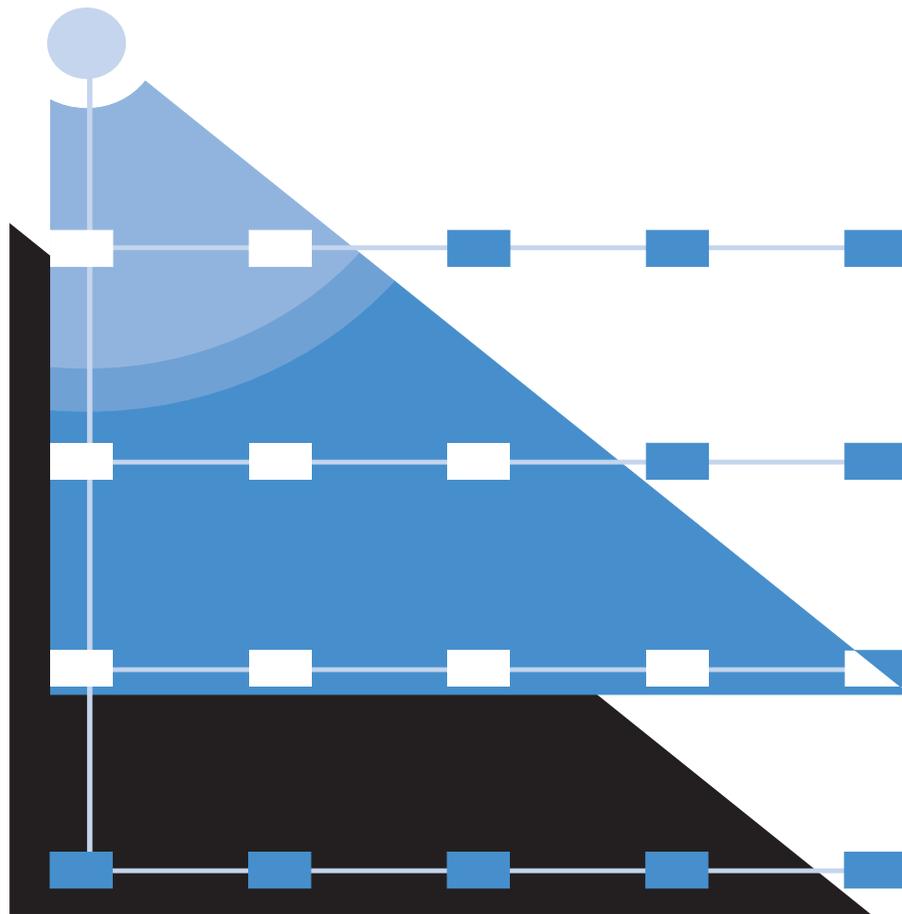


SONET Transmission Products

S/DMS Network Manager

Introduction

Update to document release: Rel 6 Standard November 1996
NTP Update Publication date: April 1997



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323-4001-059	1-7 2-1, 2-5		1-8 2-2, 2-6

SONET Transmission Products

S/DMS Network Manager

Introduction

Document number: 323-4001-102

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Date: November 1996

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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 document

This book introduces the features and user interface of the S/DMS Network Manager Release 6 software.

Who should read this book

This book is an introduction for people responsible for the operation of S/DMS Network Manager. The information in this guide provides a general overview of S/DMS Network Manager concepts.

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” on page 1-33.

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 List 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

Introducing S/DMS Network Manager

This chapter describes S/DMS Network Manager and summarizes the features available in S/DMS Network Manager Release 6. This chapter also introduces the concepts of network configuration, network surveillance, connection management, single point of access to the controller and network elements, and centralized software management.

The information in this chapter is a summary of S/DMS Network Manager operations. This chapter is not intended to replace the tool reference material, or the detailed operating procedures contained in other chapters of this guide.

What is S/DMS Network Manager

S/DMS Network Manager is a software application that runs on a Hewlett-Packard (HP) UNIX workstation. S/DMS Network Manager provides a single point of access to the existing operations, administration, maintenance, and provisioning (OAM&P) functions in your network.

S/DMS Network Manager can be used with the following Northern Telecom SONET products:

- S/DMS TransportNode OC-3/OC-12 linear systems
- S/DMS TransportNode OC-12 TA-1230 ring systems
- S/DMS TransportNode OC-48 linear systems
- S/DMS TransportNode OC-48 TA-1230 ring systems
- S/DMS TransportNode OC-192 linear systems
- S/DMS AccessNode single or combined UDLC/IDLC configurations
- S/DMS AccessNode OC-12 TA-1230 ring systems
- Cornerstone Voice
- SONET Radio 4/40

S/DMS Network Manager can be used with the following other products:

- Northern Telecom DV45 Video Codec
- Tellabs Titan 5500 Digital Cross-Connect System (DCS)

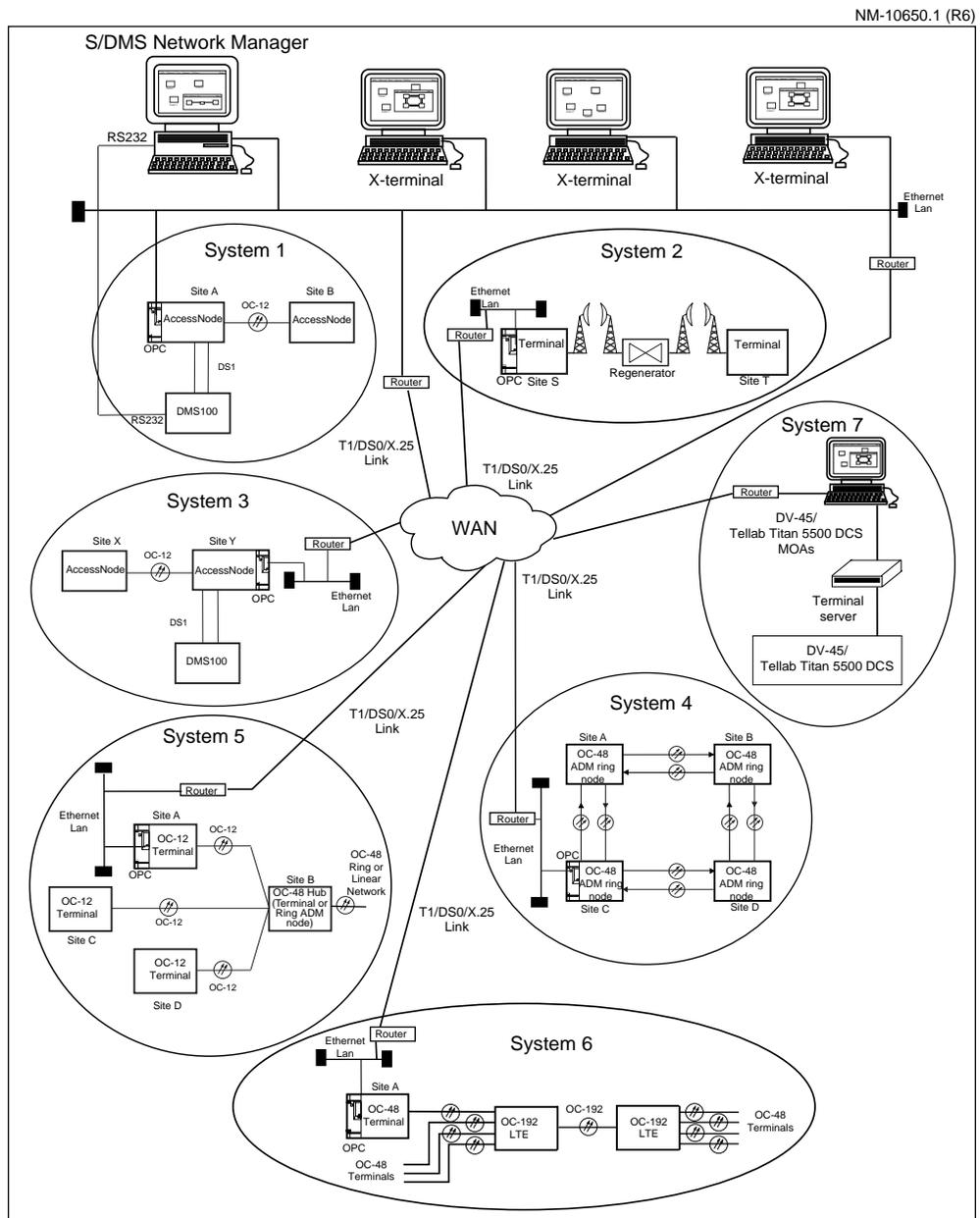
Network architecture

Networks typically consist of several individual subnetworks. Each subnetwork contains network elements. These subnetworks are called spans. A span is defined as a subnetwork where all the network elements are controlled by a primary controller and an optional backup controller. The primary and backup controllers form a controller pair. These controllers are physically located with the network elements, and provide OAM&P functions to the network elements. This arrangement of controllers and network elements is referred to as a span of control.

In addition to controlling network elements, the controller also provides a means of communicating information between the network elements and S/DMS Network Manager.

For example, each primary controller gathers alarms from the network elements it controls and relays the alarm information to S/DMS Network Manager. S/DMS Network Manager consolidates the alarms from all controllers, and displays a graphical view of the alarms for the entire network.

The following illustration shows a typical implementation of S/DMS Network Manager.



S/DMS Network Manager communicates with the controllers through a Transmission Control Protocol/Internet Protocol (TCP/IP) network. The configuration, installation, administration, and maintenance of this network are the responsibility of the customer.

In some networks two S/DMS Network Managers monitor the same controllers. One S/DMS Network Manager actively monitors the network, while the other acts as a cold-standby in case a problem develops with the active S/DMS Network Manager. In addition to this support, bridged controllers support up to four S/DMS Network Manager connections.

Although a cold-standby S/DMS Network Manager is not a requirement, it can provide added protection and an alternate surveillance environment, should something happen 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.

What is new in S/DMS Network Manager Release 6

The new features offered with S/DMS Network Manager Release 6 are summarized below. These new features build on earlier releases of the S/DMS Network Manager. A complete list of the S/DMS Network Manager Release 6 features is provided in “Release 6 feature summary” on page 1-31.

Enhanced Connection Management

Connection Management has been enhanced to support the following connection types:

- S/DMS TransportNode OC-12 bidirectional line-switched ring systems VT connections
- S/DMS TransportNode OC-48 and OC-12 linear system STS connections
- S/DMS Transport Bandwidth Manager (TBM) multiplexer (MUX) provisioning for OC-12 connections subtending off OC-48 systems
- S/DMS AccessNode Virtual Tributary Bandwidth Management (VTBM) ring bidirectional STS-1, STS-3c, and VT connections

Connections are made using a graphical point and click interface. Only the endpoints of the connections need to be specified because the system will auto configure the rest of the connection path.

Connection Management offers the capability of changing the state of a facility provisioned on a network element within S/DMS TransportNode and S/DMS AccessNode systems. In the case of TransportNode, DS1, DS3, and STS-1 tributary facilities may be activated by putting them in-service (IS), or deactivated by putting them out-of-service (OOS). Similarly for AccessNode systems, DS1, DS3, TIC, and STS-1 tributary facilities can be designated IS or OOS. These actions are initiated directly from the Tributary Usage dialog.

Connection Management now offers a summary of how the channels on a specified path on the system are used. This summary is provided through the Channel Usage dialog.

User interface enhancements

Groups can be nested within other groups without restriction. A group may contain a hierarchy of other groups and network elements, representing a network configuration. This feature enables you to design a network composed of several levels of detail.

Flexible group shapes enable users to customize the appearance of a group. There are three shapes available for flexible groups: rectangle, polygon, and multipoint line. Group shapes can help visually differentiate the function of the network elements and other groups located within the group. For example, group shapes can be used to identify system-level network components such as ring and linear systems. Also, group shapes can be used to identify geographic regions monitored by S/DMS Network Manager.

Alarm reporting can be suspended for individual network elements. This feature supplements the existing alarm control mechanism available for controllers.

External alarm control

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.

Additional support

Fault management is supported for OC-192, DV45 Video Codec, and Tellabs Titan 5500 Digital Cross-Connect System (DCS) network elements.

Remote login is supported for the controllers of DV45 Video Codec and Tellabs Titan 5500 DCS network elements. Also, remote login is supported for OC-192 linear systems.

Centralized software delivery, shelf-level graphics, and remote inventory are supported for OC-192 network elements.

Real-time shelf level alarms are supported for S/DMS AccessNode CDS and ABM shelves.

Increased engineering limits

S/DMS Network Manager supports 75 protected or 150 unprotected controllers, with a maximum of 1200 network elements. Also, controller support is available for four S/DMS Network Manager connections. (Additional RAM is required to support these limits.)

What can you do with S/DMS Network Manager

S/DMS Network Manager provides a single centralized facility that enables you to do the following:

- view a graphical representation of the network topology
- create customized network configuration displays
- monitor the network for alarms and performance threshold crossings
- monitor the traffic status of a ring or linear system
- view, provision, and edit connections on ring and linear systems
- view network element performance and protection statistics
- obtain an inventory of equipment in the network
- deliver software releases electronically from a centralized location
- log in to any controller or network element and perform provisioning, software upgrade, or troubleshooting procedures
- obtain context-sensitive on-line help for objects on the S/DMS Network Manager user interface

S/DMS Network Manager provides two graphical user interface tools: the Graphical Network Editor (GNE), and the Graphical Network Browser (GNB). These tools enable you to create a graphical representation of the network, monitor the network, provision connections on ring and linear systems, and perform centralized network management tasks.

GNE is used to create and maintain a graphical representation of the network. GNB is used to monitor the network for alarms and performance threshold crossings, and to review network element performance and protection statistics. GNB is also used to perform network management tasks such as taking inventory of the equipment in the network, service assurance, connection provisioning, and delivering software loads to the controllers.

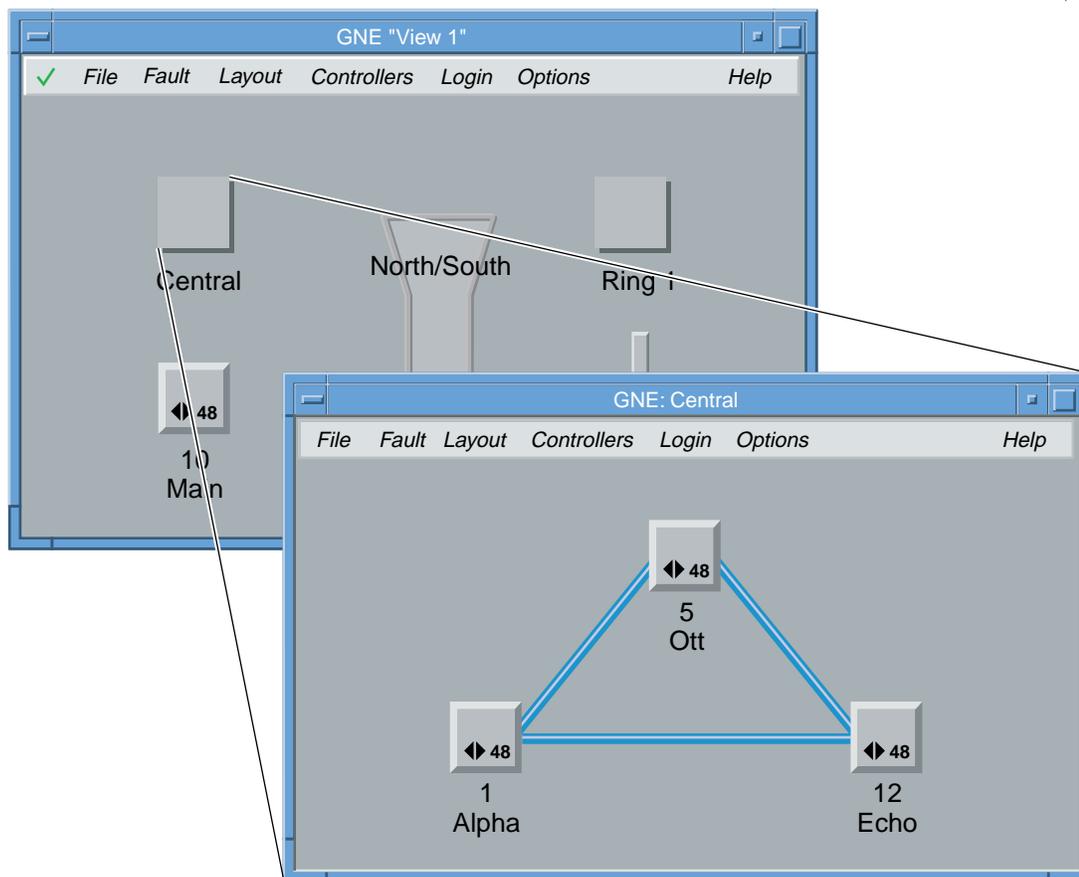
Both GNE and GNB can be used to log in to the controllers being monitored by S/DMS Network Manager.

The following sections describe S/DMS Network Manager and explain how it is used to perform the operations listed above.

View a graphical network topology

Both GNE and GNB can be used to view a graphical representation of your network. GNE is used to create the network configuration, and GNB is used to monitor and manage the network.

You can view the network topology from two perspectives: from an overall network level, and from an individual subnetwork level. Each level has its own graphical display window, as shown in the following illustration.



The network and subnetwork windows use graphical nodes to represent the network display. S/DMS Network Manager allows you to customize the network display by arranging and interconnecting the graphical nodes in whatever manner suits your operational needs. Typically, the nodes are positioned to match the physical layout of the network. However, customized network views can be created and displayed as desired.

The interconnection and arrangement of the graphical display nodes on S/DMS Network Manager has no affect on the operation or configuration of the network. For more information on creating a graphical network configuration, see "Create a graphical network configuration" on page 1-10.

Customized network topology views

GNE users can create customized network topology views for network layouts, group hierarchies, and background maps. For example, a view can be defined that displays the network from a physical perspective, with the network elements geographically aligned with the background map. Also, flexible group shapes enable you to create a group that has a distinct physical shape. Groups can be nested within other groups. This feature enables you to design a network composed of several levels of detail.

Once a view is created, GNB users can select the desired view from a list when starting GNB.

Network view

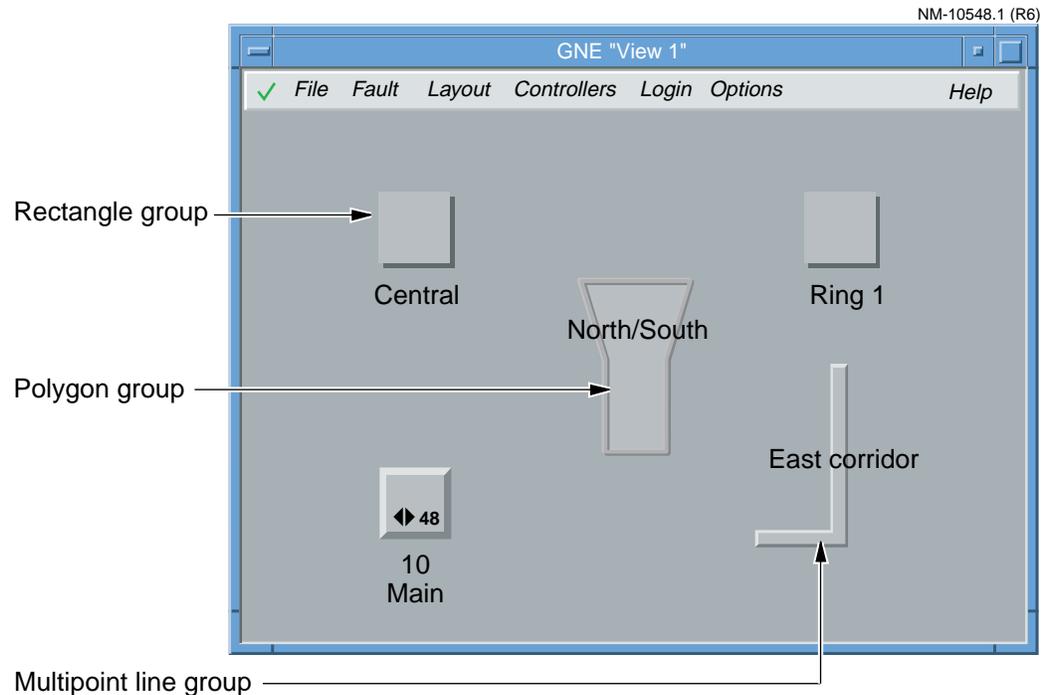
The network view is displayed in a network window. A network window is displayed after you start an S/DMS Network Manager tool and select a view preference. The network window displays a graphical view of the network that S/DMS Network Manager is currently monitoring. Typically, the network is displayed as a series of connected graphical nodes. These nodes represent groups of network elements or individual network elements. Different shapes and sizes of nodes can represent the various types of groups and individual network elements. The arrangement and presentation of these objects depends on the view selected.

Group nodes represent a collection of network elements and other groups. In the network window, individual network element nodes represent network elements not assigned to any group or subnetwork.

Groups are defined during the network configuration process. A separate node represents each group. A group can contain a hierarchy of other groups and network elements, representing a network configuration. This feature enables you to design a network composed of several levels of detail.

Network elements from any span can be placed in any group, independent of the controller to which the network element belongs. However, network elements can appear in only one location.

There are three shapes available for groups: rectangle, polygon, and multipoint line. Each type of group has unique display characteristics, as shown in the following illustration. These groups can be used to differentiate the function of the network elements within the group.

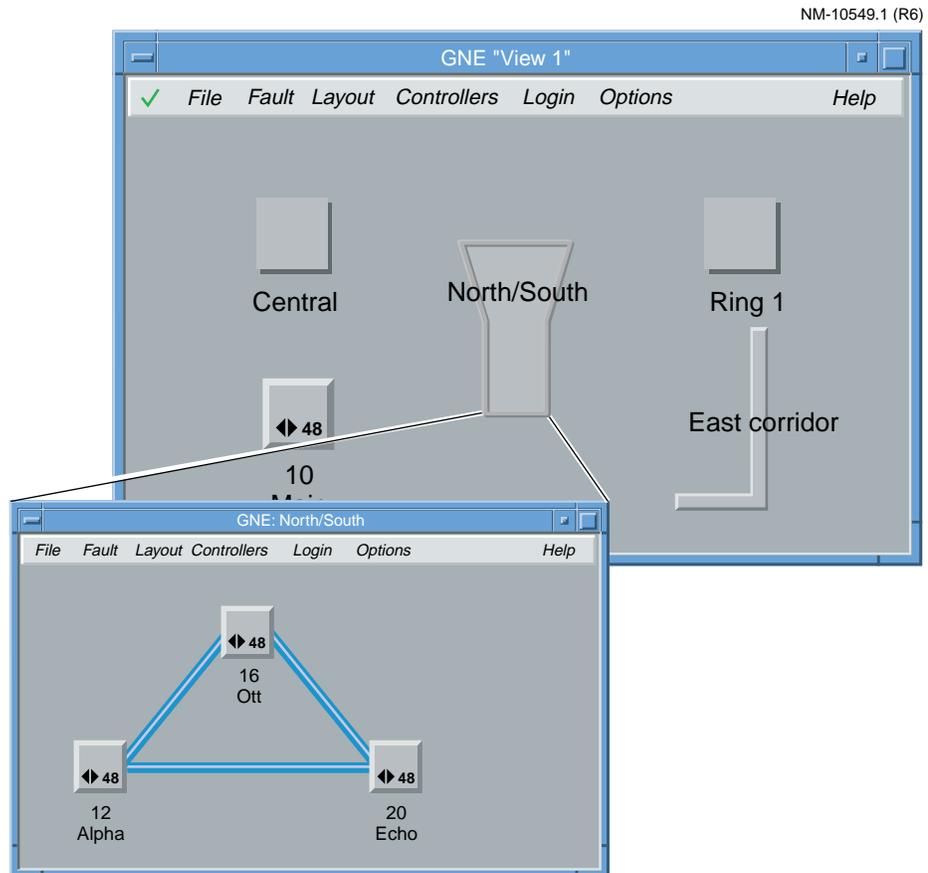


The display elements associated with a group are defined when the group is created. However, you can edit the attributes of a group after it is created.

Double-clicking on any group opens the subnetwork window associated with the group. There is a separate subnetwork window for each group.

Subnetwork view

The subnetwork view is displayed in a subnetwork window. There is a separate subnetwork window for each group in the network. The window appears when the group is opened.



Similar to the network view, the subnetwork view contains graphical nodes that represent the individual network elements and other groups associated with a group. If another group appears in this view, another subnetwork window can be opened.

Create a graphical network configuration

The Graphical Network Editor (GNE) tool is used to create and maintain a graphical representation of your network. GNE is available only to system administrators responsible for network configuration.

The network configuration is created by adding the spans of network elements that you want S/DMS Network Manager to monitor. You can then customize the graphical network configuration.

The network configuration created with the GNE tool is used by the Graphical Network Browser (GNB). GNB enables other S/DMS Network Manager users to perform network surveillance and management tasks. Only GNE users can change the network configuration.

Adding a controller

To add a controller to the network configuration, first obtain the IP addresses of the controller. The IP address is the only information required by S/DMS Network Manager to add a network element controller to the network configuration.

S/DMS Network Manager provides a dialog that enables you to add a span of network elements to the network configuration. The Controller Details dialog, as shown in the following illustration, can be accessed from the network window, or any subnetwork window.

This dialog enables you to record the controller IP addresses, validate the IP address, initiate communication with the controllers, and add the network elements of the controller to the network configuration.

NM-10519.1 (R6)

The Controller Details dialog enables you to record the controller IP addresses, validate the IP address, initiate communication with the controllers, and add the network elements of the controller to the network configuration.

After pressing the OK or Apply button, S/DMS Network Manager validates the IP address of the controller. S/DMS Network Manager then automatically determines (auto-discovers) which network elements are part of the span of the specified controller. You do not have to enter any information about individual network elements.

If you access the Controller Details dialog from a subnetwork window, the network elements associated with the controller are added to that subnetwork window.

If you access the Controller Details dialog from the network window, the network elements appear in the network window. The network elements can be transferred to another window, if desired.

You can select the type of controller user interface displayed on S/DMS Network Manager when a user logs in to the controller. Controller login is described in “Log in to controller and network element user interfaces” on page 1-30.

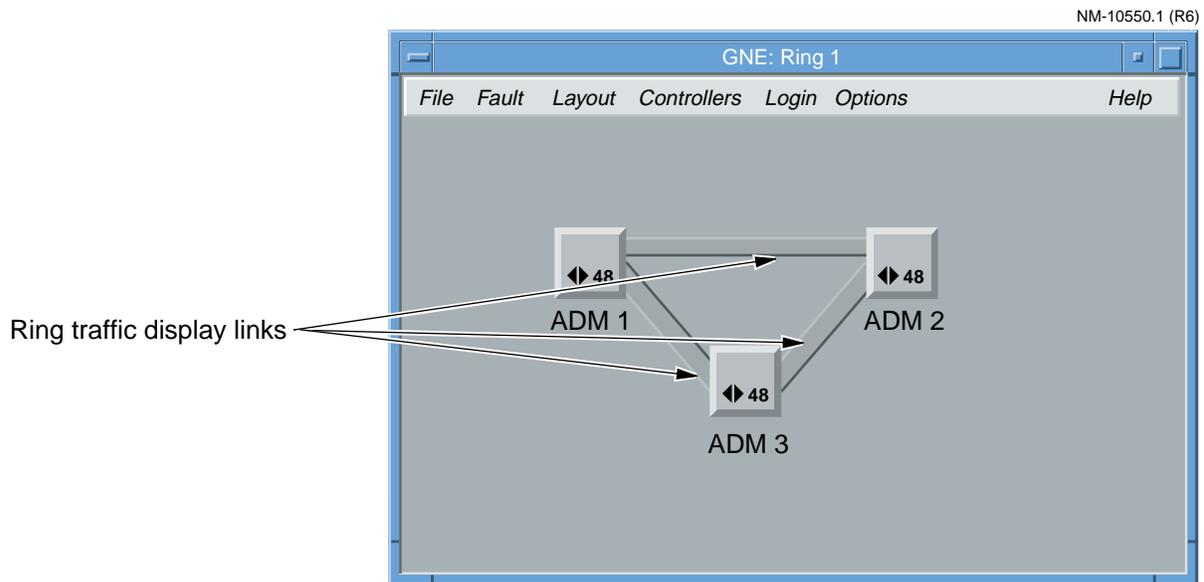
Some S/DMS Network Manager Release 6 features are supported by a controller only if the controller is running a specific version of S/DMS Network Manager server software. Server software on a controller can be updated from S/DMS Network Manager by performing a bridging operation. Bridging transfers and installs the server software required to support Release 6 features. When enabled in the Controller Details dialog, bridging is performed automatically when the controller is added to the network.

If desired, you can enter additional comments about the controller. The controller comments are optional, but can be used to record information about the span that might be beneficial to other S/DMS Network Manager users.

Automatic ring configuration display

When adding a controller, S/DMS Network Manager determines the type of configuration in which the network elements are used. For example, S/DMS Network Manager can determine whether the network elements are used in a linear configuration or in a TA-1230 ring configuration. You can then add links between the network elements to show how they are connected. For more information on linking network elements, see “Customizing the network configuration” on page 1-14.

If the network elements are part of a TA-1230 ring, S/DMS Network Manager automatically inserts traffic display links between the add-drop multiplexers (ADMs) within the ring, as shown in the following illustration.



Network element graphics and labels

Once you finish adding the controller, graphical nodes representing the individual network elements appear on GNE in the specified location.

S/DMS Network Manager applies a graphic and label to each network element to indicate the node and product type. The graphics and labels are based on International Telecommunications Union (ITU), American National Standards Institution (ANSI), and International Telegraph and Telephone Consultative Committee (CCITT) standards.

Different graphics and labels are used for line terminating equipment (LTE), ADMs, S/DMS TransportNode regenerators, and S/DMS AccessNode fiber central office terminals (FCOT), remote fiber terminals (RFT), DV45 Video Codec network elements, and Tellab Titan 5500 Digital Cross-Connect (DCS) network elements.

The following illustration is an example of the graphic and label applied to an S/DMS TransportNode OC-48 ADM.



Note: The network element must use the large display size to display the label.

For a complete description of network element graphics and labels, see “Network element graphics and labels” in *S/DMS Network Manager Configuration*, 323-4001-054 or *S/DMS Network Manager Fault Management*, 323-4001-055.

Customizing the network configuration

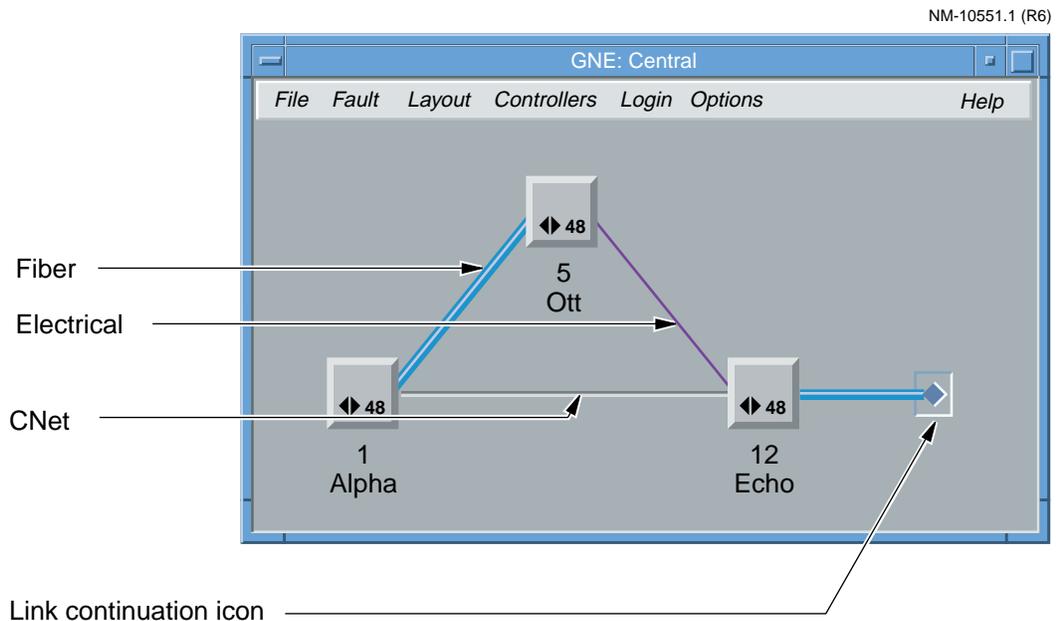
S/DMS Network Manager allows you to customize the network configuration by manually linking and moving the network elements and groups to create the desired layout.

Links between the network elements or groups provide a graphical representation of the connectivity in the system. The link types are fiber, electrical, and control network (CNet).

Fiber links show the high-speed optical fiber interconnections between network elements. Electrical links show electrical tributary interconnections, and CNet links show OAM&P communication bridges between network elements.

Links can connect network elements or groups within the same window, or in different windows. If you link network elements or groups located in different windows, a link continuation icon appears at the end of the link, in each window, to indicate that the link continues in another window.

Each type of link has unique display characteristics, as shown in the following illustration. The color and line pattern of the link enable you to identify the function of the link.



By moving the individual network elements or groups, you can create a graphical representation that matches the physical layout of your network. You can also customize the appearance of the network using flexible group shapes and background maps. These features enable you to design a network with visual reference points that provide a unique context for your layout.

You can move the network elements within their current window, or you can transfer the network elements from window to window.

If you move or transfer a network element that has a link attached to it, the link remains attached to the network element no matter where you move the network element. For example, if network element “A” is linked to network element “B” in the same window, and you transfer network element “A” to another window, the link remains attached to both network elements. A link continuation icon appears at the end of the link in each window. The link continuation icon indicates the link continues in another window.

You can modify the network configuration by adding and deleting spans, transferring network elements and groups, deleting groups, and adding groups. The configurations you create with GNE are used only for display purposes by GNE and GNB, and have no effect on the operation of the network monitored by S/DMS Network Manager.

Monitor the network

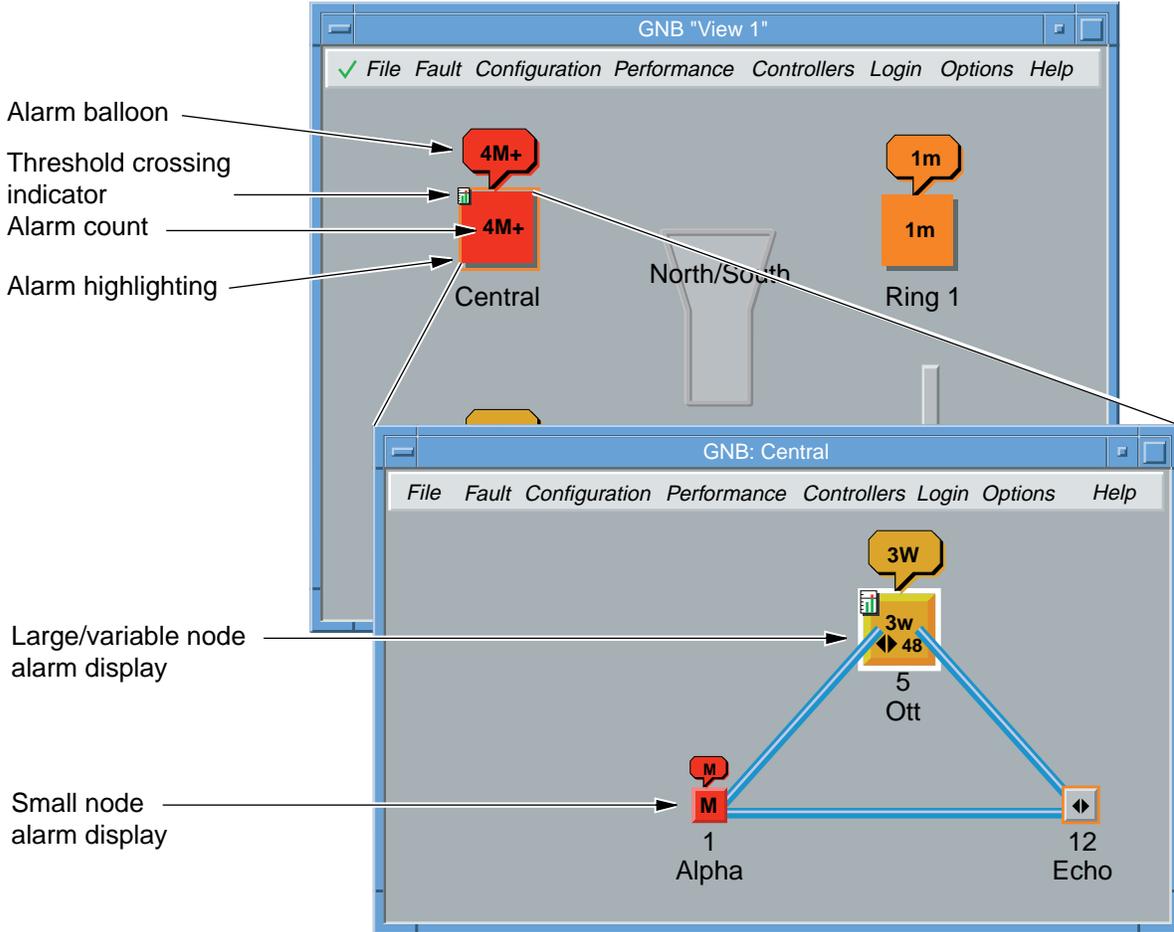
The GNB tool is used to monitor the network created by GNE. GNB enables you to monitor the network for alarms and performance degradations. GNB is available to users authorized to perform network surveillance.

GNB provides a consolidated view of the alarms raised within the network, enables you to obtain details about individual alarms and performance degradations, and to investigate the cause of the alarms.

Alarm notification

S/DMS Network Manager continually monitors the network elements for alarms. You can use GNB to isolate the individual network element that raised the alarm, and to identify the cause of the alarm.

When an alarm is raised by a network element, the alarm is brought to your attention on GNB at the network level and at the subnetwork level, as shown in the following illustration.



The alarms are kept up to date in real time. Alarm counts are updated when a new alarm is raised, an existing alarm is cleared on a network element, or an alarm is acknowledged by another GNB user.

The size of the network element nodes is user-selectable. Network elements can be designated as small, large, or variable. For more information on network element node sizes, see "Variable-sized nodes" on page 1-17.

There is a common reaction for all network element nodes, regardless of size, when a new alarm is raised: the node is highlighted in color, an alarm balloon appears above the node, and a letter indicating the highest severity alarm appears inside the node and associated alarm balloon. Also, if an alarm is the result of a performance threshold crossing, a threshold crossing indicator is applied to the affected node.

For large-sized network element nodes, the nodes and associated alarm balloons display a number indicating an alarm count. In a node, the alarm count identifies the quantity of active alarms. In the alarm balloon, the alarm count identifies the quantity of new alarms. If additional alarms of a lower severity exist, a plus sign (+) is appended to the alarm count.

On network element nodes, the color highlighting, alarm balloon, and a letter indicating the highest severity alarm identify the alarms which affect the individual network element. On the group nodes, the color highlighting, alarm balloon, and alarm count reflect the alarms raised by all network elements within a group, thereby providing a summary of alarms for the entire network.

The color highlighting serves two purposes: it identifies the nodes that have raised alarms, and it shows the severity of the alarm. Different colored highlighting is used for the different alarm severities. Red is used for critical and major alarms, orange is used for minor alarms, and yellow for warnings. If more than one alarm is raised by a node, the color highlighting reflects the highest severity of all the alarms raised by that node.

Variable-sized nodes

Network element nodes have three, user-selectable size designations: variable, small, and large. Network element icons defined as a variable size can resize on demand, or in response to events on the network.

An example of a situation that causes a network element icon to resize is a new alarm on the network element. The alarms prompt the affected network elements to increase from a small to large-size. The large size icon allows more information about that particular network element to be displayed on the face of the node.

Alarm banner

GNB also provides a network alarm banner. The alarm banner, as shown in the following illustration, provides a summary of all alarms raised by the network elements monitored by S/DMS Network Manager. The alarm banner appears automatically when you open the first GNB on your display.

NM-10510.1

Netman 1	Critical	Major	minor	warnings
?	11	85	41	52
<input type="button" value="Show Graphical Network Browser"/>				

The alarm banner is kept up to date in real time as alarms are raised and cleared on the network elements.

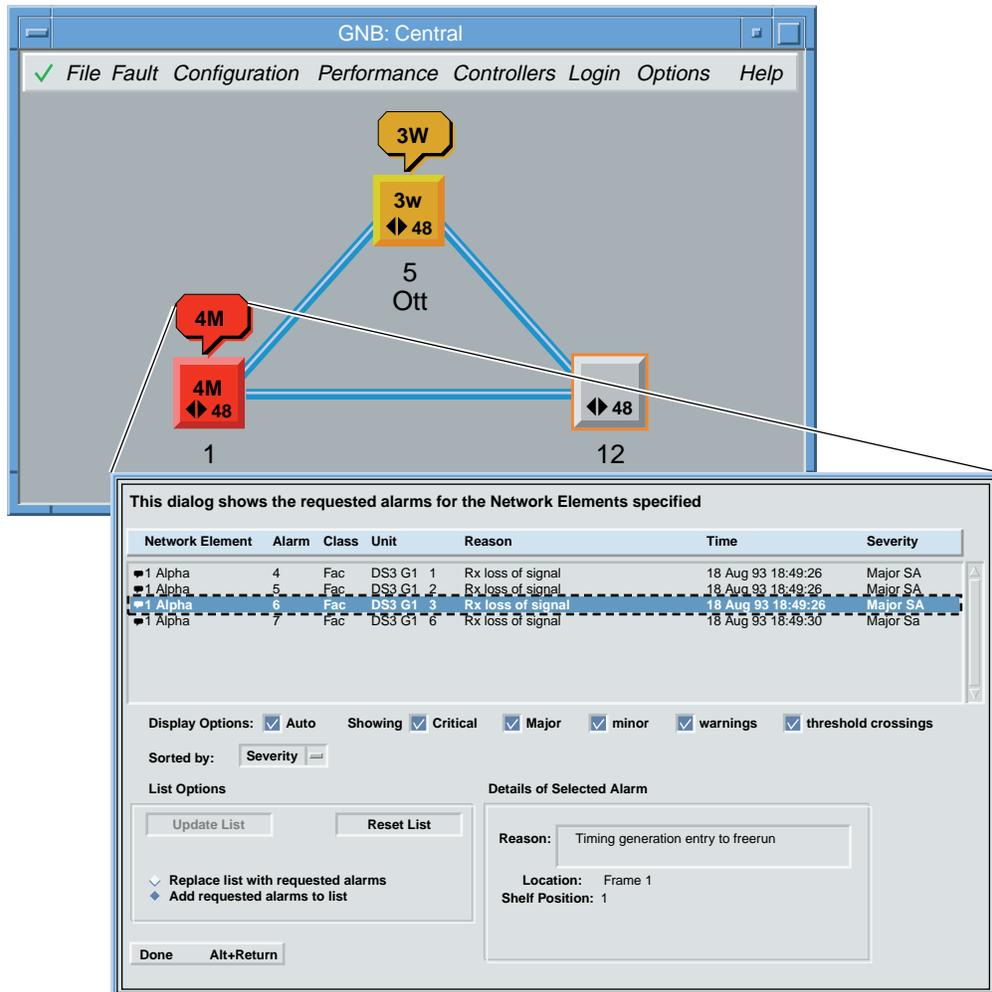
Alarm details

GNB can provide detailed information on the new, active, or cleared alarms. The alarm details enable you to isolate the cause of the alarm, and the equipment at fault, so you can take the necessary corrective action.

The Alarms dialog can provide detailed information about the new or active alarms in a group, or the new or active alarms raised by a specific network element. The Alarm Details dialog also provides the common language facility identifier (CLFI) provisioned on each network element to identify the facility on the network element.

The Alarms dialog shown in the following illustration shows the details of the new alarms on a specific network element.

NM-10554.1 (R6)



Threshold crossing details

GNB can provide detailed information about alarms raised as the result of a performance threshold crossing. Thresholds are predefined limits set on a network element to measure the performance of the network element. Threshold crossing alarms provide a warning of potential service degradations that can result in a failure.

Threshold crossings are brought to your attention by a threshold crossing indicator. The threshold crossing indicator can appear on a network element or a group node. Threshold crossings also appear in the Alarms dialog.

Threshold crossing details enable you to identify the cause of the threshold crossing on a network element or group. For example, the following illustration shows that a threshold has been crossed on network element 1 Alpha, as indicated by the threshold crossing indicator. The Alarms dialog provides detailed information for the threshold crossings on 1 Alpha.

NM-10555.1 (R6)

Threshold crossing indicator

Network Element	Alarm	Class	Unit	Reason	Time	Severity
1 Alpha	0	Eqp	DS3 G1 1	Path Tx UAS threshold 1	18 Aug 93 18:49:26	warning nsa
1 Alpha	1	Eqp	DS3 G1 2	Timing generation entry to...	18 Aug 93 18:49:26	warning nsa
1 Alpha	2	Eqp	DS3 G1 3	Timing generation entry to...	18 Aug 93 18:49:26	warning nsa
1 Alpha	3	Eqp	DS3 G1 4	Timing generation entry to...	18 Aug 93 18:49:26	warning nsa
Ott	0	Env	DS3 G1 5	lpbKGS1 Circuit pack failed	18 Aug 93 18:49:26	Major SA
Ott	1	Env	DS3 G1 6	lpbKGS1 Circuit pack failed	18 Aug 93 18:49:26	Major SA

Display Options: Auto Showing Critical Major minor warnings threshold crossings

Sorted by: Severity

List Options

Update List Reset List

Replace list with requested alarms
 Add requested alarms to list

Done Alt+Return

Details of Selected Alarm

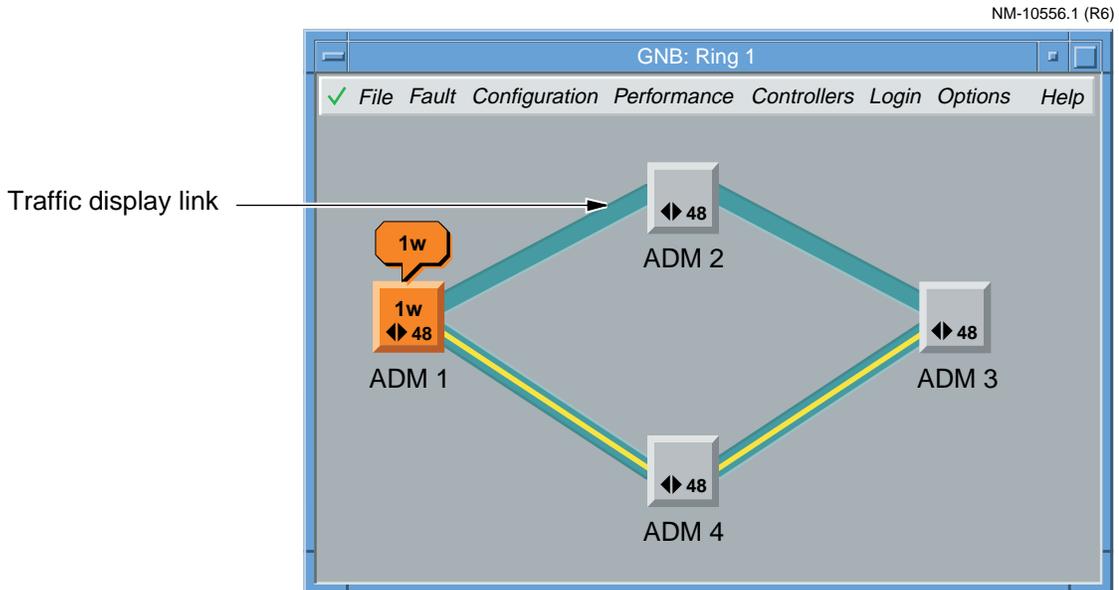
Reason: Path Rx UAS threshold 1
 Setting: 10/timed Value: 61

Location: Frame 1
 Shelf Position: 1

Monitor TA-1230 ring traffic status

If your network contains a TA-1230 ring, you can use GNB to monitor the high-speed traffic and protection status of the ring. The configuration of the TA-1230 ring is determined by S/DMS Network Manager during network configuration (see “Adding a controller” on page 1-11).

GNB uses special traffic display links to represent the fiber spans that connect the ADMs in the ring, as shown in the following illustration.



S/DMS Network Manager continually monitors the status of the ring. The traffic display links identify the state of the ring. Any change in the state of a fiber span is identified by a change in the traffic display links.

The colour and line pattern of the traffic display links change according to the state of the ring. The traffic display links can indicate

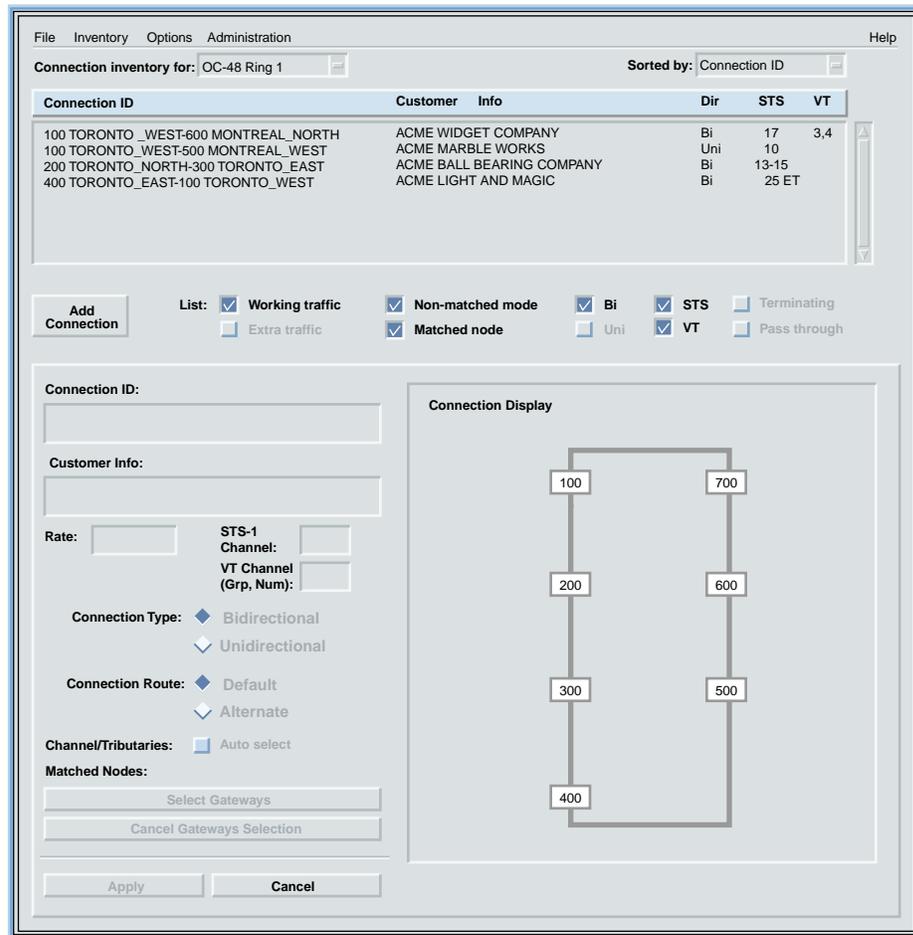
- the fiber span is active and carrying traffic
- the fiber span is inactive, but capable of carrying traffic if necessary
- the fiber span is carrying traffic due to a protection switch somewhere else in the ring
- the traffic from the fiber span was successfully rerouted around the ring due to a fault
- S/DMS Network Manager has lost connectivity with one or more ADMs in the ring

In addition, the traffic display links can indicate when a lockout of the working or protection channels on a ring ADM is in effect.

View, provision, and edit connections on ring and linear systems

GNB provides access to the connection management and service assurance features provided by the Connection Manager window. The Connection Manager window allows you to view, provision, and edit connections on ring and linear systems. The following illustration shows the Connection Manager window.

NM-10639.1



View connections

The connection inventory area of the Connection Manager window displays a list of connections in the current context of the Connection Manager. The context can be a network element (connections passing through or terminating at the network element, or both), a link (connections having their primary path provisioned on the link), or a system. The connection inventory can be sorted and filtered to include or exclude connections.

The Connection Display area of the Connection Manager window contains a graphical representation of the ring associated with the current context. When you select a connection in the connection inventory, the connection is highlighted in the Connection Display.

Provision (and deprovision) connections

The Add Connection button places the Connection Manager window in add connection mode so you can enter data for a new STS connection. You can provision the following connections on the specified system:

- S/DMS TransportNode OC-48 ring bidirectional and unidirectional STS-1 connections and bidirectional STS-3c connections
- S/DMS TransportNode OC-12 ring bidirectional STS-1, STS-3c, and VT connections
- S/DMS TransportNode OC-48 and OC-12 linear system STS connections
- Transport Bandwidth Manager (TBM) multiplexer (MUX) provisioning for OC-12 connections subtending off OC-48 systems
- AccessNode Virtual Tributary Bandwidth Management (VTBM) ring bidirectional STS-1, STS-3c, and VT connections

Two termination points must be defined for a bidirectional connection. For a unidirectional connection, one add point and one or more drop points must be defined. The channel and the tributaries used by a connection can be automatically selected by the Connection Manager, or manually entered by the user.

When a new bidirectional connection is provisioned, matched-node gateways can be defined at either or both termination points. For a new unidirectional connection, a matched-node connection across two or more rings can be provisioned as separate connections, one within each ring. The gateways that drop traffic off of each ring are provisioned as standard unidirectional drop points. The primary and secondary gateways through which traffic is added to each ring must be defined using the Select Gateways command.

Note: AccessNode connections do not support matched-node gateways.

You can also deprovision connections through the Connection Manager by using the Delete command.

Edit connections

Select the Edit command to place the Connection Manager window in edit connection mode. In edit connection mode, you can perform various editing functions. For example, you can modify connection data, redefine termination points, or redefine a matched-node gateway termination point as a single-node termination point.

Auditing connections

Connection data at one or all network elements in a system can be audited against the connection data at the active controller. If mismatches are found during the audit, the user can overwrite the network element connection data at the affected network elements with the controller connection data.

In addition, connection data can be synchronized between the primary and backup controllers in the current context of the Connection Manager.

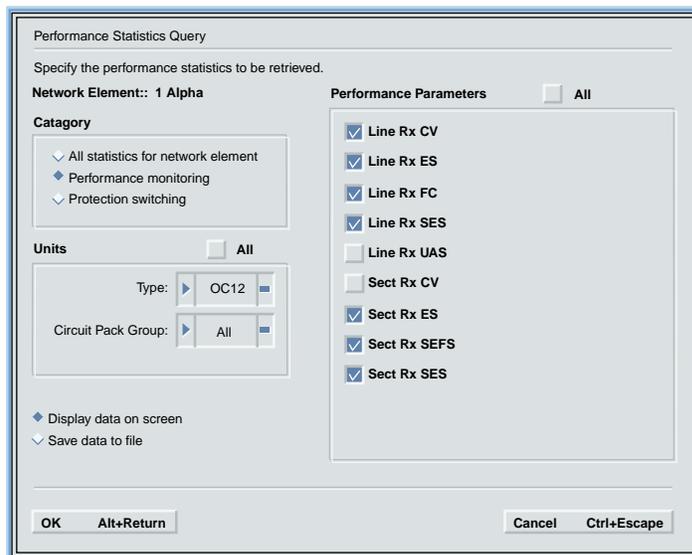
View performance and protection statistics

Performance and protection statistics are collected for network elements in the network. The controllers collect these statistics from the network elements in their span of control.

S/DMS Network Manager provides a centralized facility for selecting and retrieving performance statistics from each controller. S/DMS Network Manager provides a consolidated end-to-end view of network performance, and enables you to compare the performance of multiple network elements in a single dialog. The performance statistics enable you to evaluate the performance of equipment and transmission facilities over a period of time.

The Performance Statistics Query dialog, as shown in the following illustration, enables you to specify the exact statistics you want to retrieve for the network element.

NM-10458.1



The image shows a dialog box titled "Performance Statistics Query". It contains the following elements:

- Title:** Performance Statistics Query
- Instruction:** Specify the performance statistics to be retrieved.
- Network Element:** 1 Alpha
- Performance Parameters:** A checkbox labeled "All" is present.
- Category:** A list box with three items: "All statistics for network element" (unchecked), "Performance monitoring" (checked), and "Protection switching" (unchecked).
- Units:** A checkbox labeled "All" is present.
- Type:** A dropdown menu set to "OC12".
- Circuit Pack Group:** A dropdown menu set to "All".
- Performance Parameters List:** A list of checkboxes:
 - Line Rx CV (checked)
 - Line Rx ES (checked)
 - Line Rx FC (checked)
 - Line Rx SES (checked)
 - Line Rx UAS (unchecked)
 - Sect Rx CV (unchecked)
 - Sect Rx ES (checked)
 - Sect Rx SEFS (checked)
 - Sect Rx SES (checked)
- Options:**
 - Display data on screen (checked)
 - Save data to file (unchecked)
- Buttons:** "OK" (with Alt+Return shortcut), "Cancel" (with Ctrl+Escape shortcut).

Once you specify the statistics you want to retrieve, the statistics are displayed in the Performance Statistics display dialog, as shown in the following illustration.

NM10395.1 (R6)

The Performance Statistics dialog box displays a table of statistics for network elements. The table has columns for Network Element, Unit, Parameter, and time intervals from 13:00-13:15 to 14:45-15:00. The data shows counts for various parameters like Line Rx CV, Line Rx ES, Line Rx SES, Path Rx CV, Path Rx ES, Path Rx FC, Path Rx SAS, Path Rx SES, Path Rx UAS, and Path Rx SAS.

Network Element	Unit	Parameter	13:00-13:15	13:15-13:30	13:30-13:45	13:45-14:00	14:00-14:15	14:15-14:30	14:30-14:45	14:45-15:00
1 Alpha	DS1 012 1	Line Rx CV	.	.	.	.	.	.	.	.
1 Alpha	DS1 012 1	Line Rx ES	900	900	900	900	760	.	.	.
1 Alpha	DS1 012 1	Line Rx SES	900	900	900	900	760	.	.	.
1 Alpha	DS1 012 1	Path Rx CV	.	.	.	.	.	.	.	.
1 Alpha	DS1 012 1	Path Rx ES	.	.	.	.	.	.	.	.
1 Alpha	DS1 012 1	Path Rx FC	.	.	.	.	.	.	.	.
1 Alpha	DS1 012 1	Path Rx SAS	.	.	.	.	.	.	.	.
1 Alpha	DS1 012 1	Path Rx SES	.	.	.	.	.	.	.	.
1 Alpha	DS1 012 1	Path Rx UAS	900	900	900	900	900	900	900	900
1 Alpha	DS1 012 2	Line Rx CV	.	.	.	.	.	.	.	.
1 Alpha	DS1 012 2	Line Rx ES	900	900	900	900	837	900	900	900
1 Alpha	DS1 012 2	Line Rx SES	900	900	900	900	837	900	900	900
1 Alpha	DS1 012 2	Path Rx CV	.	.	.	.	.	.	.	.
1 Alpha	DS1 012 2	Path Rx ES	.	.	.	.	.	.	.	.
1 Alpha	DS1 012 2	Path Rx FC	.	.	.	.	.	.	.	.
1 Alpha	DS1 012 2	Path Rx SAS	.	.	.	.	.	.	.	.

Below the table, there are 'List Options' including a 'Reset List' button, a radio button for 'Replace list with requested statistics', and a checked checkbox for 'Add requested statistics to list'. At the bottom, there are 'Done Alt+Return' and 'Save' buttons.

The Performance Statistics display dialog provides an historical view of the specified statistics for the selected network element.

Network elements collect performance statistics from the controllers in timed intervals of 15 minutes. Use the Performance Statistics display dialog to display the statistics in 15-minute intervals, or in daily intervals.

You can compare the statistics from different network elements by adding their statistics to those already displayed in the Performance Statistics display dialog.

You can save the performance statistics to a data file in either an export or report format. Use export format if you want to export the data to another application, such as a spreadsheet program. Use report format to save the data in ASCII format for viewing, editing or printing using the HP VUE File Manager.

Take an inventory of remote network elements

Network elements maintain a database of the equipment provisioned and present on the network element. The controller can retrieve this information from the network elements within its span of control, enabling you to use S/DMS Network Manager to take inventory of a network element from a single centralized location.

Inventory can be obtained for an S/DMS TransportNode common equipment shelf, and S/DMS AccessNode Access Bandwidth Manager (ABM) and Copper Distribution Shelves (CDS).

The inventory information can also assist in planning and forecasting activities by providing an accurate view of equipment provisioned or present in the network. The inventory information can also assist you in verifying hardware baseline compatibility before undertaking an upgrade of your system.

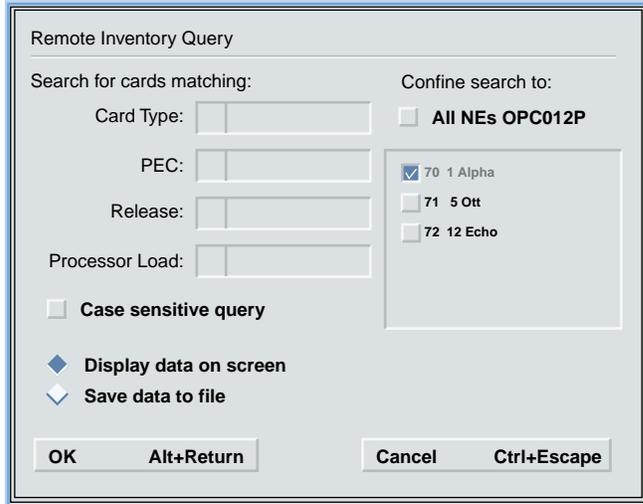
S/DMS Network Manager allows you to display the inventory two ways. You can display a textual inventory of selected items, or an inventory of an entire span. You can also display a graphical representation of a network element shelf. The shelf view shows the layout of the shelf, the equipment provisioned or present in the shelf, and any card with alarms.

All inventory information retrieved by S/DMS Network Manager is a snap-shot of the equipment provisioned or present in the network at the time the inventory request is initiated. Inventory information is not updated as changes are made to the equipment. Also, you can manually update the inventory information.

Textual inventory

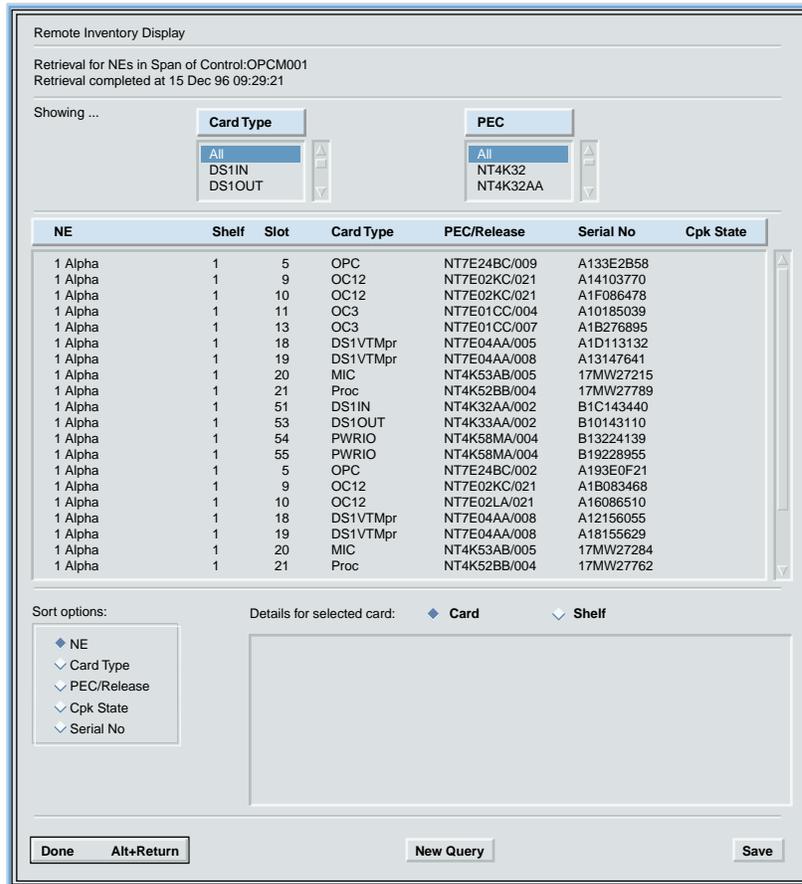
The Remote Inventory Query dialog, as shown in the following illustration, enables you to select the items for which you want to view a textual inventory.

NM-10407.1 (R6)



If retrieving inventory for an S/DMS AccessNode network element, you must specify a shelf number. An additional field is provided in the Remote Inventory Query dialog for the shelf number.

Once you specify the inventory you want to retrieve, the inventory is displayed in the Remote Inventory display dialog.

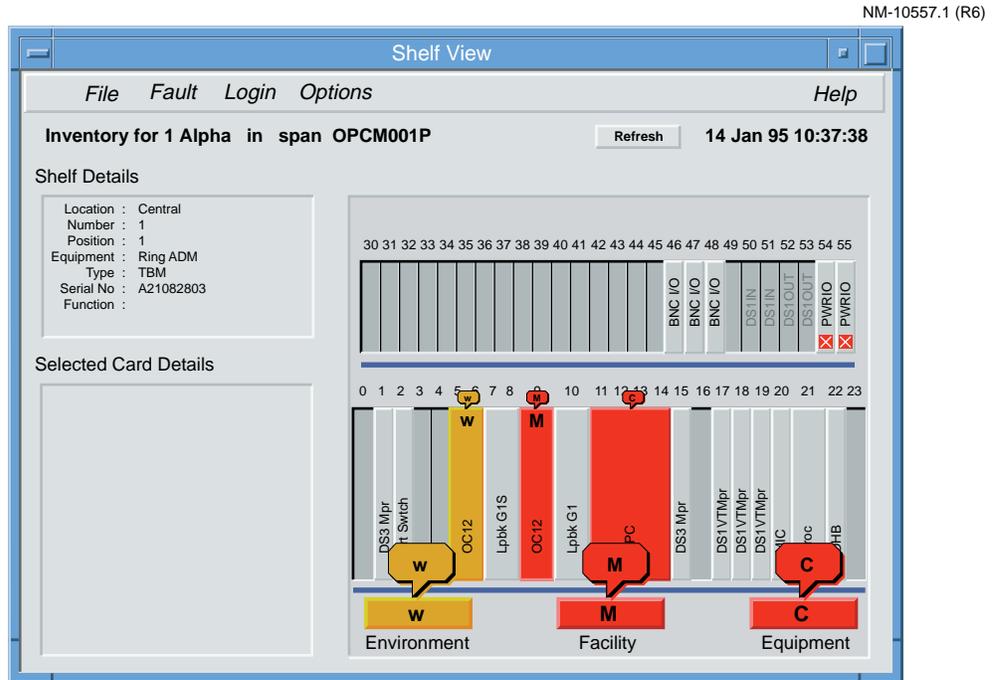


The Remote Inventory display dialog provides detailed information about each card specified in the Remote Inventory Query dialog, and the shelf in which the card is installed. You can filter and sort the inventory display so that only specific cards are displayed.

You can save the inventory to a data file in either an export or report format. Use export format to export the data to another application, such as a spreadsheet program. Use report format to save the data in ASCII format for viewing, editing or printing using the HP VUE File Manager.

Graphical shelf view with real-time alarms

The Shelf View window, as shown in the following illustration, enables you to view a graphical representation of the equipment installed in a specific network element equipment shelf.



The Shelf View window illustrates the cards provisioned or present in each slot of the shelf. If an S/DMS TransportNode network element is selected, the Shelf View window displays the common equipment shelf for the selected network element. If an S/DMS AccessNode network element is selected, the Shelf View window displays the ABM shelf. The ABM shelf view can then be used to display the Copper Distribution Shelf (CDS) in the network element.

This Shelf View window enables you to view the state of the equipment in the shelf, and to obtain detailed information for any card in the network element. Provisioning inconsistencies are also highlighted.

The Shelf View window also provides a real-time display of the alarms raised by specific cards or slots in the network element. An alarm balloon appears on the card if a new alarm has been raised on that card. The balloon contains the alarm count for the card, a letter indicating the alarm of the highest severity. The color of the alarm balloon and card affected reflect the severity of the alarm. The Shelf View window also displays alarms associated with the environment, common equipment, and facilities.

You can obtain details of an alarm shown by selecting the object, and opening the Alarms dialog from the object or alarm balloon menu.

Deliver software releases

The S/DMS Network Manager centralized software management feature allows you to schedule and electronically deliver software releases to any controller that is being monitored by S/DMS Network Manager. This feature allows you to perform centralized software delivery operations. The feature also makes it possible to perform software upgrades from a single S/DMS Network Manager location.

S/DMS Network Manager uses several specialized dialogs to schedule and monitor software deliveries. The Release Scheduler dialog, as shown in the following illustration, enables you to select the release you want to deliver, the controller you want to deliver it to, and the time you want it delivered.

NM-10498.1 (R6)

Release Scheduler

This dialog allows you to schedule the delivery of a Release to a Controller

Select a Release		Select a Target for Delivery			
Release Name	Load	Name	IP Address	Current Release	Load
OC-3/OC-12 REL 8.00	opc13av_hp_80	OPCM001P	47.46.9.101	OC-3/OC-12 REL 8	opc13ap_hp_80
OC-48 REL 9.00	opc14an_hp_80	OPCM002P	47.46.3.215	OC-48 REL 8	opc12ax_hp_80
		OPCM003P	47.46.0.258	OC-48 REL 9	opc14am_hp_80
		OPCM003P	47.46.1.12	OC-3/OC-12 REL 7	opc11av_hp_80

Specify earliest time to deliver _____ to _____

As soon as possible
 At or after : /
 (hh:mm) (dd/mm)

Specify the pace to use while doing the transfer

No pacing
 Maximum pace (bps):

The Delivery Status and Release Management dialogs enable you to monitor the status of currently scheduled deliveries. The Release Delivery History dialog enables you to view the history of past deliveries. If desired, you can modify the current delivery schedule.

Once a software release is delivered by S/DMS Network Manager, you can use S/DMS Network Manager to log in to the controller and run the operations controller (OPC) Network Upgrade Manager (NUM) tool. The NUM tool allows you to upgrade the controller and network elements software.

Log in to controller and network element user interfaces

GNB and GNE both provide a way to log in to the user interface of any controller monitored by S/DMS Network Manager, and to log in to the user interface of the individual network elements associated with those controllers. A separate window is displayed for each controller or network element login session.

Controller and network element log in from S/DMS Network Manager can be transparent, provided the controller recognizes your userID. Transparent login means you do not have to enter a userID or password to gain access to the controller or the network element.

On some controllers, two types of user interface are available: an X Window user interface and a character mode terminal (CMT) user interface. Both user interfaces provide the same functions. However, the X Window user interface requires a high-bandwidth connection such as an Ethernet TCP/IP Local Area Network (LAN) between the controller and S/DMS Network Manager.

The difference between the two user interface formats is the way the information is presented on the screen, and how you navigate around the screen. Both formats allow you to perform the same functions on the controller.

When you log in to a network element, a maintenance and administration position command interpreter (MAPCI) user interface is presented. MAPCI is also a text-based user interface, but operates in a different way than the controller CMT user interface.

Log in to a controller or network element by selecting a network element from the display, and selecting the controller or network element login command as appropriate. A separate window containing the selected user interface appears on the S/DMS Network Manager screen. You then use the tools and commands provided by the controller or network element that you logged in to.

Obtain on-line help

S/DMS Network Manager has a context-sensitive on-line help system. The help system provides a textual description for user-selected items in the S/DMS Network Manager windows and dialogs.

Context-sensitive means that S/DMS Network Manager presents help specific to the item selected.

The on-line help system augments the information provided in the descriptive chapters of this user guide. For example, the on-line help system provides detailed context-sensitive descriptions of the menu commands.

Release 6 feature summary

This guide describes the operation of S/DMS Network Manager Release 6. To find out which version of S/DMS Network Manager you are using, choose the Product Information command from the GNE or GNB Help menu.

The following is a summary of S/DMS Network Manager Release 6 features.

Feature	Description
Alarm Counts	Graphical alarm count collection for multiple spans of control.
OPC Login	The ability to access OPC UI session.
Direct network element Login	The ability for direct login to the network element.
Alarm Details	The ability to view detailed alarm information for active alarms.
Connectivity Enhancements	Link type differentiation for network element connectivity (Fiber, CNet, and Electrical).
External Device Access	Provides access to switching/AccessNode environment through a VT100 terminal session.
OPC GUI	Provides OPC graphical user interfaces for both TransportNode and AccessNode OPCs.
Alarm Acknowledgment	Allows all users of the S/DMS Network Manager to be aware of alarm acknowledgments by other users.
Real-Time Alarm Display	Allows the alarm list dialog to be updated asynchronously as new alarms are raised or cleared.
Alarm filtering	Allows the alarms displayed in the alarm list dialog to be filtered by any subset of the four basic alarm severities.
Alarm Collection Control	Allows alarm collection from one or more OPC spans to be suspended for systems that do not require alarm surveillance.
First Alert Banner	Displays a summary of all alarm counts in the network.
Traffic display for OC-12/48 BLSRs	Illustrates high speed traffic and protection status.
Centralized Software Management	Provides a centralized facility for the delivery of a software release of an OPC or network element load, required to upgrade a span of control in a network.
Centralized Performance Monitoring	Provides early detection of signal degradation in the network before the signal degrades below critical values. Centralized performance monitoring provides both error and switch statistics allowing preventative maintenance to be performed before service failures occur.
Centralized Inventory Collection	Provides the capability to acquire an accurate view of the equipment provisioned in the network. The centralized inventory feature assists in verifying the hardware baseline compatibility of a network before undertaking an upgrade.
Shelf Level Graphics / Alarms	Provides a graphical view of the inventory information for a specific network element. Alarms are now applied in real time on the shelf level graphics.

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Feature	Description
User Definable Span Information	Provides the capability to have additional textual information associated with the agent being monitored.
BLSR STS Connection Management	Provides a graphical point-and-click interface for provisioning connections on BLSR systems.
Service Assurance	The user can obtain provisioned information for all connections within a specified system, all connections that terminate at and are passing through a specified network element or all connections whose primary path is specified on the system link.
User Interface Enhancements	<ul style="list-style-type: none">- Supports Telecommunications Management Network (TMN) menu structure- Provides multiple independent views, variably-sized nodes and network element type symbol/label, annotations, background maps, and CLFI.
VTBM for OC-12BLSR	Provides the ability to provision VT1.5 connections on an OC-12 BLSR.
Connection Management for Linear Systems	Provides connection provisioning and service assurance capabilities for specific linear configurations, namely; OC-48 (1+1, 1:1 and 0:1) systems as well as OC-12 (1+1, and linear ADM chains).
Facility State Provisioning	Provides the ability to provision facility states for DS1, DS3, and STS-1 type connections.
Flexible Groups	Provides the capability to define groups whose appearances are, to a large extent, defined by the user. The visual aspects of flexible groups, such as the position of the group name and alarm status information, can be customized.
Nested Groups	Provides the capability to have groups nested within each other in any number of nesting levels.

Software release compatibility

To take full advantage of all Release 6 features, the controllers must be running a compatible software release. If a controller does not support an S/DMS Network Manager feature, because the controller is not running a compatible software release, the S/DMS Network Manager commands related to that feature are disabled (grayed out).

Tables 1-1 through 1-6 identify the S/DMS Network Manager Release 6 features supported by OC-3/OC-12, OC-48, OC-192, DV45 Video Codec, Tellabs Titan 5500 Digital Cross-Connect System (DCS), Cornerstone Voice, and SONET Radio systems. To determine which S/DMS Network Manager Release 6 features are supported by a software release, locate the table corresponding to your system. A “yes” identifies features that are supported for the product release, “no” identifies unsupported features. For a description of each S/DMS Network Manager feature, see “Release 6 feature summary” on page 1-31.

To learn how to upgrade the software release running on your controllers, contact your local Northern Telecom support organization. For further information, see “Technical support and information” on page xi.

Note: Some controllers require a manual software bootstrap prior to using the centralized software management feature. For more information, see “Bootstrapping the OPC for CSM” in *S/DMS Network Manager Installation and Administration*, 323-4001-202.

Table 1-1
S/DMS Network Manager Feature Availability for OC-3/OC-12 Systems

S/DMS Network Manager Release 6 Features	S/DMS TransportNode OC-3/OC-12 TBM Product Releases					
	Rel 5, 6	Rel 7	Rel 8	Rel 9	Rel 10	Rel 11
Alarm Counts	yes	yes	yes	yes	yes	yes
OPC Login	yes	yes	yes	yes	yes	yes
Direct network element Login	no	yes	yes	yes	yes	yes
Alarm Details	no	yes	yes	yes	yes	yes
Connectivity Enhancements	yes	yes	yes	yes	yes	yes
Access to External Device	yes	yes	yes	yes	yes	yes
OPC GUI	no	no	yes	yes	yes	yes
Alarm Acknowledgment	no	yes	yes	yes	yes	yes
Real-time Alarm Display	no	yes	yes	yes	yes	yes
Alarm Filtering	no	yes	yes	yes	yes	yes
Alarm Collection Control per SOC	yes	yes	yes	yes	yes	yes
First Alert Alarm Banner	yes	yes	yes	yes	yes	yes
Traffic Display for OC-12 BLSR	no	no	yes	yes	yes	yes
Centralized Software Management	yes ¹	yes ¹	yes	yes	yes	yes
Centralized Performance Monitoring	no	no	no	yes	yes	yes
Centralized Inventory Collection	no	no	no	yes	yes	yes
Shelf Level Graphics	no	no	no	yes	yes	yes
User Definable Span Information	yes	yes	yes	yes	yes	yes
BLSR STS Connection Management	no	no	no	no	yes	yes
Service Assurance	no	no	no	no	yes	yes
User Interface Enhancements ²	yes	yes	yes	yes	yes	yes
Connection Management- VTBM ³	no	no	no	no	no	yes
Connection Provisioning Linear Systems ⁴	no	no	no	no	yes	yes

S/DMS Network Manager Release 6 Features	S/DMS TransportNode OC-3/OC-12 TBM Product Releases					
	Rel 5, 6	Rel 7	Rel 8	Rel 9	Rel 10	Rel 11
Facility State Provisioning ⁴	no	no	no	no	yes	yes
Flexible Groups	yes	yes	yes	yes	yes	yes
Nested Groups	yes	yes	yes	yes	yes	yes
Platform Enhancements	yes	yes	yes	yes	yes	yes
Increased Engineering Limits ⁴	no	no	no	no	yes	yes

1. An OC-3/12 system running this release requires a software management bootstrap procedure on the OPC. For more information, see “Bootstrapping the OPC for CSM” in *S/DMS Network Manager Installation and Administration*, 323-4001-202.
2. CLFI supported with OC-12 Rel 11.0
3. Available in OC-12 Rel 11.0 through bridging.
4. Available in OC-12 Rel 10.0 and Rel 11.0 through bridging.

Table 1-2
S/DMS Network Manager Feature Availability for OC-48 Systems

S/DMS Network Manager Release 6 Features	S/DMS TransportNode OC-48 Product Releases						
	Rel6	Rel 7	Rel9	Rel10	Rel11	Rel12	Rel13
Alarm Counts	yes	yes	yes	yes	yes	yes	yes
OPC Login	yes	yes	yes	yes	yes	yes	yes
Direct network element Login	no	yes	yes	yes	yes	yes	yes
Alarm Details	no	yes	yes	yes	yes	yes	yes
Connectivity Enhancements	yes	yes	yes	yes	yes	yes	yes
Access to External Device	yes	yes	yes	yes	yes	yes	yes
OPC GUI	no	no	yes	yes	yes	yes	yes
Alarm Acknowledgment	no	yes	yes	yes	yes	yes	yes
Real-time Alarm Display	no	yes	yes	yes	yes	yes	yes
Alarm Filtering	no	yes	yes	yes	yes	yes	yes
Alarm Collection Control for a SOC	yes	yes	yes	yes	yes	yes	yes
First Alert Alarm Banner	yes	yes	yes	yes	yes	yes	yes
Traffic Display for OC-48 BLSR	no	no	yes	yes	yes	yes	yes
Centralized Software Management	no ¹	no	yes	yes	yes	yes	yes

S/DMS Network Manager Release 6 Features	S/DMS TransportNode OC-48 Product Releases						
	Rel6	Rel 7	Rel9	Rel10	Rel11	Rel12	Rel13
Centralized Performance Monitoring	no	no	no	yes	yes	yes	yes
Centralized Inventory Collection	no	no	no	yes	yes	yes	yes
Shelf Level Graphics	no	no	no	yes	yes	yes	yes
User Definable Span Information	yes	yes	yes	yes	yes	yes	yes
BLSR STS Connection Management	no	no	no	no	yes	yes	yes
Service Assurance	no	no	no	no	yes	yes	yes
User Interface Enhancements ²	yes	yes	yes	yes	yes	yes	yes
Connection Provisioning Linear Systems ³	no	no	no	no	yes	yes	yes
Facility State Provisioning ³	no	no	no	no	yes	yes	yes
Flexible Groups	yes	yes	yes	yes	yes	yes	yes
Nested Groups	yes	yes	yes	yes	yes	yes	yes
Platform Enhancements	yes	yes	yes	yes	yes	yes	yes
Increased Engineering Limits ³	no	no	no	no	yes	yes	yes

1. An OC-48 system running this release requires a software management bootstrap procedure on the OPC. For more information, see “Bootstrapping the OPC for CSM” in *S/DMS Network Manager Installation and Administration*, 323-4001-202.
2. CLFI will be supported with OC-48 Rel 12.0.
3. Available in OC-48 Release 11.0 and 12.0 through bridging.

Table 1-3
S/DMS Network Manager Feature Availability for OC-192 Systems

S/DMS Network Manager Release 6 Features ¹	S/DMS TransportNode OC-192 Product Release
	Rel 1.0
Alarm Counts	yes
OPC Login	yes
Direct network element Login	yes
Alarm Details	yes
Connectivity Enhancements	yes
Access to External Device	yes

S/DMS Network Manager Release 6 Features ¹	S/DMS TransportNode OC-192 Product Release
	Rel 1.0
OPC GUI	yes
Alarm Acknowledgment	yes
Real-time Alarm Display	yes
Alarm Filtering	yes
Alarm Collection Control for a SOC	yes
First Alert Alarm Banner	yes
Traffic Display for BLSR	no
Centralized Software Management	yes
Centralized Performance Monitoring	no
Centralized Inventory Collection	yes
Shelf Level Graphics	no
User Definable Span Information	yes
BLSR STS Connection Management	no
Service Assurance	no
User Interface Enhancements ²	yes
Connection Provisioning Linear Systems	no
Facility State Provisioning	no
Flexible Groups	yes
Nested Groups	yes
Platform Enhancements	yes
Increased Engineering Limits ³	yes

1. S/DMS Network Manager Release 6 supports OC-192 Release 1. OC-192 was not available for any release prior to S/DMS Network Manager Release 6. The feature summary identifies when functionality was introduced into S/DMS Network Manager.

2. CLFI will be supported with OC-192 Rel 1.0.

3. Available in OC-192 Release 1.0 through bridging.

Table 1-4
S/DMS Network Manager Feature Availability for DV45 Video Codec

S/DMS Network Manager Release 6 Features	DV45 Product Release
	Firmware NT2H35JA or NT2H35KA in DVMPEG, DV323Mux/IMux
Alarm Counts	yes
OPC Login	yes (MOA login)
Direct network element Login	no
Alarm Details	yes
Connectivity Enhancements	yes
Access to External Device	yes
OPC GUI	yes (MOA GUI)
Alarm Acknowledgment	yes
Real-time Alarm Display	yes
Alarm Filtering	yes
Alarm Collection Control for a SOC	yes (per MOA)
First Alert Alarm Banner	yes
Traffic Display for BLSR	no
Centralized Software Management	no
Centralized Performance Monitoring	no
Centralized Inventory Collection	no
Shelf Level Graphics	no
User Definable Span Information	yes
BLSR STS Connection Management	no
Service Assurance	no
User Interface Enhancements	yes
Connection Provisioning Linear Systems	no
Facility State Provisioning	no

S/DMS Network Manager Release 6 Features	DV45 Product Release
	Firmware NT2H35JA or NT2H35KA in DVMPEG, DV323Mux/IMux
Flexible Groups	yes
Nested Groups	yes
Platform Enhancements	yes
Increased Engineering Limits	yes

Table 1-5
S/DMS Network Manager Feature Availability for Tellabs Titan 5500 DCS

S/DMS Network Manager Release 6 Features	Tellabs Titan 5500 DCS Product Release
	Release 4.00
Alarm Counts	yes
OPC Login	yes (MOA login)
Direct network element Login	yes
Alarm Details	yes
Connectivity Enhancements	yes
Access to External Device	yes
OPC GUI	yes (MOA GUI)
Alarm Acknowledgment	yes
Real-time Alarm Display	yes
Alarm Filtering	yes
Alarm Collection Control for a SOC	yes (per MOA)
First Alert Alarm Banner	yes
Traffic Display for BLSR	no
Centralized Software Management	no
Centralized Performance Monitoring	no
Centralized Inventory Collection	no
Shelf Level Graphics	no
User Definable Span Information	yes
BLSR STS Connection Management	no

S/DMS Network Manager Release 6 Features	Tellabs Titan 5500 DCS Product Release
	Release 4.00
Service Assurance	no
User Interface Enhancements	yes
Connection Provisioning Linear Systems	no
Facility State Provisioning	no
Flexible Groups	yes
Nested Groups	yes
Platform Enhancements	yes
Increased Engineering Limits	yes

Table 1-6
S/DMS Network Manager Feature Availability for S/DMS AccessNode,
Cornerstone Voice, and SONET Radio Systems

S/DMS Network Manager Release 6 Features	S/DMS AccessNode				Cornerstone Voice	SONET Radio
	Product Release					
	AN08	AN10	AN12	AN14	CSV01	3.0/3.1
Alarm Counts	yes	yes	yes	yes	yes	yes
OPC Login	yes	yes	yes	yes	yes	yes
Direct network element Login	yes	yes	yes	yes	yes	no
Alarm Details	yes	yes	yes	yes	yes ¹	no
Connectivity Enhancements	yes	yes	yes	yes	yes	yes
Access to External Device	yes	yes	yes	yes	yes	yes
OPC GUI	yes	yes	yes	yes	yes	no
Alarm Acknowledgment	yes	yes	yes	yes	yes	no
Real-time Alarm Display	yes	yes	yes	yes	yes	no
Alarm Filtering	yes	yes	yes	yes	yes	no
Alarm Collection Control for a SOC	yes	yes	yes	yes	yes	yes
First Alert Alarm Banner	yes	yes	yes	yes	yes	yes
Traffic Display for BLSR	no	no	no	yes	no	no
Centralized Software Management	no	yes	yes	yes	yes	no
Centralized Performance Monitoring	no	yes	yes	yes	yes	no
Centralized Inventory Collection	no	no	no	yes	no	no
Shelf Level Graphics	no	no	no	yes	yes ²	no
User Definable Span Information	yes	yes	yes	yes	yes	yes
BLSR STS Connection Management ³	no	no	no	yes	no	no
Service Assurance ⁴	no	no	no	yes	no	no
Traffic Display for BLSR	no	no	yes	yes	yes	no
Centralized Inventory Collection	no	no	yes	yes	yes ²	no
Shelf Level Graphics ⁵	no	no	yes	yes	yes ²	no
User Interface Enhancements	yes	yes	yes ⁶	yes	yes	yes ⁷

S/DMS Network Manager Release 6 Features	S/DMS AccessNode				Cornerstone Voice	SONET Radio
	Product Release					
	AN08	AN10	AN12	AN14	CSV01	3.0/3.1
Connection ManagementVTBM ⁸	no	no	yes	yes	no	no
Connection Provisioning Linear Systems ⁸	no	no	yes	yes	no	no
Facility State Provisioning ⁸	no	no	yes	yes	yes ⁹	no
Flexible Groups	yes	yes	yes	yes	yes	no
Nested Groups	yes	yes	yes	yes	yes	no
Platform Enhancements	yes	yes	yes	yes	yes	no
Increased Engineering Limits ⁸	no	no	yes	yes	yes	no

1. The modem shelf and the voice ports will not have alarm details reported.
2. The modem shelf and the voice ports will not be displayed graphically.
3. With S/DMS Network Manager Release 6.0 and AccessNode AN12, STS and VT connection provisioning on AccessNode OC-12 bi-directional line switched ring (BLSR) system is supported.
4. With S/DMS Network Manager Release 6.0 and AccessNode AN12, service assurance is supported.
5. With S/DMS Network Manager Release 6.0 and AccessNode AN12, alarms on shelf level graphics for ABM and CDS shelves may be viewed. Support for alarms on shelf level graphics for the TBM shelf were first introduced in S/DMS Network Manager Release 5.0.
6. CLFI will be supported on AccessNode AN12.
7. NE type symbol or label do not appear for Radio nodes. CLFI is not supported on Radio 3.0/3.01.
8. Available on AccessNode AN12 through bridging.
9. Applicable to DS1 facilities only.

S/DMS Network Manager hardware platform

S/DMS Network Manager runs on the following hardware platforms:

- HP9000 Model C110
- HP9000 Model C100
- HP9000 Model 735/99
- HP9000 Model 715/64

Note: For ordering information, see “Software and hardware ordering codes” on page 1-51.

Full S/DMS Network Manager Release 6.00 capacities can be achieved with the HP9000 C100, HP9000 C110 or HP9000 735/99 workstation. Reduced S/DMS Network Manager Release 6.00 capacities will be obtained with the HP9000 715/64 workstation. However, both workstations will achieve complete S/DMS Network Manager Release 6.00 functionality.

The workstation keyboard supported for S/DMS Network Manager Release 6.00 is the HP-HIL. However, in future releases of S/DMS Network Manager, the Personal Computer (PC) style keyboard will become the supported keyboard for HP workstations. Currently, the PC keyboard functions with the following limitations:

- You cannot use the End and Tool Menu buttons in the user interface for the OPC character-mode terminal (CMT). The functionality provided by these buttons is also available using Global menu and List menu buttons.
- Keyboard shortcuts involving the Alt key are not available. The functionality provided by the shortcut is still available using the associated buttons in the S/DMS Network Manager user interface.

Additional display capability can be provided by connecting X display devices to the S/DMS Network Manager workstation. The X display device recommended for use with the S/DMS Network Manager is the HP Envizex 19Cp X terminal.

Installation, configuration, and support of the data communication network are the responsibility of the customer. For a detailed description of the S/DMS Network Manager platform, the X terminals, and communication network requirements, see S/DMS Network Manager *Planning Guide*, PG 96-04.

To learn how to install the S/DMS Network Manager software on the workstation, see “Installing the S/DMS Network Manager software” in *S/DMS Network Manager Installation and Administration*, 323-4001-202.

Operating system

HP workstations must run HP-UX Release 9.05 or 10.10, and HP-VUE 3.0 to support S/DMS Network Manager Release 6.

Note: HP-UX Release 9.05 will not be supported for future releases of S/DMS Network Manager.

Operational considerations

The following operational considerations apply to Release 6 of S/DMS Network Manager, depending on the hardware platform being used.

Operational consideration	Hardware platform							
	Rel 3.00		Rel 4.01		Rel 5.01		Rel 6.00	
	HP715	HP720H P735 ¹	HP715	HP720 HP735 ¹	HP715	HP735 ² C100	HP715	HP735 C100 C110
Number of OPC module pairs	10	50	10	50	10	50	10	75
Number of S/DMS Network Manager that can be connected to an OPC module	2	2	2	2	2	2	4	4
Number of X Terminals that can be connected to S/DMS Network Manager ³	2	4	2	9	2	9	2	9
Number of instances of the GNE tool per S/DMS Network Manager	1	1	1	1	1	1	1	1
Number of simultaneous login sessions per S/DMS Network Manager	18	30	18	30 ⁴	18	30 ⁴	18	30 ⁴
Number of simultaneous login sessions per user	6	6	6	6	6	6	6	6
Alarm Banner dialog available on all GNBs running on the same display	1	1	1	1	1	1	1	1
Number of OPC USM X sessions per S/DMS Network Manager (all users)	4	4	4	4	4	4	4	4
Number of direct serial connections per S/DMS Network Manager ⁵	2	2	0	2	0	2	0	2

Operational consideration	Hardware platform							
	Rel 3.00		Rel 4.01		Rel 5.01		Rel 6.00	
	HP715	HP720H P735 ¹	HP715	HP720 HP735 ¹	HP715	HP735 ² C100	HP715	HP735 C100 C110
Number of network elements supported by S/DMS Network Manager	340	850	340	850	340	850	340	1200
Number of instances of the Centralized Software Management tool per GNB	1	1	1	1	1	1	1	1
Number of instances of the Centralized Performance Monitoring tool per GNB	-	-	1	1	1	1	1	1
Number of instances of the Shelf Level Graphics tool per GNB	-	-	3	3	3	3	3	3
Number of instances of the Centralized Inventory Collection tool per GNB	-	-	1	1	1	1	1	1
Number of instances of the Connection Provisioning tool per GNB	-	-	-	-	3	3	3	3

1. The HP 9000 Model 720 has been discontinued by the manufacturer. It is included here for compatibility with the workstation requirements of previous versions of the S/DMS Network Manager.
2. The HP 9000 Model 735 has been discontinued by the manufacturer, but will continue to be supported.
3. The total number of users is this number plus one.
4. This is the default value. The value can be increased to a maximum of 60 if there is sufficient bandwidth.
5. Assuming standard hardware configuration of two serial ports.

Ordering Information

This section describes the component parts that make up S/DMS Network Manager Release 6, and identifies the Northern Telecom Product Engineering Codes (PEC) that must be used when ordering S/DMS Network Manager Release 6.

To order S/DMS Network Manager Release 6, contact your local Northern Telecom support organization. For further information, see “Technical support and information” on page xi.

For ordering purposes, S/DMS Network Manager consists of four main components as follows:

- S/DMS Network Manager software, which includes:
 - S/DMS Network Manager Graphical User Interface (GUI) right-to-use (RTU) for S/DMS Transportnode or S/DMS Accessnode networks
 - S/DMS Network Manager application RTUs which consist of a Software Management Application RTU, Performance Management Application RTU, Configuration Management Application RTU, STS Connection Management Application RTU, and VT1.5 Connection Management Application RTU
- S/DMS Network Manager network element connection RTU for each type network element connected (release specific) to S/DMS Network Manager
- multi-user connection to the S/DMS Network Manager using X Terminals
- S/DMS Network Manager hardware platforms for Release 6

For a complete list of S/DMS Network Manager ordering codes, see “Software and hardware ordering codes” on page 1-51 and “Documentaion ordering codes” on page 1-52.

S/DMS Network Manager software ordering

S/DMS Network Manager software is made up of a GUI RTU and four supplemental application RTUs.

The S/DMS Network Manager GUI RTU is a mandatory requirement and must be purchased for S/DMS Transportnode and S/DMS Accessnode network implementation.

The Fault Management Application RTU must be ordered in conjunction with the GUI RTU to provide network surveillance capabilities. The following application RTUs are optional:

- Software Management Application RTU
- Performance Management Application RTU
- Configuration Management Application RTU
- STS Connection Management Application RTU
- VT1.5 Connection Management Application RTU

GUI RTU

The GUI RTU allows for the following functions on S/DMS Transportnode and S/DMS Accessnode networks:

- communications software for:
 - up to 75 controller pairs (or 150 connections) if using an HP 9000 Model 735/99, HP9000 Model C110, or HP9000 Model C100
 - up to 10 controller pairs (or 20 connections) if using an HP 9000 Model 715/64
- transparent login access to controllers and network elements
- graphical user interface technology
- user administration of the S/DMS Network Manager application

The S/DMS Network Manager GUI RTU must be ordered in conjunction with the S/DMS Network Manager Release 6 Software Tape.

Fault Management Application RTU

The S/DMS Network Manager Fault Management Application RTU provides the following capabilities:

- graphical network topology displays
- ring traffic path display for S/DMS Transportnode OC-12/OC-48 and S/DMS Accessnode ring and linear systems
- first alert alarm banner
- alarm acknowledgment and audit trails
- alarm details and alarm filtering
- alarm collection control
- support for S/DMS Transportnode, S/DMS Accessnode, Cornerstone Voice, DV45 Video Codec, Tellabs Titan 5500 Digital Cross-Connect (DCS) systems

The Fault Management Application RTU is ordered once in conjunction with the GUI RTU.

Software Management Application RTU

The S/DMS Network Manager Software Management Application RTU is an optional software package that allows remote delivery and upgrade of software releases for all controllers in the network from S/DMS Network Manager.

Performance Management Application RTU

The S/DMS Network Manager Performance Management Application RTU is an optional software package that provides a centralized end-to-end view of performance threshold crossings, and allows for evaluation of equipment and transmission facility performance over a period of time.

Configuration Management Application RTU

The S/DMS Network Manager Configuration Management Application RTU is an optional software package that provides the capability of viewing the equipment provisioned on the network. The centralized inventory feature assists in verifying the hardware baseline compatibility of a network before upgrading the S/DMS Network Manager software. The Configuration Management Application RTU also enables you to manage the activity of DS1, DS3, and STS-1 terminations using the GUI.

STS Connection Management Application RTU

The S/DMS Network Manager STS Connection Management Application RTU provides STS connection provisioning and service assurance capabilities.

VT1.5 Connection Management Application RTU

The S/DMS Network Manager VT1.5 Connection Management Application RTU provides VT1.5 connection provisioning and service assurance capabilities on OC-12 BLSRs.

S/DMS Network Manager network element connection ordering

The S/DMS Network Manager network element connection RTU is made up of licences that allow S/DMS Network Manager to connect to a network element for network surveillance and for software distribution.

S/DMS Network Manager network element connection RTUs are required for each type network element connected (release specific) to S/DMS Network Manager. All functionality is then available for that network element, provided the appropriate application RTU has been ordered. Subsequent releases of S/DMS Network Manager require new network element connection RTUs for the new S/DMS Network Manager software.

Network element connection RTUs are available for the following network elements:

- TransportNode OC-12, OC-48, and OC-192
- AccessNode
- Tellabs Titan 5500 Digital Cross-Connect System (DCS)
- DV45 Video Codec
- RadioNode
- OpAmp

S/DMS Network Manager X terminal connection ordering

The S/DMS Network Manager X Terminal Connection RTU must be ordered once for each X terminal connection to S/DMS Network Manager. X terminal connections allow simultaneous multi-user access to the S/DMS Network Manager and provide additional display capabilities.

The number of X terminals that can be connected to S/DMS Network Manager depends on the S/DMS Network Manager hardware platform.

The S/DMS Network Manager X Terminal Connection RTU is ordered only for the first release of S/DMS Network Manager used in the network, and does not have to be re-ordered for subsequent S/DMS Network Manager releases. However, an S/DMS Network Manager X Terminal Connection RTU must be ordered for new or additional X terminal connections to S/DMS Network Manager.

S/DMS Network Manager hardware platform ordering

Northern Telecom offers the HP workstation and X terminal platform as part of the S/DMS Network Manager software purchase. Ordering the HP workstation or X terminal from Northern Telecom is optional. If desired, you can purchase the HP workstation or X terminal directly from HP or a distributor.

For the Northern Telecom ordering codes for HP hardware, see “Software and hardware ordering codes” on page 1-51.

For more information on the HP workstation hardware requirements for S/DMS Network Manager, see S/DMS Network Manager *Planning Guide*, PG 96-04.

If the HP workstation or X terminal is ordered through Northern Telecom, the following additional services are offered.

Simplified ordering of a workstation or X terminal

Northern Telecom has standardized on a set of piece parts for the workstation and X terminal. This standardization provides a single order code for customers to use when placing orders for the workstation or X terminal through Northern Telecom.

Ordering directly from HP requires a translation of the S/DMS Network Manager hardware specification to HP order codes for the various hardware, software and support piece parts.

Pre-assembly of the workstation or X terminal

When ordered through Northern Telecom, the workstation or X terminal arrives preassembled and ready for installation of S/DMS Network Manager software. The HP-UX operating system software required by S/DMS Network Manager is also preinstalled, and proper memory (SWAP) configurations are preconfigured.

When ordering directly from HP, you must order the workstation or X terminal piece parts. The delivered product arrives in parts and requires assembly and custom configuration. Knowledge of workstation and X terminal configurations and UNIX is required.

Single Point of Support

When the workstation or X terminal is ordered through Northern Telecom, hardware support is bundled into the maintenance agreement of the S/DMS Network Manager software.

Customers with an S/DMS Network Manager workstation or X terminal supplied by Northern Telecom need only contact Northern Telecom for support of S/DMS Network Manager hardware and software for the duration of the warranty period (standard is one year).

Northern Telecom offers various levels of support of S/DMS Network Manager hardware and software on an annual basis to extend beyond the first year warranty period. Obtain details of S/DMS Network Manager support from your local Northern Telecom support organization. For further information, see "Technical support and information" on page xi.

Customers that purchase the workstation or X terminal directly from HP or an HP distributor must obtain workstation or X terminal support from HP, through the purchase of an HP support contract. In this case, Northern Telecom provides only S/DMS Network Manager software support.

Software and hardware ordering codes

The following table identifies the software and hardware ordering codes for S/DMS Network Manager Release 6.1. (For TL1 MOA ordering information, please see “Ordering Information” in *MOA Planning Guide*, PG 95-11.)

Set	Product Feature	PEC
1a	S/DMS Network Manager Release 6.1 GUI RTU	NTSE80FB
	S/DMS Network Manager Fault Management Application RTU	NTSE82AA
	S/DMS Network Manager Release 6.1 Software Tape	NTSE85FB
1b	S/DMS Network Manager Software Management Application RTU	NTSE82BA
	S/DMS Network Manager Performance Monitoring Application RTU	NTSE82CA
	S/DMS Network Manager Configuration Management Application RTU	NTSE82DA
	S/DMS Network Manager STS Connection Management Application RTU	NTSE82EA
	S/DMS Network Manager VT1.5 Connection Management Application RTU	NTSE82FA
2	S/DMS Network Manager NE Connection RTU (OC-12)	NTSE81AE
	S/DMS Network Manager NE Connection RTU (OC-48)	NTSE81AF
	S/DMS Network Manager NE Connection RTU (OC-192)	NTSE81AG
	S/DMS Network Manager NE Connection RTU (AccessNode)	NTSE81AH
	S/DMS Network Manager NE Connection RTU (Tellabs Titan 5500 DCS)	NTSE81AI
	S/DMS Network Manager NE Connection RTU (DV45 Video Codec)	NTSE81AJ
	S/DMS Network Manager NE Connection RTU (OC-3 Express)	NTSE81AK
	S/DMS Network Manager NE Connection RTU (OpAmp)	NTSE81AL
3	S/DMS Network Manager X Terminal Connection RTU	NTSE81BA
4	S/DMS Network Manager HP C110 Workstation	NTSE53AC
	S/DMS Network Manager HP715 Workstation	NTSE51AA
	S/DMS Network Manager HP Envizex 19Cp X Terminal	NTSE53BB

Documentation ordering codes

The following table identifies the documentation ordering codes for S/DMS Network Manager Release 6.0 and 6.1.

Document Name	PEC
S/DMS Network Manager Release 6.0 User Guide	NTSE65FA
S/DMS Network Manager Release 6.0 Introduction	NTSE66FA
S/DMS Network Manager Release 6.0 Installation and Administration	
S/DMS Network Manager Release 6.0 Connectivity	NTSE66FB
S/DMS Network Manager Release 6.0 Configuration	
S/DMS Network Manager Release 6.0 Fault Management	
S/DMS Network Manager Release 6.0 Inventory Management	NTSE66FC
S/DMS Network Manager Release 6.0 Connection Management	NTSE66FD
S/DMS Network Manager Release 6.0 Performance Management	NTSE66FE
S/DMS Network Manager Release 6.0 Software Management	NTSE66FF
S/DMS Network Manager Release 6.0 Quick Reference Card	NTSE67FA
S/DMS Network Manager Release 6.0 Planning Guide	NTRS10FA

Note: The documents can be ordered individually (NTSE66FA, NTSE66FB, NTSE66FC, NTSE66FD, NTSE66FE, and NTSE66FF), or as the components for the entire user guide (NTSE65FA).

Getting to know the user interface

This chapter describes the S/DMS Network Manager graphical user interface. The chapter introduces the basic features of the user interface, and identifies and describes how to use the components of the graphical user interface. This chapter is intended for new S/DMS Network Manager users who are unfamiliar with the user interface.

In this chapter you will learn how to do the following:

- use the mouse to navigate around the display and select items
- log in to S/DMS Network Manager
- use the Hewlett-Packard Visual User Environment (HP VUE) workspace manager
- start an S/DMS Network Manager tool
- open and close windows
- understand the purpose of the windows and dialogs
- identify the components of the windows and dialogs
- display window and object menus
- select commands from menus
- move objects around the display
- manipulate windows and dialogs
- use the online help system
- exit S/DMS Network Manager

Before you begin

Before you start using S/DMS Network Manager, do the following:

- Read “Introducing S/DMS Network Manager” on page 1-1. It provides a functional overview of S/DMS Network Manager.
- Read “How commands, parameters, and responses are represented” on page viii to learn about the conventions used in this guide.

- If you want to learn about a specific aspect of S/DMS Network Manager, or you want to perform a specific task, see the reference and procedural chapters in this guide.
- This guide assumes that your S/DMS Network Manager is operating under HP-UX 9.05, HP-UX 10.10, or HP VUE 3.0. These operating systems provide the windows that S/DMS Network Manager uses for displaying information. Check with your system administrator to verify that you are using the correct operating system.
- This guide contains basic information on HP operating systems. To learn more about HP systems, see the *HP Visual User Environment User's Guide*.
- Check with your system administrator to make sure that your S/DMS Network Manager workstation or X terminal is properly set up.

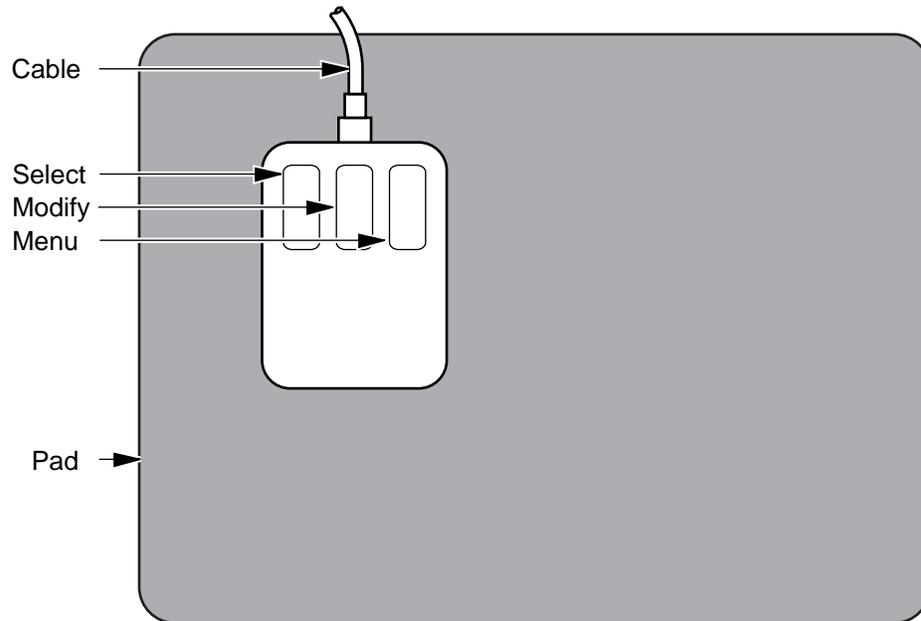
Using the mouse

The mouse is a small plastic box with three push buttons. The mouse sits on a pad with a nonskid surface and is attached to your workstation by a thin cable.

The mouse allows you to interact with S/DMS Network Manager. The mouse enables you to point to and select specific objects on the screen, and to cause S/DMS Network Manager to perform the desired actions.

A small arrow-shaped item on the screen is the mouse pointer. The pointer represents the position of the mouse. When you move the mouse, the pointer moves on the screen. Use the pointer is used to point to and select specific items on the screen.

The following illustration shows a right-handed mouse configuration. If you are left-handed, see the *HP Visual User Environment User's Guide* for instructions on how to change this configuration.



The following terms are used in this guide to describe mouse actions.

Move the pointer	Move the mouse. As you move the mouse, the arrow-shaped pointer on the screen moves in the same direction.
Click	Press and release the specified mouse button.
Double-click	Press and release the specified mouse button twice in quick succession.
Drag	Move the pointer over the object, press and hold the specified mouse button, then move the pointer to the desired location and release the mouse button.

Use the mouse buttons as follows.

Select	Use the button on the left to select an object.
Modify	Use the button in the middle to modify something or to move objects, such as windows and nodes.
Menu	Use the button on the right to display a menu associated with an object in a window. You display the menu of an object by moving the pointer to the object and clicking. After a menu appears on the object, select the required command by moving the pointer, then click on the Select button.

Logging in to S/DMS Network Manager

Before starting S/DMS Network Manager, identify yourself as a valid user by entering your userID and password in the HP VUE login dialog.

Do the following to log in to S/DMS Network Manager.

- 1 Type your userID in the HP VUE “Login” field, and press the Return key.
- 2 Type your password in the HP VUE “Password” field, and press the Return key.

If you require help logging in, select the Help button in the HP VUE login dialog. The information that appears on the screen describes how to log in to S/DMS Network Manager.

If your login is successful, an HP VUE workspace appears.

Using the workspace

After you successfully log in to the S/DMS Network Manager, the HP VUE workspace fills the entire display screen. At the bottom of the workspace is a horizontal bar called the workspace manager.

The workspace manager provides a central location for indicators and frequently used functions used in the workspace. For further information on the workspace manager, see the *HP Visual User Environment User's Guide*.

Starting a tool

The workspace manager includes a toolbox button. This button allows you to access the S/DMS Network Manager tools. To start an S/DMS Network Manager tool, do the following:

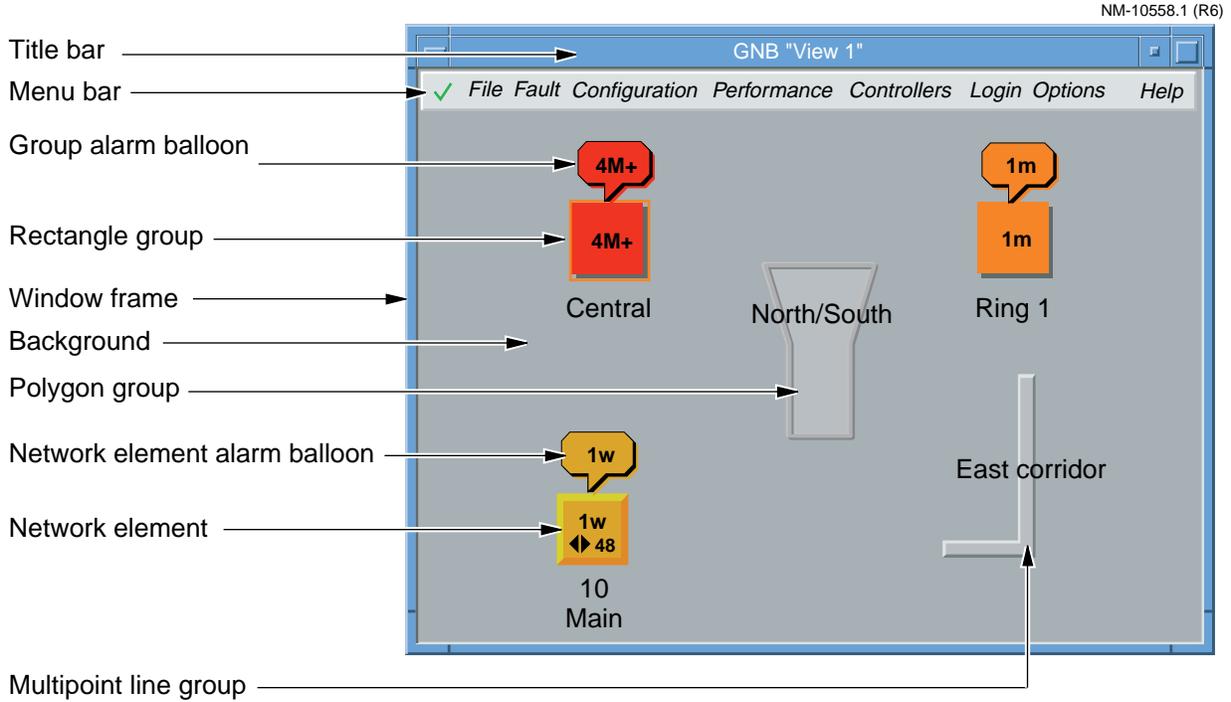
- 1 Click the toolbox button to display a menu of toolboxes available on your workstation. Toolboxes are used to group together related tools.
- 2 Click on the personal toolbox entry in the toolbox menu. A new window, containing the personal toolbox icon, appears on the display.
- 3 Double-click on the personal toolbox icon. Another window, containing icons representing the tools available to you, appears on the display.
- 4 Double-click the Net Man icon. This icon represents the S/DMS Network Manager toolbox. A new window containing the S/DMS Network Manager tools appears on the display. Depending on the privileges associated with your userID, a single Graphical Network Browser (GNB) icon, or a GNB and Graphical Network Editor (GNE) icon appears in the toolbox.

Note: If desired, you can drag the GNB and GNE icons out of the toolbox and place them in the workspace. The tool icons remain in the workspace, simplifying subsequent access to the S/DMS Network Manager tools.

- 5 Double-click on the icon that represents the tool you want to use.

2-6 Getting to know the user interface

You are prompted to select a view for displaying the network. After you select the view, the network window for the selected tool appears in the workspace. The following is a typical GNB network window.



The network window uses graphical objects to represent the network elements in your network. The network window consists of a title bar, menu bar, background, alarm balloons, groups, and network elements.

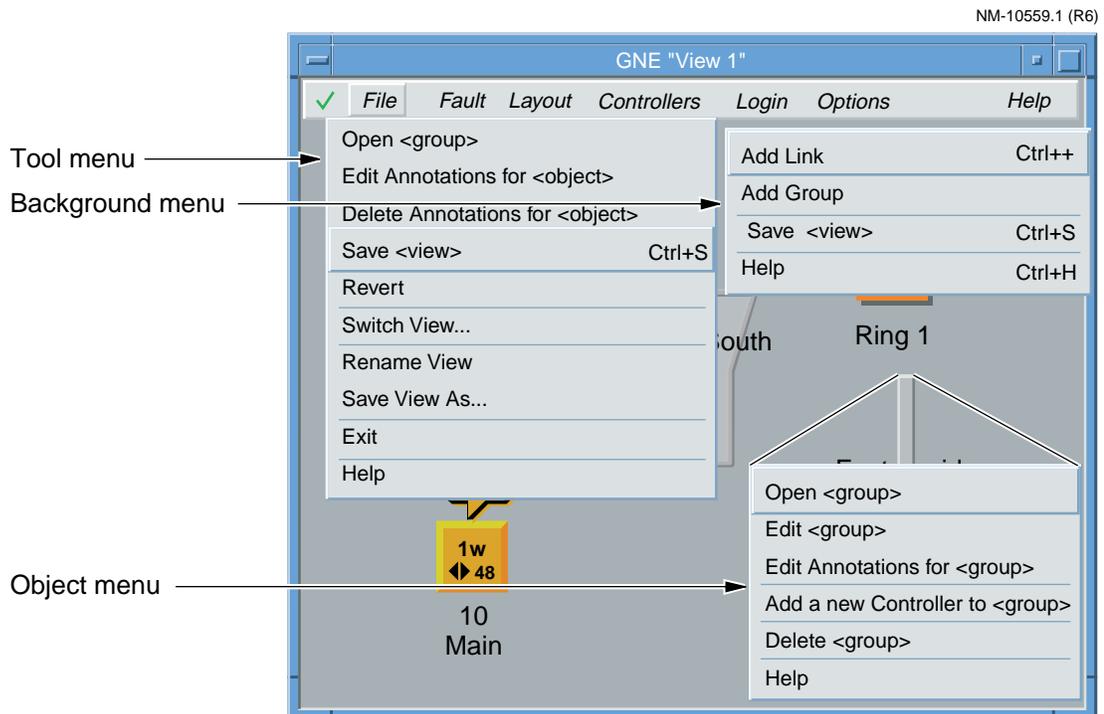
All S/DMS Network Manager windows and dialogs are surrounded by a window frame. The window frame lets you manipulate the window. The window frame is described later in this chapter.

Displaying a menu

A menu is a list of commands that allows you to interact with S/DMS Network Manager. Menus group together commands used to perform similar functions. Many menus are used in the S/DMS Network Manager windows and dialogs.

Each S/DMS Network Manager window has tool, object, and background menus. You can display only one menu at a time. Some menus provide an additional sub-set of commands. This subset of commands is called a cascade menu.

The S/DMS Network Manager menus are shown in the following illustration.



Displaying a tool menu

The tool menus are located in the menu bar at the top of the window. These menus provide commands that enable you to control the operations performed by S/DMS Network Manager.

To display a tool menu use the following steps:

- 1 Move the pointer over one of the menu names in the menu bar.
- 2 Click the on Menu button. The menu name is highlighted and the commands associated with the menu drop down from the menu bar.
- 3 To remove the menu, move the pointer to a blank area of the window and click Select. The menu disappears.

Displaying an object menu

Object menus are associated with the graphical objects on an S/DMS Network Manager window. The commands in an object menu enable you to take action on the selected object. If S/DMS Network Manager does not permit any action to be taken on an object, the object menu displays only a help command.

To display an object menu use the following steps:

- 1 Move the pointer over a group, alarm balloon, network element, or network element link in the network window.
- 2 Click on the Menu button. The actions that you can take on the object appear in a menu that drops down from the object.
- 3 To remove the menu, move the pointer to a blank area of the window and click on Select. The menu disappears.

Displaying a background menu

The background menu is a hidden menu that allows you to perform actions on the objects displayed in the window. The GNB background menus contain only a Help entry.

To display a background menu use the following steps:

- 1 Move the pointer to a blank area of the network or subnetwork window.
- 2 Click the Menu button. The background menu appears. The commands in the menu drop down from the spot where the pointer is located.
- 3 To remove the menu, move the pointer to a blank area of the window and click on Select. The menu disappears.

Displaying a cascade menu

Cascade menus provide an additional subset of commands that relate to a menu entry. Cascade menus are available only on certain tool and object menus. If a menu entry has a cascade menu, a triangular icon appears at the right of the menu entry.

To display a cascade menu use the following steps:

- 1 Move the pointer over the triangular icon at the right of the menu entry. If a menu entry does not have a triangular icon, there is no cascade menu associated with the entry.
- 2 Click on the Menu button on the triangular icon. The cascade menu drops down from the triangular icon.
- 3 To remove the menu, move the pointer to a blank area of the window and click on Select. The cascade menu disappears.

Selecting menu commands

Menu commands allow you to interact with S/DMS Network Manager.

To select a menu command use the following steps:

- 1 Display the menu that contains the desired command.
- 2 Move the pointer to the desired command.
- 3 Click the Select button. S/DMS Network Manager executes the selected command.

Disabled commands

Some commands appear dimmed (grayed out). These commands are disabled, preventing you from selecting the command. S/DMS Network Manager commands can be disabled because of the following:

- the command does not apply to the current action
- you are trying to execute a command on an object, and the controller associated with that object is not running a software load that is compatible with the command

Active/inactive commands

Some menu commands make certain S/DMS Network Manager functions active or inactive. For example, S/DMS Network Manager provides an audible alarm that sounds a series of beeps each time new alarms occur. You can make the audible alarm active (beep) or inactive (no beep).

These types of menu commands have a check mark beside them when the function is active, and no check mark when inactive. The check mark appears or disappears each time you select the command, depending on the current state of the command.

Using command shortcuts

Shortcuts are provided for some commands. These shortcuts let you use the keyboard rather than the mouse to invoke a command.

2-10 Getting to know the user interface

You can invoke a shortcut either by pressing a function key (for example, F1 for help) or by pressing and holding the Alt or Ctrl key, then pressing the shortcut key associated with the menu command. The following table lists available keyboard shortcuts for GNE windows and dialogs.

GNE window or dialog	Command	Shortcut
All windows	Help	Ctrl+H
	Help Overview	F1
Network window	Open	Ctrl+[
	Add Link	Ctrl++
	Delete	Ctrl+K
	Save	Ctrl+S
	Exit	Alt+F4
Subnetwork window	Close	Alt+F4
	Add Link	Ctrl++
	Delete	Ctrl+K
Most dialogs	Cancel	Ctrl+Esc
	Done, Yes, or OK	Alt+Return
	No	Ctrl+-
Controller List dialog	Login to <controller>	Alt+L
	Edit <controller>	Alt+E
	Add New Controller	Ctrl++
	Delete <controller>	Alt+K

Note 1: On some keyboards, the Alt key might be labeled Extended Char.

Note 2: On Sun workstations, the Meta key replaces the function of the Ctrl key.

The following table identifies keyboard shortcuts for invoking commands in GNB windows and dialogs.

GNB window or dialog	Command	Shortcut
All windows	Help Overview Acknowledge Alarms	Ctrl+H F1 Ctrl+A
Network window	Login to <controller> Open Exit	Ctrl+L Ctrl+[Alt+F4
Subnetwork window	Login to <controller> Close	Ctrl+L Ctrl+]
Most dialogs	Cancel Done, Yes, or OK No	Ctrl+Esc Alt+Return Ctrl+-
Controller List dialog	Login to <controller>	Alt+L

Note 1: On some keyboards, the Alt key might be labeled Extended Char.

Note 2: On Sun workstations, the Meta key replaces the function of the Ctrl key.

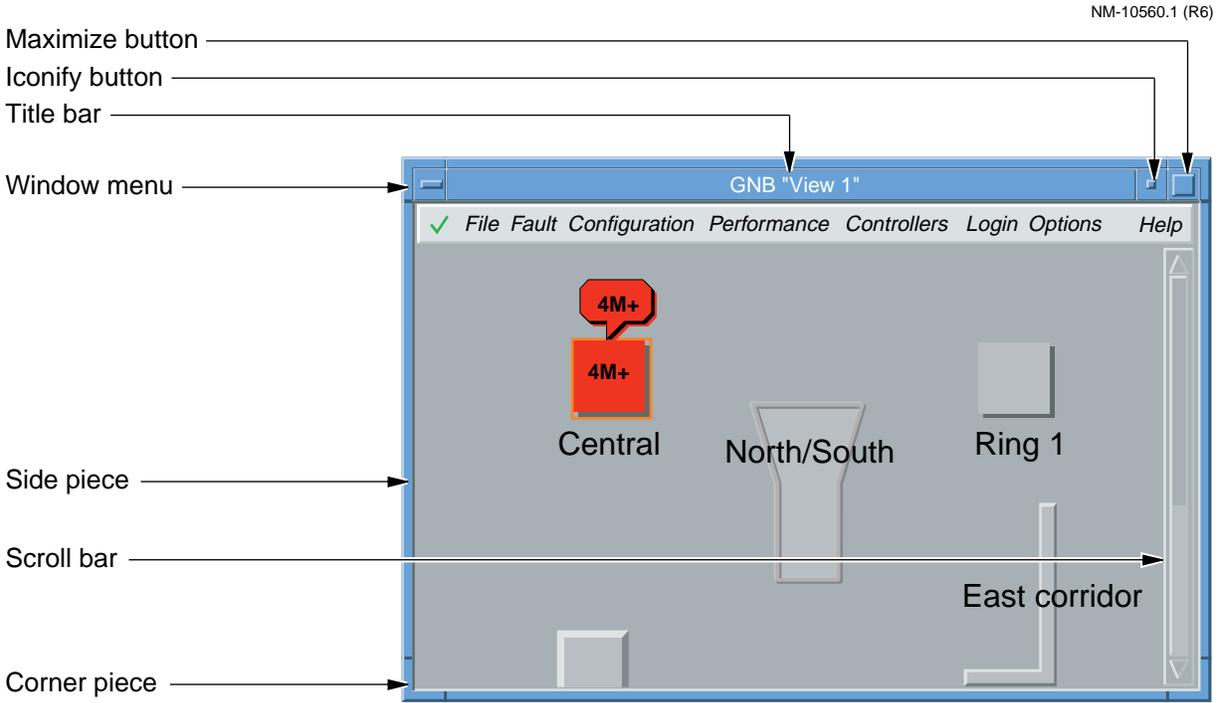
Working with windows

GNE and GNB, and their associated dialogs are all displayed within separate windows. As you work with S/DMS Network Manager, you may be required to open successive windows and dialogs. To avoid excessive screen clutter, you can manipulate the windows to view the information of interest.

Window manipulation is controlled by HP VUE. For more information, see the *HP Visual User Environment User's Guide*.

2-12 Getting to know the user interface

The following illustration shows the components of a typical window.



Window components

Each S/DMS Network Manager window and dialog is surrounded by a frame that allows you to manipulate the window. The window frame contains:

- maximize button This button expands the window to occupy the entire screen area. When you maximize a window, all other windows are obscured. This feature is not available on dialogs.
- iconify button This button shrinks the window to an icon.
- title bar This bar shows the title of the window. When the window is active, the title bar is a dark shade. If the window is inactive, the title bar is a lighter shade (grayed out).
- window menu button This button provides commands that allow you to change the size of the window, and to close the window.
- scroll bars These bars display the remaining contents of a window if all the information cannot be displayed at one time. For information on how to scroll through the display, see "Using scroll bars" on page 2-18.

side pieces	These areas can be used to change the vertical or the horizontal size of the window independently. This feature may not be available on some dialogs.
corner pieces	These areas can be used to change the vertical and horizontal size of the window at the same time. This feature may not be available on some dialogs.

Using the mouse to manipulate the windows

You can manipulate the windows and dialogs with the mouse, as explained in the following table.

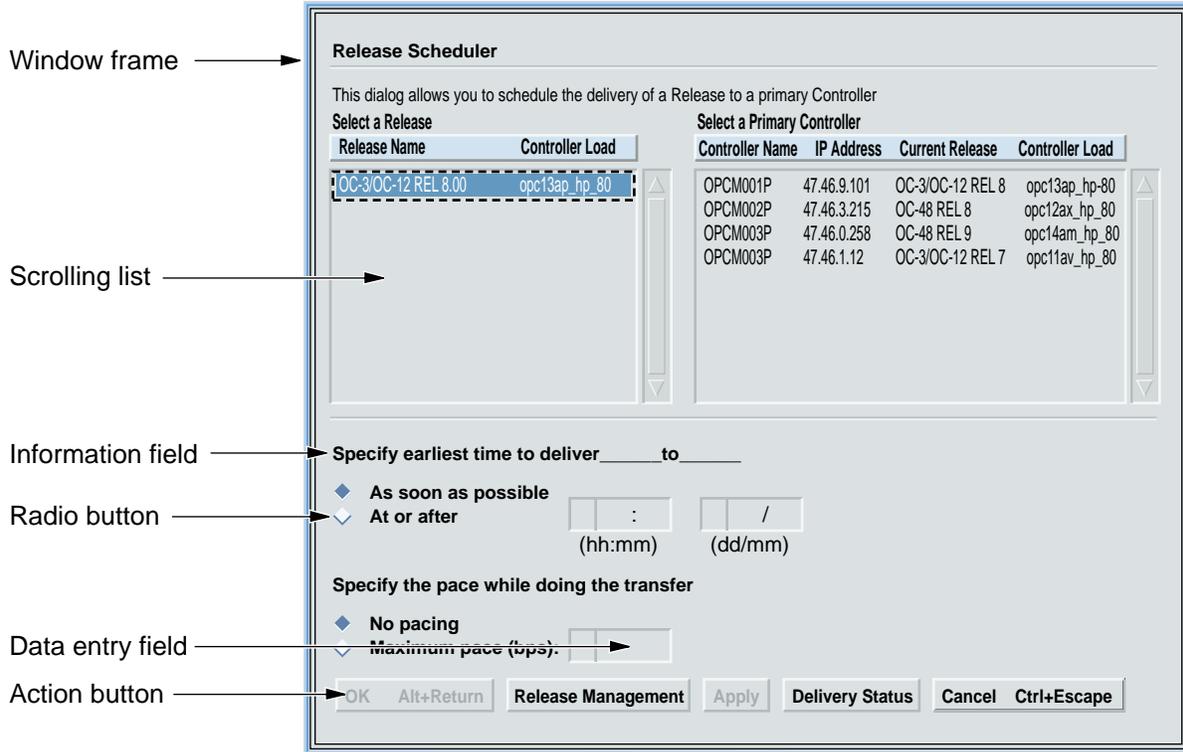
If you want to	Then
make a window active	click anywhere inside the window
bring a concealed window to the forefront of all other windows displayed on the system	click anywhere inside the visible part of the window that you want to raise
show the window menu	click on the button in the upper left corner of the window frame
close the window	double-click on the button in the upper left corner of the window frame
iconify the window	click on the smaller button in the upper right corner of the window frame
change the size of the window	drag a window frame corner or side piece
enlarge or shrink the window	click on the larger button in the upper right corner of the window frame
move a window	move the pointer over the title bar and drag the window to the desired location
move a dialog	move the pointer over the dialog, press and hold the Alt key, and drag the dialog to the desired location
activate each window in sequence	click on the Select button on a blank area of the workspace

Working with dialogs

S/DMS Network Manager uses dialogs to gather information to complete a task. The information in a dialog varies according to the task you are performing.

The components of an S/DMS Network Manager dialog are shown in the following illustration and described below. Not all dialogs contain all components.

NM-10561.1



A typical dialog contains

- a window frame Use this frame to manipulate the dialog. See “Window components” on page 2-12 to learn more about the window frame.
- scrolling list Use this list to display data. The data is usually in columns related to the dialog. For more information on how to scroll through a list, see “Using scroll bars” on page 2-18.
- information fields Used by the S/DMS Network Manager to present information relevant to the current task. You cannot modify these fields.

data entry fields	Use these fields to gather information. Data entry fields may be mandatory or optional. Mandatory data entry fields are marked with a black triangle on the left side. You can modify the information in these fields.
radio buttons	Use these buttons to select a single item from a list of options.
check buttons	Use these buttons to select multiple items from a list of options.
action buttons	Use these buttons to take an action on the dialog.

Entering and editing text

Enter information in a data entry field by moving the pointer over the field and clicking the Select button. The pointer changes to a cursor. The shape of the cursor indicates the action that you can perform on the information in the field. The cursor might be in the shape of an I-beam, or it might be in the shape of a rectangular block. The I-beam cursor indicates that you can insert text in the field. The block cursor indicates that you can overwrite the existing text in the field.

To edit the information in a data entry field, use the arrow keys to position the cursor inside the field. Type the new text, or use the Delete or Backspace key to delete existing text.

Each data entry field also has a menu that allows you to edit text. This menu allows you to move, copy, or delete larger blocks of text.

To edit text using the field menu

- 1 Move the pointer to the desired field.
- 2 Drag the cursor across the information that you want to edit.
- 3 Click on the Menu button. The field menu appears. The commands in the menu drop down from the spot where the pointer is located.
- 4 Select the command for the desired action. The menu disappears once the action is complete.

Using data selectors

If S/DMS Network Manager knows of certain values to enter in a particular data entry field, it may provide a data selector for that field. Fields with a data selector have a boxed-in triangle icon at the end of the data entry field.

The data selector lists the known values for the field. Data selectors allow you to select a value rather than enter it manually.

To display a data selector

- 1 Move the pointer to the data selector icon at the end of the desire field.
- 2 Click the Menu button. The data selector menu appears. The known values for the field drop down in a menu from the data selector icon.
- 3 Move to the desired entry in the data selector and press Select. The data selector disappears.

Modal dialogs

Modal dialogs display urgent messages that require immediate attention and response. Modal dialogs are displayed in the forefront of all other windows and dialogs currently on the screen.

S/DMS Network Manager itself does not produce modal dialogs. If you are logged in to a controller through S/DMS Network Manager, some operations you can perform on the controller can result in a modal dialog. For example, if you log in to a controller and perform a controller shutdown operation, a modal dialog can appear after completing the shutdown to indicate that the controller is out of service.

A modal dialog cannot be moved, resized, or collapsed. When a modal dialog is on the screen, you cannot interact with any window or dialog other than the modal dialog.

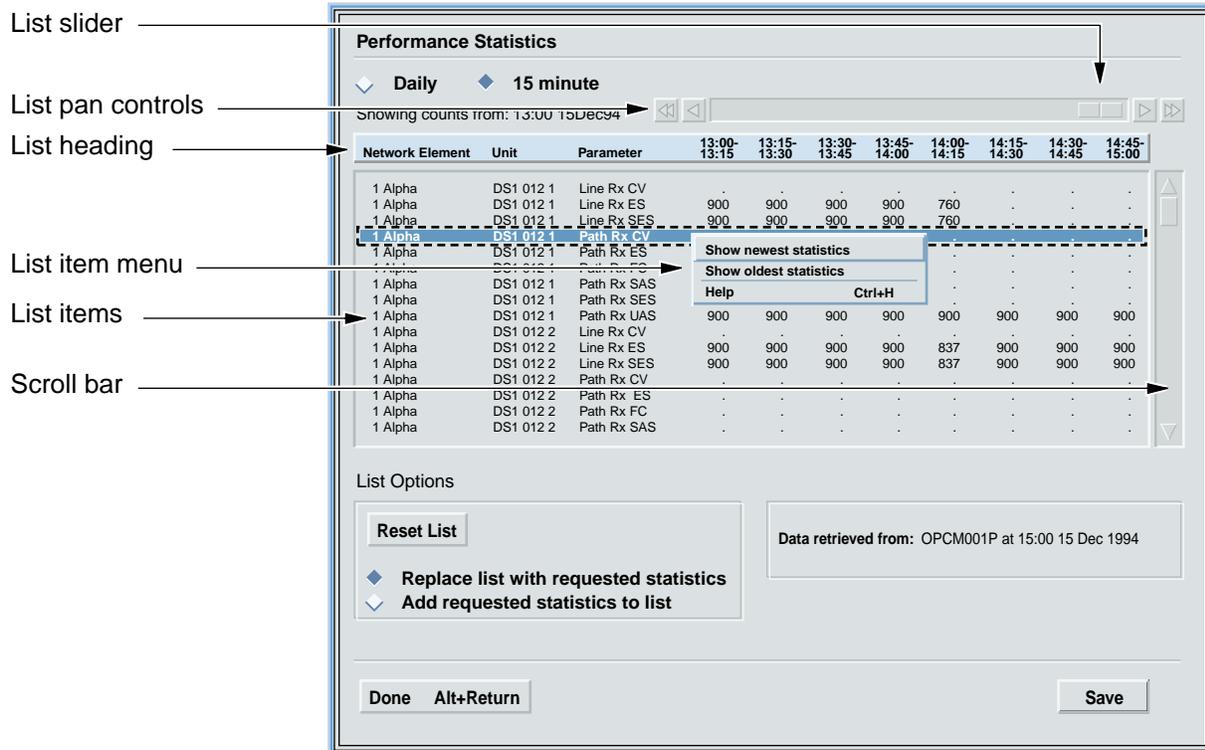
To respond to a modal dialog, use the buttons provided within the dialog.

Working with lists

Some dialogs present information in the form of a list, as shown in the following illustration. Lists are used when a dialog must display a lot of information. Each list is divided into a number of columns to make it easier to understand the information presented.

Components of a typical list are shown in the following illustration.

NM-10462.1



A list can contain

- a list heading This heading identifies the contents of each column in the list
- list items These items display data corresponding to each column.
- a list item menu This menu provides a list of commands that allow you to take action on a particular item in the list.
- scroll bars These bars display the remaining contents of a list if all the information cannot be displayed at one time. To learn how to use the scroll bars, see “Using scroll bars” on page 2-18.
- a list slider and pan control buttons These buttons enable you to maneuver horizontally through a list if all of the information cannot be displayed at one time. To learn how to use the list sliders and pan control buttons, see “Using sliders and pan control buttons” on page 2-19.

Using list item menus

A list item menu allows you to take action on a particular item in the list. This menu can only be displayed after you select an item from the list. To display a list item menu:

- 1 Move the pointer to the desired item in the list.
- 2 Click on the Menu button. The list item menu appears. Commands available for the selected item drop down from the spot where the pointer is located. If a command is not appropriate for the selected item, the command is disabled (grayed out).
- 3 Move the pointer to the desired command and press Select. The command is executed and the menu disappears.

Navigating in a window or list

S/DMS Network Manager provides control buttons that enable you to navigate in a window or list if the window or list cannot fully display its contents within the current viewing area. These control buttons allow you to quickly locate and display the desired information.

There are three types of control buttons: scroll bars, sliders, and pan buttons. Each is described in the following sections.

Using scroll bars

Scroll bars appear when a window, field, or list cannot fully display its contents within the current viewing area.

If the contents of a window or list are too large vertically, a scroll bar appears on the right side of the window or list. If the contents are too large to fit horizontally, a scroll bar appears at the bottom of the window or list.

Scroll bars consist of three components: the up/down or left/right arrows, the view bar, and the jump-scroll area.

The view bar is the white area in the scroll bar. It represents the size and location of the current view area in relation to the whole window. The jump-scroll area is the gray area in the scroll bar. It represents the overall size of the information, including the current view. The up and down arrows at the top and bottom of the scroll bar allow you to move the list one line at a time. In the case of a horizontal list, the left and right arrows allow you to move one column of information at a time.

Performance Statistics

Daily 15 minute
 Showing counts from: 13:00 15Dec94

Network Element	Unit	Parameter	13:00-13:15	13:15-13:30	13:30-13:45	13:45-14:00	14:00-14:15	14:15-14:30	14:30-14:45
1 Alpha	DS1 012 1	Line Rx CV	.	.	.	.	760	.	.
1 Alpha	DS1 012 1	Line Rx ES	900	900	900	900	760	.	.
1 Alpha	DS1 012 1	Line Rx SES	900	900	900	900	.	.	.
1 Alpha	DS1 012 1	Path Rx CV	.	.	.	.	.	.	.
1 Alpha	DS1 012 1	Path Rx ES	.	.	.	.	.	.	.
1 Alpha	DS1 012 1	Path Rx FC	.	.	.	.	.	.	.
1 Alpha	DS1 012 1	Path Rx SAS	.	.	.	.	.	.	.
1 Alpha	DS1 012 1	Path Rx SES	.	.	.	.	.	.	.
1 Alpha	DS1 012 1	Path Rx UAS	900	900	900	900	900	900	900
1 Alpha	DS1 012 2	Line Rx CV	.	.	.	.	.	.	.
1 Alpha	DS1 012 2	Line Rx ES	900	900	900	900	837	900	900
1 Alpha	DS1 012 2	Line Rx SES	900	900	900	900	837	900	900
1 Alpha	DS1 012 2	Path Rx CV	.	.	.	.	.	.	.
1 Alpha	DS1 012 2	Path Rx ES	.	.	.	.	.	.	.
1 Alpha	DS1 012 2	Path Rx FC	.	.	.	.	.	.	.

List Options

Replace list with requested statistics
 Add requested statistics to list

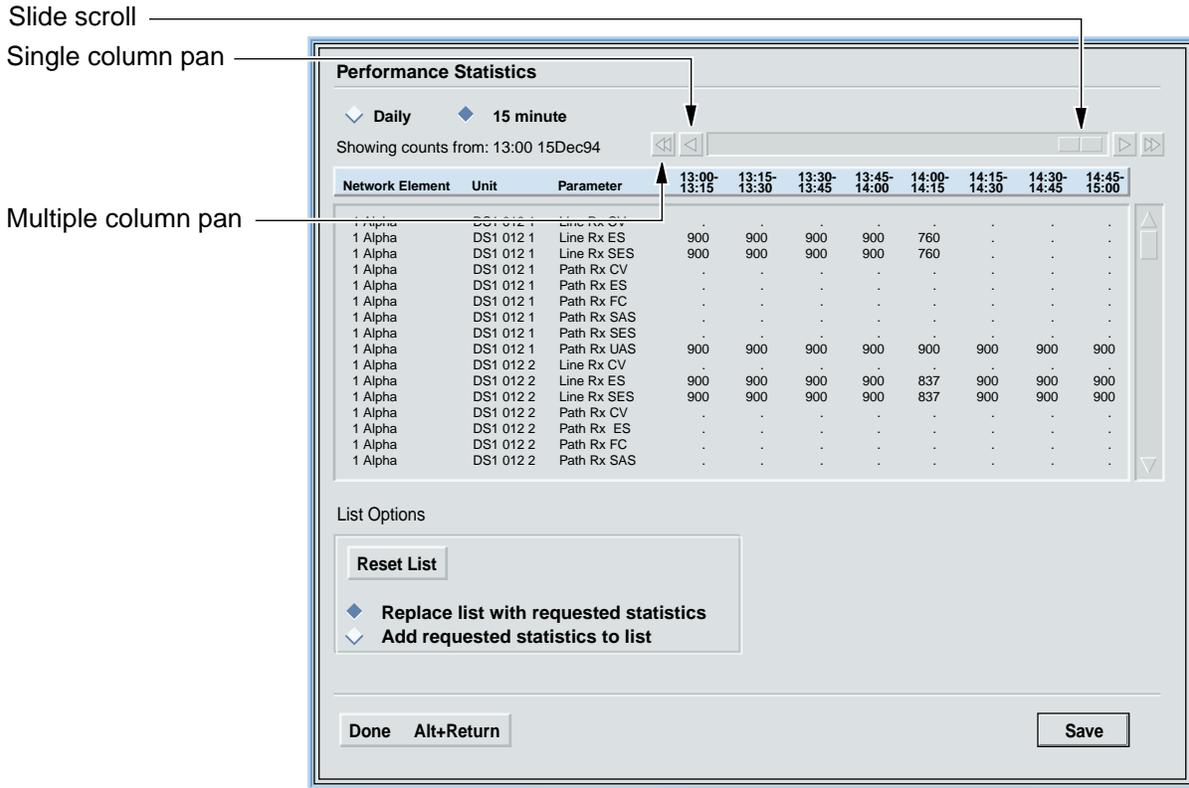
Use the scroll bars as described below.

If you want to	Then
scroll one line at a time	click the arrow at the end of the scroll bar that represents the direction of the next line you want to display.
scroll one view at a time	click the jump-scroll area corresponding to the direction you would want to scroll
quickly scroll information	drag the view bar in the desired direction

You can remove the scroll bars from a window by enlarging the window. The scroll bars disappear if the new window size is large enough to accommodate all the information. Scroll bars cannot be removed from a scrolling list.

Using sliders and pan control buttons

List sliders and pan control buttons, as shown in the following illustration, appear in horizontal lists containing large amounts of information. The slider and pan buttons enable you to navigate through the list.



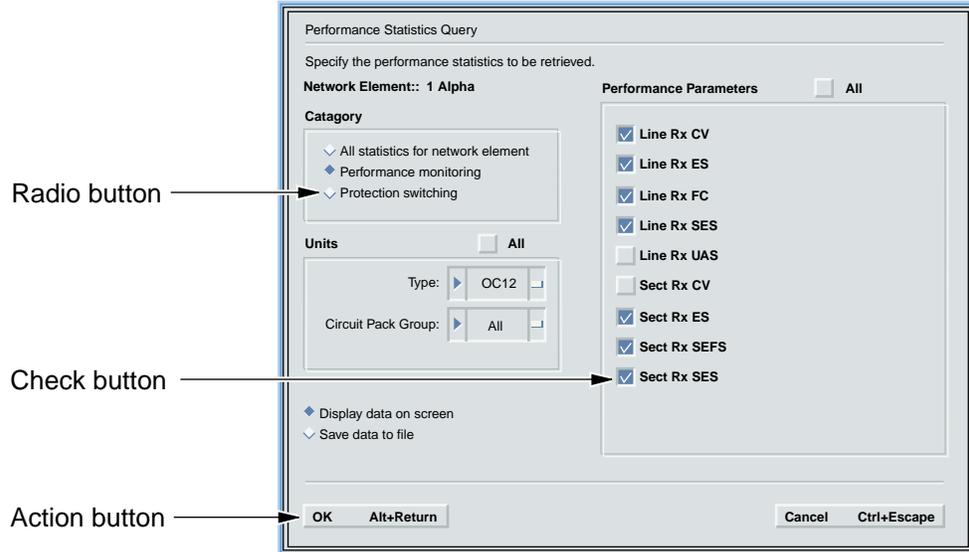
The slider spans the top of the list. The length of the slider represents the entire contents of the list. A field beside the slider serves as a reference point, and identifies which portion of the list is currently displayed. As you drag the slider with the left mouse button, the reference field changes according to the position of the slider and identifies the new portion of information displayed.

There are two pan buttons at each end of the slider: a single column pan button, and a multiple column pan button. When you select the single column pan button (single arrow), the list scrolls one column in the direction indicated by the arrow.

When you select the multiple column pan button (double-arrow), the list scrolls n-1 columns in the direction indicated by the arrow, where n is the number of columns currently on the display. One column of the previous information is retained to provide context. For example, if 8 columns are currently displayed and the multiple column pan button is selected, 7 new columns of information are displayed.

Selecting buttons

All dialogs provide buttons that allow you to interact with S/DMS Network Manager. There are three types of buttons: radio buttons, check buttons, and action buttons. (See the following illustration.)



Radio buttons appear beside each entry in a list of options, and allow you to select the desired option. Only one radio button can be selected at a time.

Check buttons allow you to select specific items or options. The item or option is enabled when a check mark appears inside a check button. When no check mark appears inside a check button, the item or option is disabled.

Action buttons allow you to invoke the action identified on the button. Every dialog has at least one action button. If a button does not apply to the present operation, it is disabled.

To select a button, move the pointer over the button and click Select.

Accessing help

S/DMS Network Manager has an online help system. The help system contains a textual description for every user selectable item in the S/DMS Network Manager windows and dialogs.

The S/DMS Network Manager Help system is context sensitive. The system presents help information only for the specific item selected.

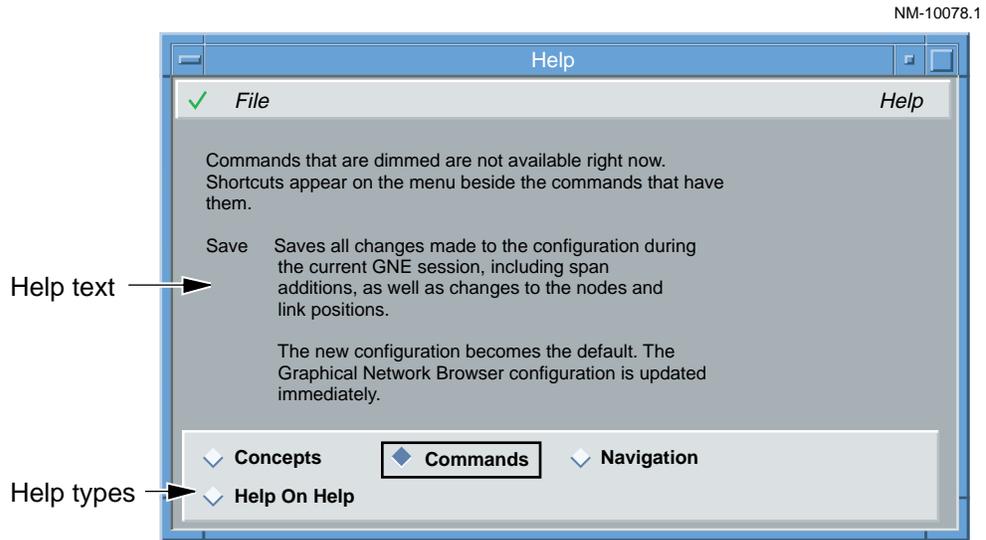
You can access help for any item in an S/DMS Network Manager window, dialog, menu, object, command, button, and field.

To access help for an item:

- 1 Move the pointer over any user-selectable item for which you want help.
- 2 Click the Menu button. A menu appears on the selected item. In some cases, only a Help command appears in the menu.

3 Select the Help command from the menu.

Once you select the Help command, a separate window opens in the workspace, as shown in the following illustration. The window contains the help text for the item selected.



Concept help for the selected item appears in the Help window as soon as it opens. Concept help gives you a general explanation of the item that you selected.

In addition to Concepts help, Navigation and Help On Help are always provided. Navigation help describes how to move around in the graphical environment. Help On Help describes the help system.

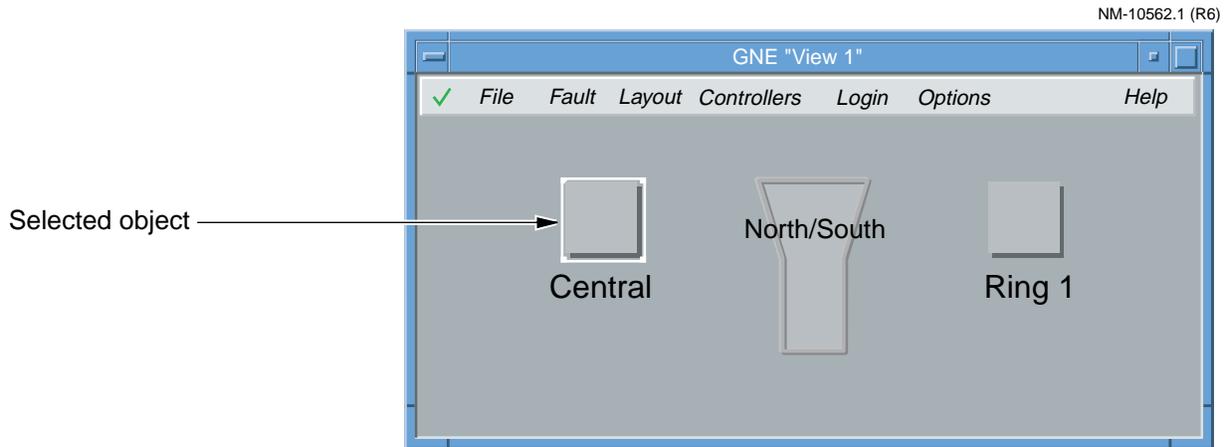
Other types of help may be available, depending on the item selected. Other types of help are represented by buttons at the bottom of the help window.

To see one of the other types of help, point to the desired help type, and press the Select button.

To close the Help window, select the Close command from the File menu in the Help window.

Selecting an object

Objects are graphical representations of the groups and network elements monitored by your S/DMS Network Manager. To select an object, move the pointer over the object and click the Select button. A border appears around the object, as shown in the following illustration.



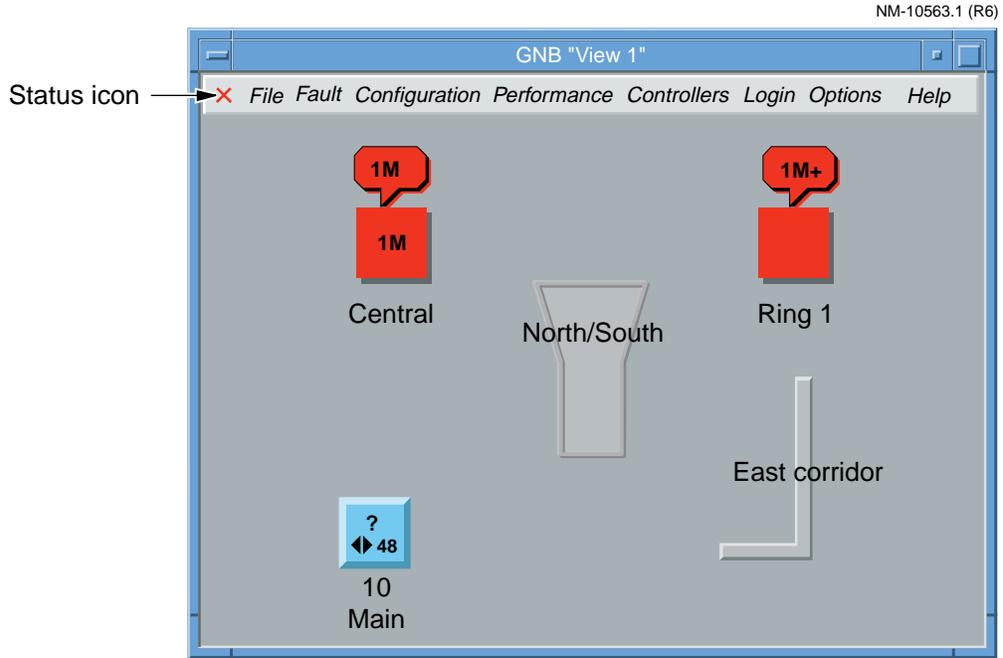
Moving an object

If using GNE, you can move groups and network elements around the window. To move an object, place the pointer over the desired object and drag it to where you want it to appear. While dragging the object, the pointer changes shape to indicate the move operation.

When you are satisfied with the new location for the object, release the mouse button. The object appears in its new location.

Status icon

S/DMS Network Manager identifies operating errors through a Status icon. The Status icon appears in the network window menu bars of each tool, as shown in the following illustration.



The status icon indicates the state of the controllers monitored by S/DMS Network Manager. The status icon can be one of the following:

- ✓ A green check mark indicates that all controllers monitored by S/DMS Network Manager are operating normally.
- ▼ An inverted yellow triangle indicates that alarm reporting has been suspended on at least one controller monitored by S/DMS Network Manager. All other controllers are operating normally.
- ✗ A red X indicates that at least one controller monitored by S/DMS Network Manager is in the abnormal state.

For further information, see “Identifying problems” in *S/DMS Network Manager Fault Management*, 323-4001-055.

Ending your session

After you finish exploring the S/DMS Network Manager user interface, select the Exit command from the network window File menu.

If using GNE, a dialog may appear on the screen which prompts you to save or discard the changes you made to the configuration. Select the **Exit, don't save** button from this dialog.

Once you select the **Exit, don't save** button, any open subnetwork windows or dialogs close, and the S/DMS Network Manager session terminates.

List of terms

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

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

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

OC-3	optical signal carrier level 3 (at 155.520 Mb/s)
OC-12	optical signal carrier level 12 (at 622.080 Mb/s)
OC-48	optical signal carrier 48 (at 2488 Mb/s)
OC-192	optical signal carrier 192 (at 9953.280 Mb/s)
OPC	operations controller
OSI	Open Systems Interconnect
PEC	product engineering code
PM	performance monitoring
SAM	System Administration Manager
S/DMS	Synchronous/Digital Multiplexing System
SOC	span of control
SONET	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).
span	all network elements under the control of a single operations controller (OPC)
STS-1	Synchronous Transport Signal (at 51.84 Mb/s)

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

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S/DMS Network Manager

Introduction

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