, choose the file `perf_all.ogd` in the OSMF\FORMS directory as the file to open.

7 If any Alert question boxes appear, click **Yes**. The Layout Editor window will eventually appear.

8 In the Graphics Builder window, choose `Compile All` from the `File` menu.

   If any errors appear in the Compile dialog box, click **OK**, close the file, save it, then perform steps 5 through 8 again until no errors appear.

9 After the file compiles with no errors, save it, close it, and perform steps 5 through 8 with files `perf_cols.ogd`, `perf_curve.ogd`, and `perf_table.ogd`.

5.3.1.5 Unlock the Deluxe Edition Functionality (if applicable).

The OSMF software that has now been installed contains the code for "Standard Edition" as well as "Deluxe Edition" features. In order to use the software's "Deluxe Edition" functionality, however, a license certificate must be obtained from HP. The license certificate includes an alphanumeric license key code, which must be correctly entered in the following procedure in order to unlock the "Deluxe Edition" functionality.

NOTE   The chapter entitled *Introduction and General Information* explains the features provided in both the standard edition and deluxe edition of the software.

1 Choose **Start** $\Rightarrow$ **Programs** $\Rightarrow$ **OSMF** $\Rightarrow$ **System Administration** $\Rightarrow$ **Install License** to invoke the "Install License" dialog box.

2 Enter the alphanumeric license key code exactly as it is shown on your license certificate into the "Enter New License Key" field, then click the **Add** button.

3 Verify that the key code is entered correctly by checking it in the "Installed Licenses" field of the dialog box, then click the **Done** button to close the dialog box.

5.4 To Install the OSMF Management Client Software

5.4.1 If you are installing the OSMF Management Client software on your system for the first time, or if you are upgrading the Management Client software, use the following procedure.

NOTE   Before beginning the OSMF Management Client software installation, certain system requirements must be met, and the HP OpenView software and Oracle software must be properly installed and configured on your system.

Refer to the *System Requirements* section in the chapter entitled *Introduction and General Information* in this manual for a listing of the current hardware and software system requirements for a Management Client. Refer to the appropriate HP OpenView and Oracle documentation for information on how to install the HP OpenView and Oracle software.

5.4.1.1 Remove the Existing Version of OSMF Software (software upgrades only)

1 Log into the system as **svroot**, and enter the svroot password.

2 Close all OSMF application windows, then exit all Windows programs that are currently running on the system (although closing all Windows programs is not required, it is strongly recommended).

3 Choose **Start ⇒ Programs ⇒ OSMF ⇒ Uninstall**.

An Uninstall dialog box appears. The uninstall process will automatically remove all OSMF application files, but you can also have the process remove newly created OSMF application log files by selecting the check-box in the dialog box.

4 After you have made any necessary selections in the Uninstall dialog box, click **OK**.

5 Answer **Yes** to the question `Are you sure you want to uninstall OSMF now?`

Several terminal windows open and then close, then a "Confirm File Deletion" box appears which contains the message "`Are you sure you want to completely remove the selected application and all of its components?`".

6 Select **Yes** in the "Confirm File Deletion" box.

7 When the box containing the message "`Uninstall successfully completed`" appears, click **OK**.

5.4.1.2 Install the Software (initial installations, reinstallations, and upgrades)

NOTE   If you just completed the above procedure (*Remove the Existing Version of OSMF Software*), as when you are in the process of upgrading or reinstalling the software, you can skip the first two steps of the following procedure.

1 Log into the system as **administrator** (for initial installations), or **svroot** (for reinstallations and upgrades), and enter the appropriate password.

2 Exit all Windows programs that are currently running on the system (although closing all Windows programs is not required, it is strongly recommended).

3 Insert the OSMF software install CD into the system's local CD-ROM drive.

4 Start the Setup program:

    a. Choose **Start ⇒ Programs ⇒ Windows NT Explorer**.

    b. Double-click on "`Setup.exe`" to start the OSMF setup program.

       When the setup program (`setup.exe`) starts, it's "Welcome" screen appears.

5 Read the information in the "Welcome" screen, click the **Next >** button and read the information in the "Information" screen that appears, then click the **Next >** button again to continue.

NOTE   The "Information" screen might contain important information that does not appear in this manual.

6 Follow the instructions in the dialog boxes that ensue.

You will be prompted for the following information:

• *Your Name* and *Company Name* - The default in both fields for initial installations is `HP`, and for software upgrades, the fields will contain the information previously entered. In either case, they can be changed.

• *Destination Folder* - The default is `sys_drive:/osmf`, for initial installations, and for software upgrades this field will contain the folder previously specified. In either case, it can be changed if desired (`sys_drive` is typically the "c:" drive).

• *Type Selection* - You must choose **Management Client** for this installation.

After the above information has been entered, a "Check Setup Information" screen appears which contains a "Current Settings" scroll-box. You can verify the setup information in this scroll-box.

7 After you have verified the setup information in the "Current Settings" scroll-box, click the **Next >** button to start the install process.

When the install process starts, progress gauges appear which show the progress of the installation. When the file installation completes, several message boxes appear, the last of which reads "`Setup is Preparing Post Configuration...`"

This message box might be followed by a question box which requires user action, or it might be followed by several terminal windows. If a question box appears, continue with the next step. If the question box does not appear, skip the next step and continue with step 9 after the terminal windows stop appearing.

8 If the svsec, svadm, svusr, svroot, or ora_dba groups exist on the system, you will be asked in a series of question boxes if you want to recreate each group. You must click the appropriate button (**Yes** or **No**) in each question box.

NOTE These groups typically shouldn't exist on a system on which you are performing an initial installation, however, they likely will exist on a system that is being upgraded. Note that if you choose to recreate any of these groups, all custom profile information for the group will be lost.

9 Remove the OSMF software install CD from the system's local CD-ROM drive, as well as any other floppy disks or tapes that might be in the other system drives.

10 As the last step in the setup process, you will be asked if you want to reboot (restart) the system. Ensure that the "`Yes, I want to restart my computer now`" radio button is selected, then click **Finish**, to reboot the system.

5.4.1.3 Build the OSMF Graphics Modules

The following steps must be done in order for the OSMF software to correctly display the performance management-related screens.

1 Ensure that you are logged into the system as **svroot**.

2 Choose **Start ⇒ Programs ⇒ Developer 2000 R2.1 ⇒ Graphics Builder** to start the Oracle Graphics Builder.

3 In the Graphics Builder main window, choose `Connect...` from the `File` menu to invoke the Connect dialog box.

4 Enter the following information into the Connect dialog box, then click **Connect**:

   • *User Name* - enter **system**
   • *Password* - enter **manager**
   • *Database* - enter **sv30.*servername*.smartview.com**

   Where *servername* is the name of your computer.

5 In the Graphics Builder main window, choose `Open...` from the `File` menu, and click **OK** in the Filter dialog box that appears.

6 In the Open dialog box, choose the file `perf_all.ogd` in the OSMF\FORMS directory as the file to open.

7 If any Alert question boxes appear, click **Yes**. The Layout Editor window will eventually appear.

8 In the Graphics Builder window, choose `Compile All` from the `File` menu.

   If any errors appear in the Compile dialog box, click **OK**, close the file, save it, then perform steps 5 through 8 again until no errors appear.

9 After the file compiles with no errors, save it, close it, and perform steps 5 through 8 with files `perf_cols.ogd`, `perf_curve.ogd`, and `perf_table.ogd`.

5.4.1.4 Unlock the Deluxe Edition Functionality (if applicable - initial installations and upgrades).

The OSMF software that has now been installed contains the code for "Standard Edition" as well as "Deluxe Edition" features. In order to use the software's "Deluxe Edition" functionality, however, a license certificate must be obtained from HP. The license certificate includes an alphanumeric license key code, which must be correctly entered in the following procedure in order to unlock the "Deluxe Edition" functionality.

NOTE   The chapter entitled *Introduction and General Information* explains the features provided in both the standard edition and deluxe edition of the software.

1 Choose **Start ⇒ Programs ⇒ OSMF ⇒ System Administration ⇒ Install License** to invoke the "Install License" dialog box.

2 Enter the alphanumeric license key code exactly as it is shown on your license certificate into the "Enter New License Key" field, then click the **Add** button.

3 Verify that the key code is entered correctly by checking it in the "Installed Licenses" field of the dialog box, then click the **Done** button to close the dialog box.

6

Commissioning an SSU

6.1 In this Chapter

6.1.1 In order to establish communication between an SSU and the OSMF software, several parameters and switch settings must be set at the SSU. The procedure in this chapter explains how to configure an SSU so that it can communicate with the OSMF software.

6.2 To Configure SSUs to Communicate with the OSMF Software

Important *The following steps suggest the order in which the SSU configuration should be performed. For details on how to modify particular parameters, refer to the documentation supplied with the interface used (TL1 commands or local craft terminal).*

6.2.1 Before any SSU can be managed by the OSMF software, some basic configuration is required on behalf of the system administrator. Since the OSMF software cannot communicate with the SSU at this point, this configuration must be performed via an alternate interface. Most of the parameters can be set using TL1 commands or via the local craft terminal. Some switch settings will also have to be changed. These switches are located on the NIMC assembly in the SSU.

NOTE Modification of some network parameters using TL1 commands requires that a sequence be followed that is different than for other parameters to avoid their inadvertently being changed. This sequence is explained in detail in the document entitled *55400A Supplemental Documentation* that is shipped with the SSU.

1 Ensure that the "Security/Password Required" switch (bit 1 of switch S4 on the NIMC assembly) and the "Force Enable Local Port" switch (bit 3 of switch S4 on the NIMC assembly) is set to Off.

   Refer to the figure at the end of this procedure for switch locations.

2 Create a user with name "svsec" and a security level of SECURITY with a password of up to ten characters. The password must contain at least one special character (such as a period, asterisk, ampersand, or percent) and at least one non-alphabetical character. (The related TL1 commands are ED-USER-SECU (edit user security) and ENT-USER-SECU (enter user security).)

   The password will later be used when managing the SSU using the OSMF software.

NOTE Refer to the *55400A SSU Programming Manual* for information on creating the new user ("svsec").

3 Verify that Remote Automatic Output is set to "ALWAYS" (the related TL1 keyword is RMTAO).

   RMTAO determines the conditions under which automatic output messages are reported to the remote port.

4 Verify that Automatic Output Message Merge is set to "N" (the related TL1 keyword is AOMERGE).

   AOMERGE determines whether or not commands and automatic output messages are merged onto the command port, or carried on separate ports.

5 Set the following network parameters:

    a. SSU IP Address - Change this to the IP address for the SSU being configured (the related TL1 keywords are IPNE (for working memory) and IPNEX (for auxiliary memory)).

    b. OSMF Host IP Address - Change this to the IP address for the Management Server, that is, the system on which the OSMF database is running (the related TL1 keywords are IPEM1 (for working memory) and IPEM1X (for auxiliary memory)).

    c. Replication System IP Address - Ensure that this is set to `0.0.0.0` (the related TL1 keywords are IPEM2 (for working memory) and IPEM2X (for auxiliary memory)).

NOTE   If IPEM2 is set to a value other than 0.0.0.0 when a replication system is not installed, OSMF functional problems can result. Replication is currently not available for the Windows NT version of the OSMF software.

    d. Gateway Address - Change this to the IP address of the default gateway (The related TL1 keywords are IPGATE (for working memory) and IPGATEX (for auxiliary memory)).

    e. Sub-Network Address - Change this to the IP address of the sub-network mask (the related TL1 keywords are IPSUBNET (for working memory) and IPSUBNETX (for auxiliary memory)).

NOTE   The following network parameters do not need to be changed from their default values to support OSMF software operation: Local Manager 1 Address (IPLM1, IPLM1X), Local Manager 2 Address (IPLM2, IPLM2X), Command Port (PORTCMDS, PORTCMDSX), Auto Output Port (PORTAO, PORTAOX), and Inactivity Time (INACTTIME).

The following network parameters are obsolete: Port Bulk, Poll Time, Ack Time, Net Retry, and Net Timer 1.

6 Set "Scramble" to "Y" (the related TL1 keyword is SCRAMBLE).

Scramble determines whether or not communications from the SSU will be scrambled.

7 Ensure that the time and date is set at the SSU (The "ED-DAT" TL1 command can be used to set the time and date).

8 Set the "Enforce IPEM1/IPEM2/IPLM1/IPLM2 OR X25EM1/X25EM2" switch (bit 8 of switch S6 on the NIMC assembly) to Off.

When this switch is set to Off, the SSU will accept communications from any address.

NOTE   If, as for security reasons, your situation requires that the SSU accept communication *only* from the defined set of addresses (IPEM1/IPEM2, IPLM1/IPLM2, X25EM1/X25EM2), bit 8 of switch S6 should be set to On. When this switch is set to On, however, communications from *all other addresses* will be ignored, *including* Management Clients.

9 Set "Security/Password Required" switch and "Force Enable Local Port" switch (bits 1 and 3 of switch S4 on the NIMC assembly) to On.

NOTE   The SSU is now configured to communicate with the OSMF software. It can now be added to a synchronization map. When managing the SSU for the first time, you will need to enter its IP Address and Password. The IP address to use is the one specified in step 5-a of the above procedure, and the Password is the one specified in step 2.
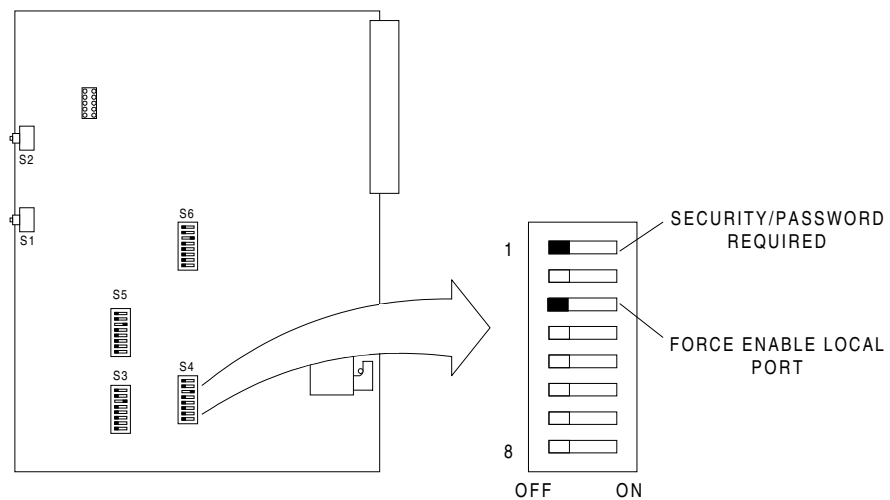
NIMC Assembly Switch Locations