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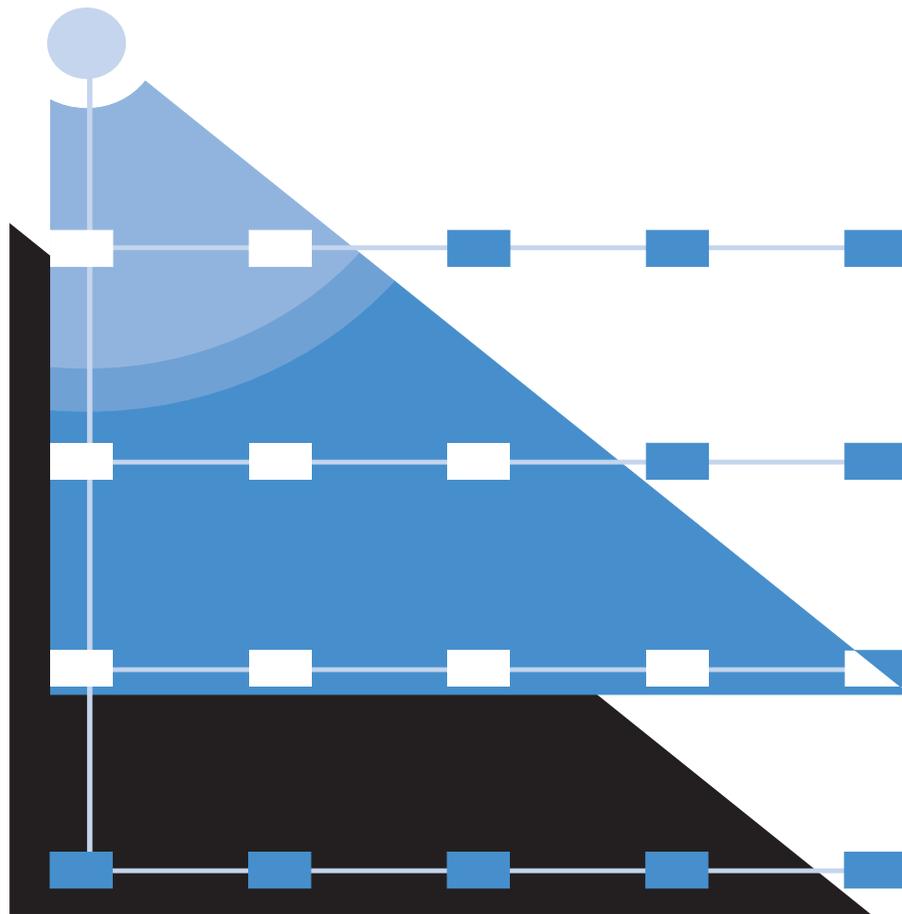
323-4001-202

SONET Transmission Products

S/DMS Network Manager

Installation and Administration

Standard Rel 6 November 1996



NORTEL
NORTHERN TELECOM

Record of NTP Update package(s)

NTP Update Network Manager Rel 6 Issue 02, January 1998

The NTP Update Network Manager Rel 6 Issue 02 is issued for the following reason:

- release of S/DMS Network Manager Release 6.1 software

NTP Update Network Manager Rel 6 Issue 01, April 1997

The NTP Update Network Manager Rel 6 Issue 01 is issued for the following reason:

- OC-3 Express support

Record of changed pages

The following pages of document Rel 6 Standard have been revised for:

NTP Update Network Manager Rel 6 Issue 02

NTP number	Pages modified	Pages added	Pages reissued (no changes)
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323-4001-202	1-12, 1-14, 1-16, 1-21		1-11,1-13, 1-15, 1-22

NTP Update Network Manager Rel 6 Issue 01

NTP number	Pages modified	Pages added	Pages reissued (no changes)
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323-4001-053	Replace entire book		
323-4001-055	2-19		2-20
323-4001-059	1-7 2-1, 2-5		1-8 2-2, 2-6

SONET Transmission Products

S/DMS Network Manager

Installation and Administration

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Publication history

November 1996

Standard for S/DMS Network Manager Release 6. Release 6 includes connection management enhancements (support for Virtual Tributary Bandwidth Manager (VTBM) and linear systems), revised network display for groups, and network element support for Tellab Titan 5500 Digital Cross-Connect System (DCS), DV45 Video Codec, and OC-192 network elements.

January 1996

Standard for S/DMS Network Manager Release 5. Release 5 adds STS connection management (provisioning) and service assurance functions to S/DMS Network Manager. Release 5 also introduces extensive changes to the user interface in the area of menu structure, node information, and display selection capabilities.

April 1995

Standard for S/DMS Network Manager Release 4. Release 4 includes updates for performance monitoring consolidation, remote inventory query and display, shelf-level graphics, provisionable span information, and support for additional users on certain S/DMS Network Manager hardware platforms.

September 1994

Standard for S/DMS Network Manager Release 3. Release 3 includes updates for centralized software management, enhanced alarm collection control, asynchronous alarm display, alarm filtering, alarm banner, TA-1230 ring configuration and traffic display, access to graphical OPC user interface, external device access, and enhancements to the S/DMS Network Manager software installation and upgrade process. This is also the first issue of the S/DMS Network Manager User Guide produced in full color.

January 1994

Standard for S/DMS Network Manager Release 2. Release 2 includes updates for user-defined network element groupings, transparent network element login access, detailed alarm information display, user-selectable link types, unrestricted network element node placement, and interwindow linking of network element nodes.

April 1993

Standard for S/DMS Network Manager Release 1. This user guide introduces the S/DMS Network Manager and describes the S/DMS Network Manager Release 1 network configuration and alarm monitoring capabilities.

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About this guide

This book provides information on installing, administering, and configuring S/DMS Network Manager Release 6 software.

Who should read this book

This book is intended for people who install, administer, and configure S/DMS Network Manager.

S/DMS Network Manager documentation packaging

The documentation for S/DMS Network Manager is composed of one volume. The volume contains nine individual books:

- *Introduction* (323-4001-102) introduces the features and user interface of S/DMS Network Manager.
- *Installation and Administration* (323-4001-202) provides installation and administration information for S/DMS Network Manager. Also, this book provides information on configuring and bootstrapping an operations controller (OPC), setting up serial ports for external device access, and customizing the S/DMS Network Manager user environment.
- *Connectivity* (323-4001-053) provides information on logging in and out of S/DMS Network Manager, controllers (OPC and TL1 MOA), network element user interfaces, and external devices.
- *Configuration* (323-4001-054) describes the Graphical Network Editor (GNE) tool of S/DMS Network Manager. The GNE is used to configure a network.
- *Fault Management* (323-4001-055) describes the Graphical Network Browser (GNB) tool of S/DMS Network Manager. The GNB is used for network surveillance.
- *Performance Management* (323-4001-056) describes centralized performance monitoring for the network elements monitored by S/DMS Network Manager.
- *Connection Management* (323-4001-057) describes viewing, provisioning, and editing connections on ring and linear systems.

- *Inventory Management* (323-4001-058) describes taking an inventory of remote network elements monitored by S/DMS Network Manager.
- *Software Management* (323-4001-059) describes controller and network element centralized software management.

Systems supported in this book

This book describes the operation of S/DMS Network Manager with S/DMS TransportNode, S/DMS AccessNode, Cornerstone Voice, SONET Radio 4/40, and TL1 MOA systems. The basic operation of S/DMS Network Manager is the same for each system. However, the availability of some features depends on the system S/DMS Network Manager is monitoring, and the software release installed on the system. For more information, see “Software release compatibility” in *S/DMS Network Manager Introduction*, 323-4001-102.

How commands, parameters, and responses are represented

Commands, parameters, and responses in this book are shown as follows.

System prompts and responses

System prompts and responses are printed as follows:

```
system-prompts and RESPONSES looks like this
```

Command strings

Command strings typed at the keyboard are printed in bold type, followed by a Return or Enter symbol (↵), as follows:

```
this is what you type ↵
```

Type the command string exactly as shown, including spaces, and end by pressing the Return key.

Variable parameters are enclosed in angle brackets, as follows:

```
Install the software in directory <directory name>
```

An explanation of the variable follows the command string, as follows:

where

```
<directory name> is the name of the directory used to...
```

On-screen buttons and menu commands

Buttons and menu command items are printed in bold type as follows:

```
select the Controller Status command
```

Hardkeys

Hardkey (keyboard keys) names are printed in plain type as follows:

press Return

Results of an action and comments

Results of an action and comments are printed in italic type, as follows:

The Controller Status dialog appears.

Screen illustrations

The screen illustrations in this book are black and white approximations of the images displayed by S/DMS Network Manager.

References in this book

S/DMS Network Manager can monitor various types of Northern Telecom SONET transmission systems, each of which has its own version of Northern Telecom Publication (NTP). Throughout this book, references to NTPs include an “nnnn” notation in place of the NTP version number. Substitute the appropriate NTP version number for the “nnnn” according to the type of system that S/DMS Network Manager is monitoring, as shown in the following table.

System type	NTP version number
OC-3/OC-12	1111
OC-48	1201
OC-192	1301
S/DMS AccessNode	3001

For example, if this book refers you to *User Interfaces Description*, 323-nnnn-301, and S/DMS Network Manager is monitoring a Northern Telecom OC-48 system, use NTP 323-1201-301 to obtain the appropriate information.

The following NTPs and other documentation are referred to, but not included as an integral part of the *S/DMS Network Manager User Guide*.

- *System Description*, 323-nnnn-100
- *Signal Flow and Protection Switching Descriptions*, 323-nnnn-103
- *Performance Monitoring Description*, 323-nnnn-105
- *User Interfaces Description*, 323-nnnn-301
- *System Administration Procedures*, 323-nnnn-302
- *Software Administration Procedures*, 323-nnnn-303

- *Protection Switching Procedures*, 323-nnnn-311
- *Performance Monitoring Procedures*, 323-nnnn-520
- *Alarm and Trouble Clearing*, 323-nnnn-543
- *S/DMS Network Manager, Release 6.00 Planning Guide*, PG 96-04
- *MOA, Release 2.00 Planning Guide*, PG 95-11
- *HP Visual User Environment User's Guide*, Hewlett Packard Part No B1171-90042
- *HP Remote Access User's Guide*, Hewlett Packard Part No B1862-90011
- *HP-UX Installing Peripherals*, Hewlett Packard Part No B1864-90011
- *HP-UX System Administration Tasks manual*
- *Bellcore SONET BLSR Equipment Criteria TA-NWT-001230* (issue 2)

Technical support and information

Additional technical support and information can be obtained by contacting the nearest service center. The service centers for the United States and Canada are listed in the following sections.

United States regional service centers

In the United States, contact the nearest regional service center for technical support and information.

For 24 hour emergency technical support

For assistance restoring service on equipment which has been carrying traffic and is out-of-service, call the following toll-free number:

800-275-3827 (800-ASK-ETAS)

For technical support from 8 a.m. to 10 p.m.

Call the following toll-free number:

800-275-8726 (800-ASK-TRAN)

Southern Region

Northern Telecom Inc.
5555 Winward Parkway, Suite B,
Alpharetta, Georgia 30201-3895
(404) 661-4000

Central Region

Northern Telecom Inc.
475 Martingale Road
Schaumburg, Illinois 60173
(708) 706-8000 or 8389

Pacific Region (North)

Northern Telecom Inc.
2305 Camino Ramon
San Ramon, California 94583
(510) 867-2000

Pacific Region (South)

Northern Telecom Inc.
300 North Lake Avenue
Pasadena, California 91101
(818) 584-2000

Northeast Region

Northern Telecom Inc.
200 Summit Lake Drive
Valhalla, New York 10595
(914) 773-2559

Western Region

Northern Telecom Inc.
5575 DTC Parkway, Suite 150
Englewood, Colorado 80111
(303) 850-5600

Southwest Region

Northern Telecom Inc.
2221 Lakeside Blvd., FL 9
Richardson, Texas 75082-4399
(214) 684-4195 or 1000

Eastern Region

Northern Telecom Inc.
2010 Corporate Ridge
McLean, Virginia 22102
(703) 712-8487

Canada technical assistance service centers

In Canada, contact the nearest technical assistance service center for technical support and information.

For 24-hour emergency technical support

For assistance with problems that can lead to payload-affecting failures or issues that prevent payload protection switching, call the following numbers:

(800) 361-2465 or (514) 956-3500

For 24-hour emergency recovery

For assistance restoring service on equipment which has been carrying payload and is out of service, call ETAS at the following number:

613-226-5456

For non emergency support from 8:00 a.m. to 4:00 p.m.

Call the regional Field Service Engineering (FSE) group in your Technical Assistance Service Center.

FSE West (Alberta)

Northern Telecom Canada Limited
10235, 101 Street
Edmonton, Alberta T5J 3G1
(403) 441-3193

FSE West (Manitoba, North-Western Ontario)

Northern Telecom Canada Limited
180, 117 King Edward Street E.
Winnipeg, Manitoba R3H 0Y3
(204) 788-7531

Ontario

Northern Telecom Canada Limited
PO Box 3000
Brampton, Ontario L6V 2M6
(905) 452-2104

FSE East (Newfoundland)

Northern Telecom Canada Limited
63 Thorburn Rd.
St. John's, Newfoundland A1B 3M2
(709) 722-2500 or 1-800-661-4827

FSE East (Nova Scotia, Prince Edward Island)

Northern Telecom Canada Limited
1701 Hollis St., Suite 900
Halifax, Nova Scotia B3J 3M8
(902) 421-2301

FSE West

(British Columbia, Yukon, and Northwest Territories)

Northern Telecom Canada Limited
#410, 13251 Delf Place
Richmond, British Columbia V6V 2A2
(604) 279-2258

FSE West (Saskatchewan)

Northern Telecom Canada Limited
PO Box 770
Regina, Saskatchewan S4P 3A8
(1867 Hamilton Street, 8th floor)
(306) 791-7100 or (306) 791-7110

Quebec

Northern Telecom Canada Limited
PO Box 2110
St. Laurent, Quebec H4L 4Y7
(514) 744-8750

FSE East (New Brunswick)

Northern Telecom Canada Limited
1 Brunswick Square, 4th Floor
Saint John, New Brunswick E2L 4K2
(506) 632-8271 or (506) 632-8203

Installing the S/DMS Network Manager software

S/DMS Network Manager software is distributed on a single digital data storage (DDS) tape. This tape contains the S/DMS Network Manager software, the command scripts that allow you to install the software, and a set of default users that allow you to begin using S/DMS Network Manager.

This chapter describes how to prepare a new S/DMS Network Manager workstation to ensure that the S/DMS Network Manager software operates properly, and how to install the S/DMS Network Manager software on the workstation.

Before preparing the new workstation, or installing the software, ensure the workstation is properly connected to your data communication network. Due to the variety of data communication networks, this guide provides only general information about connecting to a data communication network. For specific instructions on connecting the workstation to your network, see the documentation provided by the vendor of your network.

The procedures in this chapter explain how to perform first-time installation of S/DMS Network Manager software on a new workstation, and how to upgrade existing S/DMS Network Manager software already installed on a workstation.

If you are upgrading existing S/DMS Network Manager software, all configuration data from the older version is maintained, providing it was properly saved using the Graphical Network Editor (GNE). If you are upgrading the software on an S/DMS Network Manager actively monitoring the network, ensure all S/DMS Network Manager users are logged off.

To ensure network visibility during the upgrade process, use a cold-standby S/DMS Network Manager to monitor the network, if one is available.

Prior to using the cold-standby S/DMS Network Manager, ensure that the latest network configuration database is transferred from the active S/DMS Network Manager to the cold-standby S/DMS Network Manager. For more information, see Procedure 2-9, “Transferring the configuration database” on page 2-27.

Chapter task list

The following tasks are included in this chapter. For a first-time software installation on a new workstation, these tasks must be performed in the order shown. If upgrading existing S/DMS Network Manager software, proceed directly to the “Installing the software” task.

Task	Page
Preparing for the software installation	1-3
Installing the software	1-12

Requirements

Before you begin the software installation, you must do the following:

- ensure the data communication network is properly installed and configured according to the instructions provided by the network vendor
- refer to the *S/DMS Network Manager Planning Guide*, PG 96-04, supplied by Northern Telecom, and review the data communication network requirements
- ensure the workstation is properly connected to the data communication network according to the instructions provided by the network vendor
- ensure the workstation is prepared according to the instructions provided in Procedure 1-1, “Preparing for the software installation” on page 1-3
- familiarize yourself with your workstation, and develop a basic knowledge of the UNIX operating system. To install the S/DMS Network Manager software, you must be authorized to log in to the workstation as the UNIX root user.
- if upgrading an existing version of S/DMS Network Manager software, ensure all S/DMS Network Manager users are logged off S/DMS Network Manager
- configure the Ethernet port on each operations controller (OPC) so that S/DMS Network Manager can monitor them. See “Configuring the OPC” on page 3-1 of this document.
- refer to “Advanced user topics” on page 7-1 if using an environment other than HP VUE

Procedure 1-1

Preparing for the software installation

Use this procedure to prepare a new S/DMS Network Manager workstation prior to installing the S/DMS Network Manager software. It is important that you perform this procedure to ensure that the workstation operates properly once the software is installed.

If you purchased your S/DMS Network Manager workstations from Northern Telecom, all necessary hardware components are pre-assembled prior to delivery. Once you complete this procedure, the workstation is ready for installation of the S/DMS Network Manager software.

If you did not purchase your S/DMS Network Manager workstation from Northern Telecom, some hardware assembly and custom configuration of the operating system might be required. Once you complete this procedure, and before you install the S/DMS Network Manager software, review “Workstation setup summary” on page 1-10 to ensure all pre-installation requirements are satisfied.

This procedure is performed by the local network administrator.

Configuration record

Before proceeding, obtain the following information from your local network administrator, and record the information for future reference. This information is required to complete this procedure.

System name (hostname) assigned to workstation:

IP address of the workstation:

Subnetwork mask of the LAN that the workstation is on:

Default network gateway hostname:

Default network gateway IP address:

Time zone in which the workstation is located:

Procedure 1-1 (continued)

Preparing for the software installation

Additional Requirements

In addition to the requirements described in “Requirements” on page 1-2, the following conditions must be satisfied to complete this procedure:

- connect all hardware components (for example, keyboard, monitor, and tape drive)
- ensure the workstation is powered down and no changes have been made to the workstation configuration
- connect the workstation to the data communications network. See the instructions provided by the network vendor
- determine a root password for the workstation. For security reasons, do not disclose this password to anyone

Action

Step	Action
-------------	---------------

- | | |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Verify that there is a physical connection from the workstation to the data communication network.

For example, if your configuration uses an EtherTwist Transceiver, verify that it is connected to the network.

<i>If there is no connection, ask your local network administrator to connect the S/DMS Network Manager workstation to the network before proceeding.</i> |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

—continued—

Procedure 1-1 (continued)

Preparing for the software installation**Step Action**

- 2** Power up the workstation.

The workstation begins an initialization process. This takes a few minutes. Once the workstation is initialized, the following message appears.

```

Welcome to HP-UX!

Before using your system, you will need to answer a few questions.

The first question is whether you plan to use this system on a network.

Answer "yes" if you have connected the system to a network and are ready
to link with a network.

Answer "no" if you:

    * Plan to set up this system as a standalone (no networking).

    * Want to use the system now as a standalone and connect to a
      network later.

Are you ready to link this system to a network?

Press [y] for yes or [n] for no, then press [Return]

```

- 3** Verify that the correct LEDs on the network interface device are lit. See the vendor documentation of the network interface device to determine which LEDs should be lit.
- If the correct LEDs are not lit, the physical link requirements are not met. Ask your local network administrator to verify the physical connection of the S/DMS Network Manager workstation to the network before continuing.*
- 4** To link the system to the network, enter
- y** ↵
- A message appears identifying information that is required in this procedure and asks if you wish to continue.*
- 5** If you have the required information, enter
- y** ↵
- 6** Enter the workstation system name (hostname) and press Return.
- 7** If the name is correct, enter
- y** ↵
- A message appears requesting the IP address.*
- 8** Enter the IP address of this S/DMS Network Manager workstation and press Return.

—continued—

1-6 Installing the S/DMS Network Manager software

Procedure 1-1 (continued)

Preparing for the software installation

Step	Action
9	If the IP address is correct, enter y ↵ <i>A message appears asking if you want to configure additional network parameters.</i>
10	To configure the additional network parameters, enter y ↵ <i>A message appears asking for the subnetwork mask.</i>
11	Enter the workstation subnetwork mask and press Return.
12	If the subnetwork mask is correct, enter y ↵ <i>A message appears asking for the network gateway.</i>
13	To specify the network gateway, enter y ↵
14	Enter the hostname of the default gateway and press Return.
15	Enter the IP address of the default gateway and press Return.
16	If the gateway hostname and IP address are correct, enter y ↵ <i>A message appears asking if you want to specify the bind server.</i>
17	You do not need to specify a BIND server. Enter: n ↵ <i>A message appears asking for the time zone the workstation is in.</i>
18	Enter the number corresponding to the location of the S/DMS Network Manager and press Return. <i>A message appears asking for more specific time zone information.</i>
19	Enter the number corresponding to the time zone and press Return.
20	If the time zone is correct, enter y ↵
21	Verify the time and date. The time or date can be corrected later if it is wrong. To continue, enter y ↵
22	To set the root password, enter y ↵

—continued—

Procedure 1-1 (continued)

Preparing for the software installation

- | Step | Action | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-------------------------------------------------------------|--|---------|---------------|--------|--------------|-----|-----|---------------|------------|-----|-----|-------------------------------------------------------------|------------|------|------|---------------|--------------------------------|-----|-----|---------------|
| 23 | Enter the root password and press Return.
Note: For security reasons, the password does not appear on the screen as you type it. Do not reveal the root password to anyone that is not authorized to log in to the S/DMS Network Manager as a root user. | | | | | | | | | | | | | | | | | | | | | | |
| 24 | Re-enter the root password and press Return. | | | | | | | | | | | | | | | | | | | | | | |
| 25 | To continue, press Return.
This S/DMS Network Manager workstation is now configured for your data communication network. | | | | | | | | | | | | | | | | | | | | | | |
| 26 | The remaining steps of this procedure apply to workstations purchased from Northern Telecom.
If your workstation was not purchased from Northern Telecom, you can execute the remaining steps, however, additional configuration may be required. For more information, see "Workstation setup summary" on page 1-10. | | | | | | | | | | | | | | | | | | | | | | |
| 27 | Workstations purchased from Northern Telecom are preconfigured and shipped with default values for the following items. There is no need to change the defaults for any of these items. | | | | | | | | | | | | | | | | | | | | | | |
| | <table border="1"> <thead> <tr> <th rowspan="2">Value</th> <th colspan="2">HP 735</th> <th rowspan="2">Comment</th> </tr> <tr> <th>C110 and C100</th> <th>HP 715</th> </tr> </thead> <tbody> <tr> <td>Screen Saver</td> <td>Off</td> <td>Off</td> <td>do not change</td> </tr> <tr> <td>Swap space</td> <td>325</td> <td>130</td> <td>pre-configured for optimal performance and future expansion</td> </tr> <tr> <td>File names</td> <td>Long</td> <td>Long</td> <td>do not change</td> </tr> <tr> <td>total system processes (nproc)</td> <td>572</td> <td>316</td> <td>do not change</td> </tr> </tbody> </table> | Value | HP 735 | | Comment | C110 and C100 | HP 715 | Screen Saver | Off | Off | do not change | Swap space | 325 | 130 | pre-configured for optimal performance and future expansion | File names | Long | Long | do not change | total system processes (nproc) | 572 | 316 | do not change |
| Value | HP 735 | | Comment | | | | | | | | | | | | | | | | | | | | |
| | C110 and C100 | HP 715 | | | | | | | | | | | | | | | | | | | | | |
| Screen Saver | Off | Off | do not change | | | | | | | | | | | | | | | | | | | | |
| Swap space | 325 | 130 | pre-configured for optimal performance and future expansion | | | | | | | | | | | | | | | | | | | | |
| File names | Long | Long | do not change | | | | | | | | | | | | | | | | | | | | |
| total system processes (nproc) | 572 | 316 | do not change | | | | | | | | | | | | | | | | | | | | |
| 28 | Once the system reboots, log in to the workstation using the new root userID and password. | | | | | | | | | | | | | | | | | | | | | | |
| 29 | Move the cursor to the toolbox icon in the HP VUE workspace. The toolbox is the icon with the image of a calculator, protractor, and triangle. | | | | | | | | | | | | | | | | | | | | | | |
| 30 | Click the left mouse button on the toolbox.
<i>The Toolboxes dialog appears.</i> | | | | | | | | | | | | | | | | | | | | | | |
| 31 | Click on the General Toolbox icon.
<i>The General Toolbox dialog appears.</i> | | | | | | | | | | | | | | | | | | | | | | |
| 32 | In the System_Admin directory, move to the System Administration Manager (SAM) icon and doubleclick the left mouse button. | | | | | | | | | | | | | | | | | | | | | | |

—continued—

Procedure 1-1 (continued)

Preparing for the software installation

Step Action

- 33 Enter the root password at the prompt.
The SAM dialog appears.
- 34 Doubleclick the left mouse button on **Kernel Configuration** in the SAM dialog.
The Kernel Configuration submenu is displayed.
- 35 Double click on the **Configurable Parameters** command.
The Configurable Parameters dialog is displayed.
- 36 For each of the following parameters, scroll down to the parameter name and select it.

Parameter	HP 735	HP 715	HP C110	HP C100
maxfiles	300	300	300	300
maxuprc	200	100	200	200
nfile	2300	850	2300	2300
npty	85	60	85	85
shmseg	50	50	50	50
nproc	572	316	572	572

The parameter is highlighted.

- 37 Select the **Modify Configurable Parameter** command from the Actions menu.
The Modify Configurable Parameter dialog appears.
- 38 Enter the corresponding value (see the table in step 36) in the Formula/Value field and select the **OK** button.
The Modify Configurable Parameter dialog closes.
Repeat steps 36 to 38 until all the parameters have been updated.
- 39 Select **Create a New Kernel** from the Actions tool menu.
A confirmation dialog is displayed.
- 40 Select the **Yes** button to acknowledge the confirmation dialog.
The system processes the information, then displays a Reboot System dialog.
- 41 Select the **OK** button in the Reboot System dialog. This button causes the changes to the kernel to take effect.
The system performs a reboot.

—continued—

Procedure 1-1 (continued)

Preparing for the software installation

Step	Action
42	Once the workstation login screen is displayed, the system is successfully rebooted, and ready for the installation of the S/DMS Network Manager software. Proceed to Procedure 1-2, "Installing the S/DMS Network Manager software" on page 1-12.

—end—

Workstation setup summary

Following is a brief summary of the workstation setup options, and their associated values. For more information, refer to the documentation identified in each section.

Screen saver

Make sure the screen saver is disabled. If it is not, new alarms cause an audible alarm, but the workspace does not reappear. To redisplay the workspace, move the cursor or strike a key.

To learn how to turn off the screen saver, see the *HP Visual User Environment User's Guide*.

Swap space

The swap space requirements for Hewlett-Packard (HP) workstations vary with the model. These requirements allow S/DMS Network Manager to be implemented using its peak potential.

Workstation	Swap Space Requirements
HP C110	325 Mbytes
HP C100	325 Mbytes
HP 735	325 Mbytes
HP 715	130 Mbytes
Minimum Real Memory	128 Mbytes

Use the UNIX System Administration Manager (SAM) to set swap space. To learn more about SAM, refer to the *HP-UX System Administration Tasks* manual.

File names

The HP-UX operating system can be configured for short or long file names. When setting up the HP-UX operating system for S/DMS Network Manager, ensure that long file names are configured.



CAUTION

Risk of malfunction

Ensure that long file names are enabled when setting up the S/DMS Network Manager HP-UX operating system.

S/DMS Network Manager does not function properly if long file names are not enabled.

For more information on configuring HP-UX for long file names, see the *HP-UX System Administration Tasks* manual.

Software patches

The following software patch must be applied to HP 9000 Series Model 715/64 workstations running HP-UX 9.05 to properly execute and display S/DMS Network Manager. Contact your workstation supplier to obtain this patch.

- PHSS_5066

Operating system parameters

These operating system parameters must be set to the following values.

Parameter	HP C110	HP C100	HP 735	HP 715
maximum user processes (maxuprc)	200	200	200	100
number of files (nfile)	2300	2300	2300	850
number of pseudo terminals per system (npty)	85	85	85	60
maximum number of shared memory segments (shmseg)	50	50	50	50
maximum number of open files per process (maxfiles)	300	300	300	300

This operating system parameter must be set equal to, or greater than, the following default values.

Parameter	HP C110	HP C100	HP 735	HP 715
total system processes (nproc)	572	572	572	316

Use the UNIX System Administration Manager (SAM) to set these parameters. To learn more about SAM, refer to the *HP-UX System Administration Tasks* manual.

Procedure 1-2 Installing the S/DMS Network Manager software

This procedure describes how to extract the S/DMS Network Manager software from a DDS tape and install it on the S/DMS Network Manager workstation.

During the software installation, you are prompted for the following:

- the device name of the tape drive used to install the software
- the name of the directory in which to install the software
- the name of the directory in which to install the S/DMS Network Manager user account information

Each prompt includes a default response. The default appears in square brackets at the end of the prompt. You can either accept the default response by pressing Return, or enter another response.

If you are installing the first S/DMS Network Manager software load on the workstation, six default S/DMS Network Manager user accounts (admin, master, operator, slat, netsurv, prov, or layout) are created during the software installation process. After installation, you can log in to S/DMS Network Manager as one of these users to verify the installation.

If you do not want to install the software or user account information in the default directories, make new directories before installing the S/DMS Network Manager software.

Make sure all S/DMS Network Manager users are logged out when you install the software. If any users are still logged in when you begin the installation, a warning message identifies them.

If you are installing the S/DMS Network Manager software on a workstation that already has Release 4, 5, 6, or 6.1 installed, the user account, software management, and audit trail information from the previous installation is preserved.

Scheduled controller and network element software deliveries are removed when S/DMS Network Manager is upgraded to Release 6.1 from a previous release. If required, make note of the scheduled deliveries and reschedule them after S/DMS Network Manager is upgraded, or wait until the deliveries are complete before starting the upgrade. For more information on changing the delivery schedule of a software release, see “Altering the delivery schedule”, in *S/DMS Network Manager Software Management*, 323-4001-059.

 Procedure 1-2 (continued)

Installing the S/DMS Network Manager software

Step	Action
------	--------


CAUTION
Risk of malfunction

S/DMS Network Manager includes several important tar files. Do not delete any files beginning with COPC or CACN. These files are required any time software bridging is performed.

Additional Requirements

In addition to the requirements described on page 1-2, the following conditions must be satisfied to complete this procedure:

- obtain the root password
- connect a DDS tape drive to the S/DMS Network Manager workstation
- ask all users to log out of S/DMS Network Manager
- make sure the workstation has at least 25 Mbytes of free disk space
- read the conventions described in “About this guide” on page vii

Action

Step	Action
------	--------

- | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Insert the S/DMS Network Manager software load DDS tape into the tape drive.

<i>The tape rewinds.</i> |
| 2 | Log in to the workstation as the root user by entering the root userID and password in the login dialog.

<i>A console window appears. This window allows you to access the root file system of the workstation.</i> |

—continued—

1-14 Installing the S/DMS Network Manager software

Procedure 1-2 (continued)

Installing the S/DMS Network Manager software

Step	Action								
3	<p>The installation procedure depends on whether you are installing the software for the first time or replacing an existing release.</p> <table><thead><tr><th>If you are</th><th>Then</th></tr></thead><tbody><tr><td>installing the first S/DMS Network Manager software load on the workstation</td><td>step 4</td></tr><tr><td>upgrading an existing Release 3 or earlier S/DMS Network Manager software load</td><td>step 4</td></tr><tr><td>upgrading Release 4, 5, 6, or an existing Release 6.1 S/DMS Network Manager software load</td><td>step 10</td></tr></tbody></table>	If you are	Then	installing the first S/DMS Network Manager software load on the workstation	step 4	upgrading an existing Release 3 or earlier S/DMS Network Manager software load	step 4	upgrading Release 4, 5, 6, or an existing Release 6.1 S/DMS Network Manager software load	step 10
If you are	Then								
installing the first S/DMS Network Manager software load on the workstation	step 4								
upgrading an existing Release 3 or earlier S/DMS Network Manager software load	step 4								
upgrading Release 4, 5, 6, or an existing Release 6.1 S/DMS Network Manager software load	step 10								
4	<p>Change to the /tmp directory by entering</p> <pre>cd /tmp ↵</pre> <p>Note 1: You can start the software installation process from any directory. However, using the /tmp directory ensures that the S/DMS Network Manager installation files are stored in one location.</p> <p>Note 2: If you are upgrading the S/DMS Network Manager software, ensure no controller or network element software deliveries are scheduled. For more information, see “Altering the delivery schedule”, in <i>S/DMS Network Manager Software Management</i>, 323-4001-059.</p>								
5	<p>Wait for the tape drive to stop rewinding.</p>								
6	<p>Remove any old S/DMS Network Manager installation files which are no longer required by entering</p> <pre>rm -rf /tmp/install ↵</pre>								
7	<p>Extract the installation software from the tape by entering</p> <pre>dd if=/dev/rmt/Øm bs=2Øb tar xf - ↵</pre> <p>Note: /dev/rmt/Øm is the default device name. If your tape drive has a different name, enter it instead when entering the command.</p> <p><i>A directory named “install” is created, and a file called “noc_install” is placed in this directory.</i></p>								

—continued—

 Procedure 1-2 (continued)

Installing the S/DMS Network Manager software

Step	Action
	<p>Note: After you enter the command to extract the installation software from the tape, one of two messages might, or might not appear on the screen.</p> <p>The message might be:</p> <pre><n> + <m> records in <n> + <m> records out</pre> <p>where:</p> <p><n> and <m> are some integer</p> <p>or,</p> <pre>broken pipe</pre> <p>You do not have to take any action on these messages.</p>
8	<p>Start the software installation process by entering</p> <pre>install/noc_install ↵</pre> <p><i>The following message appears.</i></p> <pre>S/DMS Network Manager installation begins...</pre> <p><i>After a short time, the following prompt appears.</i></p> <pre>Enter name of the tape device. Type abort to quit [/dev/rmt/Øm]:</pre> <p>This message prompts you to enter the device name of the tape drive used to install the software. This name must be the same as the device name entered in step 7.</p>
9	<p>Enter the tape drive name, or press Return to accept the default device name.</p> <p><i>The following prompt appears.</i></p> <pre>Enter name of directory in which to store this load. Type abort to quit [/usr/bin]:</pre> <p><i>A subdirectory called "noc" is automatically created under the specified directory. The software is installed in the "noc" directory.</i></p> <p>Note: You might want to install the software in a directory other than usr/bin if it is already being used for another purpose.</p> <p>Go to step 14.</p>
10	<p>Ensure no controller or network element software deliveries are scheduled using S/DMS Network Manager. For more information, see "Altering the delivery schedule", in <i>S/DMS Network Manager Software Management</i>, 323-4001-059.</p>

—continued—

1-16 Installing the S/DMS Network Manager software

Procedure 1-2 (continued)

Installing the S/DMS Network Manager software

- | Step | Action |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11 | Start the S/DMS Network Manager Administration script by entering
/usr/bin/noc/noc_admin ↵
<i>The S/DMS Network Manager administration menu appears.</i> |

```
1. Add a new S/DMS Network Manager user
2. Delete an existing S/DMS Network Manager user
3. List current S/DMS Network Manager users
4. View the audit trail
5. Disable S/DMS Network Manager user environment on X Terminal
6. List X terminals supporting S/DMS Network Manager user environment
7. Compress system log messages
8. Schedule the regular compression of system log messages
9. Cancel the regular compression of system log messages
10. Configure Number of Remote Login Sessions
11. Show Current Number of Remote Login Sessions
12. Install a new S/DMS Network Manager load
13. Delete the current S/DMS Network Manager load
14. Help
15. Quit

Select one of the above commands [1-15]:
```

Note: You can use this script only to upgrade a Release 4, 5, 6, or an existing Release 6.1 S/DMS Network Manager software load.

- | | |
|----|----------------------------------------------------------------------------|
| 12 | To install a new S/DMS Network Manager software load, enter
12 ↵ |
|----|----------------------------------------------------------------------------|

The following message appears.

Enter name of the tape device [/dev/rmt/Øm]:

Note: /dev/rmt/Øm is the default tape device name.

- | | |
|----|------------------------------------------------------------------------------------------------------------------|
| 13 | Enter the name of the tape drive attached to the workstation, or press Return to accept the default device name. |
|----|------------------------------------------------------------------------------------------------------------------|

Note: If the tape device name is not acceptable, an error message appears.

The following prompt appears.

S/DMS Network Manager installation begins...

Enter name of directory in which to store this load.

Type abort to quit [/usr/bin]:

A subdirectory called "noc" is automatically created under the specified directory. The software is installed in the "noc" directory.

Note: You might want to install the software in a directory other than usr/bin if it is already being used for another purpose.

—continued—

 Procedure 1-2 (continued)

Installing the S/DMS Network Manager software

Step	Action
14	<p>Press Return to install the software in the default directory, or enter the full path name of the directory to be used.</p> <p><i>The following message appears.</i></p> <pre>Installing software in <directory name></pre> <p>where:</p> <p style="padding-left: 40px;"><directory name> is the name of the directory where the S/DMS Network Manager software will be installed.</p> <p><i>The software occupies approximately 21 Mbytes of disk space. If there is not enough space for the software in the specified file system, an error message appears. Clear some disk space before loading the software.</i></p> <p>If you select the default, a directory called /usr/bin is automatically created (if it does not already exist).</p> <p>If you enter the name of a directory other than the default, it must already exist. A symbolic link is created between the directory you specified and the /usr/bin/noc directory.</p> <p>Note: Do not install the software in a directory called /usr/bin/noc or /tmp. If you try, an error message appears.</p>
15	<p>You are prompted for the directory to be used to store controller and network element software releases and the audit trail files. S/DMS Network Manager uses this directory when performing centralized software management. This directory is also used by S/DMS Network Manager to maintain a log of all activities performed on S/DMS Network Manager.</p> <p><i>The following message appears.</i></p> <pre>Enter name of directory in which to store the Controller/NE Software Releases and Audit Trail. Type abort to quit [/usr/lib]:</pre>

—continued—

1-18 Installing the S/DMS Network Manager software

Procedure 1-2 (continued)

Installing the S/DMS Network Manager software

- | Step | Action |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 16 | <p>Press Return to use the default directory to store the controller and network element software releases and the audit trail files, or enter the full path name of the directory to be used.</p> <p><i>The following message appears.</i></p> <pre>Controller/NE Software Releases and Audit Trail will be stored in <directory name></pre> <p>where:</p> <p><directory name> is the name of the directory used to store the controller and network element software releases and the audit trail files.</p> <p>Note: If you enter the name of a directory other than the default, the directory must already exist and there must be a minimum of 6 MBytes of space available. A symbolic link is created between the directory you specify and the default directory.</p> |
| 17 | <p>You are prompted for the directory to be used to store the default user accounts.</p> <p><i>The following message appears.</i></p> <pre>Enter name of directory in which to store the default users. Type abort to quit [/users]:</pre> <p>Note: If there is not enough space for the user account information on the file system that contains /users, you must specify another directory.</p> |
| 18 | <p>Press Return to use the default directory to store the user account information. If required, the directories for the default users are automatically created during the installation process.</p> <p>To install the user accounts in a directory other than the default, enter the full path name of that directory and press Return.</p> |

—continued—

 Procedure 1-2 (continued)

Installing the S/DMS Network Manager software

Step	Action						
19	<p>You are prompted to continue with the installation. The prompt indicates whether another S/DMS Network Manager load is already installed on the workstation.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>no other S/DMS Network Manager load is installed on the workstation, only the load you are installing appears in the prompt</td> <td>step 20</td> </tr> <tr> <td>another S/DMS Network Manager load is already installed on the workstation, the existing load, and the new load you are installing is displayed in the prompt</td> <td>step 23</td> </tr> </tbody> </table>	If	Then	no other S/DMS Network Manager load is installed on the workstation, only the load you are installing appears in the prompt	step 20	another S/DMS Network Manager load is already installed on the workstation, the existing load, and the new load you are installing is displayed in the prompt	step 23
If	Then						
no other S/DMS Network Manager load is installed on the workstation, only the load you are installing appears in the prompt	step 20						
another S/DMS Network Manager load is already installed on the workstation, the existing load, and the new load you are installing is displayed in the prompt	step 23						
20	<p>If no other S/DMS Network Manager load is installed on this workstation, the following message appears.</p> <pre>Installing new release <load name> Do you wish to continue ? [yes,no]</pre> <p>where:</p> <p style="padding-left: 40px;">< load name> is the name and version number of the S/DMS Network Manager load to be installed.</p>						
21	<p>To proceed with the installation, enter yes ↵</p> <p><i>The following message appears.</i></p> <pre>Extracting files from tape, this may take some time...</pre>						
22	<p>The default user accounts are created.</p> <p><i>The following message appears.</i></p> <pre>Creating/updating default users, this may take some time...</pre> <p>Go to step 29.</p>						

—continued—

Procedure 1-2 (continued)

Installing the S/DMS Network Manager software

Step	Action				
23	<p>If another S/DMS Network Manager load is already installed on the workstation, the following message appears.</p> <p>The new release <new load> will overwrite <old load>. Do you wish to continue ? [yes,no]</p> <p>where:</p> <table><tr><td>< new load ></td><td>is the name and version number of the S/DMS Network Manager load that you are installing.</td></tr><tr><td><old load></td><td>is the name and version number of the S/DMS Network Manager load that is already installed on the workstation.</td></tr></table>	< new load >	is the name and version number of the S/DMS Network Manager load that you are installing.	<old load>	is the name and version number of the S/DMS Network Manager load that is already installed on the workstation.
< new load >	is the name and version number of the S/DMS Network Manager load that you are installing.				
<old load>	is the name and version number of the S/DMS Network Manager load that is already installed on the workstation.				
24	<p>To proceed with the installation, enter yes ↵</p> <p><i>The following message appears.</i></p> <p>Extracting files from tape, this may take some time...</p>				
25	<p>The existing S/DMS Network Manager software release information and the audit trail files are preserved when you install the new S/DMS Network Manager load.</p> <p><i>The following message appears.</i></p> <p>Preserving <directory name>/eswd from previous installation Preserving <directory name>/audit from previous installation</p> <p>where:</p> <table><tr><td>< directory name></td><td>is the name of the directory used by the previous installation to store the controller and network element software releases and the audit trail file.</td></tr></table>	< directory name>	is the name of the directory used by the previous installation to store the controller and network element software releases and the audit trail file.		
< directory name>	is the name of the directory used by the previous installation to store the controller and network element software releases and the audit trail file.				
26	<p>If the default user accounts already exist from a previous installation, they are updated. If the default user accounts do not exist, they are created.</p> <p><i>The following message appears.</i></p> <p>Creating/updating default users, this may take some time...</p> <p>Note: Warning messages can appear on the display during the installation process. Ignore these messages.</p>				

—continued—

Procedure 1-2 (continued)

Installing the S/DMS Network Manager software

Step	Action						
27	<p>The installation script checks if device files for the serial port are available. If one or more of the device files are not available, the following message appears.</p> <pre>Serial line /dev/tty0p0 is being used by a system process. This conflicts with your possible use of it for External Alarm Control. Consult your user documentation for more details.</pre> <p>If you want to use the indicated device for external alarm control, use the UNIX System Administrator (SAM) to disable the terminal device for serial access. To learn more about SAM, see the <i>HP-UX System Administration Tasks</i> manual.</p>						
28	<p>If the workstation is using HP-UX 10.10, the following message appears.</p> <pre>Configuring the External Alarm Control for the new HP-UX terminal devices /dev/tty0p0 and /dev/tty1p0</pre>						
29	<p>The following message appears after a few minutes to indicate the software installation is complete.</p> <pre>Installation completed successfully. New load installed, press return to continue. The S/DMS Network Manager software installation is now complete.</pre> <p>Note: If you are installing the S/DMS Network Manager software for the first time, a default password is assigned to each user account. The default password is the same as the user account name (for example, the default password for the admin user account is admin). To avoid unauthorized access to S/DMS Network Manager, change the default passwords as soon as possible by executing the UNIX passwd command.</p> <p>If you are upgrading S/DMS Network Manager, the passwords do not change.</p>						
30	<p>Once the installation is complete, old installation files must be removed. This removal is done automatically if you are upgrading Release 4, 5, 6, or an existing Release 6.1 software load. Otherwise, you must do it manually.</p> <table border="1"> <thead> <tr> <th>If you are</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>installing the first S/DMS Network Manager software load on the workstation, or upgrading an existing Release 3 or earlier S/DMS Network Manager software load</td> <td>step 31</td> </tr> <tr> <td>upgrading a Release 4, 5, 6, or an existing Release 6.1 S/DMS Network Manager software load</td> <td>the administration menu appears Go to step 32</td> </tr> </tbody> </table>	If you are	Then	installing the first S/DMS Network Manager software load on the workstation, or upgrading an existing Release 3 or earlier S/DMS Network Manager software load	step 31	upgrading a Release 4, 5, 6, or an existing Release 6.1 S/DMS Network Manager software load	the administration menu appears Go to step 32
If you are	Then						
installing the first S/DMS Network Manager software load on the workstation, or upgrading an existing Release 3 or earlier S/DMS Network Manager software load	step 31						
upgrading a Release 4, 5, 6, or an existing Release 6.1 S/DMS Network Manager software load	the administration menu appears Go to step 32						

—continued—

1-22 Installing the S/DMS Network Manager software

Procedure 1-2 (continued)

Installing the S/DMS Network Manager software

Step	Action
31	Once the installation is complete, remove the S/DMS Network Manager installation files which are no longer required by entering rm -rf /tmp/install ↵ Go to step 33.
32	To quit the S/DMS Network Manager administration script, enter 15 ↵
33	Eject the S/DMS Network Manager software load tape from the tape drive.
34	Select the log out button from the control panel. <i>A confirmation dialog appears.</i>
35	Select the OK button in the confirmation dialog. <i>The workstation login dialog appears.</i>
33	Log in to S/DMS Network Manager by entering one of the default userIDs (admin, master, operator, slat, netsurv, prov, or layout) in the login dialog.
34	Enter the password for the user account. <i>The HP VUE workspace appears.</i>
35	You can now select and begin using the S/DMS Network Manager tools. Note 1: Only the admin, master, operator, and layout user accounts can access the GNE tool.

—end—

Administering S/DMS Network Manager

This chapter describes S/DMS Network Manager administration. S/DMS Network Manager administration includes how to administer user accounts, audit trails, the user display environment, system log messages, network configuration data, remote log in sessions, and S/DMS Network Manager software.

S/DMS Network Manager administration is provided by the `noc_admin` script. This script administers:

- user accounts
- audit trails
- the user display environment
- system log messages
- network configuration data
- remote login sessions
- S/DMS Network Manager software

All S/DMS Network Manager user accounts are assigned to an access class, which determines the S/DMS Network Manager functions you can perform. There are four S/DMS Network Manager access classes: `admin`, `layout`, `provisioning`, and `surveillance`. When you install the S/DMS Network Manager software on the workstation for the first time, seven default user accounts are created. Each user account is assigned an access class.

The following table shows which functions can be performed by each access class and which of the seven default accounts are assigned to each.

User account class	Function access	Default user account
admin access class	all GNB and GNE functions	admin, master, and operator
provisioning access class	all GNB functions except correcting connection audit results	prov
surveillance access class	all GNB functions except add, edit, and delete connections	netsurv and slat
layout access class	all GNE and GNB (surveillance access class) functions	layout

You can add new user accounts and assign them an access class using the procedures in this section. You can also delete existing user accounts if they are no longer needed. When you upgrade S/DMS Network Manager software, the user accounts are preserved.

S/DMS Network Manager operates under the Hewlett Packard Visual User Environment (HP VUE). This environment provides the user interface for the S/DMS Network Manager. The user environment is automatically enabled on X terminals when the user logs in. This chapter describes how to disable a user environment on a specific X terminal.

S/DMS Network Manager generates system log files and alarm acknowledgment audit trail files. You can view the audit trail files using commands described in this chapter. You can also set up S/DMS Network Manager to compress and store the log files, and schedule a regular daily time at which the log files are automatically compressed and stored.

Depending on the hardware platform and other resources, S/DMS Network Manager can support up to 60 simultaneous login sessions. You can set the maximum number of remote login sessions with the administration script.

In some systems, two S/DMS Network Managers monitor the same controllers. One S/DMS Network Manager actively monitors the network for alarms, while the other acts as a cold-standby in case there is a problem with the active S/DMS Network Manager. This chapter describes how to transfer the network configuration database from the active S/DMS Network Manager to the standby S/DMS Network Manager, if there is one. This transfer ensures that the active and standby S/DMS Network Manager use the same network configuration data, and therefore, both monitor the same network for alarms.

Requirements

To perform the procedures in this chapter, you must do the following:

- read the conventions described in “About this guide” on page vii
- ensure you have a basic knowledge of the UNIX operating system
- obtain the S/DMS Network Manager root password

Chapter task list

The following tasks are included in this chapter.

Task	Page
User account administration	
Displaying a list of S/DMS Network Manager users	2-4
Adding a new user account	2-6
Deleting a user account	2-10
User environment administration	
Managing the X terminal user environment	2-12
System logs and audit trail administration	
Managing the system log messages	2-15
Viewing the audit trail file	2-18
Login session administration	
Controlling remote login sessions	2-22
Software administration	
Administering S/DMS Network Manager software loads	2-24
Data administration	
Transferring the configuration database	2-27

Procedure 2-1

Displaying a list of S/DMS Network Manager users

Use this procedure to display a list of the users currently authorized to access S/DMS Network Manager.

Before starting this procedure, read “Requirements” on page 2-3.

Action

Step	Action
------	--------

- | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Log in to the workstation as the root user by entering the root userID and password in the login dialog.
<i>A console window appears. This window allows you to access the root file system of the workstation.</i> |
| 2 | Start the S/DMS Network Manager Administration script by entering /usr/bin/noc/noc_admin ↵
<i>The S/DMS Network Manager administration menu appears.</i> |

```
1. Add a new S/DMS Network Manager user
2. Delete an existing S/DMS Network Manager user
3. List current S/DMS Network Manager users
4. View the audit trail
5. Disable S/DMS Network Manager user environment on X Terminal
6. List X terminals supporting S/DMS Network Manager user environment
7. Compress system log messages
8. Schedule the regular compression of system log messages
9. Cancel the regular compression of system log messages
10. Configure Number of Remote Login Sessions
11. Show Current Number of Remote Login Sessions
12. Install a new S/DMS Network Manager load
13. Delete the current S/DMS Network Manager load
14. Help
15. Quit

Select one of the above commands [1-15]:
```

—continued—

 Procedure 2-1 (continued)

Displaying a list of S/DMS Network Manager users

Step Action

3 To list the current S/DMS Network Manager users, enter

3 ↵

A list of the users appears.

<u>User</u>	<u>Class</u>	<u>Home Directory</u>
admin	admin	/users/admin
master	admin	/users/master
operator	admin	/users/operator
netsurv	surveillance	/users/netsurv
slat	surveillance	/users/slat
prov	provisioning	/users/prov
layout	layout	/users/layout

This list shows the user account name, the access class for each user, and the directory where the user account information is stored.

The S/DMS Network Manager administration menu appears.

4 To quit the S/DMS Network Manager administration script, enter

15 ↵

—end—

Procedure 2-2

Adding new user accounts

Use this procedure to add a new S/DMS Network Manager user account and to assign the account an access class.

There are four access classes: admin, layout, surveillance, and provisioning. The access class determines the S/DMS Network Manager functions that the user can perform. User accounts with admin access class can perform both GNB and GNE functions. User accounts with surveillance access class can perform GNB functions, with the exception of adding, editing, and deleting connections. User accounts with provisioning access class can add, edit, and delete connections in addition to the GNB functions associated with a surveillance access class. User accounts with layout access can perform GNE and GNB (surveillance) functions.

Before starting this procedure, read “Requirements” on page 2-3.

Action

Step	Action
1	Log in to the workstation as the root user by entering the root userID and password in the login dialog.
2	Open a console window and start the S/DMS Network Manager Administration script by entering the following: <code>/usr/bin/noc/noc_admin</code> ↵ <i>The S/DMS Network Manager administration menu appears.</i>

—continued—

 Procedure 2-2 (continued)
 Adding new user accounts

Step	Action
------	--------

```

1. Add a new S/DMS Network Manager user
2. Delete an existing S/DMS Network Manager user
3. List current S/DMS Network Manager users
4. View the audit trail
5. Disable S/DMS Network Manager user environment on X Terminal
6. List X terminals supporting S/DMS Network Manager user environment
7. Compress system log messages
8. Schedule the regular compression of system log messages
9. Cancel the regular compression of system log messages
10. Configure Number of Remote Login Sessions
11. Show Current Number of Remote Login Sessions
12. Install a new S/DMS Network Manager load
13. Delete the current S/DMS Network Manager load
14. Help
15. Quit
  
```

```
Select one of the above commands [1-15]:
```

3 To add a new user to S/DMS Network Manager, enter

```
1↵
```

The following prompt appears.

```
Enter the user name (type abort to quit):
```

4 Enter the new user name.

The user name can be up to 8 alphanumeric characters in length.

Note: User names are case sensitive.

S/DMS Network Manager checks whether the user name is already in use. If so, an error message appears.

If the user name is acceptable, the following prompt appears.

```
Enter the user class [a-admin, l-layout, p-provisioning,
s-surveillance, abort to quit]:
```

—continued—

Procedure 2-2 (continued)
Adding new user accounts

Step	Action
5	<p>To assign the admin access class to the user, enter a ↵</p> <p>To assign the provisioning access class to the user, enter p ↵</p> <p>To assign the layout access class to the user, enter l ↵</p> <p>To assign the surveillance access class to the user, enter s ↵</p> <p><i>Users with admin access can perform both GNB and GNE functions, and can access the UNIX file system. Users with provisioning or surveillance access can perform only GNB functions.</i></p> <p><i>The following prompt appears if the access class is acceptable.</i></p> <p>Enter directory in which to store this user. [/users, abort to quit]:</p> <p><i>This message prompts you to enter the name of the directory where the user account information is to be installed.</i></p>
6	<p>To install the new user account in the default directory, press Return.</p> <p>To install the user account in a directory other than the default, enter its full path name.</p>

—continued—

Procedure 2-2 (continued)
Adding new user accounts

Step	Action
7	<p>To show that the new user account has been successfully added to S/DMS Network Manager, the following message appears.</p> <p>User '<user name>' added successfully.</p> <p>where</p> <p><user name> is the name of the user account that you entered in step 4</p> <p><i>You are prompted to enter a password.</i></p> <p>Enter New Password:</p> <p><i>You are prompted to re-enter the password.</i></p> <p>Re-Enter New Password:</p> <p><i>A message confirms the account has been added.</i></p> <p>User <username> entered successfully to S/DMS Network Manager.</p> <p>Note: If a Managed Object Agent (MOA) is installed on the same workstation as S/DMS Network Manager, you are prompted to update the user environment to include MOA.</p> <p><i>The S/DMS Network Manager administration menu appears.</i></p>
8	<p>Quit the S/DMS Network Manager administration script by entering</p> <p>15 ↵</p>

—end—

Procedure 2-3

Deleting a user account

Use this procedure to delete a user account from S/DMS Network Manager.



CAUTION

When you delete a user account, all the files in the user's home directory and subdirectories are deleted.

Before starting this procedure, read “Requirements” on page 2-3.

Action

Step	Action
------	--------

- | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Log in to the workstation as the root user by entering the root userID and password in the login dialog.
<i>A console window appears. This window allows you to access the root file system of the workstation.</i> |
| 2 | Open a console window and start the S/DMS Network Manager Administration script by entering
/usr/bin/noc/noc_admin ↵
<i>The S/DMS Network Manager administration menu appears.</i> |

- ```
1. Add a new S/DMS Network Manager user
2. Delete an existing S/DMS Network Manager user
3. List current S/DMS Network Manager users
4. View the audit trail
5. Disable S/DMS Network Manager user environment on X Terminal
6. List X terminals supporting S/DMS Network Manager user environment
7. Compress system log messages
8. Schedule the regular compression of system log messages
9. Cancel the regular compression of system log messages
10. Configure Number of Remote Login Sessions
11. Show Current Number of Remote Login Sessions
12. Install a new S/DMS Network Manager load
13. Delete the current S/DMS Network Manager load
14. Help
15. Quit
```

Select one of the above commands [1-15]:

—continued—

---

Procedure 2-3 (continued)  
**Deleting a user account**

---

- | <b>Step</b> | <b>Action</b>                                                                                                                                                                                                                                                                                                                |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>3</b>    | To delete an S/DMS Network Manager user, enter<br><b>2</b> ↵<br><i>The following prompt appears.</i><br>Enter the user name (type abort to quit):                                                                                                                                                                            |
| <b>4</b>    | Enter the name of the user you want to delete.<br><i>The following prompt appears if you enter a valid user name.</i><br>Removing user <user name> will remove all files in<br><user names> home directory.<br>Do you wish to continue? [yes, no]<br><br>where<br><br><user name>       is the user account you are deleting |
| <b>5</b>    | To confirm that you want to delete the specified user account, enter<br><b>yes</b> ↵<br><i>The following message appears.</i><br>User '<user name>' deleted successfully.                                                                                                                                                    |
| <b>6</b>    | To quit the S/DMS Network Manager administration script, enter<br><b>15</b> ↵                                                                                                                                                                                                                                                |

—end—

## Procedure 2-4 Managing the X terminal user environment

---

Use this procedure to administer the S/DMS Network Manager user display environment. The user display environment is automatically enabled on an X terminal when a user logs on to S/DMS Network Manager from that X terminal. If necessary, you can disable the user environment on an X terminal.

If the user environment is disabled on an X terminal, the X terminal can still log in to S/DMS Network Manager, however, the environment on the X terminal will not be the correct.

### Additional Requirements

In addition to the requirements described on page 2-3, the following conditions must be satisfied to complete this procedure:

- ensure the X terminals are set up and configured according to the manufacturer's instructions and are connected to your communications network
- know the name of the X terminal entered in the `/etc/hosts` file during X terminal setup operation

### Action

---

| Step | Action                                                                                                                               |
|------|--------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Log in to the workstation as the root user by entering the root userID and password in the login dialog.                             |
| 2    | Open a console window and start the S/DMS Network Manager Administration script by entering<br><code>/usr/bin/noc/noc_admin ↵</code> |

---

—continued—

Procedure 2-4 (continued)  
**Managing the X terminal user environment**

**Step    Action**

*The S/DMS Network Manager administration menu appears.*

```

1. Add a new S/DMS Network Manager user
2. Delete an existing S/DMS Network Manager user
3. List current S/DMS Network Manager users
4. View the audit trail
5. Disable S/DMS Network Manager user environment on X Terminal
6. List X terminals supporting S/DMS Network Manager user environment
7. Compress system log messages
8. Schedule the regular compression of system log messages
9. Cancel the regular compression of system log messages
10. Configure Number of Remote Login Sessions
11. Show Current Number of Remote Login Sessions
12. Install a new S/DMS Network Manager load
13. Delete the current S/DMS Network Manager load
14. Help
15. Quit

Select one of the above commands [1-15]:

```

**3** You can disable the user environment on an X terminal or list the devices on which the S/DMS Network Manager user environment is already enabled.

| <b>If you want to</b>              | <b>Then</b> |
|------------------------------------|-------------|
| list the devices currently enabled | step 4      |
| disable a user environment         | step 5      |

**4** To list the display devices currently enabled for each user, enter

**6** ↵

*A list of the devices currently enabled for the current users appears.*

| <u>User</u> | <u>Terminal(s)</u> |
|-------------|--------------------|
| admin       | Xterm1             |
| master      | Xterm1             |
| operator    | Xterm1             |
| netsurv     | Xterm1             |
| slat        | Xterm1             |
| prov        | Xterm1             |
| layout      | Xterm1             |

—continued—

Procedure 2-4 (continued)

**Managing the X terminal user environment**

---

| <b>Step</b> | <b>Action</b>                                                                                                                                                                                                                                                                                                                                                             |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | Go to step 7.                                                                                                                                                                                                                                                                                                                                                             |
| <b>5</b>    | To disable the user environment on an X terminal, enter<br><b>5 ↵</b><br><i>The following prompt appears.</i><br>Enter the X terminal name (type abort to quit):                                                                                                                                                                                                          |
| <b>6</b>    | Enter the name of the X terminal that you want to disable.<br><i>To show that the user environment has been disabled on the specified X terminal, the following message appears.</i><br><terminal name> disabled for users: admin, master,<br>operator, layout, netsurv, slat, prov<br>where<br><terminal name>       is the name of X terminal that you are<br>disabling |
| <b>7</b>    | To quit the S/DMS Network Manager administration script, enter<br><b>15 ↵</b>                                                                                                                                                                                                                                                                                             |

—end—

---

## Procedure 2-5

# Managing the system log messages

---

Use this procedure to manage S/DMS Network Manager system log messages.

S/DMS Network Manager system log messages are stored on the hard disk. To preserve disk space, the system log messages can be compressed into a single system log file and stored on the S/DMS Network Manager hard disk.

You can compress and store these log files manually or schedule an automatic compression of the log files. Regular compression limits the amount of disk space required to store the system log messages.

The compressed system log files are used only by technical support personnel when investigating problems with the operation of S/DMS Network Manager. If needed, the technical support personnel can decompress the system log files.

### Additional Requirements

In addition to the requirements described on page 2-3, the following condition must be satisfied to complete this procedure:

- ensure there is sufficient disk space for the log messages

### Action

---

| Step | Action                                                                                                                                      |
|------|---------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Log in to the workstation as the root user by entering the root userID and password in the login dialog.                                    |
| 2    | Open a console window and start the S/DMS Network Manager Administration script by entering<br><b><code>/usr/bin/noc/noc_admin</code></b> ↵ |

—continued—

Procedure 2-5 (continued)  
Managing the system log messages

**Step Action**

*The S/DMS Network Manager administration menu appears.*

```

1. Add a new S/DMS Network Manager user
2. Delete an existing S/DMS Network Manager user
3. List current S/DMS Network Manager users
4. View the audit trail
5. Disable S/DMS Network Manager user environment on X Terminal
6. List X terminals supporting S/DMS Network Manager user environment
7. Compress system log messages
8. Schedule the regular compression of system log messages
9. Cancel the regular compression of system log messages
10. Configure Number of Remote Login Sessions
11. Show Current Number of Remote Login Sessions
12. Install a new S/DMS Network Manager load
13. Delete the current S/DMS Network Manager load
14. Help
15. Quit

Select one of the above commands [1-15]:

```

**3** You can compress the system log messages manually, or you can schedule a regular compression to occur at a predetermined time of the day.

| <b>If you want to</b>                                     | <b>Then</b> |
|-----------------------------------------------------------|-------------|
| manually compress the system log messages                 | step 4      |
| schedule a regular compression of the system log messages | step 5      |
| cancel the regular compression of the system log messages | step 6      |

**4** To manually compress the system log messages, enter  
**7 ↵**

*A compressed version of the /usr/adm/syslog file is stored in /usr/adm/syslog.save-1.Z. All but the last 100 lines are deleted from the /usr/adm/syslog file.*

*The last seven compressed versions of the /usr/adm/syslog file are saved in /usr/adm/syslog.save-<n>.Z files.*

where

<n> is a number between 1 and 7, each representing a syslog file, 7 being the oldest compressed version.

Go to step 7.

—continued—

---

Procedure 2-5 (continued)

**Managing the system log messages**

---

- | <b>Step</b> | <b>Action</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>5</b>    | To schedule regular daily compression of the system log messages, enter<br><b>8</b> ↵<br><i>The system log messages are automatically compressed and stored at 0230 (2:30 a.m.) each day.</i><br><i>Approximately one week of system log messages are compressed and kept in /usr/adm/syslog.save-&lt;n&gt;.Z files.</i><br>where<br><br><n> is a number between 1 and 7, each representing a syslog file, 7 being the oldest compressed version.<br><br>Go to step 7. |
| <b>6</b>    | To cancel the regular daily compression of the system log messages, enter<br><b>9</b> ↵<br><i>The regular compression of system log messages is cancelled.</i>                                                                                                                                                                                                                                                                                                         |
| <b>7</b>    | To quit the S/DMS Network Manager administration script, enter<br><b>15</b> ↵                                                                                                                                                                                                                                                                                                                                                                                          |

—end—

## Procedure 2-6

### Viewing the audit trail

---

Use this procedure to view the alarm acknowledgment audit trail. Entries are made in the audit trail automatically by S/DMS Network Manager when a user performs certain actions.

When you use this procedure to view the audit trail, a UNIX utility called *pg* enables you to view and save the contents of the audit trail without risk of corrupting the file.

The audit trail file contains three different records of S/DMS Network Manager activity:

- an alarm acknowledgment record for systems running OPC09 or earlier software loads
- an alarm acknowledgment record for systems running OPC10 or later software loads
- a suspend/resume reporting record

The audit trail file has a capacity for 10,000 records. When the file is full, the records in the file wrap. That is, the oldest record is overwritten by the newest record. The last record in the file is a counter which determines the number of the newest record to be written.

Before starting this procedure, read “Requirements” on page 2-3.

#### **Acknowledgment record—OPC09 or earlier**

This alarm acknowledgment record contains the following columns of information to describe alarms that have been acknowledged on systems running an OPC09 or earlier software load.

Primary OPC name  
Backup OPC name (if there is a backup OPC)  
NE ID  
NE name  
Alarm number  
Alarm class (that is, Eqp, Fac, Env)  
Unit ID (that is, OC48 G2, DS3 G1, etc.)  
Reason text  
Time of alarm  
Alarm severity  
Alarm impact (SA for service affecting, NSA for non-service affecting)  
UserID of acknowledger  
Time of acknowledgment

## Acknowledgment record—OPC10 or later

This alarm acknowledgment record contains the following columns of information to describe alarms that have been acknowledged on systems running an OPC10 or later software load.

Primary OPC name  
 Backup OPC name (if there is a backup OPC)  
 NE ID  
 The string “Critical”  
 The number of critical alarms acknowledged  
 The string “Major”  
 The number of major alarms acknowledged  
 The string “minor”  
 The number of minor alarms acknowledged  
 The string “warnings”  
 The number of warnings acknowledged  
 UserID of acknowledger  
 Time of acknowledgment

## Suspend/resume reporting record

This record contains the following columns of information to describe the instances of alarm reporting being suspended and resumed.

Primary OPC name  
 Backup OPC name (if there is a backup OPC)  
 The string “Suspended Reporting” or “Resumed Reporting”  
 UserID that suspended or resumed reporting  
 Time that reporting was suspended or resumed

## Action

---

| Step | Action                                                                                                   |
|------|----------------------------------------------------------------------------------------------------------|
| 1    | Log in to the workstation as the root user by entering the root userID and password in the login dialog. |

---

—continued—

## 2-20 Administering S/DMS Network Manager

---

### Procedure 2-6 (continued) Viewing the audit trail

---

| Step | Action |
|------|--------|
|------|--------|

---

- 2** Open a console window and start the S/DMS Network Manager Administration script by entering

**/usr/bin/noc/noc\_admin** ↵

*The S/DMS Network Manager administration menu appears.*

```
1. Add a new S/DMS Network Manager user
2. Delete an existing S/DMS Network Manager user
3. List current S/DMS Network Manager users
4. View the audit trail
5. Disable S/DMS Network Manager user environment on X Terminal
6. List X terminals supporting S/DMS Network Manager user environment
7. Compress system log messages
8. Schedule the regular compression of system log messages
9. Cancel the regular compression of system log messages
10. Configure Number of Remote Login Sessions
11. Show Current Number of Remote Login Sessions
12. Install a new S/DMS Network Manager load
13. Delete the current S/DMS Network Manager load
14. Help
15. Quit
```

Select one of the above commands [1-15]:

- 3** To begin viewing the audit trail, enter

**4** ↵

*The contents of the audit trail appear in the window. You can navigate through the audit trail using the pg commands (see step 4). You cannot modify the contents of the audit trail file.*

—continued—

---

 Procedure 2-6 (continued)  
**Viewing the audit trail**


---

**Step Action**

- 4** At the command prompt, use the following commands to navigate and save the audit trail file.

| Command              | Description                                                 |
|----------------------|-------------------------------------------------------------|
| 1 ↵                  | return to the start of the audit trail file                 |
| \$ ↵                 | go to the end of the audit trail file                       |
| ↵                    | view the next page of the audit trail file                  |
| <#> ↵                | go to page number # of the audit trail file                 |
| d ↵                  | view the next half page of the audit trail file             |
| / <PATTERN> / ↵      | search forward for the character pattern PATTERN            |
| ? <pattern> ? ↵      | search backward for the character pattern PATTERN           |
| s <space> SAVEFILE ↵ | save the audit trail to another file with the name SAVEFILE |
| h ↵                  | enter h to get help in navigating the audit trail           |

- 5** When you finish viewing the audit trail, enter

**q** ↵

- 6** To quit the S/DMS Network Manager administration script, enter

**15** ↵

—end—

---

## Procedure 2-7

# Controlling remote login sessions

---

Use this procedure to define the maximum number of remote login sessions allowed on S/DMS Network Manager. This command is not available on all hardware platforms.



**CAUTION**

**Risk of performance degradation**

Do not change the maximum number of remote login sessions for the hardware platform you are using.

Before starting this procedure, read “Requirements” on page 2-3.

### Action

---

| Step | Action |
|------|--------|
|------|--------|

---

- 1 Log in to the workstation as the root user by entering the root userID and password in the login dialog.
- 2 Open a console window and start the S/DMS Network Manager Administration script by entering  
**/usr/bin/noc/noc\_admin ↵**  
*The S/DMS Network Manager administration menu appears.*

```
1. Add a new S/DMS Network Manager user
2. Delete an existing S/DMS Network Manager user
3. List current S/DMS Network Manager users
4. View the audit trail
5. Disable S/DMS Network Manager user environment on X Terminal
6. List X terminals supporting S/DMS Network Manager user environment
7. Compress system log messages
8. Schedule the regular compression of system log messages
9. Cancel the regular compression of system log messages
10. Configure Number of Remote Login Sessions
11. Show Current Number of Remote Login Sessions
12. Install a new S/DMS Network Manager load
13. Delete the current S/DMS Network Manager load
14. Help
15. Quit
```

Select one of the above commands [1-15]:

—continued—

Procedure 2-7 (continued)  
**Controlling remote login sessions**

| Step                                                                                                                                                                                                                                                                                                                                                                                                                                | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                |      |                                                   |        |                                             |        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------|---------------------------------------------------|--------|---------------------------------------------|--------|
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p>You can list the current number of remote login sessions allowed by this Network Manager. You can also change the maximum number of login sessions.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If you want to</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>list the current number of login sessions allowed</td> <td>step 4</td> </tr> <tr> <td>change the number of login sessions allowed</td> <td>step 5</td> </tr> </tbody> </table> | If you want to | Then | list the current number of login sessions allowed | step 4 | change the number of login sessions allowed | step 5 |
| If you want to                                                                                                                                                                                                                                                                                                                                                                                                                      | Then                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                |      |                                                   |        |                                             |        |
| list the current number of login sessions allowed                                                                                                                                                                                                                                                                                                                                                                                   | step 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                |      |                                                   |        |                                             |        |
| change the number of login sessions allowed                                                                                                                                                                                                                                                                                                                                                                                         | step 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                |      |                                                   |        |                                             |        |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p>To list the current number of remote login sessions allowed by this S/DMS Network Manager, enter</p> <p><b>11</b> ↵</p> <p><i>The number of remote login sessions allowed by this S/DMS Network Manager is displayed.</i></p> <p>Go to step 7.</p>                                                                                                                                                                                                                                                                                               |                |      |                                                   |        |                                             |        |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p>To change the maximum number of remote login sessions allowed by this S/DMS Network Manager, enter</p> <p><b>10</b> ↵</p>                                                                                                                                                                                                                                                                                                                                                                                                                        |                |      |                                                   |        |                                             |        |
| 6                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p>Enter the maximum number of login sessions when prompted to do so, and press return.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |      |                                                   |        |                                             |        |
| <div style="border: 1px solid black; padding: 10px; display: inline-block;">  <div style="margin-left: 10px;"> <p><b>CAUTION</b><br/> <b>Risk of performance degradation</b><br/>           Do not change the maximum number of remote login sessions for the hardware platform you are using.</p> </div> </div> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |      |                                                   |        |                                             |        |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p>To quit the S/DMS Network Manager administration script, enter</p> <p><b>15</b> ↵</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                |      |                                                   |        |                                             |        |

—end—

---

## Procedure 2-8

# Administering S/DMS Network Manager software loads

---

Use this procedure to remove the S/DMS Network Manager software load from the workstation.



**CAUTION**

**Risk of losing network configuration data**

Use this procedure with extreme caution. When you delete the current S/DMS Network Manager load, all existing configuration data is lost. Once the current load is deleted, it cannot be recovered. You must successfully install a new load from tape, and rebuild the configuration.

*Note:* To install a new S/DMS Network Manager software load using the Administration script, see Procedure 1-2, “Installing the S/DMS Network Manager software” on page 1-12.

### Additional Requirements

In addition to the requirements described on page 2-3, the following condition must be satisfied to complete this procedure:

- ask all users to log out from S/DMS Network Manager

### Action

---

| Step | Action                                                                                                                                                                                                                 |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Log in to the workstation as the root user by entering the root userID and password in the login dialog.<br><i>A console window appears. This window allows you to access the root file system of the workstation.</i> |
| 2    | Start the S/DMS Network Manager Administration script by entering<br><code>/usr/bin/noc/noc_admin</code> ↵                                                                                                             |

—continued—

Procedure 2-8 (continued)

**Administering S/DMS Network Manager software loads**

**Step    Action**

*The S/DMS Network Manager administration menu appears.*

```

1. Add a new S/DMS Network Manager user
2. Delete an existing S/DMS Network Manager user
3. List current S/DMS Network Manager users
4. View the audit trail
5. Disable S/DMS Network Manager user environment on X Terminal
6. List X terminals supporting S/DMS Network Manager user environment
7. Compress system log messages
8. Schedule the regular compression of system log messages
9. Cancel the regular compression of system log messages
10. Configure Number of Remote Login Sessions
11. Show Current Number of Remote Login Sessions
12. Install a new S/DMS Network Manager load
13. Delete the current S/DMS Network Manager load
14. Help
15. Quit

```

Select one of the above commands [1-15]:

**3** To delete the current S/DMS Network Manager load, enter

**13** ↵

*The following message appears.*

```

Removing all S/DMS Network Manager software and
configuration files in <load directory> and data files in
<release directory> and <audit directory>
This cannot be undone

```

Do you wish to proceed? [yes, no]

where

<load directory>      is the name of the directory where the S/DMS Network Manager software load is currently installed

<release directory>    is the name of the directory containing the software release files used by S/DMS Network Manager for centralized software management

<audit directory>      is the name of the directory containing the audit trail files

—continued—

Procedure 2-8 (continued)

**Administering S/DMS Network Manager software loads**

---

| <b>Step</b> | <b>Action</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>4</b>    | <p>To confirm that you want to delete the current S/DMS Network Manager software load, enter</p> <p><b>yes</b> ↵</p> <p><i>The following message appears.</i></p> <p>S/DMS Network Manager load has been deleted.</p> <p><b>Note:</b> The following message can appear once the load is deleted. Ignore this message.</p> <p>Error occurred during load deletion - remove files in 'usr/bin/noc' manually</p> <p><i>When the console prompt appears, the software load has been successfully removed.</i></p> |
| <b>5</b>    | <p>To quit the S/DMS Network Manager administration script, enter</p> <p><b>15</b> ↵</p>                                                                                                                                                                                                                                                                                                                                                                                                                      |

—end—

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## Procedure 2-9

# Transferring the configuration database

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Use this procedure to transfer the network configuration database from the active S/DMS Network Manager to a cold-standby S/DMS Network Manager.

Although a cold-standby S/DMS Network Manager is not a requirement, it can provide added protection and an alternate surveillance environment, if something happens to the active S/DMS Network Manager. A cold-standby S/DMS Network Manager can also be used to ensure network visibility when upgrading the software on the active S/DMS Network Manager.

This procedure ensures that the cold-standby S/DMS Network Manager has the same network configuration as the active S/DMS Network Manager. This similarity allows the cold-standby S/DMS Network Manager to take over surveillance of the network, with minimal disruption, in case of a problem with the active S/DMS Network Manager.

The configuration data that needs to be transferred from the active S/DMS Network Manager to a standby S/DMS Network Manager is located in the configuration database.

Any software releases scheduled for delivery from the active S/DMS Network Manager are not transferred to the standby S/DMS Network Manager when you transfer the configuration database.

There are two ways to transfer these files to the standby S/DMS Network Manager: by electronically transferring the file to the standby using File Transfer Protocol (ftp), or by backing up the files on a digital data storage (DDS) tape and loading them onto the standby. Both methods are described in this procedure.

### Additional Requirements

In addition to the requirements described on page 2-3, the following conditions must be satisfied to complete this procedure:

- obtain the IP address of the active and standby S/DMS Network Managers
- ensure you have admin user access privileges on both S/DMS Network Managers
- if using the tape transfer method, connect a DDS tape drive to each S/DMS Network Manager, and obtain a blank DDS
- ensure an equal or higher version of S/DMS Network Manager software is installed on the standby S/DMS Network Manager
- make sure the standby S/DMS Network Manager workstation has at least 10 Mbytes of free disk space

Procedure 2-9 (continued)

**Transferring the configuration database**

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**Action**

---

| <b>Step</b> | <b>Action</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1</b>    | <p>Log in to the standby S/DMS Network Manager workstation as an admin class user and open the Graphical Network Editor (GNE).</p> <p><i>The GNE network window appears.</i></p> <p>For more information on logging in and opening an S/DMS Network Manager tool, see “Logging in and opening an S/DMS Network Manager tool” in <i>S/DMS Network Manager Connectivity</i>, 323-4001-053.</p> <p>If you are in the same location as the standby S/DMS Network Manager workstation, go to step 2.</p> <p>If you are not in the same location as the standby S/DMS Network Manager workstation</p> <ol style="list-style-type: none"><li>Using the right mouse button, open a new xterm window.</li><li>Prepare for connection by entering<br/><b>xhost +</b></li><li>Telnet to the standby S/DMS Network Manager workstation by entering<br/><b>Telnet &lt;ip address&gt;</b><br/>where<br/><b>&lt;ip address&gt;</b> is the address of the standby S/DMS Network Manager</li><li>Log in as an admin class user.<br/><i>The GNE network window appears.</i></li><li>Set the UNIX shell by entering<br/><b>ksh</b></li><li>Set up the display by entering<br/><b>export DISPLAY=&lt;ip address&gt;:0.0</b><br/>where<br/><b>&lt;ip address&gt;</b> is the address of the workstation you are using</li><li>Change to the directory where the standby S/DMS Network Manager is located.<br/><b>cd /usr/bin/noc</b></li><li>Start the GNE.<br/><b>./gnconfig</b></li></ol> |

—continued—

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 Procedure 2-9 (continued)

**Transferring the configuration database**


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| Step                                           | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                |            |         |        |         |        |
|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|------------|---------|--------|---------|--------|
| 2                                              | On the standby S/DMS Network Manager workstation, display the Controllers menu and select the <b>Show List of Controllers</b> command.<br><i>The Controller List dialog appears.</i>                                                                                                                                                                                                                                                                               |                                                |            |         |        |         |        |
| 3                                              | Check the entry in the S/DMS Network Manager Collection Status (Network Collector Collection Status) field.<br><table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If the entry in the Collection Status field is</th> <th style="text-align: left;">Then go to</th> </tr> </thead> <tbody> <tr> <td>Running</td> <td>step 4</td> </tr> <tr> <td>Stopped</td> <td>step 8</td> </tr> </tbody> </table>    | If the entry in the Collection Status field is | Then go to | Running | step 4 | Stopped | step 8 |
| If the entry in the Collection Status field is | Then go to                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                |            |         |        |         |        |
| Running                                        | step 4                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                |            |         |        |         |        |
| Stopped                                        | step 8                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                |            |         |        |         |        |
| 4                                              | Perform a <b>Save</b> .<br>For more information on saving the configuration, see "Saving or reverting the configuration" in <i>S/DMS Network Manager Configuration</i> , 323-4001-054.                                                                                                                                                                                                                                                                             |                                                |            |         |        |         |        |
| 5                                              | Select the <b>Stop</b> button beside the Network Collector Collection Status field.<br><i>A confirmation dialog appears.</i>                                                                                                                                                                                                                                                                                                                                       |                                                |            |         |        |         |        |
| 6                                              | Select the <b>Yes</b> button in the confirmation dialog.<br><i>The confirmation dialog closes and the entry in the Network Collector Collection Status field changes to Stopped.</i>                                                                                                                                                                                                                                                                               |                                                |            |         |        |         |        |
| 7                                              | Select the <b>OK</b> button in the Notification dialog.                                                                                                                                                                                                                                                                                                                                                                                                            |                                                |            |         |        |         |        |
| 8                                              | Select the <b>Done</b> button in the Controller List dialog.<br><i>The Controller List dialog closes.</i>                                                                                                                                                                                                                                                                                                                                                          |                                                |            |         |        |         |        |
| 9                                              | Select the <b>Exit</b> command from the network window File menu.<br><i>The GNE network window closes.</i><br><br><b>Note:</b> If a confirmation dialog appears when you attempt to exit GNE, select the <b>Exit, don't save</b> command. You do not have to save the configuration on the standby S/DMS Network Manager workstation because it is replaced with the network configuration you are transferring from the active S/DMS Network Manager workstation. |                                                |            |         |        |         |        |

—continued—

Procedure 2-9 (continued)

**Transferring the configuration database**

| Step                                                                                                                                                | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                        |            |              |         |                                                                                                                                                     |         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------|--------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 10                                                                                                                                                  | <p>If you have not already done so, log in to the active S/DMS Network Manager workstation.</p> <p><b>Note:</b> There is no need to open GNE or GNB.</p> <p>If you are not in the same location as the active S/DMS Network Manager:</p> <ol style="list-style-type: none"><li>Using the right mouse button, open a new xterm window.</li><li>Telnet to the active S/DMS Network Manager workstation<br/><b>Telnet &lt;ip address&gt;</b> ↵</li></ol> <p>where</p> <p>&lt;ip address&gt; is the address of the active S/DMS Network Manager</p> <ol style="list-style-type: none"><li>Log in as an admin class user</li></ol> |                        |            |              |         |                                                                                                                                                     |         |
| 11                                                                                                                                                  | <p>On the active S/DMS Network Manager workstation, change to the directory that contains the configuration database files by entering</p> <p><b>cd /usr/bin/noc</b> ↵</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                        |            |              |         |                                                                                                                                                     |         |
| 12                                                                                                                                                  | <p>Bundle up the entire configuration database by entering</p> <p><b>tar cf /tmp/transfer.tar config</b> ↵</p> <p><i>A file named transfer.tar is created and placed in the /tmp directory.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                           |                        |            |              |         |                                                                                                                                                     |         |
| 13                                                                                                                                                  | <p>There are two different ways to transfer the configuration database to the standby S/DMS Network Manager workstation: electronic file transfer using ftp, or a tape transfer.</p> <table border="1"><thead><tr><th>If you want to use the</th><th>Then go to</th></tr></thead><tbody><tr><td>ftp transfer</td><td>step 14</td></tr><tr><td>tape transfer (this procedure requires that someone be present at the active S/DMS Network Manager and later, at the standby S/DMS Network Manager)</td><td>step 26</td></tr></tbody></table>                                                                                   | If you want to use the | Then go to | ftp transfer | step 14 | tape transfer (this procedure requires that someone be present at the active S/DMS Network Manager and later, at the standby S/DMS Network Manager) | step 26 |
| If you want to use the                                                                                                                              | Then go to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                        |            |              |         |                                                                                                                                                     |         |
| ftp transfer                                                                                                                                        | step 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                        |            |              |         |                                                                                                                                                     |         |
| tape transfer (this procedure requires that someone be present at the active S/DMS Network Manager and later, at the standby S/DMS Network Manager) | step 26                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                        |            |              |         |                                                                                                                                                     |         |
| 14                                                                                                                                                  | <p>If you are in the same location as the standby S/DMS Network Manager, select the terminal icon from the HP VUE control panel.</p> <p><i>A terminal window appears on the display.</i></p> <p><b>Note:</b> If you logged in remotely a terminal window already exists.</p>                                                                                                                                                                                                                                                                                                                                                  |                        |            |              |         |                                                                                                                                                     |         |
| 15                                                                                                                                                  | <p>On the standby S/DMS Network Manager workstation, change to the directory that is to contain the network configuration database bundle by entering</p> <p><b>cd /tmp</b> ↵</p>                                                                                                                                                                                                                                                                                                                                                                                                                                             |                        |            |              |         |                                                                                                                                                     |         |

—continued—

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 Procedure 2-9 (continued)

**Transferring the configuration database**


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| <b>Step</b> | <b>Action</b>                                                                                                                                                                                                                                                                                                                                            |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>16</b>   | To start an ftp session to the active S/DMS Network Manager workstation, enter<br><b>ftp &lt;IP address&gt; ↵</b><br>where<br><IP address> is the IP address of the active S/DMS Network Manager<br><br><i>The connection to the active S/DMS Network Manager is established, and a Name prompt appears.</i>                                             |
| <b>17</b>   | Enter your userID at the Name prompt.<br><i>A password prompt appears.</i>                                                                                                                                                                                                                                                                               |
| <b>18</b>   | Enter your password at the Password prompt.<br><i>The following message appears.</i><br>User admin logged in.<br>Remote system type is UNIX<br>Using binary mode to transfer files.<br>ftp><br><i>You are now logged in to the active S/DMS Network Manager workstation.</i>                                                                             |
| <b>19</b>   | In the ftp session to the active S/DMS Network Manager workstation, change to the directory where the configuration database files are located by entering<br><b>cd /tmp ↵</b><br><i>The following message appears.</i><br>CWD command successful.<br>ftp>                                                                                               |
| <b>20</b>   | Set the ftp transfer mode to binary by entering<br><b>bin ↵</b>                                                                                                                                                                                                                                                                                          |
| <b>21</b>   | Start transferring the file to the standby S/DMS Network Manager workstation by entering<br><b>get transfer.tar ↵</b><br><i>The following message appears.</i><br>PORT command successful.<br>Opening BINARY mode data connection for transfer.tar<br>(<size> bytes)<br><br>where<br><size> is the size of the file, in bytes, that you are transferring |

—continued—

Procedure 2-9 (continued)

**Transferring the configuration database**

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| <b>Step</b> | <b>Action</b>                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>22</b>   | <p>When the file transfer is complete, the following message appears.</p> <pre>Transfer complete.<br/>&lt;size&gt; bytes received in &lt;time&gt; sec (&lt;rate&gt; Kbytes/s)<br/>ftp&gt;</pre> <p>where</p> <p>&lt;time&gt; is the amount of time, in seconds, that it took to transfer the file</p> <p>&lt;rate&gt; is the number of kilobytes per second that were transferred</p>                                   |
| <b>23</b>   | <p>When the transfer finishes, end the file transfer process by entering <b>quit</b> ↵</p> <p><i>The command prompt appears.</i></p>                                                                                                                                                                                                                                                                                    |
| <b>24</b>   | <p>On the standby S/DMS Network Manager workstation, change to the directory that contains the configuration database files by entering <b>cd /usr/bin/noc</b> ↵</p>                                                                                                                                                                                                                                                    |
| <b>25</b>   | <p>Unbundle the configuration database by entering <b>tar xf /tmp/transfer.tar</b> ↵</p> <p>Go to step 35</p>                                                                                                                                                                                                                                                                                                           |
| <b>26</b>   | <p>Insert a blank DDS into the tape drive connected to the active S/DMS Network Manager workstation.</p>                                                                                                                                                                                                                                                                                                                |
| <b>27</b>   | <p>On the active S/DMS Network Manager, select the terminal icon from the HP VUE control panel.</p> <p><i>A terminal window appears on the display.</i></p>                                                                                                                                                                                                                                                             |
| <b>28</b>   | <p>On the active S/DMS Network Manager, change to the directory where the configuration database files are located by entering <b>cd /tmp</b> ↵</p>                                                                                                                                                                                                                                                                     |
| <b>29</b>   | <p>Transfer the network configuration file to the tape drive connected to the active S/DMS Network Manager workstation by entering <b>cat transfer.tar   dd of=/dev/rmt/Øm</b> ↵</p> <p><i>The configuration data archival files are stored on the tape drive.</i></p> <p><b>Note:</b> The default device name is /dev/rmt/Øm. If your tape drive has a different name, enter it instead when entering the command.</p> |
| <b>30</b>   | <p>Eject the tape from the tape drive, and log out of the active S/DMS Network Manager workstation.</p>                                                                                                                                                                                                                                                                                                                 |

—continued—

Procedure 2-9 (continued)

### Transferring the configuration database

| Step | Action                                                                                                                                                                                                                                                                                                              |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 31   | Move to the standby S/DMS Network Manager workstation, and insert the tape into the tape drive connected to the standby S/DMS Network Manager workstation.                                                                                                                                                          |
| 32   | Select the terminal icon from the HP VUE control panel.<br><i>A terminal window appears on the display.</i>                                                                                                                                                                                                         |
| 33   | On the standby S/DMS Network Manager workstation, change to the directory where you want to place the network configuration by entering<br><b>cd /usr/bin/noc</b> ↵                                                                                                                                                 |
| 34   | Extract the configuration data from the tape by entering<br><b>dd if=/dev/rmt/Øm   tar xf -</b> ↵<br>where<br><br><device name> is the name of the device that contains the tape with the configuration data.<br><br>Ø is a zero                                                                                    |
|      | <b>Note:</b> The default device name is /dev/rmt/Øm. If your tape drive has a different name, enter it instead when entering the command.<br><i>The configuration database files are placed in the /usr/bin/noc directory.</i>                                                                                      |
|      | <b>Note:</b> After you enter the command to extract the configuration data from the tape, one of two messages can appear on the screen:<br><br><n> + <m> records in<br><n> + <m> records out<br><br>where<br><br><n> and <m> are an integer between 0 and 24<br><br>or<br><br>broken pipe<br>Ignore these messages. |
| 35   | Change the group associated with the files by entering<br><b>chgrp -R nocadm config</b> ↵                                                                                                                                                                                                                           |
| 36   | On the working S/DMS Network Manager workstation, delete the file transfer .tar by entering<br><b>rm /tmp/transfer.tar</b> ↵                                                                                                                                                                                        |

—continued—

Procedure 2-9 (continued)

**Transferring the configuration database**

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| <b>Step</b> | <b>Action</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>37</b>   | On the stand-by S/DMS Network Manager workstation, delete the file transfer .tar by entering<br><b>rm /tmp/transfer.tar ↵</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>38</b>   | Close the terminal window by entering<br><b>exit ↵</b><br><i>The terminal window closes.</i><br><i>The configuration data transfer is now complete. The active and standby S/DMS Network Manager workstations now have the same network configuration data.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>39</b>   | To confirm the configurations are the same on both S/DMS Network Manager workstations, do the following: <ol style="list-style-type: none"><li>Start GNE on the active S/DMS Network Manager and note the configuration shown in the network window. For more information on starting the GNE, see “Logging in and opening an S/DMS Network Manager tool” in <i>S/DMS Network Manager Connectivity</i>, 323-4001-053.</li><li>Take note of the annotations on the network objects, and the views available in the View Choice dialog.</li><li>Open the Controller List dialog and note the OPCs in the list and the state of each OPC.</li><li>Stop collection on the active S/DMS Network Manager.</li><li>Log in to the standby S/DMS Network Manager and start collection.</li><li>Compare the configuration in the network window with that of the previously active S/DMS Network Manager.</li><li>Compare the controllers listed in the Controller List dialog, and the state of each controller, with that of the previously active S/DMS Network Manager. Also, compare the annotations and views.</li></ol> |

—end—

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## Configuring the OPC

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This chapter describes how to configure a Northern Telecom operations controller (OPC) to communicate with S/DMS Network Manager.

In an S/DMS TransportNode or S/DMS AccessNode system, the OPC provides operations, administration, maintenance, and provisioning (OAM&P) functions to the network elements in its span of control.

In addition to controlling the network elements, the OPC also acts as a communication conduit between the network elements and the S/DMS Network Manager. The OPC gathers alarm conditions, ring traffic status, performance data and inventory information from its network elements, and relays them to the S/DMS Network Manager. The S/DMS Network Manager then displays the information in a graphical form.

The S/DMS Network Manager and the OPC communicate through a Transmission Control Protocol and Internet Protocol (TCP/IP) network. The Ethernet port on the front panel of the OPC provides an interface to this network. Before the S/DMS Network Manager can communicate with an OPC, the Ethernet port must be initialized and enabled.

The procedures in this chapter describe how to initialize and control the Ethernet port on the OPC, and how to manage the performance monitoring at the OPC so that the performance data can be displayed on S/DMS Network Manager. These procedures must be performed on each OPC monitored by S/DMS Network Manager.

In addition, a TCP/IP communication network must be installed between the S/DMS Network Manager and the OPCs. Instructions for installing and configuring a TCP/IP network are beyond the scope of this guide. For detailed information on the TCP/IP network, see *S/DMS Network Manager Planning Guide*, PG 96-04.

To take full advantage of all S/DMS Network Manager Release 6 functions, each OPC monitored by S/DMS Network Manager must run a certain software load. The exact load depends on the type of system monitored. For more information, see “Software release compatibility” in *S/DMS Network Manager Introduction*, 323-4001-102.

To learn how to upgrade the OPC software to support S/DMS Network Manager Release 6, contact your local Northern Telecom support organization. For further information, see “Technical support and information” on page xi.

### Chapter task list

The following table lists the OPC configuration tasks.

| Task                                       | Page |
|--------------------------------------------|------|
| Initializing the Ethernet port             | 3-3  |
| Controlling the Ethernet port              | 3-7  |
| Managing performance monitoring at the OPC | 3-10 |

### Requirements

To perform the procedures in this chapter, you must do the following:

- read the conventions described in “About this guide” on page vii
- obtain the root password that allows you to log in to the OPC

## Procedure 3-1 Initializing the Ethernet port

Use this procedure to initialize the OPC Ethernet port. Once you initialize the Ethernet port, the OPC can communicate with the S/DMS Network Manager over the TCP/IP network.

Before performing this procedure, ensure that the TCP/IP network is properly set up and configured, and the OPC is physically connected to the network through the front panel Ethernet port. For information on how to perform these tasks, see *S/DMS Network Manager Planning Guide*, PG 96-04.

You must initialize the Ethernet port on each OPC that is to report alarms to S/DMS Network Manager. The Ethernet port must be initialized before the OPC can be added to the S/DMS Network Manager network configuration.

*Note:* The OPC Ethernet port needs to be initialized only once.

### Additional Requirements

In addition to the requirements described on page 3-2, the following conditions must be satisfied to complete this procedure:

- obtain the following identifiers for the OPC Ethernet port:
  - the node name (for example, OPCM001)
  - the Internet Protocol (IP) address (for example, 41.2.9.101)
  - the netmask (for example, 255.255.255.0)
- Although these identifiers can be assigned arbitrarily, they must be used consistently within your local network. If your network communicates with an external network, the IP address must conform to the Defense Advanced Research Projects Agency (DARPA) allocation standard, which ensures that IP addresses are unique. In any case, the IP addresses and node names must be unique within your local network.
- If node names and IP addresses have not been allocated for the OPC under consideration, obtain them from the communications planning department in your organization, or directly from DARPA.

### Action

| Step | Action                                                                                                                     |
|------|----------------------------------------------------------------------------------------------------------------------------|
| 1    | Log in to OPC by entering the root userID and password at the login prompt.<br><i>The "TERM = (vt100)" prompt appears.</i> |

—continued—

### 3-4 Configuring the OPC

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#### Procedure 3-1 (continued) Initializing the Ethernet port

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| Step | Action |
|------|--------|
|------|--------|

---

- |   |                                                                                                                                                      |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Press Return.<br><i>The UNIX shell prompt "opc&gt;" appears.</i>                                                                                     |
| 3 | Start the Ethernet administration tool by entering the following:<br><b>/iws/lan/ether_admin</b> ↵<br><i>The Ethernet port command list appears.</i> |

```
1. Initialize and enable the Ethernet port
2. Ethernet port control (enable/disable)
3. X terminals configuration
4. Help
5. Quit

Select one of the above commands [1-5]:
```

**Note:** The Ethernet port must be initialized before it can be enabled or disabled.

- |   |                                                                                                                                                                                          |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | To initialize the Ethernet port, enter<br><b>1</b> ↵<br><i>A message describing the port initialization requirements appears, followed by a node name prompt.</i><br>Enter the nodename: |
| 5 | Enter the nodename assigned to the OPC.<br><i>The node name can be up to a maximum of eight alphanumeric characters.</i>                                                                 |

—continued—

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 Procedure 3-1 (continued)  
**Initializing the Ethernet port**


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| Step | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6    | Press the Return key.<br><br><i>The nodename is checked. If the nodename is not in the correct format, or it is reserved or already assigned to another OPC, an error message appears, followed by another nodename prompt.</i><br><br><i>Once you enter an acceptable nodename, an IP address prompt appears.</i><br><br>Enter the IP address:                                                                                                                                                                                                                                                                                                                                                                        |
| 7    | Enter the unique IP address number assigned to the OPC.<br><br><i>The IP address consists of four numbers, each separated by a period. For example, an IP address is n.n.n.n, where n represents a number greater than or equal to 0, and less than or equal to 255.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 8    | Press the Return key.<br><br><i>The IP address is checked. If the IP address is not in the correct format, or it is reserved, or already assigned to another OPC, an error message appears, followed by another IP address prompt.</i><br><br><i>Once you enter an acceptable IP address, the netmask prompt appears.</i><br><br>Enter the IP netmask [default 255.255.255.0]:                                                                                                                                                                                                                                                                                                                                         |
| 9    | Enter the netmask number assigned to the OPC.<br><br><i>The default netmask value is 255.255.255.0. You can accept this value by pressing Return, or you can enter a new netmask number using the same criteria as the IP address.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 10   | Press the Return key.<br><br><i>The netmask is checked. If the netmask is not in the correct format, an error message appears followed by another netmask prompt.</i><br><br><i>After you enter an acceptable netmask number, a summary of the Ethernet port initialization values appear, followed by a request to continue with the initialization process.</i><br><br>Initializing Ethernet to:<br>name: <nodename><br>address: <IP address><br>netmask: <netmask><br>Do you wish to continue? [yes;no]:<br><br>where<br><br><nodename>            is the nodename entered in step 5<br><IP address>           is the IP address entered in step 7<br><netmask>             is the netmask number entered in step 9 |

—continued—

### 3-6 Configuring the OPC

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#### Procedure 3-1 (continued) Initializing the Ethernet port

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| <b>Step</b>                                                           | <b>Action</b>                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |             |                                                                       |                                                                    |                                              |         |
|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------|-----------------------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------|---------|
| <b>11</b>                                                             | Check and verify the initialization values in the summary.<br><b>If you want to</b> <hr/> <table><thead><tr><th></th><th><b>Then</b></th></tr></thead><tbody><tr><td>continue the Ethernet port initialization</td><td>step 13</td></tr><tr><td>discontinue the Ethernet port initialization</td><td>step 12</td></tr></tbody></table>                                                                                                            |  | <b>Then</b> | continue the Ethernet port initialization                             | step 13                                                            | discontinue the Ethernet port initialization | step 12 |
|                                                                       | <b>Then</b>                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |             |                                                                       |                                                                    |                                              |         |
| continue the Ethernet port initialization                             | step 13                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |             |                                                                       |                                                                    |                                              |         |
| discontinue the Ethernet port initialization                          | step 12                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |             |                                                                       |                                                                    |                                              |         |
| <b>12</b>                                                             | To discontinue the Ethernet port initialization process, enter <b>no</b> ↵<br><i>The Ethernet port command list appears.</i><br>To re-execute the Ethernet port initialization process, go to step 4.<br>To quit the initialization process, proceed to step 17.                                                                                                                                                                                  |  |             |                                                                       |                                                                    |                                              |         |
| <b>13</b>                                                             | To continue the Ethernet port initialization process, enter <b>yes</b> ↵                                                                                                                                                                                                                                                                                                                                                                          |  |             |                                                                       |                                                                    |                                              |         |
| <b>14</b>                                                             | The OPC checks to see whether the Ethernet port has been initialized before.<br><b>If</b> <hr/> <table><thead><tr><th></th><th><b>Then</b></th></tr></thead><tbody><tr><td>a warning message appears, followed by the Ethernet port command list</td><td>the Ethernet port has never been initialized before. Go to step 15</td></tr><tr><td>only the Ethernet port command list appears</td><td>step 16</td></tr></tbody></table>                |  | <b>Then</b> | a warning message appears, followed by the Ethernet port command list | the Ethernet port has never been initialized before. Go to step 15 | only the Ethernet port command list appears  | step 16 |
|                                                                       | <b>Then</b>                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |             |                                                                       |                                                                    |                                              |         |
| a warning message appears, followed by the Ethernet port command list | the Ethernet port has never been initialized before. Go to step 15                                                                                                                                                                                                                                                                                                                                                                                |  |             |                                                                       |                                                                    |                                              |         |
| only the Ethernet port command list appears                           | step 16                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |             |                                                                       |                                                                    |                                              |         |
| <b>15</b>                                                             | The OPC Ethernet port has been initialized for the first time. The OPC is now ready to communicate with S/DMS Network Manager.<br><i>The following warning message indicates that this is the first time the Ethernet port has been initialized.</i><br>Warning: Unable to add default route in the routing table. Changes to the routing table will only take effect after the OPC is rebooted with the OPC Shutdown tool.<br><br>Go to step 17. |  |             |                                                                       |                                                                    |                                              |         |
| <b>16</b>                                                             | The Ethernet port is already initialized. The OPC is ready to communicate with S/DMS Network Manager.                                                                                                                                                                                                                                                                                                                                             |  |             |                                                                       |                                                                    |                                              |         |
| <b>17</b>                                                             | To exit the Ethernet port command list, enter <b>5</b> ↵<br><i>The UNIX shell prompt "opc&gt;" appears.</i>                                                                                                                                                                                                                                                                                                                                       |  |             |                                                                       |                                                                    |                                              |         |

—end—

---

## Procedure 3-2

# Controlling the Ethernet port

---

Use this procedure to enable or disable the OPC Ethernet port, once it is initialized. The OPC can communicate with the S/DMS Network Manager only when the Ethernet port is enabled.

The S/DMS Network Manager and the OPC communicate through a Transmission Control Protocol and Internet Protocol (TCP/IP) network. The Ethernet port on the front panel of the OPC provides an interface to this network.

Before performing the following procedure, ensure that the TCP/IP network is properly set up and configured, and the OPC is physically connected to the network through the front panel Ethernet port. For information on how to perform these tasks, see *S/DMS Network Manager Planning Guide*, PG 96-04.

**Note:** The OPC Ethernet port must be initialized before it can be enabled or disabled.

### Additional Requirements

In addition to the requirements described on page 3-2, the following condition must be satisfied to complete this procedure:

- ensure that the OPC Ethernet port is initialized. For more information, see Procedure 3-1, “Initializing the Ethernet port”

### Action

---

| Step | Action                                                                                                                         |
|------|--------------------------------------------------------------------------------------------------------------------------------|
| 1    | Log in to the OPC by entering the root userID and password at the login prompt.<br><i>The “TERM = (vt100)” prompt appears.</i> |
| 2    | Press Return.<br><i>The UNIX shell prompt “opc&gt;” appears.</i>                                                               |

—continued—

### 3-8 Configuring the OPC

---

#### Procedure 3-2 (continued) Controlling the Ethernet port

---

- | Step | Action                                                                                                                                |
|------|---------------------------------------------------------------------------------------------------------------------------------------|
| 3    | Start the Ethernet administration tool by entering<br><b>/iws/lan/ether_admin</b> ↵<br><i>The Ethernet port command list appears.</i> |

```
1. Initialize and enable the Ethernet port
2. Ethernet port control (enable/disable)
3. X terminals configuration
4. Help
5. Quit

Select one of the above commands [1-5]:
```

**Note:** The Ethernet port must be initialized before it can be enabled or disabled. For more information, see Procedure 3-1 “Initializing the Ethernet port” in this chapter.

- |   |                                                                                                                                                                                                                                                                                                                                                                                                    |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | To enable the Ethernet port, enter<br><b>2</b> ↵<br><i>The Ethernet port control values appear, followed by a prompt for the new Ethernet port status.</i><br><br>You will be prompted for the following information:<br>new Ethernet port status: enabled or disabled<br><br>Type 'abort' at the prompt to terminate the command.<br><br>Enter new Ethernet port status [e - enable, d - disable] |
| 5 | The Ethernet port must be enabled to allow the OPC to communicate with the S/DMS Network Manager. When the Ethernet port is disabled the OPC is disconnected from the network.                                                                                                                                                                                                                     |

| If you want to            | Then   |
|---------------------------|--------|
| enable the Ethernet port  | step 6 |
| disable the Ethernet port | step 7 |

—continued—

---

 Procedure 3-2 (continued)  
**Controlling the Ethernet port**


---

| Step                                          | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |      |                               |        |                                               |         |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------|-------------------------------|--------|-----------------------------------------------|---------|
| 6                                             | <p>To enable the Ethernet port, enter</p> <p><b>e</b> ↵</p> <p><i>The Ethernet port is enabled. The OPC is now ready to communicate with the S/DMS Network Manager.</i></p> <p><b>Note:</b> If the Ethernet port is already enabled, this step has no effect on the Ethernet port configuration.</p> <p>Go to step 11.</p>                                                                                                                                                  |                |      |                               |        |                                               |         |
| 7                                             | <p>To disable the Ethernet port, enter</p> <p><b>d</b> ↵</p> <p><i>The following warning message appears.</i></p> <p>Warning!</p> <p>Disabling the Ethernet port will cause loss of network connectivity.</p> <p>Do you wish to continue? [yes, no]:</p> <p><b>Note:</b> If you log into the OPC remotely, and disable the Ethernet port, you lose your connection with the OPC, and cannot restart it.</p>                                                                 |                |      |                               |        |                                               |         |
| 8                                             | <p>If you disable the Ethernet port, the OPC cannot communicate with the S/DMS Network Manager.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If you want to</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>continue and disable the port</td> <td>step 9</td> </tr> <tr> <td>leave the port enabled and quit the procedure</td> <td>step 10</td> </tr> </tbody> </table> | If you want to | Then | continue and disable the port | step 9 | leave the port enabled and quit the procedure | step 10 |
| If you want to                                | Then                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |      |                               |        |                                               |         |
| continue and disable the port                 | step 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |      |                               |        |                                               |         |
| leave the port enabled and quit the procedure | step 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |      |                               |        |                                               |         |
| 9                                             | <p>To continue and disable the Ethernet port, enter</p> <p><b>yes</b> ↵</p> <p><i>The Ethernet port command list appears. The Ethernet port is disabled, thereby disconnecting the OPC from the S/DMS Network Manager.</i></p> <p>Go to step 11.</p>                                                                                                                                                                                                                        |                |      |                               |        |                                               |         |
| 10                                            | <p>To terminate the Ethernet port control procedure without disabling the port, enter</p> <p><b>no</b> ↵</p> <p><i>The Ethernet port command list appears.</i></p>                                                                                                                                                                                                                                                                                                          |                |      |                               |        |                                               |         |
| 11                                            | <p>To exit the Ethernet port command list, enter</p> <p><b>5</b> ↵</p> <p><i>The UNIX shell prompt "opc&gt;" appears.</i></p>                                                                                                                                                                                                                                                                                                                                               |                |      |                               |        |                                               |         |

—end—

## Procedure 3-3

# Managing performance monitoring at the OPC

---

Use this procedure to enable, disable, or query the status of performance monitoring on the OPC.

To use S/DMS Network Manager to monitor the performance of the network elements in the system, the following two conditions must be met:

- performance monitoring must be enabled on the primary OPC that controls the network elements whose performance you want to monitor, and
- network element threshold crossings must be provisioned as alarms.

This procedure describes how to enable performance monitoring on the OPC. To learn more about performance monitoring at the network element, or how to provision threshold crossings as alarms at the network element, see *Performance Monitoring Procedures*, 323-nnnn-520.

Performance statistics are collected by each network element within an OPC span of control. If the above conditions are met, S/DMS Network Manager can retrieve and display the performance statistics of the individual network elements.

### Additional Requirements

In addition to the requirements described on page 3-2, the following conditions must be satisfied to complete this procedure:

- ensure you have a userID and password that allow you access to GNB (admin, surveillance, or provisioning access class)
- ensure that performance monitoring threshold crossings are provisioned as alarms at the network element. For more information, see *Performance Monitoring Procedures*, 323-nnnn-520.

### Action

---

| Step | Action |
|------|--------|
|------|--------|

---

- |   |                                                                                                                                                                                                                                         |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Log in to S/DMS Network Manager and open GNB.<br><i>For more information, see "Logging in and opening an S/DMS Network Manager tool" in S/DMS Network Manager Connectivity, 323-4001-053.</i><br><i>The GNB network window appears.</i> |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

—continued—

Procedure 3-3 (continued)

**Managing performance monitoring at the OPC**

| Step                                                          | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |      |                                                               |        |                                                 |        |                                                  |        |                                                         |         |                               |         |
|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------|---------------------------------------------------------------|--------|-------------------------------------------------|--------|--------------------------------------------------|--------|---------------------------------------------------------|---------|-------------------------------|---------|
| 2                                                             | Display the Controller List dialog and select the OPC for which you want to manage performance monitoring.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |      |                                                               |        |                                                 |        |                                                  |        |                                                         |         |                               |         |
| 3                                                             | Select the <b>Login to Controller</b> command to log in to the OPC.<br><i>For more information, see "Logging in to Northern Telecom OPC" in S/DMS Network Manager Connectivity, 323-4001-053.</i><br><i>A controller session window appears.</i>                                                                                                                                                                                                                                                                                                                                                                                                              |                |      |                                                               |        |                                                 |        |                                                  |        |                                                         |         |                               |         |
| 4                                                             | Enter the OPC root userID and password at the login and password prompts in the OPC session window.<br><i>The UNIX shell prompt "opc&gt;" appears.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |      |                                                               |        |                                                 |        |                                                  |        |                                                         |         |                               |         |
| 5                                                             | Display the performance monitoring management commands by typing:<br><b>pmstate</b> ↵<br><i>The pm state menu appears. The menu includes performance monitoring query and control commands. Commands are selected by entering the associated command number and pressing the Return key.</i>                                                                                                                                                                                                                                                                                                                                                                  |                |      |                                                               |        |                                                 |        |                                                  |        |                                                         |         |                               |         |
| 6                                                             | You can query the current status of performance monitoring on the OPC, specify a new status, or exit the UNIX shell tool and return to the OPC User Session Manager.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                |      |                                                               |        |                                                 |        |                                                  |        |                                                         |         |                               |         |
|                                                               | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If you want to</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>query the current status of performance monitoring on the OPC</td> <td>step 7</td> </tr> <tr> <td>enable collection of all performance statistics</td> <td>step 8</td> </tr> <tr> <td>disable collection of all performance statistics</td> <td>step 9</td> </tr> <tr> <td>enable collection of all but DS3 performance statistics</td> <td>step 10</td> </tr> <tr> <td>exit to the UNIX shell prompt</td> <td>step 12</td> </tr> </tbody> </table> | If you want to | Then | query the current status of performance monitoring on the OPC | step 7 | enable collection of all performance statistics | step 8 | disable collection of all performance statistics | step 9 | enable collection of all but DS3 performance statistics | step 10 | exit to the UNIX shell prompt | step 12 |
| If you want to                                                | Then                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                |      |                                                               |        |                                                 |        |                                                  |        |                                                         |         |                               |         |
| query the current status of performance monitoring on the OPC | step 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |      |                                                               |        |                                                 |        |                                                  |        |                                                         |         |                               |         |
| enable collection of all performance statistics               | step 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |      |                                                               |        |                                                 |        |                                                  |        |                                                         |         |                               |         |
| disable collection of all performance statistics              | step 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |      |                                                               |        |                                                 |        |                                                  |        |                                                         |         |                               |         |
| enable collection of all but DS3 performance statistics       | step 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                |      |                                                               |        |                                                 |        |                                                  |        |                                                         |         |                               |         |
| exit to the UNIX shell prompt                                 | step 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                |      |                                                               |        |                                                 |        |                                                  |        |                                                         |         |                               |         |
| 7                                                             | To query the current status of performance monitoring by the OPC, type<br><b>1</b> ↵<br><i>The current status of performance monitoring by the OPC is displayed.</i><br><i>The pm state menu appears.</i><br>Go to step 6.                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |      |                                                               |        |                                                 |        |                                                  |        |                                                         |         |                               |         |
| 8                                                             | To enable collection of all performance statistics from the network elements in the OPC span of control, type<br><b>2</b> ↵<br><i>A message appears, explaining the consequences of the command.</i><br>Go to step 11.                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |      |                                                               |        |                                                 |        |                                                  |        |                                                         |         |                               |         |

—continued—

## 3-12 Configuring the OPC

---

Procedure 3-3 (continued)

### Managing performance monitoring at the OPC

---

| <b>Step</b> | <b>Action</b>                                                                                                                                                                                                                       |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>9</b>    | To disable collection of all performance statistics from the network elements in the OPC span of control, type<br><b>3</b> ↵<br><i>A message appears, explaining the consequences of the command.</i><br>Go to step 11.             |
| <b>10</b>   | To enable collection of all but DS3 performance statistics from the network elements in the OPC span of control, type<br><b>4</b> ↵<br><i>A message appears, explaining the consequences of the command.</i>                        |
| <b>11</b>   | To confirm and implement the change, type<br><b>yes</b> ↵<br>To cancel the change, type<br><b>no</b> ↵<br><i>A message appears, explaining the results of your selection.</i><br><i>The pm state menu appears.</i><br>Go to step 6. |
| <b>12</b>   | To exit to the UNIX shell prompt, type<br><b>5</b> ↵<br><i>The UNIX Shell prompt "opc&gt;" appears.</i>                                                                                                                             |
| <b>13</b>   | To exit the UNIX shell, type<br><b>exit</b> ↵<br><i>You are prompted to press the return key, at which time the OPC session window is removed from the display.</i>                                                                 |

—end—

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## Bootstrapping the OPC for CSM

---

This chapter describes how to bootstrap operations controllers (OPC) that are running software loads that do not fully support S/DMS Network Manager centralized software management (CSM) features.

Your OPC fully supports S/DMS Network Manager CSM if the OPC runs any of the following software loads: OC-3/OC-12 Rel 8 or later; OC-48 Rel 9 or later; OC-192 Rel 1 or later; S/DMS AccessNode AN10 or later; and Cornerstone Voice CSV01. There is no need to bootstrap these OPCs for CSM before electronically delivering a software release from S/DMS Network Manager.

The S/DMS Network Manager CSM features allow you to electronically deliver software releases to an OPC, if the software release installed on the OPC supports CSM.

If the OPC does not support CSM, you may still be able to use S/DMS Network Manager to electronically deliver software releases to the OPC, but you must first perform a special software management bootstrap procedure on the OPC. Bootstrapping prepares an incompatible OPC to receive software releases electronically from S/DMS Network Manager.

Once you bootstrap an OPC for CSM, you can deliver software releases to the OPC as though it were running a software load that supports CSM.

Table 4-1, “Software releases supporting CSM”, identifies the OPC software loads that support S/DMS Network Manager CSM. If an OPC software load does not appear in this table, it does not support S/DMS Network Manager CSM.

Determine the software release currently running on your OPC, and look up that release in the table. The CSM bootstrap column identifies whether or not you must bootstrap the OPC for CSM before you can use S/DMS Network Manager to deliver a software release to the OPC.

**Table 4-1**  
**Software releases supporting CSM**

| Software Release                | CSM bootstrap |          |              |
|---------------------------------|---------------|----------|--------------|
|                                 | Not possible  | Required | Not required |
| OC-48 FWP04T (see <i>Note</i> ) | X             |          |              |
| OC-48 Rel 5                     |               | X        |              |
| OC-48 Rel 6                     |               | X        |              |
| OC-48 Rel 7                     |               | X        |              |
| OC-48 Rel 8                     |               | X        |              |
| OC-48 Rel 9 or higher           |               |          | X            |
| OC-3/OC-12 Rel 4                | X             |          |              |
| OC-3/OC-12 Rel 5                |               | X        |              |
| OC-3/OC-12 Rel 6                |               | X        |              |
| OC-3/OC-12 Rel 7                |               | X        |              |
| OC-3/OC-12 Rel 8 or higher      |               |          | X            |
| OC-192                          |               |          | X            |
| AN08                            | X             |          |              |
| AN10 or higher                  |               |          | X            |
| CSV01                           |               |          | X            |

**Note:** If the OPC is running the OC-48 FWP04T software release, and an opc04dm software load is installed on the OPC as part of that release, it is possible to bootstrap the OPC for CSM. However, the opc04dm load is the only OC-48 FWP04T OPC load that can be bootstrapped.

To use S/DMS Network Manager CSM to deliver a software load to an OPC that is running an OC-3/OC-12 Rel 4, or to an OPC that is running OC-48 FWP04T software release without the opc04dm load, you must first upgrade the OPC to at least OC-3/OC-12 Rel 5 or OC-48 Rel 5 before attempting to bootstrap the OPC for CSM.

To learn how to upgrade the OPC to support S/DMS Network Manager CSM, contact your local Northern Telecom support organization. For further information, see “Technical support and information” on page xi.

---

## Chapter task list

The following task is included in this chapter.

| Task                     | Page |
|--------------------------|------|
| Bootstrap an OPC for CSM | 4-4  |

## Requirements

To perform the procedure in this chapter, you must do the following:

- read the conventions described in “About this guide” on page vii
- log in to S/DMS Network Manager with a user account that allows you to log in to GNE and GNB
- ensure that your S/DMS Network Manager has Rel 3.0, or higher software installed. To do this, choose the Product Information command from the Help menu in either GNE or GNB
- familiarize yourself with your workstation, and have a basic knowledge of the UNIX operating system
- obtain the root password for the OPC that you are bootstrapping
- ensure that the Ethernet port on the OPC you are bootstrapping is properly configured. See “Configuring the OPC” on page 3-1 of this document.
- ensure S/DMS Network Manager is monitoring the OPC that you are bootstrapping, and that the alarm collection process is running. For instructions, see “Viewing controller status” in *S/DMS Network Manager Configuration*, 323-4001-054.
- ensure the desired software release has been extracted from a digital data storage (DDS) tape and stored on S/DMS Network Manager. For instructions, see “Extracting a software release from tape” in *S/DMS Network Manager Centralized Software Management*, 323-4001-059.

## Procedure 4-1 Bootstrapping the OPC for CSM

---

Use this procedure to bootstrap an OPC that is not running a software load compatible with S/DMS Network Manager centralized software management.

Once you complete this procedure, you can use S/DMS Network Manager to deliver software releases to the OPC.

*Note:* There is no need to bootstrap the OPC if it runs any of the following software loads: OC-3/OC-12 Rel 8, OC-48 Rel 9, OC-192 Rel 1, S/DMS AccessNode AN10, CSV01, or later.

Before starting this procedure, read “Requirements” on page 4-3.

### Action

---

| Step | Action                                                                                                                                                                                                                                                              |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Log in to S/DMS Network Manager.<br><i>For more information, see “Logging in and opening an S/DMS Network Manager tool” in S/DMS Network Manager Connectivity, 323-4001-053.</i><br><b>Note:</b> There is no need to open GNE or GNB, if they are not already open. |
| 2    | Select the terminal icon from the HP VUE control panel.<br><i>A terminal window appears.</i>                                                                                                                                                                        |
| 3    | At the terminal window command prompt, enter<br><b>xterm &amp; ↵</b><br><i>A second terminal window appears.</i>                                                                                                                                                    |
| 4    | Close the first terminal window by entering the following command in the first terminal window<br><b>exit ↵</b>                                                                                                                                                     |
| 5    | At the remaining terminal window command prompt, change to the directory that contains the OPC CSM bootstrap script by entering<br><b>cd /usr/bin/noc ↵</b>                                                                                                         |

—continued—

Procedure 4-1 (continued)  
**Bootstrapping the OPC for CSM**

| Step                     | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |      |                          |        |                          |        |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------|--------------------------|--------|--------------------------|--------|
| 6                        | <p>Start the OPC CSM bootstrap script by entering<br/> <b>bootstrap_opc</b> ↵<br/> <i>The OPC CSM bootstrap message appears.</i></p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <pre> Electronic Software Delivery Bootstrap Service ===== You will be prompted for the steps necessary to bootstrap an OPC for electronic software delivery. The following information is needed:   1) IP address of the OPC to bootstrap.   2) The password for the root user.   3) The name of the new release being used to      initially upgrade the OPC  Please ensure you have a copy of the bootstrap procedure guide on hand.  Do you wish to continue [Y/n]?                     </pre> </div>                                                                            |    |      |                          |        |                          |        |
| 7                        | <p>To continue with the bootstrap procedure, press the Return key.</p> <p><b>Note:</b> Yes (Y) is the default response. When you press the Return key, Y is automatically entered as the response. If you do not want to continue, enter n and press the Return key.</p> <p><i>S/DMS Network Manager verifies that an appropriate software release has been extracted from the DDS tape and stored on the hard disk. If not, an error message appears.</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>an error message appears</td> <td>step 8</td> </tr> <tr> <td>no error message appears</td> <td>step 9</td> </tr> </tbody> </table> | If | Then | an error message appears | step 8 | no error message appears | step 9 |
| If                       | Then                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |      |                          |        |                          |        |
| an error message appears | step 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |      |                          |        |                          |        |
| no error message appears | step 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |      |                          |        |                          |        |
| 8                        | <p>You must extract an OC-3/OC-12 Rel 8 or later, OC-48 Rel 9 or later, OC-192 Rel 1 or later, S/DMS AccessNode AN10 or later, or Cornerstone Voice CSV01 or later software release from DDS tape and store it on S/DMS Network Manager before you can proceed with the bootstrap.</p> <p><i>For more information, see "Extracting a software release from tape" in S/DMS Network Manager Centralized Software Management, 323-4001-059.</i></p> <p><i>When the release has been extracted, go to step 5.</i></p>                                                                                                                                                                                                                                                                               |    |      |                          |        |                          |        |

—continued—

4-6 Bootstrapping the OPC for CSM

---

Procedure 4-1 (continued)

**Bootstrapping the OPC for CSM**

---

**Step    Action**

---

**9**        Review the list of software releases stored on S/DMS Network Manager.

Choose the release that will be used to upgrade the OPC. The bootstrap in that release will be used to enable Electronic Software Delivery on the OPC.

Select a release from the following list:

- 0) Quit.
- 1) OC-48 REL 9.00
- 2) OC-3/OC-12 REL 8.00

Select a number (0-2):

**10**        Select the number that corresponds to the software release you want to use to perform the CSM bootstrap on the OPC, by entering

**<selection>**

where

**<selection>**        is the number from the list that represents the release that you want to use to perform the bootstrap

**11**        Press the Return key.

*An OPC IP address message appears.*

Enter the IP address of the OPC you wish to bootstrap in standard dot notation (ie 255.255.255.255).

Enter IP address:

**12**        The IP address identifies the OPC you want to bootstrap. Enter the unique IP address number assigned to the OPC.

*The IP address consists of four numbers, each separated by a period. For example, an IP address is n.n.n.n, where n represents a number greater than or equal to 0, and less than or equal to 255.*

**13**        Press the Return key.

*The software release you selected for the bootstrap, and the IP address of the OPC, appear.*

Using release <release> to bootstrap OPC <IP address>.

Do you wish to continue [Y/n]?

—continued—

Procedure 4-1 (continued)  
**Bootstrapping the OPC for CSM**

| Step | Action |
|------|--------|
|------|--------|

*In the dialog, <release> is the software release name corresponding to the selection in step 10, and <IP address> is the IP address you entered in step 12.*

- |           |                                                                                                                                                                                             |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>14</b> | <p>To continue with the bootstrap procedure, press the Return key.</p> <p><i>The bootstrap process continues, and a message prompting you for the root password on the OPC appears.</i></p> |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

```
The bootstrap file will now be transferred using ftp.
Please enter the password for root user.
Password:
```

- |           |                                                                                                                                                                                                                                                                                 |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>15</b> | <p>Enter the root user password, and press the Return key.</p> <p><i>S/DMS Network Manager begins transferring the CSM bootstrap file for the specified OPC. When successfully completed, a message appears explaining the procedure that must be performed on the OPC.</i></p> |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

```
File successfully transferred.

A telnet session will now started in order to execute
the bootstrap script. Perform the following once
connected:

 1) Login as the root user.
 2) Type RETURN to select the default terminal type
 (vt100).
 3) Type cd /tmp to change to the tmp directory.
 4) Type rm -rf bootstrap to clean up previous
 bootstrap attempts.
 5) Type tar xf bootstrap.tar to install the files.
 6) Type cd /tmp/bootstrap to change to the
 bootstrap directory.
 7) Type bootstrap_eswd to bootstrap the OPC.
 8) Type logout to log out of the OPC.

Type RETURN when ready...
```

- |           |                                                                                                                                                                                                                            |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>16</b> | <p>Press the Return key to continue the CSM bootstrap operation.</p> <p><i>S/DMS Network Manager begins a Telnet session to connect to the OPC that you are bootstrapping. When connected, a login prompt appears.</i></p> |
| <b>17</b> | <p>Enter the root userID, and press the Return key.</p> <p><i>A password prompt appears.</i></p>                                                                                                                           |
| <b>18</b> | <p>Enter the root user password.</p> <p><i>If the userID and password are correct, a terminal prompt appears.</i></p>                                                                                                      |

Term = (vt100)

—continued—

## 4-8 Bootstrapping the OPC for CSM

---

Procedure 4-1 (continued)

### Bootstrapping the OPC for CSM

---

| Step                                                                                                                                                                                                                    | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 19                                                                                                                                                                                                                      | Press the Return key.<br><i>The UNIX shell prompt appears.</i><br>opc>                                                                                                                                                                                                                                                                                                                                                                                  |
| 20                                                                                                                                                                                                                      | At the UNIX shell prompt, change to the directory to be used to store the bootstrap file, by entering<br><b>cd /tmp</b> ↵                                                                                                                                                                                                                                                                                                                               |
| 21                                                                                                                                                                                                                      | Install the new bootstrap file, by entering<br><b>tar xf bootstrap.tar</b> ↵                                                                                                                                                                                                                                                                                                                                                                            |
| 22                                                                                                                                                                                                                      | Change to the bootstrapping directory on the OPC, by entering<br><b>cd /tmp/bootstrap</b> ↵                                                                                                                                                                                                                                                                                                                                                             |
| 23                                                                                                                                                                                                                      | Execute the bootstrap process on the OPC, by entering<br><b>bootstrap_eswd</b> ↵<br><i>The bootstrap process begins on the OPC, and messages showing the progress of the bootstrap appear.</i>                                                                                                                                                                                                                                                          |
| <pre>Bootstrapping OPC for electronic software delivery ... Successfully completed bootstrapping OPC for electronic software delivery.  System software can now be electronically delivered to this OPC.  opc&gt;</pre> |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 24                                                                                                                                                                                                                      | <b>Note:</b> If the CSM bootstrap fails, an error message appears, and the bootstrap process terminates. To restart the bootstrap process, go to step 6.<br>If the CSM bootstrap is successful, end the Telnet session by entering<br><b>logout</b> ↵<br><i>The Telnet session to the OPC closes and control returns to S/DMS Network Manager. A message prompts you to indicate to S/DMS Network Manager whether the OPC bootstrap was successful.</i> |

```
Connection closed by foreign host.
Returning to S/DMS Network Manager.
Was the bootstrap operation successful [Y/n]?
```

—continued—

---

Procedure 4-1 (continued)  
**Bootstrapping the OPC for CSM**

---

| <b>Step</b> | <b>Action</b> |
|-------------|---------------|
|-------------|---------------|

---

**25** Press the Return key.

*The IP address of the OPC is added to an S/DMS Network Manager configuration file to identify that the OPC is now compatible with S/DMS Network Manager centralized software management.*

*A confirmation message appears.*

```
OPC <IP address> has been successfully bootstrapped.
It is now capable of receiving files via Electronic
Software Delivery.
```

```
Press RETURN to exit.
```

**26** Press the Return key.

*The terminal window command prompt appears.*

—end—



---

## Setting up serial ports for EDA

---

This chapter describes how to set up the serial ports on S/DMS Network Manager so that users can use the External Device Access (EDA) feature. EDA allows users to log in to devices connected to S/DMS Network Manager through a direct serial connection or over a Transmission Control Protocol/Internet Protocol (TCP/IP) network. Any device with a facility for serial or TCP/IP connections can be connected to S/DMS Network Manager.

For example, a serial connection can be set up between S/DMS Network Manager and telephone switching equipment, such as a Northern Telecom Digital Multiplex System (DMS). The S/DMS Network Manager EDA feature allows a user to log in to the DMS Maintenance and Administration Position (MAP) from S/DMS Network Manager. Refer to the Northern Telecom DMS NTPs to learn how to make a physical connection to the serial port on a DMS.

Before using the EDA feature, the S/DMS Network Manager serial ports must be identified and configured. The S/DMS Network Manager system administrator is responsible for ensuring that the serial ports are properly configured. This verification is done using a UNIX utility called System Administration Manager (SAM). SAM is a graphical configuration tool that allows the system administrator to choose the parameters necessary to define and configure the S/DMS Network Manager serial ports.

This chapter does not describe how to use SAM. This chapter only identifies the S/DMS Network Manager serial port parameters that must be set to facilitate serial communication with the external device. For more information about SAM, see the *HP-UX Installing Peripherals* manual.

## Requirements

To perform the procedures in this chapter, you must do the following:

- read the conventions described in “About this guide” on page vii
- ensure you have a userID and password that allow you to log in to GNE
- ensure you have superuser privileges on the S/DMS Network Manager workstation
- obtain the serial communication parameters of the external device to be connected to the S/DMS Network Manager serial port
- obtain the S/DMS Network Manager superuser password
- ensure you have a good knowledge of the UNIX operating system, the workstation hardware configuration, and SAM

## Chapter task list

The following table identifies the S/DMS Network Manager serial port configuration task.

| <b>Task</b>             | <b>Page</b> |
|-------------------------|-------------|
| Setting up serial ports | 5-3         |

## Procedure 5-1

# Setting up the serial ports

Use this procedure to configure the S/DMS Network Manager serial ports to communicate with an external device connected to S/DMS Network Manager.

Serial port configuration is performed using a UNIX utility called System Administration Manager (SAM). For more information about SAM, see the *HP-UX Installing Peripherals* manual.

You can use this procedure to configure a new device, or to reconfigure an existing device. If reconfiguring an existing device, you cannot use SAM to modify the parameters of the device. Delete the device first using SAM, then reconfigure it with the new parameters.

**Note:** This procedure is performed only by qualified S/DMS Network Manager system administration personnel.

Before starting this procedure, read “Requirements” on page 5-2.

## Action

| Step | Action                                                                                                                                                                                                                                  |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Log in to S/DMS Network Manager and open GNE.<br><i>For more information, see “Logging in and opening an S/DMS Network Manager tool” in S/DMS Network Manager Connectivity, 323-4001-053.</i><br><i>The GNE network window appears.</i> |
| 2    | Select the terminal icon from the HP VUE control panel.<br><i>A terminal window appears on the display.</i>                                                                                                                             |
| 3    | At the terminal window command prompt, switch to the superuser by entering <b>su</b> ↵<br><i>A password prompt appears.</i>                                                                                                             |
| 4    | Enter the superuser password and press the Return key.                                                                                                                                                                                  |
| 5    | Start SAM by entering <b>sam &amp;</b> ↵<br><i>The graphical System Administration Manager appears in a new window.</i>                                                                                                                 |

—continued—

5-4 Setting up serial ports for EDA

---

Procedure 5-1 (continued)

**Setting up the serial ports**

---

| <b>Step</b>                    | <b>Action</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                       |             |                                |        |                        |        |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------|--------------------------------|--------|------------------------|--------|
| <b>6</b>                       | SAM does not allow you to modify the parameters of an existing device. Instead, delete the device, then reconfigure it as if it were a new device.<br><br><table border="1"><thead><tr><th><b>If you want to</b></th><th><b>Then</b></th></tr></thead><tbody><tr><td>reconfigure an existing device</td><td>step 7</td></tr><tr><td>configure a new device</td><td>step 9</td></tr></tbody></table>                                                                                                                                                                                                                                                                                                                                                                               | <b>If you want to</b> | <b>Then</b> | reconfigure an existing device | step 7 | configure a new device | step 9 |
| <b>If you want to</b>          | <b>Then</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                       |             |                                |        |                        |        |
| reconfigure an existing device | step 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                       |             |                                |        |                        |        |
| configure a new device         | step 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                       |             |                                |        |                        |        |
| <b>7</b>                       | Use SAM to remove the existing device from the Terminals and Modems list and the UUCP devices list.<br><br>For more information, see <i>HP-UX Installing Peripherals</i> manual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       |             |                                |        |                        |        |
| <b>8</b>                       | Verify that the device is removed from the UUCP list. If the device is not removed from the UUCP list, the following problems may occur when attempting to use EDA: <ul style="list-style-type: none"><li>• the device continues to appear in the data selector for the serial field in the EDA dialog. However, when a user attempts to use the device, a "Requested device/system name not known" message appears.</li><li>• when you add the device back after removing it, the serial port may not be set to the new baud rate (speed) that you specify when adding the device</li></ul><br><i>Once you verify that the device does not appear in the UUCP list, the remainder of the reconfiguration procedure is the same as adding a new device. Continue with step 9.</i> |                       |             |                                |        |                        |        |
| <b>9</b>                       | Display the Add Modem screen <ol style="list-style-type: none"><li>a. Select Peripheral Devices.</li><li>b. Select Terminals and Modems</li><li>c. Select <b>Add Modem...</b> from the Actions menu.</li></ol> For more information, see Hewlett-Packard <i>HP-UX Installing Peripherals</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                       |             |                                |        |                        |        |
| <b>10</b>                      | Set up the device parameters by doing the following in the Add Modem screen <ol style="list-style-type: none"><li>a. Select a Mux/Serial card from the list.</li><li>b. Select the port number (0).</li><li>c. Select <b>Speed (baud rate)</b>, and drag it to the baud rate appropriate for communication with the external device.</li><li>d. Select <b>Use device for calling out</b>.</li><li>e. Deselect <b>Receive incoming calls</b>.</li><li>f. Select <b>Use for UUCP Connection</b>.</li><li>g. Click on <b>OK</b>.</li></ol>                                                                                                                                                                                                                                           |                       |             |                                |        |                        |        |

—continued—

---

 Procedure 5-1 (continued)  
**Setting up the serial ports**


---

| Step             | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             |            |                 |         |                  |         |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------|-----------------|---------|------------------|---------|
| 11               | Return to the top level of the SAM menus and modify the modem type by doing the following <ol style="list-style-type: none"> <li>a. Select <b>Networking and Communications</b>.</li> <li>b. Select <b>UUCP</b>.</li> <li>c. Select <b>UUCP Devices</b>.</li> <li>d. Select the modem you added from the list provided.</li> <li>e. Select <b>Modify...</b> from the Actions menu.</li> <li>f. Select <b>direct</b> modem type from the modem type list.</li> <li>g. Select <b>OK</b>.</li> </ol> |             |            |                 |         |                  |         |
| 12               | Exit SAM. <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">If you are:</th> <th style="text-align: left; border-bottom: 1px solid black;">Then go to</th> </tr> </thead> <tbody> <tr> <td>using HPUX 9.xx</td> <td>step 14</td> </tr> <tr> <td>using HPUX 10.xx</td> <td>step 13</td> </tr> </tbody> </table>                                                                                                   | If you are: | Then go to | using HPUX 9.xx | step 14 | using HPUX 10.xx | step 13 |
| If you are:      | Then go to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |            |                 |         |                  |         |
| using HPUX 9.xx  | step 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |             |            |                 |         |                  |         |
| using HPUX 10.xx | step 13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |             |            |                 |         |                  |         |
| 13               | Change the permissions for Devices to make it accessible by S/DMS Network Manager. <ol style="list-style-type: none"> <li>a. At the UNIX prompt, enter<br/><b>cd /usr/lib/uucp</b></li> <li>b. Change the permissions, enter<br/><b>chmod o+r Devices</b></li> </ol> <p>Due to the security measures added by HP to HPUX 10, the permissions for Devices must be modified each time a new UUCP device is added.</p>                                                                               |             |            |                 |         |                  |         |
| 14               | The S/DMS Network Manager serial port is now configured. Once the external device is physically connected to S/DMS Network Manager, you can use EDA to establish a serial connection to that device. <p>To learn how to use EDA to establish a serial connection to an external device, see "Connecting to an external device" in <i>S/DMS Network Manager Connectivity</i>, 323-4001-053.</p>                                                                                                    |             |            |                 |         |                  |         |

—end—



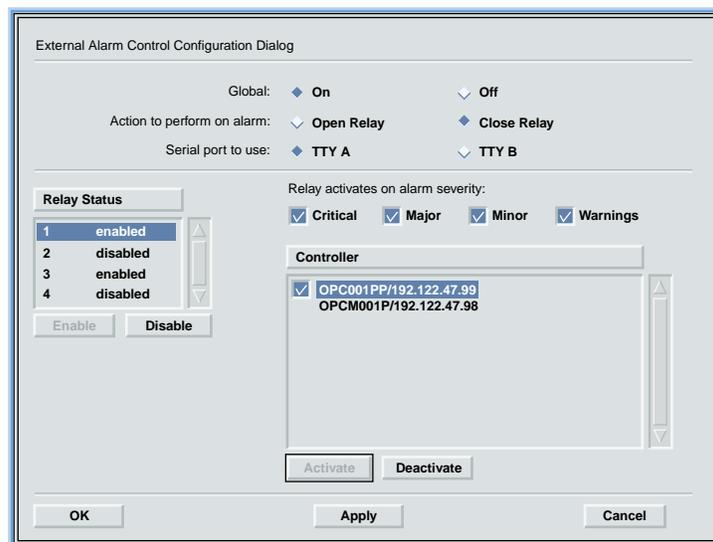
## Controlling external alarms

This chapter describes how to configure and control the external alarm control feature of S/DMS Network Manager. The external alarm control feature enables you to configure S/DMS Network Manager and an external relay unit, so that on detection of certain alarm criteria within the network, external alarm equipment is activated. An audible indicator at a remote location is an example of external alarm equipment. The external alarm condition is maintained until the alarm is cleared or acknowledged on the network element.

The external alarm control feature controls relay settings on a external relay unit. The external alarm equipment connected to the relay unit is determined by the customer's application of external alarm control.

The External Alarm Control Configuration dialog enables you to configure S/DMS Network Manager and the external relay unit. (See the following illustration.)

NM-10649.1 (R6)



## 6-2 Controlling external alarms

---

The radio buttons at the top of the dialogue allow you to enable or disable the external alarm control feature, set the relay action (for all relays at the external relay unit) for external alarm control, and set the S/DMS Network Manager serial port to be used for external relay unit connection. The other areas of the dialog are used to configure relays (at the external relay unit) and define the alarm criteria associated with the individual relays. The buttons at the bottom of the dialogue allow you to save, cancel, or exit the dialog.

The External Alarm Control Configuration dialog is also used to change the external alarm control settings. Relays used for external alarm control can be disabled, and the alarm criteria associated with relays can be changed.

### External relay unit

S/DMS Network Manager Release 6 supports the Harris WS2000 HASP relay box. The pin-to-pin layout of the serial cable for the Harris relay box is shown in the following table.

| DB-9 Connector | DB-9 Connector function | Serial and digital host port conntions <sup>1</sup> (P12 <sup>2</sup> ) |
|----------------|-------------------------|-------------------------------------------------------------------------|
| 1              | Data Carrier Detect     |                                                                         |
| 2              | Rx                      | 1 (Tx)                                                                  |
| 3              | Tx                      | 5 (Rx)                                                                  |
| 4              | DTE Ready               |                                                                         |
| 5              | Signal Ground           | 4 (Common)                                                              |
| 6              | Data Set Ready          |                                                                         |
| 7 <sup>3</sup> | Request to Send         |                                                                         |
| 8 <sup>3</sup> | Clear to Send           |                                                                         |
| 9              | Ring Indicator          |                                                                         |

1. Pins 2 and 3 of P12 must be connected together.
2. P12 is a port that can be found at the rear panel of the Harris relay box. Also, to make the front panel LEDs become the visual indicators of the output relay, put jumpers on Z7 and Z9 at the rear panel.
3. Pins 7 and 8 of DB-9 must be connected together.

## Requirements

To perform the procedures in this chapter, you must do the following:

- read the conventions described in “About this guide” on page vii
- ensure you have a userID and password that allow you to log in to GNE
- ensure there is an external relay unit connected to S/DMS Network Manager

## Chapter task list

The following table identifies the S/DMS Network Manager serial port configuration task.

| <b>Task</b>                             | <b>Page</b> |
|-----------------------------------------|-------------|
| Controlling external alarm notification | 6-4         |

## Procedure 6-1 Controlling external alarm notification

---

Use this procedure to control the external reporting of alarms for individual controllers monitored by S/DMS Network Manager.

Before starting this procedure, read “Requirements” on page 6-3.

### Action

---

| Step | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Display the Fault menu and select the <b>External Alarm Control</b> command.<br><i>The External Alarm Control Configuration dialog appears.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 2    | Select the global options for external alarm reporting. The <b>On</b> or <b>Off</b> buttons control the display of the dialog. (If the dialog is turned off, all fields in the dialog are disabled.) The <b>Open Relay</b> and <b>Close Relay</b> buttons define the state of the relay when an alarm is received. The <b>TTY A</b> and <b>TTY B</b> specify the workstation serial port used to connect to the external relay device.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 3    | Available relays are displayed in the Relay Status list. The relay status can be enabled or disabled. To enable a relay, select the relay and the <b>Enable</b> button. If the relay is disabled, the alarm severity buttons and the controller list are disabled.<br><br>When a relay is enabled, you can select the criteria used to toggle the relay and activate the external alarm device. Criteria for activating the relay are the alarm severity and the controller associated with an alarm. Specify the alarm severity using the <b>Critical</b> , <b>Major</b> , <b>Minor</b> , and <b>Warnings</b> buttons. Choose the controllers associated with a relay by selecting the span of control displayed in the controller list and the <b>Activate</b> button.<br><br><i>A check mark appears beside the controllers associated with a relay.</i><br><b>Note:</b> A controllers association with a relay can be removed by selecting the span of control displayed in the controller list and the Deactivate button. |
| 4    | Changes made to the relay configuration are saved to file using the <b>OK</b> or <b>Apply</b> buttons. The OK button implements the changes and closes the dialog. The Apply button implements the changes and the dialog remains open.<br><br><i>A confirmation dialog appears. When the action is confirmed, the changes are saved to file and the current alarms are filtered using the configuration specified in the External Alarm Control Configuration dialog.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

—continued—

---

Procedure 6-1 (continued)

**Controlling external alarm notification**

---

| <b>Step</b> | <b>Action</b> |
|-------------|---------------|
|-------------|---------------|

---

**Note:** Changes made to each relay must be saved individually.

Selecting the **Cancel** button closes the dialog and discards any relay configuration changes, if any.

- |          |                                                                                                                |
|----------|----------------------------------------------------------------------------------------------------------------|
| <b>5</b> | When you finish configuring the external alarm notification, save the new S/DMS Network Manager configuration. |
|----------|----------------------------------------------------------------------------------------------------------------|

For more information, see "Saving or reverting the configuration" in *S/DMS Network Manager Configuration*, 323-4001-054.

—end—



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## Advanced user topics

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This chapter is intended only for expert UNIX users. It describes how to customize the standard S/DMS Network Manager user environment and how to display an audit trail file that lists certain activities that have been performed on S/DMS Network Manager.

The standard S/DMS Network Manager user environment recommended and supported by Northern Telecom is the Hewlett Packard Visual User Environment (HP VUE). If necessary, you can customize the user environment.

### Executable files

The following executable files are used to invoke the GNE and the GNB applications:

- `/usr/bin/noc/gnbrowse` executes the GNB application
- `/usr/bin/noc/gnconfig` invokes the GNE application

To invoke either of these applications outside the HP VUE environment, enter the executable name at the command prompt.

You must have a userID in the `nocadm` or `noclayout` group to invoke the GNE application. You must have a userID in either the `noc`, `nocadm`, `nocprov`, or `noclayout` group to invoke the GNB.

Since both applications are X11 based, ensure the display device is properly set. Use the `Display` environment variable to set the display device before invoking the application.

The following executable file is used to invoke the S/DMS Network Manager Administration script.

- `/usr/bin/noc/noc_admin`

The S/DMS Network Manager Administration script is used to add and delete user accounts and assign access classes to the standard user environment. It is also used to manage the user display environments, the system log messages and the S/DMS Network Manager software load. For further information, see “Administering S/DMS Network Manager” on page 2-1.

Do not attempt to invoke any of the other executable files located in the /usr/bin/noc directory.

### **Data files**

When you use GNE to configure a surveillance network, the S/DMS Network Manager updates files in the /usr/bin/noc/config/ directory. These files contain information on network element controllers, links, node positions, preferences associated with views, and annotations for network objects.

The /usr/bin/noc/maps/ directory contains map files that can be used by S/DMS Network Manager. Maps provide a visual reference point or context for the group and network element layout displayed in GNE and GNB.

As a precaution, make a regular backup, to tape or disk, of the files in the /usr/bin/noc/config/ and /usr/bin/noc/maps/ directories. If these files are lost or deleted, you have to re-build the network configuration.

When restoring the files in the /usr/bin/noc/config/ and /usr/bin/noc/maps/ directories, ensure the ownership, group, and permissions are set properly. Set the ownership to admin, the group to nocadm, and the permission to 664.

Procedure 2-9, “Transferring the configuration database” on page 2-27 describes how to transfer the network configuration database from the active S/DMS Network Manager to another S/DMS Network Manager functioning as a cold-standby, if there is one.

The S/DMS Network Manager alarm collection process must be stopped and restarted for these files to take effect.

Do not alter the contents of the data files.

### **Temporary directory files**

Files located in the /tmp directory should not be altered while you are using S/DMS Network Manager. Problems can occur with the operation of S/DMS Network Manager if the files are modified when either GNE or GNB is open.

## NT Help Manager

GNE and GNB both use the Northern Telecom Help Manager to display the help text. The Help Manager is an application started at login time by the your .login script file. An excerpt of the standard C-shell .login file created by the S/DMS Network Manager at login follows.

```
Set up the terminal
if (! $?VUE) then
 eval `test -s -Q -m '?:xterm' `
else
 /usr/bin/noc/xohmgr >& /dev/null &
endif
```

This portion of the .login script shows how the login device is set up. If the device is an X11-based display device and HP VUE runs on the device, the Help Manager is started in the background. (See the “else” portion of the above example.)

If the device is not an X11-based display device, the user is probably logged in on a terminal, or a pseudo-terminal, in which case the user is prompted for a terminal type.

If the user environment is not HP VUE, the NT Help Manager is not launched at login. You can launch the NT Help Manager when not using the standard environment by changing VUE to DISPLAY in the if statement of the .login file.

Since the Help Manager is an X11-based application, ensure the display environment is properly set before invoking the application. Use the DISPLAY environment variable, or -display command line option.

## X11 resources

A large number of X11 resources are used by GNE, GNB, and the Help Manager applications. All resources used by these applications are contained in the /usr/bin/noc/vue.resources file. For the most part, these resources are directives to the HP VUE window manager, but others apply to specific applications such as the Help Manager.



### CAUTION

Do not tamper with the /usr/bin/noc/vue.resources file unless you are absolutely sure of their function, and the effect of the changes on the operation of the S/DMS Network Manager.

Colors are an important X11 resource. If you try to open the GNE or GNB and the application cannot locate the color resources it requires, the application may not open. Other applications that are open and use X11 color resources are a possible cause of this problem.

## Adding or modifying users

If modifying an existing S/DMS Network Manager user account, or adding a new user account, you must

- define primary user group as either noc, nocprov, noclayout, or nocadmin for the group to be recognized by S/DMS Network Manager
- ensure the path setting for the executable files contains at least the following:  
/bin /usr/bin /usr/bin/X11 /usr/bin/noc /usr/contrib/bin /usr/local/bin
- set the following environment variables to the given values:
  - NOCTMP /tmp
  - XOHDIR /usr/bin/noc
  - UIU\_PATH /usr/bin/noc
- set the display device as described above in NT Help Manager
- execute the Help Manager in the background as described above in NT Help Manager
- delete the S/DMS Network Manager temporary files using the following command:

```
rm -f $NOCTMP/*.DISPLAY* >&/dev/null
```

---

## List of terms

---

|                |                                                                         |
|----------------|-------------------------------------------------------------------------|
| <b>ABM</b>     | Access Bandwidth Manager                                                |
| <b>ADM</b>     | add-drop multiplexer                                                    |
| <b>alarm</b>   | a condition, such as a fault, that sends a signal to an indicator       |
| <b>AN</b>      | S/DMS AccessNode                                                        |
| <b>ASCII</b>   | American Standard Code for Information Interchange                      |
| <b>balloon</b> | a balloon-shaped object that appears on a node to indicate alarm counts |
| <b>BLSR</b>    | bidirectional line switched ring                                        |
| <b>CCITT</b>   | Consultative Committee on International Telegraphy and Telephony        |
| <b>CLFI</b>    | Common Language Facility Identifier                                     |
| <b>CMT</b>     | character-mode terminal                                                 |
| <b>CNet</b>    | control network                                                         |
| <b>CPC</b>     | corporate product code                                                  |

|                     |                                                                                   |
|---------------------|-----------------------------------------------------------------------------------|
| <b>CPG</b>          | circuit pack group                                                                |
| <b>CSM</b>          | centralized software management                                                   |
| <b>DARPA</b>        | Defense Advanced Research Projects Agency                                         |
| <b>DDS</b>          | digital data storage (tape)                                                       |
| <b>DMS</b>          | Digital Multiplex System                                                          |
| <b>DMS MAP</b>      | Digital Multiplex System Maintenance Access Position                              |
| <b>DV45</b>         | Digital Video Codec                                                               |
| <b>EDA</b>          | external device access                                                            |
| <b>ftp</b>          | file transfer protocol                                                            |
| <b>GNB</b>          | Graphical Network Browser                                                         |
| <b>GNE</b>          | Graphical Network Editor                                                          |
| <b>group</b>        | a logical collection of network elements                                          |
| <b>GUI</b>          | Graphical User Interface                                                          |
| <b>highlighting</b> | the graphical application of color to a node to indicate a certain alarm severity |
| <b>HP</b>           | Hewlett-Packard                                                                   |
| <b>HP VUE</b>       | Hewlett-Packard Visual User Environment                                           |

|                             |                                                                                                      |
|-----------------------------|------------------------------------------------------------------------------------------------------|
| <b>indicator</b>            | an audible or visible alert to an alarm or status condition                                          |
| <b>ISO</b>                  | International Standards Organization                                                                 |
| <b>LAN</b>                  | local area network                                                                                   |
| <b>log in</b>               | the action of opening a user interface element                                                       |
| <b>log out</b>              | the action of closing a user interface element                                                       |
| <b>LTE</b>                  | line terminating equipment                                                                           |
| <b>MAPCI</b>                | Maintenance and Administration Position Command Interpreter                                          |
| <b>menu</b>                 | a list of action options                                                                             |
| <b>menu bar</b>             | the portion of the graphical user interface that contains the status indicator, and the window menus |
| <b>MOA</b>                  | Managed Object Agent                                                                                 |
| <b>network element (NE)</b> | a collection of equipment at one location that functions and is administered as a single entity      |
| <b>node</b>                 | graphic object representing groups or single network elements                                        |
| <b>NTP</b>                  | Northern Telecom Publication                                                                         |
| <b>NUM</b>                  | Network Upgrade Manager, an OPC tool                                                                 |
| <b>OAM&amp;P</b>            | operations, administration, maintenance, and provisioning                                            |

|               |                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>OC-3</b>   | optical signal carrier level 3 (at 155.520 Mb/s)                                                                                                                                                                                                                                                                                                                                          |
| <b>OC-12</b>  | optical signal carrier level 12 (at 622.080 Mb/s)                                                                                                                                                                                                                                                                                                                                         |
| <b>OC-48</b>  | optical signal carrier 48 (at 2488 Mb/s)                                                                                                                                                                                                                                                                                                                                                  |
| <b>OC-192</b> | optical signal carrier 192 (at 9953.280 Mb/s)                                                                                                                                                                                                                                                                                                                                             |
| <b>OPC</b>    | operations controller                                                                                                                                                                                                                                                                                                                                                                     |
| <b>OSI</b>    | Open Systems Interconnect                                                                                                                                                                                                                                                                                                                                                                 |
| <b>PEC</b>    | product engineering code                                                                                                                                                                                                                                                                                                                                                                  |
| <b>PM</b>     | performance monitoring                                                                                                                                                                                                                                                                                                                                                                    |
| <b>SAM</b>    | System Administration Manager                                                                                                                                                                                                                                                                                                                                                             |
| <b>S/DMS</b>  | Synchronous/Digital Multiplexing System                                                                                                                                                                                                                                                                                                                                                   |
| <b>SOC</b>    | span of control                                                                                                                                                                                                                                                                                                                                                                           |
| <b>SONET</b>  | Synchronous Optical Network is a standard for optical transport that defines optical carrier levels and their electrical equivalent for synchronous transport signals. The SONET standard allows for a multivendor environment, positioning the network to transport new services, synchronous networking, and enhanced operations, administration, maintenance and provisioning (OAM&P). |
| <b>span</b>   | all network elements under the control of a single operations controller (OPC)                                                                                                                                                                                                                                                                                                            |
| <b>STS-1</b>  | Synchronous Transport Signal (at 51.84 Mb/s)                                                                                                                                                                                                                                                                                                                                              |

|                     |                                                                                                                               |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>subnetwork</b>   | a graphical collection of objects organized into groups to represent the network elements monitored by S/DMS Network Manager. |
| <b>system</b>       | network elements associated with the same payload                                                                             |
| <b>TA-1230 ring</b> | Bellcore standard for SONET BLSR Equipment Criteria, TA-NWT-001230 (issue 2)                                                  |
| <b>TCP/IP</b>       | Transmission Control Protocol/Internet Protocol                                                                               |
| <b>UDLC</b>         | Universal Digital Loop Carrier                                                                                                |
| <b>UI</b>           | user interface                                                                                                                |
| <b>USM</b>          | User Session Manager                                                                                                          |
| <b>VTBM</b>         | Virtual Tributary Bandwidth Management                                                                                        |
| <b>window</b>       | a rectangular area of a display screen used to contain a particular application                                               |
| <b>WAN</b>          | wide area network                                                                                                             |
| <b>X.25</b>         | CCITT protocol used for wide-area packet switching. OSI Data communication standard                                           |



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SONET Transmission Products

## **S/DMS Network Manager**

Installation and Administration

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