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SONET Transmission Products

S/DMS Network Manager
Fault Management

NORTEL
NORTHERN TELECOM

Record of NTP Update package(s)

Network Manager Rel 6 Issue 01, April 1997

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

- OC-3 Express support

Record of changed pages

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

NTP Update Network Manager Rel 6 Issue 01

NTP number	Pages modified	Pages added	Pages reissued (no changes)
323-4001-102	1-1, 1-5, 1-33, 1-49, 1-51	1-37.1, 1-37.2	1-2, 1-6, 1-34, 1-37, 1-38 1-50, 1-52
323-4001-053	Replace entire book		
323-4001-055	2-19		2-20
323-4001-059	1-7 2-1, 2-5		1-8 2-2, 2-6

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S/DMS Network Manager
Fault Management

Document number: 323-4001-055
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Publication history

November 1996

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

January 1996

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

April 1995

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

September 1994

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

January 1994

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

April 1993

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

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About this guide

This book describes network surveillance using S/DMS Network Manager Release 6 software.

Who should read this book

This book is intended for people who must monitor S/DMS Network Manager for alarms.

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 bootstraping an operations controller (OPC), setting up serial ports for external device access, and customizing the S/DMS Network Manager user environment.

- *Connectivity* (323-4001-053) provides information on logging in and out of S/DMS Network Manager, controllers (OPC and TL1 MOA), network element user interfaces, and external devices.

- *Configuration* (323-4001-054) describes the Graphical Network Editor (GNE) tool of S/DMS Network Manager. The GNE is used to configure a network.

- *Fault Management* (323-4001-055) describes the Graphical Network Browser (GNB) tool of S/DMS Network Manager. The GNB is used for network surveillance.

- *Performance Management* (323-4001-056) describes centralized performance monitoring for the network elements monitored by S/DMS Network Manager.

- *Connection Management* (323-4001-057) describes viewing, provisioning, and editing connections on ring and linear systems.

- *Inventory Management* (323-4001-058) describes taking an inventory of remote network elements monitored by S/DMS Network Manager.

- *Software Management* (323-4001-059) describes controller and network element centralized software management.

Systems supported in this book

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

How commands, parameters, and responses are represented

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

System prompts and responses

System prompts and responses are printed as follows:

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

Command strings

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

this is what you type ↵

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

Variable parameters are enclosed in angle brackets, as follows:

Install the software in directory <directory name>

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

where

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

On-screen buttons and menu commands

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

select the **Controller Status** command

Hardkeys

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

press Return

Results of an action and comments

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

The Controller Status dialog appears.

Screen illustrations

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

References in this book

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

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

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

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

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

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

Technical support and information

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

United States regional service centers

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

For 24 hour emergency technical support
For assistance restoring service on equipment which has been carrying traffic and is out-of-service, call the following toll-free number:

<center>

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

</center>

For technical support from 8 a.m. to 10 p.m.
Call the following toll-free number:

<center>

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

</center>

Southern Region Northern Telecom Inc. 5555 Winward Parkway, Suite B, Alpharetta, Georgia 30201-3895 (404) 661-4000	**Northeast Region** Northern Telecom Inc. 200 Summit Lake Drive Valhalla, New York 10595 (914) 773-2559
Central Region Northern Telecom Inc. 475 Martingale Road Schaumburg, Illinois 60173 (708) 706-8000 or 8389	**Western Region** Northern Telecom Inc. 5575 DTC Parkway, Suite 150 Englewood, Colorado 80111 (303) 850-5600
Pacific Region (North) Northern Telecom Inc. 2305 Camino Ramon San Ramon, California 94583 (510) 867-2000	**Southwest Region** Northern Telecom Inc. 2221 Lakeside Blvd., FL 9 Richardson, Texas 75082-4399 (214) 684-4195 or 1000
Pacific Region (South) Northern Telecom Inc. 300 North Lake Avenue Pasadena, California 91101 (818) 584-2000	**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** **(British Columbia, Yukon, and Northwest Territories)** Northern Telecom Canada Limited #410, 13251 Delf Place Richmond, British Columbia V6V 2A2 (604) 279-2258
FSE West **(Manitoba, North-Western Ontario)** Northern Telecom Canada Limited 180, 117 King Edward Street E. Winnipeg, Manitoba R3H 0Y3 (204) 788-7531	**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
Ontario Northern Telecom Canada Limited PO Box 3000 Brampton, Ontario L6V 2M6 (905) 452-2104	**Quebec** Northern Telecom Canada Limited PO Box 2110 St. Laurent, Quebec H4L 4Y7 (514) 744-8750
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 (New Brunswick)** Northern Telecom Canada Limited 1 Brunswick Square, 4th Floor Saint John, New Brunswick E2L 4K2 (506) 632-8271 or (506) 632-8203
FSE East **(Nova Scotia, Prince Edward Island)** Northern Telecom Canada Limited 1701 Hollis St., Suite 900 Halifax, Nova Scotia B3J 3M8 (902) 421-2301	

Understanding GNB

This chapter describes the Graphical Network Browser (GNB). GNB is a network surveillance and software management tool used to perform the following tasks:

- monitor and investigate the alarms raised within the network
- log in to the network elements and controllers monitored by S/DMS Network Manager
- perform software management tasks from a centralized location
- view TA-1230 ring traffic and protection status
- display performance statistics for the network elements monitored by S/DMS Network Manager
- provision, deprovision, view, and edit unidirectional and bidirectional connections on ring and linear systems
- view a list of connections associated with a network element, ring, or link
- obtain an inventory of the network elements, and display a graphical representation of the common equipment shelf in a network element

GNB displays the network as a series of connected graphical nodes. These nodes provide a visual representation of the network, and the alarm conditions within the network.

The nodes are linked together to represent the connectivity of the network. The layout and interconnection of the nodes is defined by the Graphical Network Editor (GNE).

GNB provides two separate types of windows to monitor the network: a network window and a subnetwork window.

The network window provides a consolidated, graphical view of the entire network monitored by S/DMS Network Manager. Typically, the network is displayed as a series of connected graphical nodes. These nodes represent groups of network elements or individual network elements

The subnetwork window contains the groups and network elements that comprise the parent group. Groups can be nested within other groups, enabling you to design a network composed of several levels of detail.

The icons used to represent network elements in the GNB are available in small, large, and variable size designations. Variable-sized nodes allow you to tailor the appearance and behavior of the network element icons. This feature permits you to display more network elements in the display window.

Links can be used to represent the interconnections between individual network elements and groups of network elements in the system that S/DMS Network Manager is monitoring. Links can connect groups or network elements within a single window or different windows. You cannot link groups to network elements.

If your S/DMS Network Manager monitors a system that contains a TA-1230 ring, the links used to connect the network elements or groups in the ring are given a special graphical treatment. These links help to distinguish ring configurations from linear configurations. Unique colors and line patterns are applied to the ring links to identify the protection status of the ring, and assist you in monitoring the traffic within the ring.

When a network element raises an alarm, S/DMS Network Manager displays the alarm information. GNB provides a visual indication of the alarm by applying color and an alarm balloon to the node that represents the network element. A color is used for each alarm severity. If the network elements are part of a group of network elements, the group also appears in color.

GNB provides you with detailed information about the alarms so you can analyze the problem and take the action required to solve the problem. An Alarms dialog describes the alarm condition, the equipment affected by the alarm, and the location of the equipment. An optional alarm banner summarizes the active alarms in the network. The alarm banner identifies the total number of each severity of alarm.

The performance monitoring capabilities of S/DMS Network Manager provide a means of detecting service degradations before a failure occurs, allowing preemptive action to be taken. On demand, S/DMS Network Manager retrieves performance and protection switching data from the controllers it monitors. This data is used by GNB to identify the network elements with service degradations, and allows you to review the performance of a network element over a period of time. For more information, see "Understanding performance management" in *S/DMS Network Manager Performance Management*, 323-4001-056.

GNB can also be used to retrieve and display inventory information and a graphical view of a shelf in a remotely located network element. This capability can help you plan and forecast activities by providing an accurate view of equipment provisioned in the network. Remote inventory can also help you verify hardware baseline compatibility before undertaking an upgrade of your system. For more information, see "Understanding remote inventory" in *S/DMS Network Manager Inventory Management*, 323-4001-058.

You can also use GNB to perform software management tasks. If your access privileges allow it, you can select and schedule the delivery of a software load to any controller in the network monitored by S/DMS Network Manager. This feature is described in "Understanding centralized software management" in *S/DMS Network Manager Software Management*, 323-4001-059.

The Connection Manager window enables you to provision, deprovision, view, and edit unidirectional and bidirectional connections on ring (BLSR) and linear systems.The window also provides you with the ability to view a list of connections associated with a network element, ring, or link. For more information, see "Understanding connection management and service assurance" in *S/DMS Network Manager Connection Management*, 323-4001-057.

GNB allows you to log in to the network element or the controller of the network element. (Controllers supported include Northern Telecom OPCs and TL1 MOA.) Once logged in to a controller or network element, you can use the tools available on that platform to investigate an alarm or perform other operations, administration, maintenance, and provisioning (OAM&P) functions. If an external device is connected to the S/DMS Network Manager, you can also use GNB to access the user interface of that device. For more information, see "Logging in to user interfaces" in *S/DMS Network Manager Connectivity*, 323-4001-053.

Procedures that describe how to use GNB to monitor the network are located in "Monitoring a network" on page 2-1 and "Trouble clearing" on page 3-1. Other procedures involving the GNB are located in the following chapters:

- "Accessing the network" in *S/DMS Network Manager Connectivity*, 323-4001-053.

- "Monitoring performance" in *S/DMS Network Manager Performance Management*, 323-4001-056

- "Provisioning and editing STS and VT connections" in *S/DMS Network Manager Connection Management*, 323-4001-057

- "Taking a remote inventory" in *S/DMS Network Manager Inventory Management*, 323-4001-058

- "Managing software deliveries" in *S/DMS Network Manager Software Management*, 323-4001-059

GNB network window

The network window appears when you first open GNB. This window displays nodes that represent the groups and individual network elements that S/DMS Network Manager currently monitors for alarms. (See the following illustration.)
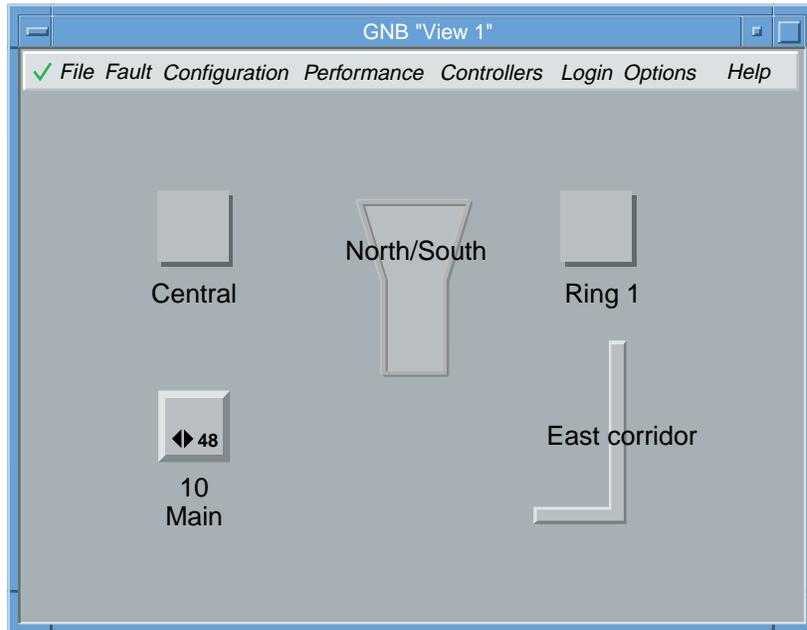
NM-10575.1 (R6)

When a change in alarms occurs, the node affected by the alarm is highlighted, and an alarm balloon appears above the node to indicate the quantity and severity of the alarm.

In addition to monitoring network level alarms, the GNB network window enables you to:

• display the details of an alarm

• monitor the network for performance threshold crossings

• view performance and protection switching statistics

• monitor the status of the high-speed traffic in a TA-1230 ring (if the system you are monitoring has one)

• display an inventory of the equipment in a network element

• log in to the controller or user interface of a network element

• review the status of the alarm collection process

• remove alarm highlighting

• perform centralized software management functions

- provision, deprovision, view, and edit connections on ring and linear systems

The network window consists of a status icon, menu bar, groups, and network elements. The network window can also contain alarm balloons and threshold crossing indicators. Each component of the network window is described in the following sections.

Status icon

The status icon is located at the left of the menu bar in the network window. (See the following illustration.)

NM-10576.1 (R6)
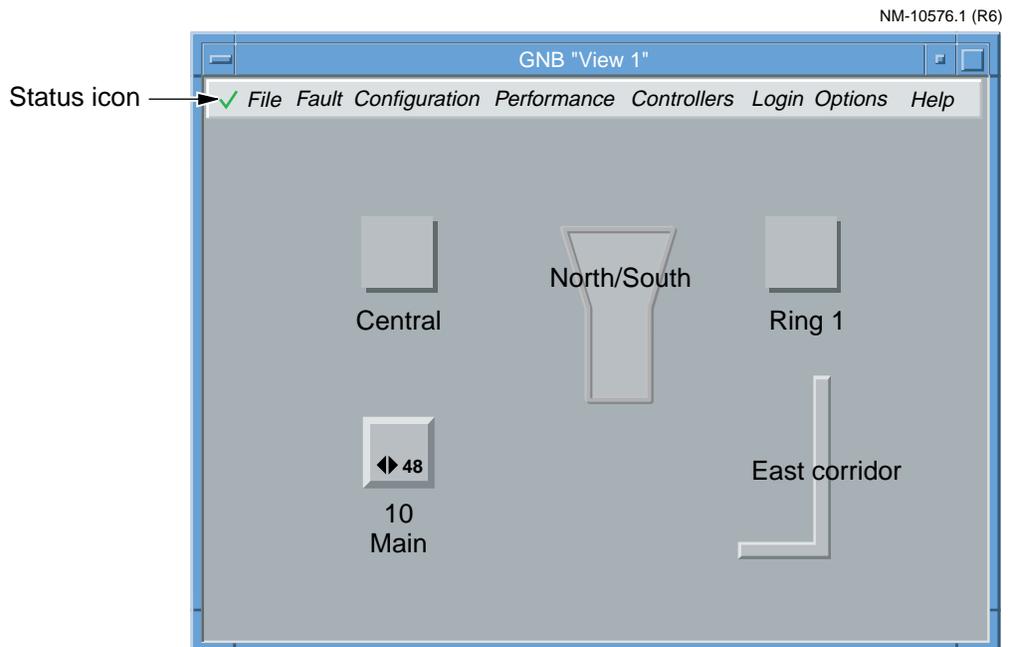
The status icon indicates the state of the controllers monitored by S/DMS Network Manager. The status icon can be one of the following:

✓   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 or network element monitored by S/DMS Network Manager. All other controllers and network elements are operating normally.

✕   A red X indicates that at least one controller monitored by S/DMS Network Manager is in the abnormal state.

GNB subnetwork window

The GNB subnetwork window displays groups and network elements currently monitored for alarms by S/DMS Network Manager.
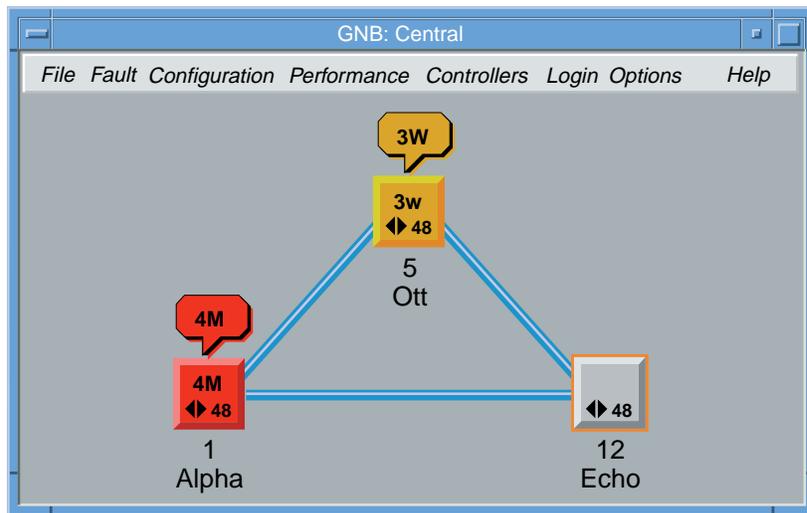
NM-10577.1 (R6)

The name of the parent group that the network elements and groups are associated with is shown in the window title bar.

When a change in the alarms occurs, the node affected by the alarm is highlighted, and an alarm balloon appears above the node to indicate the quantity and severity of the alarm.

The subnetwork window allows you to display details about the alarms, and to log in to a network element or controller. You can also review the status of the alarm collection process, and remove the alarm highlighting.

In some cases, link connections appear between network elements or groups. (Links cannot appear between groups and network elements.) These links represent the connectivity of the network elements and groups in the system. The links can connect network elements and groups located within the same window, or different windows.

In addition to monitoring subnetwork level alarms, you can also use the subnetwork window to:

- display the details of an alarm
- monitor threshold crossings and performance statistics
- monitor the status of high-speed traffic in a TA-1230 ring (if the system you are monitoring has one)
- display an inventory of the cards in a network element
- provision, deprovision, view, and edit connections on ring and linear systems
- view a list of connections associated with an object
- log in to the controller or user interface of a network element

GNB window menus

The menus and associated commands presented in the GNB network and subnetwork windows are almost identical. In some cases, commands are disabled (grayed out). There are two reasons for this: the command is not applicable to the current action, or the feature invoked by the command cannot be executed because the controller does not run a version of software that supports the feature. For more information, see "Software release compatibility" in *S/DMS Network Manager Introduction*, 323-4001-102.

Menu bar

The menu bar is located above the display area of the network and subnetwork window. The menu bar contains a status icon and a menu bar. The following menus are available: File, Fault, Configuration, Performance, Controllers, Login, Options, and Help. (See the following illustration.)

NM-10578.1 (R6)
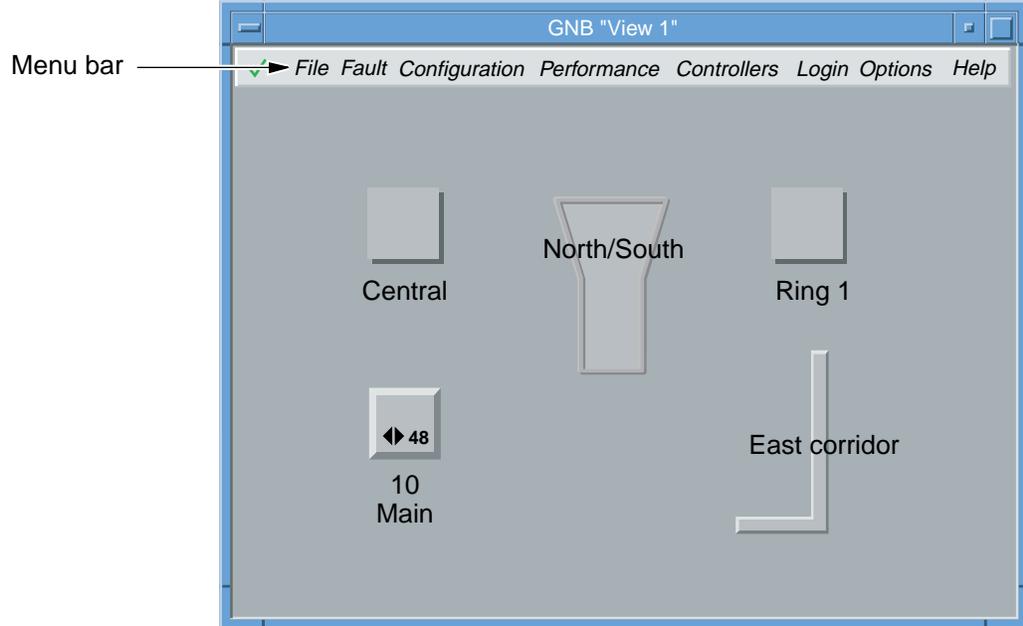
The commands available through the GNB menu bar provide access to all functions of the S/DMS Network Manager software. The commands available through object menus, key combinations, and other techniques are shortcuts for the functions provided by the menu bar commands.

File menu

The File menu enables you to open a subnetwork window for a group, display annotations for an object, switch the network view, and exit the GNB.

Fault menu

The Fault menu enables you to show new and existing alarms for network elements or groups, and acknowledge new alarms for network elements or groups. The menu can also be used to show cleared alarms for network elements.

Configuration menu

The Configuration menu enables you to obtain an inventory and a graphical display of connections and equipment associated with a network element, link, or the entire system. You can also use this menu to retrieve a graphical view of the equipment layout and inventory of a network element, retrieve inventory information for a network element, and deliver software releases to controllers.

Note: The Show Release Manager command is disabled if you are not authorized to perform this task. For more information, see "Understanding centralized software management" in *S/DMS Network Manager Software management*, 323-4001-059.

Performance menu

The Performance menu enables you to obtain performance and protection switching statistics for a specific network element.

Controllers menu

The Controllers menu enables you to obtain the current status of the S/DMS Network Manager alarm collection process. You can also obtain information on each of the controllers monitored by S/DMS Network Manager.

Login menu

The Login menu enables you to log in to a network element, or the network element controller. You can access the network element or controller through manual login dialogs, or through an automated process if the network element or controller recognizes your S/DMS Network Manager userID.

You can also use the Login menu to initiate a VT100 terminal emulation session on an external device, if available.

Options menu

The Options menu enables you to control the format of the information displayed in the network and subnetwork window and to set the default preferences used to display and indicate alarms. A check mark beside a command indicates that the command is active.

> *Note:* Ensure the audio is properly adjusted on your workstation. For more information, see the *HP Visual User Environment User's Guide*.

Help menu

The Help menu enables you to obtain background information on GNB. You can also access an on-line legend that contains examples of the graphical elements used by S/DMS Network Manager to represent your network. The legend also shows how the graphical elements are used to indicate various conditions in your network.

GNB also provides context-sensitive help that displays a detailed explanation of the item selected from the GNB screen. Context sensitive help is available for menus, commands, windows, and dialogs. The help consists of a general description of the item, followed by a more detailed description for selectable components, if any.

GNB groups

Groups represent a collection of network elements and other groups in a system. Groups can be nested within other groups, enabling you to design a network composed of several levels of detail.

When a GNE user adds a span of network elements to the network display, all network elements in the span are placed in the same location. The GNE user can then transfer each network element to any group or window to create the desired network configuration.

Groups are used for display purposes only. The components within a group are not necessarily all part of the same span of control.

You can display the network elements and subgroups associated with a group by double-clicking on the group, or by selecting the Open command from the File or group object menu.

There are three group shapes: rectangle, polygon, and multipoint line. (See the following illustration.)
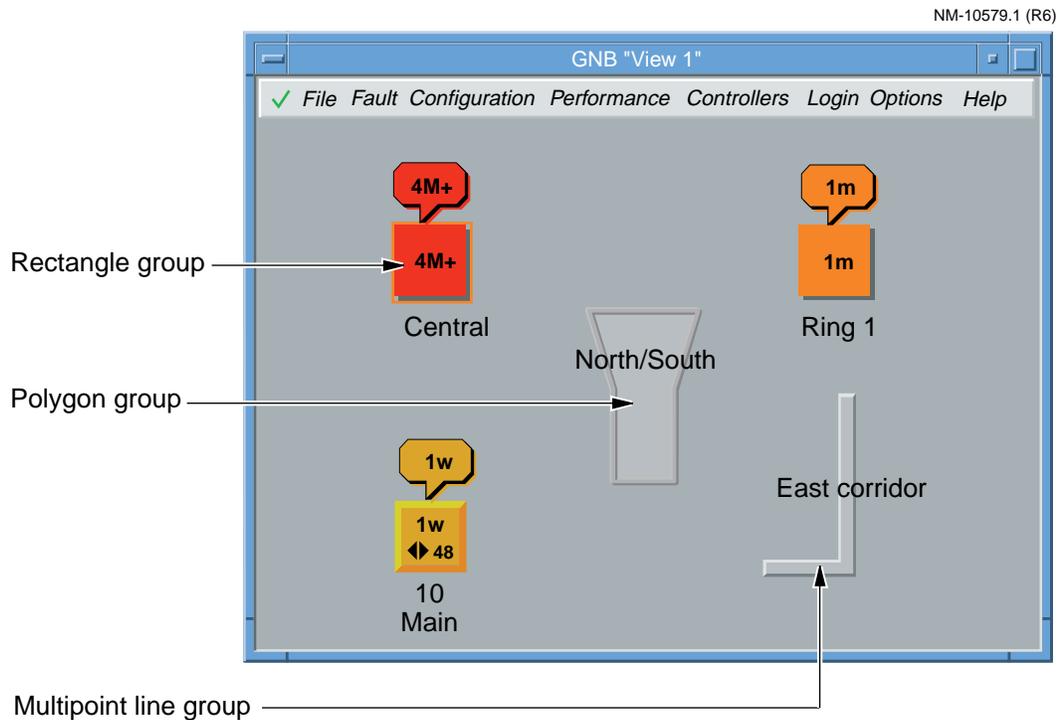
Other display attributes of a group are the name, fill pattern, and color.

Note: Fill patterns cannot be defined for multipoint line groups.

Fill patterns are translucent and do not interfere with the display of objects in the underlying network. The colors available for displaying groups are a set of pastel shades that do not interfere with the colors used to show alarm states. (For more information on group alarms, see "Group alarm severity colors" on page 1-11.) All attributes, including the group shape, are defined using the Group Display Attributes dialog in the GNE.

Each group has an object menu that enables you to open a subnetwork window for the group, and show alarms and textual annotations for the group.

Group alarm severity colors

When an alarm condition occurs on a node contained in a group, color highlighting and an alarm balloon is applied to the node and parent group (if any). The color of the highlighting and alarm balloon is determined by the highest severity alarm. The following colors indicate the highest severity alarm on the network elements or subgroup in the group:

Color		Indicates
red		critical or major alarms have been raised by the network elements or subgroups associated with the group
orange		minor alarms have been raised by the network elements or subgroups associated with the group
yellow		warnings have been raised by the network elements or subgroups associated with the group
blue		alarm counts for the network elements or subgroups associated with the group are not reliable
gray		there are no alarms on any network elements or subgroups associated with the group
color outline		the alarms on the network elements or subgroups within the group have been acknowledged. The outline acts as a reminder that alarms have not yet been cleared. The color of the outline represents the highest severity alarm.

For example, a rectangle group labelled "Central" contains three network elements, 1 Alpha, 5 Ott, and 12 Echo. If 1 Alpha raises four major alarms and 5 Ott raises three warnings, the Central group is highlighted in red and an alarm balloon is attached to the group. Also, the following alarm-related information appears inside the group and alarm balloon: the number 4, the letter M, and a plus sign. (See the following illustration.)

Because a major alarm is a higher severity than a warning, the red color highlighting applied to the Central group does not change when subsequent alarms of a lower severity are raised by the other network elements or subgroups within the group. To indicate that alarms with a lower severity exist, a plus sign (+) is added to the alarm count inside the group.

Group notations

In addition to the color highlighting applied to the group, the following notations can appear inside the group to indicate the quantity and severity of alarms within the group.

Notation	Indicates
number	This number gives the quantity of the highest severity alarms raised by the network elements or subgroups within the group.
C	A critical alarm is the most severe alarm raised by all network elements or subgroups in the group.
M	A major alarm is the most severe alarm raised by all network elements or subgroups in the group.
m	A minor alarm is the most severe alarm raised by all network elements or subgroups in the group.
w	A warning is the most severe alarm raised by all network elements or subgroups in the group.
+ (plus sign)	Alarms with a severity lower than that indicated by the color of the group, and the letter inside the group, have been raised by one or more network elements or subgroups within the group.

The alarm notations represent the total number of active alarms raised by the network element or subgroup. Active alarms include new alarms and alarms already acknowledged with GNB.

The notation remains inside the group until all alarms are cleared from all network elements or subgroups within the group. You must log in to the network element to clear an alarm.

If S/DMS Network Manager cannot obtain alarm counts from a network element within a group, the alarm count information for that network element is removed from the group display. Also, a special notation appears inside the group. The following notations indicate the reason for unreliable alarm counts.

Notation	Indicates
?	The alarm counts for the group are not reliable because there is a communication problem somewhere between S/DMS Network Manager and a network element within the group.
	For example, if association between a controller and a network element in the group has been lost, or the S/DMS Network Manager alarm collection process has been shut down, S/DMS Network Manager cannot obtain alarm counts from the controller.
	The ? appears when the alarm counts are not reliable because S/DMS Network Manager cannot obtain the alarm counts from the controller.
NR	S/DMS Network Manager is not reporting alarms for some of the network elements in this group. This condition exists because alarm reporting for at least one controller or network element associated with the group has been suspended. Suspending and resuming alarms for controllers and network elements is performed in the Graphical Network Editor (GNE).
	Even though the alarm reporting has been suspended, S/DMS Network Manager continues to collect alarms from the network elements. When alarm reporting resumes, all alarms raised by the network elements in that span appear on GNB.

Group alarm balloons and threshold crossing indicators

A group alarm balloon indicates that new, unacknowledged alarms have been raised by a network element or subgroup associated with the group. The quantity and severity of the new alarms is indicated by the color of the balloon and the notation inside the balloon. For more information, see "Alarm balloons" on page 1-20.

If an alarm is the result of a threshold crossing, a threshold crossing indicator appears on the upper-left corner of the group.

The threshold crossing indicator shows that at least one alarm in the group was raised when a predefined performance threshold was exceeded on a network element or subgroup associated with the group. The threshold crossing indicator warns you of potential service degradations before a failure occurs. For more information on the threshold crossing indicator, see "Threshold crossing indicator" on page 1-23.

Group alarm investigation

To determine which network element or subgroup in the group raised the alarm, open the subnetwork window associated with the group. To display the subnetwork window for the group, select the Open command from the group menu, or double-click on the group. The subnetwork window shows the network elements and subgroups associated with the group. The network elements or subgroups that raised the alarms are highlighted in color.

After you review the alarms, select the Acknowledge Alarms <group> command from the group object menu. This action removes the alarm highlight from the group and makes it easier to tell when new alarms arrive. When you select the Acknowledge Alarms <group> command, all GNB displays are updated so that all GNB users are aware that the alarms for the group have been acknowledged.

Network elements

Network elements represent the individual elements in the system monitored by S/DMS Network Manager. Network elements can appear in a network or subnetwork window, and can be linked to other network elements in any group.

Commands in the network element object menu enable you to log in to the network element or the controller of the network element. The network element object menu also has commands that enable you to display connections, a graphical equipment inventory, textual annotations, and alarms for a network element.

Network element size

S/DMS Network Manager uses three size designations to represent network elements. The size designations available are small, large, and variable. Network elements defined as variable can resize on demand, or in response to new alarms on the network. When a variable network element resizes, the icon changes from small to large. The large icon displays more information about that particular network element on the face of the icon.

A variable network element resizes from a large to a small display size when the alarms are acknowledged or cleared.

The following illustration shows a small and large network element.

NM-10569.1 (R6)
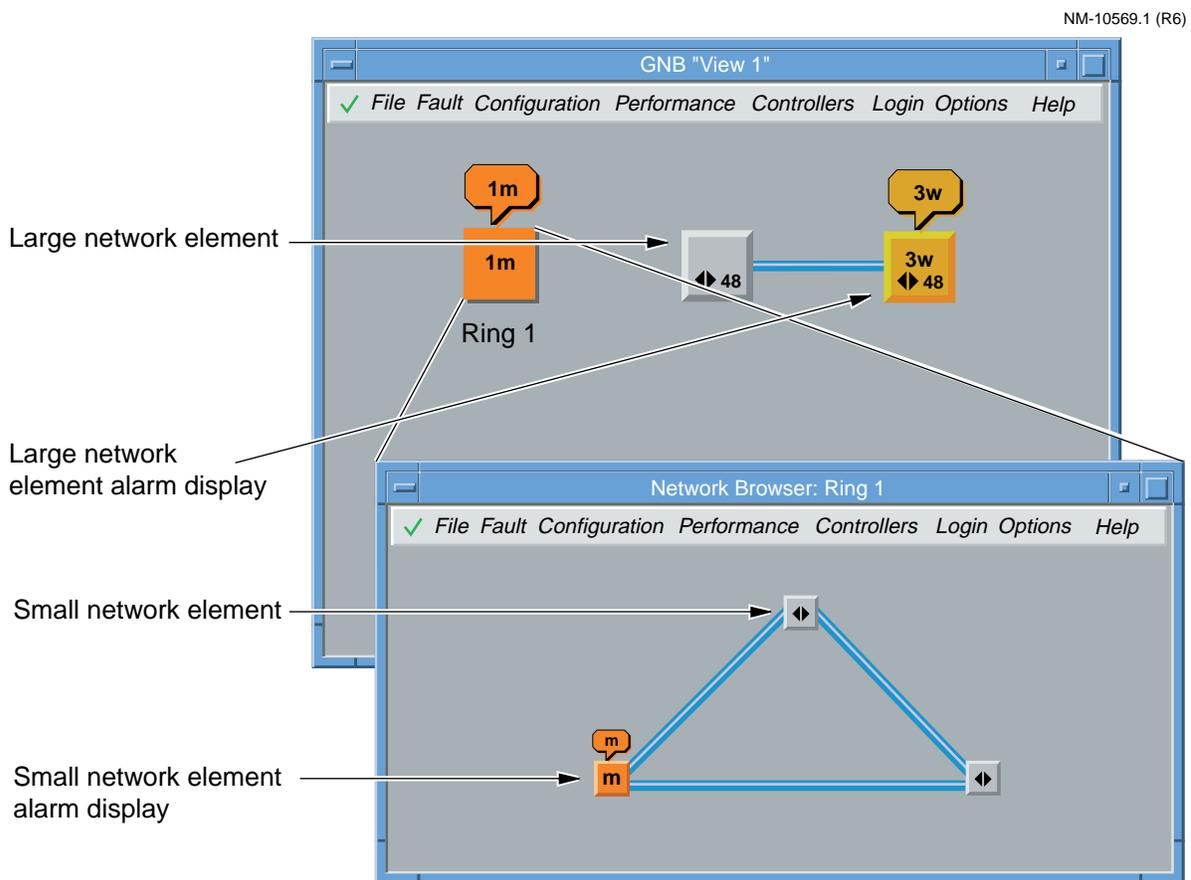
The size designation of a network element is controlled through the Preferences dialog.

Network element names and numbers

Network elements are identified by a name and number that appears directly below the node. You can change the network element name but not the number using S/DMS Network Manager. The network element number is assigned in the system. Also, you can select the size of the font used to display the network element name and number. The available sizes are small, variable, and large.

> *Note:* If you are using a dark background color to display your network, it can be difficult to read the network element name and number. Use the default background color (grey) for best visibility. This feature is controlled using the NE Names Background command in the Preferences dialog.

The display of network element names and numbers are controlled through commands in the Options menu or the Preferences dialog. If you use the Options menu, the display preferences are applied to the active window. If you use the Preferences dialog, the display preferences are applied throughout all GNB windows.

Network element graphics and labels

Information about network elements is displayed on the face of the icon. The information displayed on the icon depends on the size designation of the network element. Small network elements display a graphic that identifies the node type. Large network elements display a graphic that identifies the node type and a label that identifies the product type. The information displayed by variable network elements changes accordingly with the size designation of the network element.

> *Note:* The node type graphic on a small network element is replaced by a letter indicating the highest severity active alarm that is affecting the network element.

Node type graphics used by S/DMS Network Manager are shown in the following illustration.

NM-10643.1 (R6)

◀▶ S/DMS TransportNode ADM

◇ S/DMS TransportNode Regenerator

◆ S/DMS TransportNode LTE

▤ S/DMS AccessNode FCOT

� S/DMS AccessNode RFT

◈ DV45 Video Codec

⊠ Tellabs Titan 5500 DCS

Network element alarms

When a network element raises an alarm, the node representing that network element is highlighted in color and an alarm balloon appears above the network element. The color of the highlighting and alarm balloon is determined by the highest severity alarm.

Alarm severity colors
The following colors indicate the highest severity alarm on the network element:

Color		Indicates
red		critical or major alarms have been raised by the network element
orange		minor alarms have been raised by the network element
yellow		warnings have been raised by the network element
blue		alarm counts for the network element are not reliable
gray		there are no alarms on the network element
color outline		the alarms on the network element have been acknowledged, but not yet cleared at the network element. The outline acts as a reminder that alarms have not yet been cleared. The color of the outline represents the highest severity alarm.

For example, if a network element raises four major alarms and other alarms of lower severity, the network element is highlighted in red and an alarm balloon is attached to the network element. Also, the following alarm-related information appears inside the network element and the alarm balloon: the number 4, the letter M, and a plus sign. (See the following illustration.)

Network element notations

In addition to highlighting the network element in color when an alarm occurs, the following notations can appear inside the network elements to indicate the quantity and severity of the alarms.

Notation	Indicates
number	This number gives the quantity of the highest severity alarm raised by the network element.
C	A critical alarm is the most severe alarm raised by the network element.
M	A major alarm is the most severe alarm raised by the network element.
m	A minor alarm is the most severe alarm raised by the network element.
w	A warning is the most severe alarm raised by the network element
+ (plus sign)	Alarms with a severity lower than that indicated by the color and the letter inside the network element have been raised by the network element.

The alarm notations represent the total number of active alarms raised by the network element. Active alarms include new alarms and alarms already acknowledged with GNB.

The notation remains inside the network element until the alarms are cleared from the network element. Alarms can only be cleared from the network element user interface (you must log in to the network element to clear an alarm).

If S/DMS Network Manager cannot obtain alarm counts from a network element, any existing alarm count information on the network element is replaced by a special notation. The following notations indicate the reason for the unreliable alarm counts.

Notation	Indicates
?	The network element alarm count is not reliable because a communication problem exists somewhere between S/DMS Network Manager and the network element.
	For example, if association between a controller and a network element is lost, or the S/DMS Network Manager alarm collection process has been shut down, S/DMS Network Manager cannot obtain alarm counts from the controller.
	The ? appears when the alarm counts are not reliable because S/DMS Network Manager cannot obtain the alarm counts from the controller.
NR	S/DMS Network Manager does not report alarms for the network element because alarm reporting has been suspended for the network element or the associated controller. Suspending and resuming alarms for network elements and controllers is performed in the Graphical Network Editor (GNE).
	Even though the alarm reporting has been suspended, S/DMS Network Manager continues to collect alarms from the network element. When alarm reporting resumes, all alarms raised by the network element appear on GNB

Network element alarm balloons and threshold crossing indicators

A network element alarm balloon indicates that new, unacknowledged alarms have been raised by the network element. The quantity and severity of the new alarms is indicated by the color of the balloon and the notation inside the balloon. For more information on alarm balloons, see "Alarm balloons" on page 1-20.

If an alarm is the result of a threshold crossing, a threshold crossing indicator appears on the upper-left corner of the network element.

The threshold crossing indicator shows that at least one alarm on the network element was raised when a predefined performance threshold was exceeded. The threshold crossing indicator warns you of potential service degradations before a failure occurs. For more information, see "Threshold crossing indicator" on page 1-23.

Network element alarm investigation

Commands in the Fault menu, network element object menu, and the alarm balloon menu enable you to investigate alarm conditions for a selected network element. The Show New Alarms for <ne> command displays the new alarms for the network element. The Show Alarms for <ne> command displays all active alarms for the network element. When either of these commands are selected, the Alarms dialog displays the details of the specified alarms. For more information, see "Alarms dialog" on page 1-25.

To make it easier to tell when new alarms arrive, select the Acknowledge Alarms for <ne> command from the Fault or alarm balloon menu. This action removes the alarm highlight from the network element and makes it easier to tell when new alarms arrive. When you select the Acknowledge Alarms for <ne> command, all GNB displays are updated so all GNB users are aware that the alarms for the network element have been acknowledged.

Alarm balloons

When a new alarm condition occurs, an alarm balloon appears above the affected node. (See the following illustration.)

NM-10581.1 (R6)
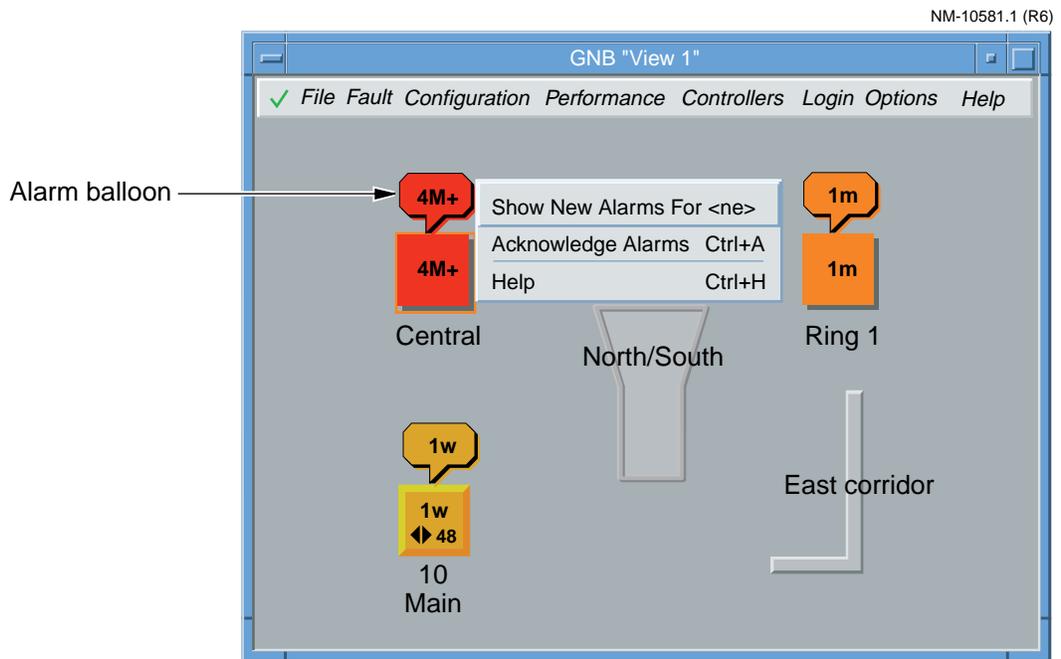
Alarm balloons can appear on groups, network elements, and objects in the Shelf View window. The alarm balloons show the severity of the new alarms using textual notations and colors. The textual notations located within the alarm balloon vary depending on the object that the balloon is attached to. The color of the alarm balloon, and the node to that it is attached to, are almost always the same color.

> *Note:* The alarm balloon associated with a group or network element experiencing a communication problem does not change to the color blue. The color of the alarm balloon remains the same as the original alarm condition.

On groups, the alarm balloons provide the total count of unacknowledged alarm conditions for all network elements associated with the group. Only the highest severity alarm conditions are shown in the alarm balloon. If there are any alarm conditions with a lower severity on the network elements associated with the group, a plus sign (+) appears inside the alarm balloon.

On network elements, the display size of the network element icon determines the amount of information displayed by the alarm balloon. Alarm balloons for small-sized icons display a letter indicating the most severe unacknowledged alarm against the network element. Alarm balloons for large icons display the alarm count and a letter indicating the highest severity alarm. A plus sign (+) appears inside the alarm balloon if any alarm conditions of a lower severity are present on the network element.

small alarm balloon

large alarm balloon

On objects in the Shelf View window, alarm balloons display a letter indicating the most severe unacknowledged alarm. Objects include circuit packs, and icons representing alarms associated with the environment, facilities, and equipment.

The alarm balloons remain on the node until you acknowledge the new alarms, or the alarms are cleared at the network element. Alarms can be cleared from the network element user interface (you must log in to the network element). For more information, see "Logging in to a network element" in *S/DMS Network Manager Connectivity*, 323-4001-202.

Alarm balloon alarm severity colors

Alarm balloons use the same color highlighting and alarm notation techniques as those used on the groups, network elements, and objects in the Shelf View window. The color of highlighting is determined by the highest severity alarm. The following colors indicate the highest severity alarm on the group, network element, or object in the Shelf View window:

Color		Indicates
red	**1M**	critical or major alarms have been raised by the network element
orange	**1m**	minor alarms have been raised by the network element
yellow	**1w**	warnings have been raised by the network element

Alarm balloon notations

In addition to the color highlight, the following notations can appear inside the alarm balloon to indicate the quantity and severity of alarms raised by the group or network element to which it attaches.

Notation	Indicates
number	This number gives the quantity of the highest severity alarms raised by the network element.
C	A critical alarm is the most severe alarm raised by the network element.
M	A major alarm is the most severe alarm raised by the network element.
m	A minor alarm is the most severe alarm raised by the network element.
w	A warning is the most severe alarm raised by the network element.
+ (plus sign)	Alarms with a severity lower than that indicated by the color of the balloon, and the letter inside the balloon, have been raised by the network element.

Alarm balloon menu

The alarm balloon has a menu that allows you to view detailed information about the new alarms and to acknowledge the alarms for the selected object. When alarms are acknowledged, the highlighting is removed from the selected object.

Threshold crossing indicator

The threshold crossing indicator appears if an alarm raised by a network element is the result of a performance threshold crossing. (See the following illustration.)

NM-10456.1

Reporting of threshold crossings is controlled at the individual network elements by provisioning the threshold crossings as alarms, alerts, or not provisioning them at all. S/DMS Network Manager displays threshold crossings only if the threshold crossings are provisioned as alarms. If threshold crossings are provisioned as alerts, or not provisioned at all, they are not displayed on S/DMS Network Manager.

Even though threshold crossings are classified as alarms, they are identified on GNB separately from other types of alarms. This allows you to easily distinguish a threshold crossing from other types of alarms.

When a threshold crossing occurs, an alarm balloon appears on the affected network element to identify that a new alarm has been raised. A threshold crossing indicator also appears on the network element to indicate that at least one of the alarms on the network element is the result of a threshold crossing.

The threshold crossing indicator can appear on group and network element nodes. On groups, the threshold crossing indicator identifies that a network element in the group has raised an alarm because of a threshold crossing. On network elements, the threshold crossing indicator identifies the specific network element on which the threshold crossing occurred.

The threshold crossing indicator is removed from a network element or group when the alarms on the network element are acknowledged.

You can obtain detailed information about the threshold crossings by selecting the Show Alarms for <ne> command from a group or network element object menu, or by selecting the Show New Alarms for <ne> command from an alarm balloon object menu. These commands open the Alarms dialog.

You can also obtain performance and protection switching statistics for the network element by selecting the Query Performance Statistics for <ne> command from the Performance menu. This command enables you to view the Performance Statistics dialog.

For more information, see "Understanding performance management" in *S/DMS Network Manager Performance Management*, 323-4001-056.

Alarm banner

The Alarm banner allows you to view a summary of all alarms in the network monitored by S/DMS Network Manager. The display of the banner is controlled through the Preferences dialog. (See the following illustration.)
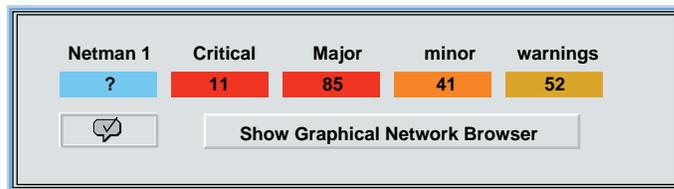
NM-10510.1

The Alarm banner displays alarm counts for critical, major, minor, and warning alarm severities. These counts represent the total new, active, and acknowledged alarms for all network elements monitored by S/DMS Network Manager. The alarm counts are kept up to date as alarms are raised and cleared.

When a new alarm occurs, the corresponding alarm count is highlighted in color. The color highlighting is the same as that used to show alarm severity on the groups, network elements and alarm balloons. Red shows critical and major alarms, orange shows minor alarms, and yellow shows warnings.

If there are no alarms of a particular severity, the alarm count for that severity is empty, as indicated by a dot (.) in the Alarm banner.

If S/DMS Network Manager cannot communicate with a controller, or association is lost between a controller and a network element, a question mark (?) appears on the far left of the Alarm banner, above the S/DMS Network Manager name.

The Show Graphical Network Browser button allows you to raise the GNB
network window to the foreground if it is hidden by other windows, or if it is
reduced to an icon. You can then view the graphical representation of alarms
shown on the Alarm banner, and determine the exact network elements
affected by the alarms.

If an alarm clears on a network element, a small alarm balloon with a check
mark inside it appears in the bottom left corner of the Alarm banner. You can
then find out which network element the alarm cleared on by selecting the
Show NEs with Cleared Alarms from the Fault menu, or by clicking the alarm
balloon icon on the Alarm banner. Either method displays the NEs with
Cleared Alarms dialog. The NEs with Cleared Alarms dialog provides you
with the option of removing the alarm balloon icon (for that particular alarm
notification).

Alarms dialog

The Alarms dialog, as shown in the following illustration, provides detailed
information about the alarms shown on GNB. The Alarms dialog has an alarm
list, list option buttons, and an alarm details area.

NM-10435.1

This dialog shows the requested alarms for the Network Elements specified						
Network Element	Alarm	Class	Unit	Reason	Time	Severity
1 Alpha	0	Eqp	DS3 G1 1	Path Rx UAS threshold 1	18 Aug 93 18:49:26	warning nsa
5 Ott	1	Eqp	DS3 G1 2	Timing generation entry to...	18 Aug 93 18:49:26	warning nsa
5 Ott	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
1 Alpha	0	Env	DS3 G1 5	lpbkGS1 Circuit pack failed	18 Aug 93 18:49:26	Major SA
1 Alpha	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   **Details of Selected Alarm**

[Update List]   [Reset List]

⌄ **Replace list with requested alarms**   **Reason:** lpbkGS1 Circuit pack failed
◆ **Add requested alarms to list**
                                                        Location: Frame 1
                                                    Shelf Position: 1

[Done   Alt+Return]

The alarm list provides a one-line summary for each alarm. The information in
the alarm list depends on which object menu you used to open the Alarms
dialog, and the type of list filtering used.

If you open the Alarms dialog from an alarm balloon menu, the alarm list
provides a summary for each new, unacknowledged alarm condition on the
object associated with the balloon. If you open the Alarms dialog from a group,
network element, or the circuit pack object menu in the Shelf View window,
the alarms list summarizes all active alarms in the group, network element, or
circuit pack. Active alarms include new and acknowledged alarms.

If you select an object with a not reporting (NR) notation and no alarm count summary, no information for that object appears in the alarms list.

The alarm list display options allow you to take a snapshot of the current alarm conditions, or to have the list automatically updated as soon as new alarms occur. You can also filter the alarm list so that only specific alarms are displayed. When the alarms are displayed, the list can be sorted by alarm severity, network element ID, time, or alarm ID.

The list options allow you to add new alarm conditions to the existing alarms list (if Auto update is turned off), or to replace the alarms list with new alarm conditions. These changes are implemented the next time that you select one of the Show Alarms commands.

The alarm details fields provide information about a specific alarm condition you selected from the alarm list. The information in the alarm details fields allows you to isolate the cause of the alarm, and determine the location of the equipment at fault.

If an alarm is the result of a threshold crossing, the Reason column and details box identify the specific threshold exceeded.

Threshold crossings

Threshold crossings are brought to your attention by a threshold crossing indicator. The threshold crossing indicator appears on the network elements on which a threshold crossing occurs. If applicable, a threshold crossing indicator also appears on the groups to which the network elements belongs. The Alarms dialog provides details on the threshold crossings, if the threshold crossing filter button is selected.

Only threshold crossings provisioned as alarms are displayed in the Alarms dialog. Threshold crossings provisioned as alerts are not displayed. Alarm provisioning, including provisioning thresholds as alarms, is performed on the network element.

The details box in the Alarms dialog identifies the network element and unit affected by the threshold crossing, the specific threshold parameter crossed, the predefined threshold limit, the actual measurement that caused the threshold to be crossed, and the time the threshold was crossed.

Alarms list

The alarms list provides a one-line textual summary for each alarm condition on a selected network element or group. The information presented in the alarm list is determined by the filtering options you selected. The list can be sorted by alarm severity, network element ID, time, or alarm ID.

The following information summarizes alarms.

Alarm status   Indicates the alarm condition described on this line
                   has not yet been acknowledged. An alarm balloon
                   appears on the far left of the alarm list beside the
                   network element column.

Network Element   Provides the identification numbers and the names of
                   the network elements on which S/DMS Network
                   Manager detects an alarm condition.

Alarm #   Identifies the sequential number assigned by the
                   network element to keep track of each alarm. This
                   number is also used by the controller and the network
                   element to keep track of the alarm.

Class   Identifies the classification of the alarm. The
                   following alarm classes might appear:

                   Eqp—the alarm condition is caused by an equipment
                   alarm. Equipment alarms indicate a problem with
                   hardware components.

                   Fac—the alarm condition is caused by a facility
                   alarm. Facility alarms indicate a problem with the
                   signals carried by a network element.

                   Env—the alarm condition is caused by an
                   environment alarm. Environment alarms identify a
                   problem with an external customer input such as an
                   open door, a cooling fan failure, or a fire alarm.

Unit   Identifies the logical address of the unit affected by
                   the alarm condition. The information in the Unit field
                   can include the hardware type, the circuit pack group
                   name, the port number, or the channel number,
                   depending on the alarm class.

Reason   Provides the first 17 characters of the text that
                   explains the alarm condition. The full text of the
                   alarm is shown in the Details fields after the alarm is
                   selected from the Alarm list.

                   If the alarm is the result of a threshold crossing, the
                   Reason column identifies the threshold parameter
                   that caused the alarm.

Time   Identifies when the alarm condition was raised. The time shown is the S/DMS Network Manager local time.

Severity   Indicates the severity and service code of each alarm. The service code identifies the impact of the alarm on the operation of the system. Severity and service codes are as follows:

Severity—Critical, Major, minor, or warning

Service code—SA for service affecting alarms, nsa for non-service-affecting alarms.

Alarms list menu

The Alarms list item menu enables you to raise the network element affected by an alarm to the foreground of the network display. You can also log in to a network element or a network element controller, acknowledge an individual alarm for a network element, and display the performance statistics for a network element. For more information on performance statistics, see "Understanding performance management" in *S/DMS Network Manager Performance Management*, 323-4001-056.

Display options

The Alarms dialog display options allow you to control how the alarms list is updated.

The Auto button allows you to turn automatic updating of the alarms list off and on. When automatic updating is turned on, as indicated by a check mark beside the button, the alarms list automatically updates when new alarms are received by S/DMS Network Manager, or alarms are cleared on the network element.

When the Auto button is turned off, the alarms list does not change when there is a change in the alarms. The alarms list is only updated when you select a different set of network elements from the display, or you select the Update List button.

List filtering options

The list filtering buttons allow you to choose the alarms displayed in the alarms list.

A check mark inside any of the following buttons means the alarms list includes the corresponding severity:

Critical button

This button allows you to include or omit critical alarms from the alarms list. When this button is inactive (no check mark), critical alarms are omitted from the alarms list.

Major button

This button allows you to include or omit major alarms from the alarms list. When this button is inactive (no check mark), major alarms are omitted from the alarms list.

minor button

This button allows you to include or omit minor alarms from the alarms list. When this button is inactive (no check mark), minor alarms are omitted from the alarms list.

warnings button

This button allows you to include or omit warning alarms from the alarms list. When this button is inactive (no check mark), warnings are omitted from the alarms list.

Note: Although threshold crossings are identified as having a warning severity, when the warning button is inactive, threshold crossing alarms remain in the list if the threshold crossing button is active.

threshold crossings

This button allows you to include or omit alarms raised as a result of threshold crossings. When this button is inactive (no check mark), threshold crossings are omitted from the list.

Note: S/DMS Network Manager can only recognize threshold crossings as distinct alarms if the controller runs an OC-3/OC-12 Rel 9, OC-48 Rel 10, OC-192 Rel 1, or AccessNode AN08 or later software load. If a controller runs an older software load, threshold crossings do not appear in the alarms list if the only active filter is threshold crossings. The warning filter must also be active for threshold crossings to appear.

For example, if your S/DMS Network Manager monitors a controller with an OC-48 Rel 9 software load, and the only active filter is threshold crossings, the threshold crossings for that controller does not appear in the alarms list. The threshold crossings for that controller appear only if the warnings filter is active.

This limitation does not apply to controllers running OC-3/OC-12 Rel 9, OC-48 Rel 10, or AccessNode AN08 or later, software loads.

List sorting

The Alarms dialog Sorted by field allow you to sort the information displayed in the alarms list by alarm severity, network element ID, time, or alarm ID.

List options

The Alarms dialog List Options field allows you to display new alarm information. The List Options field contains two action buttons and two radio buttons:

Update List button	This action button can be used only if the Auto check button in the Display Options is inactive. The Update List button, when enabled (not grayed out), indicates new alarm conditions have occurred.
	Select this button to update the alarms list with the new alarms.
Reset List button	This action button allows you to remove all current alarm information from the alarm list. This button does not affect the alarms shown on the network element or group.
Replace list with requested alarms	This radio button allows you to display only the alarms for a selected group, network element, or alarm balloon.

The alarms list does not change until you select an object from the network display and select the show alarms command for that object.

Any existing alarm information is removed from the alarms list, and the requested alarm information is displayed in its place.

Add requested alarms to list

This radio button allows you to add alarm information for a selected group, network element, or alarm balloon to the existing alarms list.

The alarms list is not changed until you select an object from the network display and select the show alarms command for that object.

The requested alarm information is added to existing alarm information.

Alarms details

The Details of Selected Alarm area of the Alarms dialog provides detailed information about an alarm you select from the Alarms list. This information allows you to identify the cause of the alarm and to locate the equipment at fault.

Depending on the type of alarm, the details area provides the following information:

Reason

Provides an expanded textual explanation of the cause of the alarm condition.

If the alarm selected from the alarm list was caused by a threshold crossing, the Reason field identifies the specific threshold that was exceeded, the predefined setting for the threshold and the actual measured value that caused the alarm.

Location

Identifies the name of the frame containing the network element affected by the alarm condition.

Shelf Position

Indicates the position of the shelf, within the identified frame, containing the circuit pack affected by the alarm condition.

Slot

Identifies the slot number that contains the circuit pack affected by the alarm condition.

Subslot	Indicates the subslot, if applicable, of the circuit pack affected by the alarm condition.
Threshold Exceeded	Identifies the performance monitoring parameter for which a threshold has been crossed. Each parameter can have up to two thresholds, therefore, the same parameter may appear in the list more than once for a unit.
Value	Provides the actual measured value of the performance monitoring parameter. If this value exceeds the value in the setting column, a threshold crossing alarm is raised by the network element.
Setting	Identifies the predefined value of the performance monitoring threshold for the parameter identified in the Threshold Exceeded column. The value in this column is defined on the network element. When this value is exceeded, an alarm is issued by the network element, and the threshold crossing indicator appears on the network element, and on the group to which the network element belongs.
Time	Indicates the time at which the threshold was crossed.

Note: The Location, Shelf Position, Slot, and Sub-slot fields appear only for facility or equipment class alarms. The Threshold Exceeded, Value, Setting, and Time fields appear only for threshold crossing alarms.

Cleared alarms

When alarms are raised by the network elements monitored by S/DMS Network Manager, the alarm is recorded and brought to your attention on GNB by color highlighting and alarm balloons. When the alarms are cleared on a network element, a Cleared Alarm indicator appears on the Alarm banner. (See the following illustration.)

NM-10583.1

Netman 1	Critical	Major	minor	warnings
?	11	85	41	52

Cleared alarm indicator

Show Graphical Network Browser
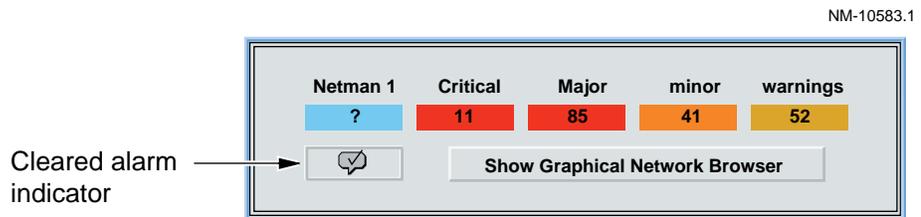
Cleared Alarms dialog

The Cleared Alarms dialog enables you to review network elements on which alarms have cleared, remove the cleared alarm indicator for that particular alarm notification, and log in to the network element or the controller of the network element.

The Cleared Alarms dialog appears when you select the Cleared alarm indicator on the Alarm Banner, or display the Fault menu and select the Show NEs with Cleared Alarms command. (See the following illustration.)

NM-10174.1
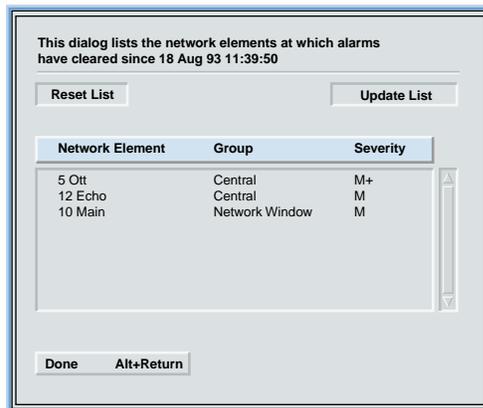
The action buttons on the Cleared Alarms dialog, as described below, enable you to remove the Cleared Alarm indicator from GNB, and to update the list with any new cleared alarms.

Update list	When this action button is enabled (not grayed out), you can update the cleared alarm list with new cleared alarms.
	This button is enabled only when additional alarms are cleared since the Cleared Alarms dialog was opened.
	When the list is updated, the entries automatically resort by severity. The time-stamp changes to the time you selected the Update button.
Reset	When you choose this action button, the Cleared Alarm indicator is removed from the Alarm Banner. All entries in the Cleared Alarms dialog are removed, and the time-stamp changes to the time you selected the Reset button.

Cleared alarms list

The Cleared alarms list identifies network elements on which alarms have been cleared. The list provides the following information:

Network Element   Identifies the network elements on which alarms were cleared.

Group   Identifies where the network element is located on GNB.

                      Network elements can be located in a specific group or in the network window. If a network element is located in a group, the name of the group is provided.

                      This information allows you to locate the network element if the window containing the network element in not currently on the screen.

Severity   Identifies the severity of the alarms cleared. The severity can be one of the following: C for critical alarms, M for major alarms, m for minor alarms, and w for warnings.

                      Only the highest severity alarm is shown. If alarms with a lower severity were also cleared from a network element, a plus sign (+) appears beside the severity.

Cleared alarm lists menu

The Cleared alarms list provides a menu that enables you to log in to the network element, or the controller of a network element.

> *Note:* The network element login command is disabled (grayed out) if the controller of the network element does not run a version of software that supports the feature. For more information, see "Software release compatibility" in *S/DMS Network Manager Introduction*, 323-4001-102.

The network elements list menu enables you to automatically log in to a network element or the network element controller.

Network element and group links

Links show the interconnections between individual network elements, and groups of network elements, in the system monitored by S/DMS Network Manager.

Links can connect groups or network elements within a single window or different windows. You cannot link groups to network elements.

Three basic types of links are used by S/DMS Network Manager to show network element and group connectivity: fiber, electrical, and control network (CNet). (See the following illustration.) S/DMS Network Manager uses a different color and line pattern to distinguish the different types of links.

NM-10584.1 (R6)
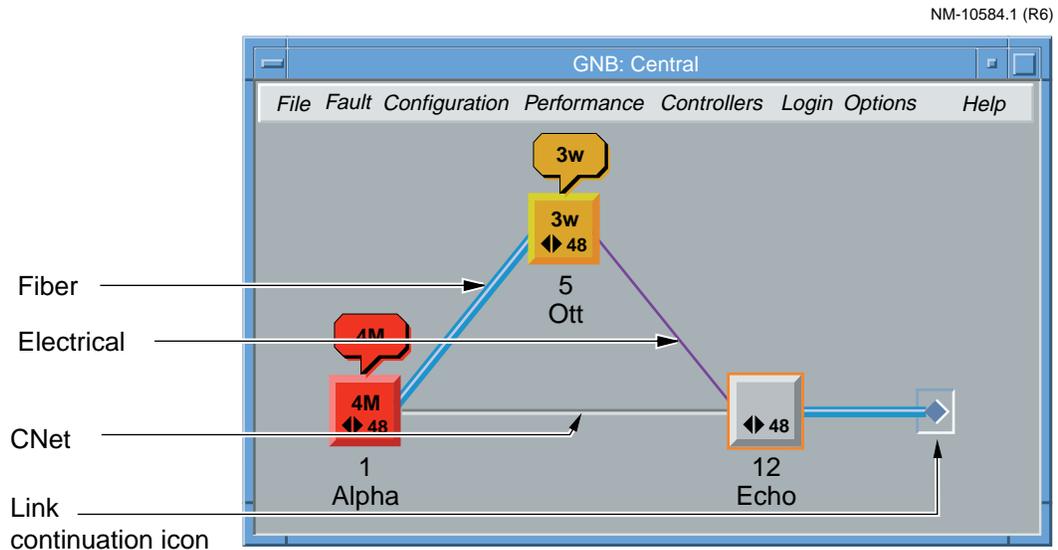
If your S/DMS Network Manager monitors a system containing a TA-1230 ring, special traffic display links connect the network elements and groups that comprise the ring. For more information, see "Ring traffic display links".

Link continuation icons

The link continuation icon identifies links that span two windows. The icon indicates the link is connected to a network element or group in another window. To view the window containing the remainder of the network elements or groups in the link, double-click on the link continuation icon, and the other window appears on the screen. When both windows are on the screen, the link continuation icons in both windows are highlighted to show the related links.

Ring traffic display links

S/DMS Network Manager uses ring traffic display links for systems that contain a TA-1230 ring. If your S/DMS Network Manager is monitoring this type of system, and a representation of that ring has been created, special traffic display links show the configuration of the ring.

The TA-1230 ring is a closed, two-fiber loop that offers bidirectional protection in the event of a node or link failure. The TA-1230 ring complies with Bellcore standard TA-NWT-001230 SONET BLSR Equipment Generic Criteria (issue 2).For more information on a TA-1230 ring, see the Northern Telecom Publications (NTP).

Traffic display links are thicker variations of the basic links used to show fiber, electrical, and CNet connections. Traffic display links appear only if your S/DMS Network Manager is configured to monitor a TA-1230 ring.

The traffic display links provide a visual representation of the high-speed traffic within the ring, and shows the state of the links connecting the ring ADMs. (See the following illustration.)

NM-10358.1 (R6)

GNB: Ring 1

File   Selected   View   Help

1m

1m

ADM 1   ADM 2

ADM 3
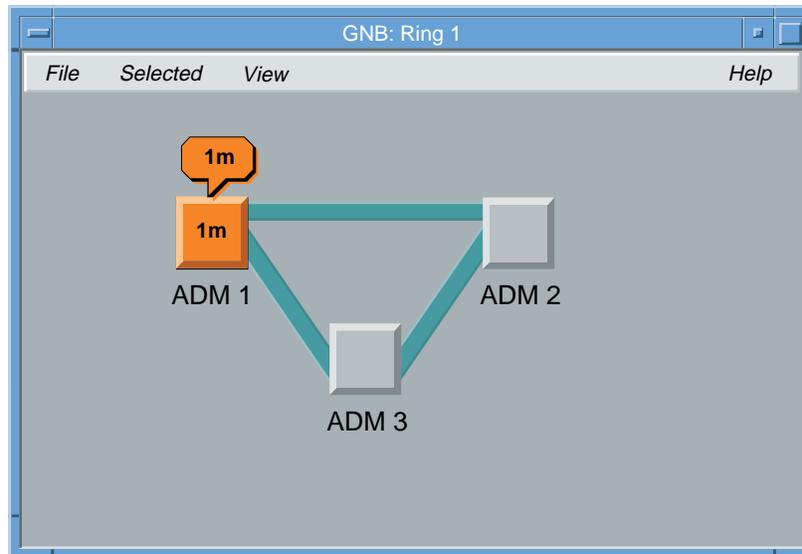
Each ring traffic display link has an object menu enabling you to display all connections provisioned on a link, the circuit pack groups (CPG) used on each ADM in the ring, and textual annotations for a selected link.

Ring traffic link states

The traffic display links in a TA-1230 ring can be in different states depending on the current status of the link. The color, fill, line patterns and notations applied to the traffic display links allow you to identify the state of the ring, whether there are any problems within the ring, and to identify the lockout status of the span.

A lockout means that the traffic on the channel is locked out, and cannot be switched to, and in some cases, from another channel in the event of a failure. The working channel, protection channel, or both channels at the same time can be locked out. Lockouts are performed from the controller or the network element user interface.

For more information on lockouts and ring protection switching procedures, see the Northern Telecom Publications (NTP).

Following is a summary of the color, fill, and line patterns used for the GNB traffic display link states.

> *Note:* If S/DMS Network Manager loses connectivity with one or both of the ADM endpoints of a traffic display link, the link is identified with color highlighting. Possible causes of connectivity problems are loss of association and communication degradation.

Active

NM-10376.1   The link is in the active state.

The active state is the normal working state where the working channels typically carry traffic and the protection channels are idle.

Color: turquoise

NM-10381.1   Loss of connectivity.

Color: blue

Inactive

NM-10377.1   The link is in the inactive state.

The link does not carry traffic at the moment because of a user-initiated forced/manual protection switch.

Color: gray

The problem has been cleared and the span is waiting to restore traffic after a trouble state.

This state can also appear if alarm reporting is suspended for the controller that contains the ADM. The link is capable of carrying traffic.

NM-10613.1   Loss of connectivity.

Color: blue/gray

Protected

NM-10378.1   The link is in the protected state.

This state indicates both working and protection channels are active. This state occurs when a protection switch is active somewhere in the ring.

Color:
turquoise/yellow

NM-10614.1   Loss of connectivity.

Color: blue/yellow

Troubled (protected)

NM-10379.1   The link is in the troubled-protected state. Traffic was successfully switched to the protection channel.

This state indicates the span does not currently carry traffic and cannot carry traffic due to a fault. This state typically occurs when an automatic protection switch is activated on an ADM.

Color: yellow
(dashed outline)

NM-10615.1   Loss of connectivity.

Color: blue
(dashed outline)

Troubled (unprotected)

NM-10380.1

Color: red

The link is in the troubled-unprotected state, and traffic can not be switched to the protection channel.

The traffic on the link was not successfully protected because an automatic protection switch was attempted but was not successful.

This state typically occurs in multiple failure and isolation scenarios such as when a cable cut occurs while a forced switch is active elsewhere in the ring.

This state is distinguished visually from the troubled-protected state to alert the user of a potentially service-affecting problem.

NM-10616.1 Loss of connectivity.

Color: blue

Lockout of working

NM-10382.1 A lockout of the working channel is in effect. If there is a failure on this link, traffic remains on the working channels. Traffic cannot be switched to the protection channels.

Lockout of protection

NM-10383.1 A lockout of the protection channel is in effect. If there is a failure on another link in the ring, traffic from the working channels of that failed link cannot be switched to the protection channels of this link.

Lockout of working and protection

NM-10384.1 A lockout of both the working and protection channels is in effect.

Network display control

The GNB provides features for customizing the display of the network monitored by S/DMS Network Manager.

View selection

The GNB enables you to display the network using a specific view. Network elements appear in different groups and can possess different connects in each view (with the exception of Traffic Display Links because they are not specified in the GNE and are an attribute of the network itself). Each view displays all network elements monitored by S/DMS Network Manager. Only relative positioning, connectivity, and groupings of network elements are different. Each view can have its own customized layout, group hierarchy, background maps, annotations, and preferences.

If more than one view is available, you are prompted to select a view when the GNB is started. Use the GNB View Choice dialog for selecting a view. (See the following illustration.)

NM-10606.1

Please choose the view in which to display the network:

Physical
Logical
Management Domain

Use   Exit
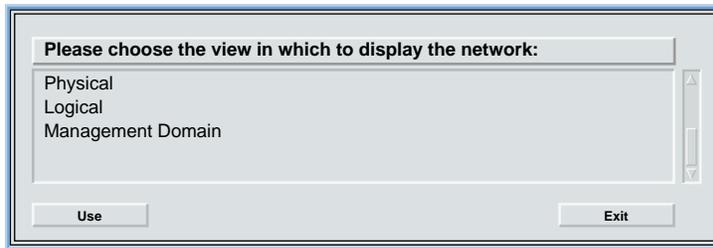
For more information, see "Selecting a view to display the network" on page 2-4.

Preferences

The GNB Preferences dialog enables you to set network display options for your GNB. The display options are applied to all elements in GNB, for that view and user. You can apply the display preferences to the current session or replace the default display preferences.

Default display preferences for GNB are set in the GNE. When display preferences are set in the GNB, they replace the default display preferences. You can also replace the display preferences defined in the GNB and revert to the original default display preferences.

To display the Preferences dialog, select the Preferences command from the Options menu. The Preferences dialog moves to the foreground if it is already open when you select this command. (See the following illustration.)
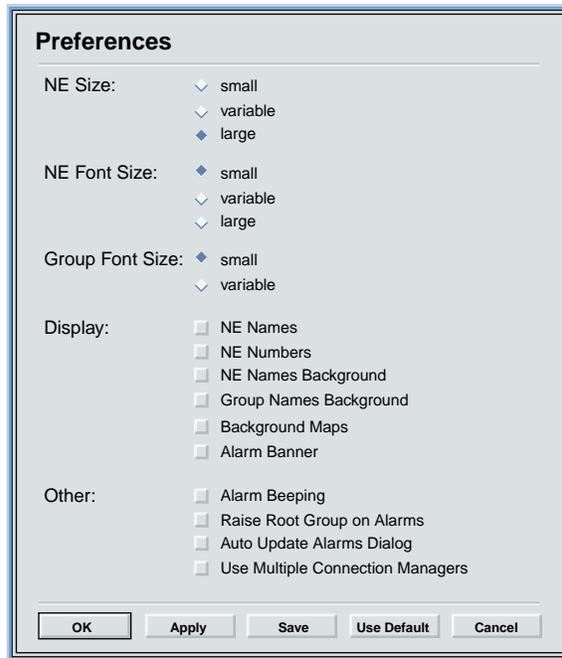
Display options in the Preferences dialog are grouped into the following classifications.

NE Size	Sets all network element node sizes to small, variable, or large.
NE Font Size	Sets the font size for the network element name and number to small, variable, or large.
Group Font Size	Sets the font size for the group name to small or large.
Display	Controls the display of the network element names and numbers, default background color (grey), background maps, and Alarm Banner. If NE names and NE numbers are not selected, and an alarm is raised by a network element, the name and number for that particular network element is automatically displayed.
Other	Controls how GNB reacts when an alarm is raised, and provides the option of using multiple connection managers. Options for the display of alarms include an audible beep, the network window appearing over top of the other display windows, and the Alarms dialog being automatically updated.

For more information on setting network display options for the GNB, see "Monitoring a network" on page 2-1.

Background maps

Background maps provide a visual reference point or context for the groups and network elements displayed in the GNB. An example of a background map is shown in the following illustration.

NM-10612.1
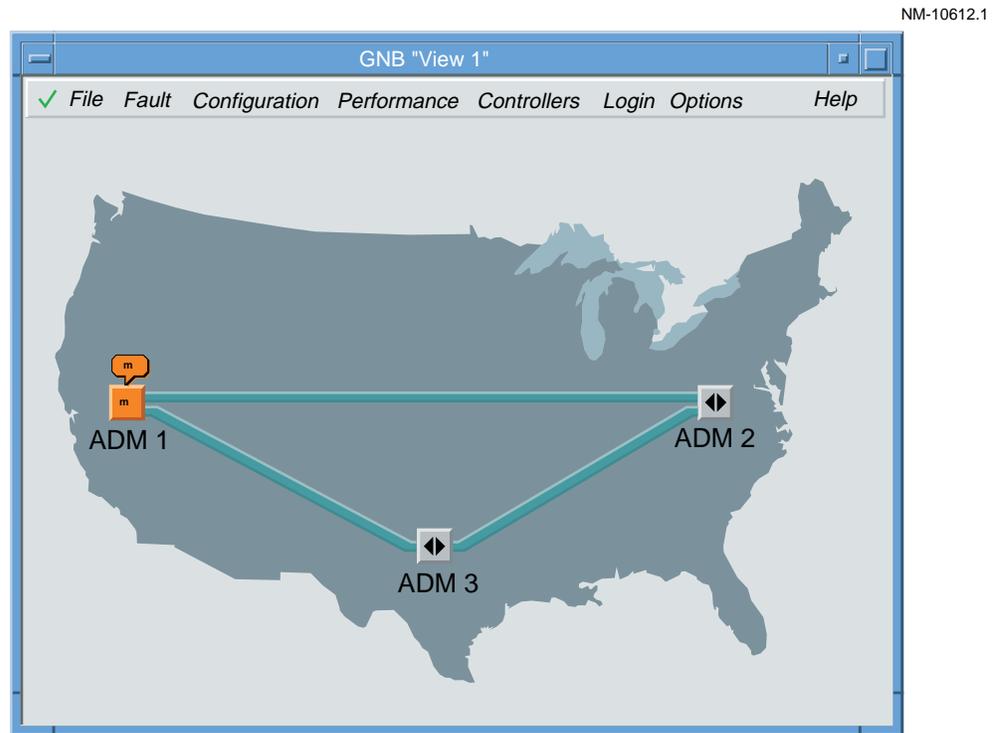
Background maps are scaled and positioned using the GNE.

For more information, see "Displaying background maps" on page 2-35.

GNB Controller List dialog

The GNB Controller List dialog shows the current status of the S/DMS Network Manager alarm collection process, and provides information on each of the controllers monitored by S/DMS Network Manager.

To display the GNB Controller List dialog, select the Show List of Controllers command from the Controllers menu. The Controller List dialog moves to the foreground if it is already open when you select this command.

The GNB Controller List dialog contains a collection status field, four display section radio buttons, and a controller information list.

Note: If the name of a controller is changed, the name displayed in the Controller Details dialog updates only when the controller is re-added to the network configuration. It does not update dynamically.

The information contained in the controller list depends on which display selection button you select. The controller list can display:

- the activity and status of each controller (Controller Status button selected)
- a textual message relating to each controller (Controller Comments button selected)
- information about the software release installed on each controller (S/W Releases button selected)
- bridge status and version of S/DMS Network Manager to controller software relation (Bridging status button selected)

The following illustration shows the Controller List dialog with the Display Controller Status button selected.

NM-10587.1

Collection status field

The S/DMS Network Manager Collection Status field indicates the current status of the alarm collection process as follows:

Running   The S/DMS Network Manager alarm collection process is operating and collecting alarms from the controllers.

Stopped   The S/DMS Network Manager alarm collection process is stopped and not collecting alarms from any controllers.

Controller information list

The information provided in the controller information list depends on which display selection button you select. You can display the status of each controller monitored by S/DMS Network Manager, comments about each controller, the software release running on each controller, or bridging status for each controller in the S/DMS Network Manager span of control.

Controller status

When you select the Display Controller Status button, the controller information list provides details on each controller monitored by S/DMS Network Manager. (See the following illustration.) These controllers control the network elements in the system. The current activity, and the status of alarm collection and reporting for each controller is shown in the controller information list.

NM-10588.1

Controller List

Network Manager Collection Status: Running

Display   ◆   Controller Status

        ▽   Controller Comments

        ▽   S/W Releases

        ▽   Bridging Status

Primary Controller	Activity	Status	Backup Controller	Activity	Status
OPCM001P/47.46.9.101	Active	Collecting	<none>	n/a	n/a
OPCM002P/47.46.3.215	Active	Collecting	<none>	n/a	n/a
OPCM003P/47.46.0.258	Active	Collecting	OPCM0038/47.46.1.14	Inactive	Not collecting
OPCM004P/47.46.1.12	Active	Collecting	<none>	n/a	n/a

Done   Alt+Return

The list is divided into two parts: one for the primary controller and one for the backup controller. If S/DMS Network Manager monitors only one of these controllers, only that part of the list is filled in. The controller list is sorted alphabetically, according to Primary controller name.

The Controller List shows the names and IP addresses of each controller, the current activity of the controller, and the status of alarm collection and reporting from the controller.

The Activity field shows the state of operation for each controller monitored by S/DMS Network Manager. The following values can appear in the Activity field.

Active
: The controller is in the active state, and is currently managing the span of network elements.

Inactive
: The controller is in the inactive state and is not managing the span of network elements at this time. It is available if needed.

OOS
: The controller is out of service and not communicating with S/DMS Network Manager.

Busy
: This controller is already monitored by the maximum number of S/DMS Network Managers.

: To see which S/DMS Network Managers are monitoring this controller, select the Edit command from the Module controller status list menu. The Availability field in the resulting Controller Details dialog shows which S/DMS Network Managers are monitoring the controller.

Unknown
: The state of operation of the controller is unknown because S/DMS Network Manager cannot communicate with the controller.

: This state can be caused by a failure of the communication link between S/DMS Network Manager and the controller, or by a GNE user initiated action that manually stops the S/DMS Network Manager alarm collection process.

: If the communication link between S/DMS Network Manager and a controller fails, S/DMS Network Manager cannot determine the operating state of the controller.

: If a user stops the S/DMS Network Manager alarm collection process, all communication between S/DMS Network Manager and the controllers it monitors is terminated, preventing S/DMS Network Manager from determining the operating state of the controller.

n/a
: The Activity field does not apply to this controller.

The Status field shows the state of the S/DMS Network Manager alarm collection process as it relates to each controller.

The alarm collection process enables S/DMS Network Manager to communicate with, and gather alarms from, the controllers it monitors. If the alarm collection process is stopped, communication between S/DMS Network Manager and all controllers it monitors stops. The following values can appear in the Status field.

Collecting	The alarm collection process is operating and S/DMS Network Manager is collecting alarms from the controller.
Not collecting	S/DMS Network Manager is not communicating with the controller, and not collecting alarms from the controller. This condition might be because the controller is not active, or because a GNE user manually stopped the S/DMS Network Manager alarm collection process by selecting the collection control button.
Suspended	S/DMS Network Manager is not reporting alarms for this controller because alarm reporting has been suspended for the controller or an associated network element. Suspending and resuming alarms for network elements and controllers is performed in the Graphical Network Editor (GNE). An inverted triangle appears in the column on the far left beside the primary controller name when alarm reporting is suspended.
Collecting/Sus	At least one, but not all network elements have suspended alarm reporting. An inverted triangle in the left-most column identifies the primary controller of the network elements with suspended alarm reporting.
Unknown	The alarm collection state is unknown because S/DMS Network Manager alarm collection process has been stopped by a user.
n/a	The Status field does not apply to this controller.

Together, the Activity and Status fields allow you to determine the following for each controller:

• the current operating state

- the status of S/DMS Network Manager alarm collection and reporting

The normal state is a primary controller in the active state, and a backup controller, if there is one, in the inactive state. If the primary and backup controllers are in any other state, an X appears in the column on the far left of the list beside the controller name.

The following table lists and describes all possible combinations that might appear in the Activity and State fields.

Activity	State	Indicates
Active	Collecting	S/DMS Network Manager is collecting and reporting alarms from the controller. This combination indicates normal S/DMS Network Manager operation.
OOS	Not collecting	S/DMS Network Manager cannot collect alarms from the controller because the controller is out of service (OOS).
Busy	Not collecting	S/DMS Network Manager cannot collect alarms from the controller because the controller is already monitored by the maximum number of S/DMS Network Managers.
Inactive	Not collecting	S/DMS Network Manager is not collecting alarms from the controller because the controller is in the inactive state. S/DMS Network Manager collects alarms only from active controllers.
Unknown	Not collecting	S/DMS Network Manager cannot collect alarms from the controller because the controller does not run a compatible version of software. This combination also appears when S/DMS Network Manager is trying to establish a connection with the controller.
Any of the above	Suspended	A GNE user has manually suspended alarm reporting for this controller.
Unknown	Unknown	The S/DMS Network Manager alarm collection process has been stopped. S/DMS Network Manager cannot communicate with the controller. Therefore, no alarm information can be collected or reported for the controller.

Controller comments

When you select the Display Controller Comments button, the controller information list shows the names and IP addresses of the primary and backup controllers, and a comment about each controller. (See the following illustration.)

NM10589.1
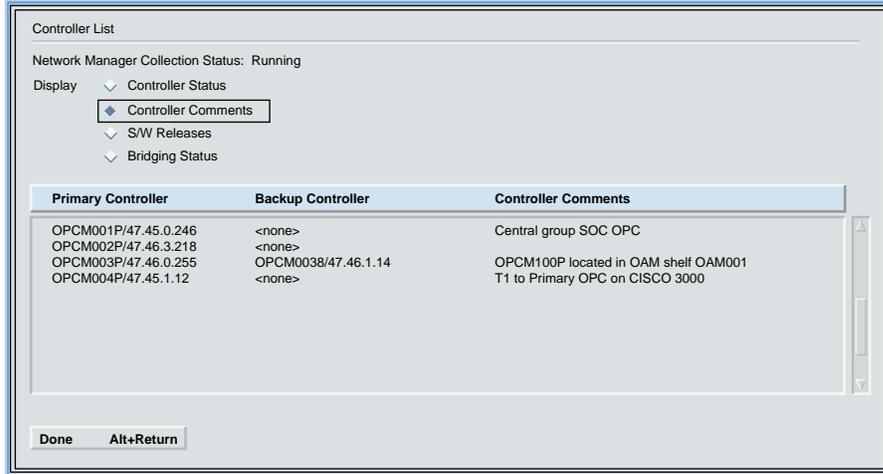
Controller comments are recorded by GNE users when setting up the network configuration. The controller comments are optional, but are used to provide additional information about a controller. If there are no comments for a controller, the Controller Comments field for that controller is blank.

Software releases

When you select the Display S/W Releases button, the controller information list shows the software release installed on each primary and backup controller monitored by S/DMS Network Manager. (See the following illustration.)

NM-10590.1

S/DMS Network Manager   323-4001-055   Rel 6   Standard   Nov 1996

The S/W Release column identifies the name of the product-specific software release installed on each controller. The software release name identifies the product that the software is used for (for example, OC-48 or OC-3/OC-12), and the software version (for example, 8.0, 9.0, 10.0).

Bridging status

When you select the Bridging Status button, the controller information list shows bridging status for each controller. (See the following illustration.)

NM10591.1(R6)

Controller List

Network Manager Collection Status: Running

Display   ⌄ Controller Status
            ⌄ Controller Comments
            ⌄ S/W Releases
            ◆ Bridging Status

Primary Controller	Bridging Status	Version	Backup Controller	Bridging Status	Version
OPCM001P/47.45.0.246	not required	**6.0**	<none>	n/a	n/a
OPCM002P/47.46.3.218	not required	**6.0**	<none>	n/a	n/a
OPCM003P/47.46.0.255	not required	**6.0**	OPCM0038/47.46.1.14	6.0	not required
OPCM004P/47.45.1.12	not required	**6.0**	<none>	n/a	n/a

Done   Alt+Return

Each controller must have an appropriate version of S/DMS Network Manager controller software, also called server software, to support connection management and service assurance features. If the controller does not have the appropriate server software installed, a special software bridging operation must be performed on the controller. For more information, see "Bridging controller software" in *S/DMS Network Manager Configuration*, 323-4001-054.

The Controller List shows the names and IP addresses of each controller, the Bridging status for the controller, and the version of S/DMS Network Manager server software installed on the controller.

The Bridge Status field shows the state of the bridging process for each controller. The following values can appear in the Status field.

required	The controller needs to be bridged to enable certain S/DMS Network Manager Release 6 features.
not required	The controller does not need to be bridged because it runs a software release that supports all S/DMS Network Manager Release 6 features. Also, "not required" appears in this field if the controller runs a software release prior to OC-48 Rel 11 or OC-3/OC-12 Rel 10 that cannot be bridged.
pending	Bridging has been requested, and is about to be performed. The job is queued.
xfer in progress	Bridging files are being transferred to the controller.
install in progress	S/DMS Network Manager server software is being installed on the controller.
complete	Bridging is complete.
fail	Bridging failed and will not be retried automatically.
unknown	The bridging state of the controller is unknown.
disabled	Bridging can not be performed because bridging has been disabled by the GNE user.
another NM bridging	Another S/DMS Network Manager is bridging the controller.

The Version field identifies the S/DMS Network Manager release supported by the server software installed on the controller.

Use the Bridging Status field to determine whether the server software on the controller requires bridging to support Release 6 features.

Controller information list menu

The controller information list has a menu that allows you to log in to a controller, to view details of a controller, and to control alarm reporting for a controller. This menu is available on all controller information list displays.

Controller Details dialog

The Controller Details dialog provides information about the controller for a particular span of network elements monitored by S/DMS Network Manager. A span is a collection of network elements that use the same controller.

The Controller Details dialog appears when you select the View command in the controller list menu on the Controller List dialog. The Controller Details dialog provides detailed information about the controller. (See the following illustration.)
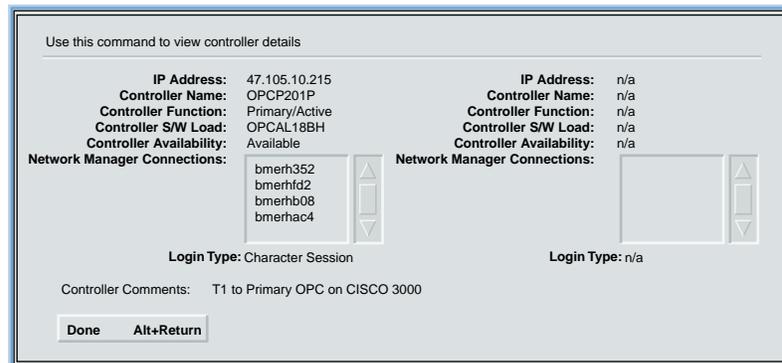
There are two separate columns of information in the Controller Details dialog: one for the primary controller, and one for the backup controller. If only one controller in the span is monitored by S/DMS Network Manager, only that controller shows up in the Controller Details dialog.

The Controller comments field provides additional information that augments the Controller Details.

The Controller Details dialog contains the following components:

IP Address	The controllers and S/DMS Network Manager communicate through a TCP/IP (Transmission Control Protocol and Internet Protocol) network. Each controller in the network is assigned a unique IP address. The IP Address tells S/DMS Network Manager where each controller is located in the TCP/IP network.
Controller Name	Identifies the name of the controller at the specified IP address.
Controller Function	Identifies the function (primary or backup) of the controller at the specified IP address.
Controller S/W Load	Identifies the software load installed in the controller at the specified IP address.

Controller Availability	Identifies whether the controller is available for alarm collection, or whether it currently reports alarm information to another S/DMS Network Manager. This field contains one of the following values:
	Available—The controller is available for concurrent monitoring by another S/DMS Network Manager. Both controllers must run a version of software that supports concurrent monitoring feature. To determine which controller loads support concurrent monitoring, see "Software release compatibility" in *S/DMS Network Manager Introduction*, 323-4001-102.
	Not Available—The controller is not available for monitoring by another S/DMS Network Manager.
	Busy—The controller is already monitored by the maximum allowable number of S/DMS Network Managers. The names of the S/DMS Network Managers monitoring this controller are listed. Your S/DMS Network Manager cannot monitor this controller at this time
Network Manager Connections	Identifies the S/DMS Network Managers monitoring the controller.
Login Type	Identifies the default type of controller user interface (Character Session or X Window Session) displayed when you log in to the controller.
Controller Comments	The Controller Comments field provides optional information entered by GNE users when adding the controller to the network configuration. The information in the Controller Comments field is used to augment controller details.
Done button	Closes the dialog.

Monitoring a network

This chapter describes how to monitor a network using the Graphical Network Browser (GNB). GNB provides a graphical user interface that allows you to monitor your network for alarms, performance threshold crossings, and ring protection status. GNB also provides a means of logging in to the controller and network element user interfaces, and delivering software to the controllers from one centralized location.

The GNB enables you to provision, deprovision, view, and edit connections on OC-48 and OC-3/OC-12 ring and linear systems.You can also view a list of connections associated with an NE, ring, or link. For more information on connection management, see "Provisioning and editing STS connections" in *S/DMS Network Manager Connection Management*, 323-4001-057.

The configuration and interconnection of network elements are represented by various graphical objects and line patterns. You cannot use GNB to change the configuration and interconnection of the network elements. That task is done by a system administrator who is authorized to use the S/DMS Network Manager Graphical Network Editor (GNE).

When a network element raises an alarm, GNB records the alarm information and then provides a visible and audible indication of the alarm. Color highlighting and an alarm balloon are applied to the network elements affected by an alarm. GNB uses different color highlighting to distinguish critical, major, minor, and warning alarms. Highlighting serves two purposes: it indicates that a network element raised an alarm, and it shows the severity of the alarm.

When an alarm is raised on a variable-sized network element, the icon size changes from small to large. A large-sized icon displays information on the network element node and product type, and the total number of alarms affecting the network element. This additional information is useful to determine the cause of the alarm.

An optional alarm banner provides a summary of the alarms raised within the entire network.

GNB also provides a visible indication of the network elements affected by performance threshold crossings, allowing you to take preemptive action before a failure occurs. You can also retrieve and display performance and protection switching statistics that show the performance of the network elements over a period of time. For information of monitoring performance, see "Performance Monitoring" in *S/DMS Network Manager Performance Monitoring*, 323-4001-056.

GNB can provide detailed information about alarms and threshold crossings. These details help to identify and locate the network element at fault, and to isolate the cause of the problem. The action you take on an alarm or performance threshold crossing depends on your local operating procedures.

If your S/DMS Network Manager monitors a system that contains a TA-1230 ring, GNB allows you to monitor the traffic within the ring and the protection status of the ring. Special graphical treatment is applied to the links to show the state of the ring.

You can also use GNB to retrieve an inventory of remotely located equipment in your network, and to display a graphical representation of the cards provisioned in a network element common equipment shelf. This capability enables you to forecast equipment requirements for the entire network, and plan network upgrades. The procedures used to retrieve an inventory are described in "Taking a remote inventory" in *S/DMS Network Manager Remote Inventory*, 323-4001-058.

GNB also allows authorized users to perform software management tasks such as managing software releases and scheduling software deliveries to any controller in the network monitored by S/DMS Network Manager. The procedure used to operate the GNB software management feature are described in "Managing software deliveries" in *S/DMS Network Manager Centralized Software Management*, 323-4001-059.

Requirements

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

- read the conventions described in "About this guide" on page ix
- read "Understanding GNB" on page 1-1
- ensure you have a userID and password that allow you access to GNB (admin or surveillance access class)
- log in to S/DMS Network Manager and open GNB. For more information, see "Logging in and opening an S/DMS Network Manager tool" in *S/DMS Network Manager Connectivity*, 323-4001-053.

- ensure that performance monitoring threshold crossings are provisioned as alarms at the network element. For Northern Telecom operations controllers (OPC), see *Performance Monitoring Procedures*, 323-nnnn-520.

- ensure that performance statistics collection is enabled on the controllers. For Northern Telecom OPCs, see "Configuring the OPC" in *S/DMS Network Manager Installation and Administration*, 323-4001-202.

Chapter task list

The following table lists the network monitoring tasks. These procedures can be performed at any time, in any order.

Tasks	Page
Selecting a view to display a network	2-4
Browsing the network for alarms	2-5
Controlling alarm notification	2-11
Viewing threshold crossing details	2-13
Viewing alarm details	2-16
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Procedure 2-1
Selecting a view to display the network

Use this procedure to select a view to display a network. The GNB user is presented with the View Choice dialog when the session is started. This dialog allows you to select a view.

> *Note:* You can also select a view from the command line when starting S/DMS Network Manager. If this method is used, the View Choice dialog is bypassed. For more information, see "Logging in and opening an S/DMS Network Manager tool" in *S/DMS Network Manager Connectivity*, 323-4001-053.

If only one view is available to display a network, the view is automatically displayed and the View Choice dialog is bypassed.

> *Note:* The display preferences set in the GNE become the defaults for the GNB. You can reset the display preferences in the Preferences dialog.

Before starting this procedure, read "Requirements" on page 2-2.

Action

Step	Action
1	When you start GNB, the View Choice dialog appears. The View Choice dialog enables you to select a network view.
	For more information on how to log in to the GNE, see "Logging in and opening an S/DMS Network Manager tool" in *S/DMS Network Manager Connectivity*, 323-4001-053.
2	Select a view in the View Choice dialog and select the **Use View** button.
	The GNB network window is displayed using the selected view.
	Note: You can also select a view from the command line before you start GNB. For more information, see "Logging in and opening an S/DMS Network Manager tool" in *S/DMS Network Manager Connectivity*, 323-4001-053.

<div align="center">—**end**—</div>

Procedure 2-2
Browsing the network for alarms

Use this procedure to monitor a network for alarms, using GNB.

You can monitor alarms in the network window, the subnetwork window, and the Shelf View window. The network and subnetwork windows show alarms for groups and network elements. The Shelf View window shows alarms for the shelves and cards associated with a network element. Also, alarms related to the environment, facilities, and common equipment are shown in the Shelf View window.

To bring the alarms to your attention, GNB uses

- alarm balloons
- color highlighting of the object affected and associated alarm balloons
- an audible indicator
- an alarm banner

To ensure that all alarm notification options are enabled, see Procedure 2-3, "Controlling alarm notification".

If an alarm is raised on a network element designated as variable-sized, the icon expands in size from small to large. The large icon identifies the node and product type, and the quantity of highest severity alarms affecting the network element.

If an alarm is the result of a performance threshold crossing, a threshold crossing indicator also appears on the network element and its associated group.

If S/DMS Network Manager monitors a system that contains a TA-1230 ring, the links within that ring are given special graphical treatment. These links allow you to monitor the traffic and the protection status in the ring.

Procedure 2-2 (continued)
Browsing the network for alarms

Action

Step	Action

1 When an alarm is detected, the following events occur:

- the network window is automatically raised to the forefront of the screen, if the Raise Root Group on Alarms command is enabled in the Preferences dialog

- the groups and network elements affected by the alarm change color to indicate the severity of the alarm

- an alarm balloon, highlighted in a color corresponding to the severity of the alarm, appears above the groups and network elements

- the network element node size expands from small to large, if the node is designated as variable-sized

- alarm information appears inside groups and network elements.

- the alarm information displayed in the Alarm banner is updated

- the audible alarm indicator sounds, if it is enabled, for critical and major alarms

- the network element names appear, if they are hidden

2 Check the Alarm Banner for a summary of alarms for all network elements.

The Alarm Banner is automatically displayed when you start GNB.

The alarm counts in the Alarm Banner are kept up to date in real time. The counts are adjusted when new alarms arrive, alarms are acknowledged, or alarms are cleared on the network elements.

Note: To view the alarm that is cleared on the network, and the network elements involved, see "Viewing cleared alarms" on page 2-23.

3 Raise the GNB network window by selecting the **Show Graphical Network Browser** button in the Alarm Banner.

4 Objects react differently when an alarm is raised, depending on the size of the object and the type of object.

If you see alarms on	**Then**
a network element	step 7
a group	step 5

—**continued**—

Procedure 2-2 (continued)
Browsing the network for alarms

Step	Action
5	Check the groups in the network window for color highlighting and alarm balloons. *The group shows the highest severity alarm count for all network elements the groups represents.* **Note:** For a description of the alarm highlighting and notations, see step 9.
6	Double-click on the group showing the alarm. *The subnetwork window appears. The subnetwork window contains the network elements and groups that form the parent group.*
7	The alarm information conveyed through a network element node depends on the size of the node.

If the node size is	**Then**
large	the node conveys alarm severity and alarm counts. Go to step 8.
small	the node conveys only alarm severity. Go to step 14.
variable	the node expands to large size. Go to step 8.

Step	Action
8	Check the network element nodes for color highlighting and alarm balloons. **Note:** Network elements can appear in the network or subnetwork window.
9	Check the color of the nodes. The following colors indicate alarm severity: • red indicates a critical or major alarm • orange indicates a minor alarm • yellow indicates a warning alarm • blue indicates that the alarm counts might not be reliable because of a communication problem between S/DMS Network Manager and a controller, or a controller and network element • gray indicates no alarms, or the alarm has been acknowledged
10	Check the alarm count inside the nodes and alarm balloons.

Alarm counts in	Identify
a group	the total number of the highest severity alarms for all network elements the group represents
a network element	the total of the highest severity alarms raised by the individual network element
an alarm balloon	the number of new alarms on the object since the highlighting was last cleared

—**continued**—

Procedure 2-2 (continued)
Browsing the network for alarms

Step	Action
	The alarm count provides the following information:

- a letter identifies the severity of the alarm: C for critical alarms, M for major alarms, m for minor alarms, and w for warnings.
- a number identifies the quantity of the highest severity alarm
- a plus sign (+) identifies that a lower severity alarm exists

Step	Action
11	If a question mark (?) appears inside an object, the alarm counts for that object might not be reliable due to a communication problem between S/DMS Network Manager and a controller, or a controller and a network element. The ? appears on all objects shown in blue.
12	If a not reporting notation (NR) appears inside an object, alarms affecting the object have been suspended. Alarms can be suspended for a controller or a network element. Suspending and resuming alarms is controlled through the GNE.

To determine which controllers have suspended alarm reporting, see Procedure 2-13, "Viewing controller details".

The status icon in the network window appears as an inverted yellow triangle when alarm reporting has been suspended for a controller or network element.

Step	Action
13	Go to step 16.
14	Check for color highlighting and alarm balloons on the small size network elements.

Small size network elements shows the highest severity alarm. The following colors indicate alarm severity:

- red indicates a critical or major alarm
- orange indicates a minor alarm
- yellow indicates a warning alarm
- blue indicates the alarm counts might not be reliable because of a communication problem between S/DMS Network Manager and a controller, or a controller and a network element
- gray indicates no alarms, or the alarm has been acknowledged

Step	Action
15	Check the alarm notification inside the small size network elements and alarm balloons.

Alarm notification in an	Identify
object	the highest severity alarm raised by the individual object
alarm balloon	the highest severity alarm on the object since the highlighting was last cleared

—continued—

Procedure 2-2 (continued)
Browsing the network for alarms

Step	Action

The alarm notification letter provides the following information:

- C for critical alarms
- M for major alarms
- m for minor alarms,
- w for warnings.

16 If the audible alarm indicator is enabled, some alarms are accompanied by a beeping sound.

The following audible alarm indications are provided:

- 4 beeps for critical alarms
- 2 beeps for major alarms
- 0 beeps for minor and warning alarms

If a critical and a major alarm occur at the same time, an audible alarm is sounded only for the critical alarm. For example, four beeps sound when a critical and major alarm occur at the same time.

To enable or disable the audible alarm indicator, see Procedure 2-3, "Controlling alarm notification".

17 The alarms are updated in real time. If an alarm is cleared before you have a chance to acknowledge it, the cleared alarm is brought to your attention through a small alarm balloon icon on the network Alarm Banner.

A Cleared Alarms indicator appears on the network Alarm Banner. This indicator enables you to determine if any alarms have cleared on the network, and which network elements are involved.

For more information on viewing cleared alarms, see Procedure 2-6, "Viewing cleared alarms".

18 Respond to the alarms according to your local operating procedures.

19 When you finish browsing the alarms, acknowledge the alarm. This makes it easier to tell when the alarms change.

For more information, see Procedure 2-7, "Acknowledging alarms on an object".

GNB reapplies the alarm highlighting only when there is a new alarm on the network element.

Procedure 2-2 (continued)
Browsing the network for alarms

Step	Action
20	To use GNB to investigate an alarm, see the following procedures.

If you want to	**Then** see
control alarm notification	Procedure 2-3, "Controlling alarm notification"
view alarm details	Procedure 2-5, "Viewing alarm details"
view cleared alarms	Procedure 2-6, "Viewing cleared alarms"
acknowledge an alarm	Procedure 2-7, "Acknowledging alarms on an object"
view the details of a controller	Procedure 2-13, "Viewing controller details"
log in to a controller	"Logging in to a Northern Telecom OPC" in *S/DMS Network Manager Connectivity*, 323-4001-053.
	"Logging in to a remote TL1 MOA controller" in *S/DMS Network Manager Connectivity*, 323-4001-053.
connect to an external device	"Connecting to an external device" in *S/DMS Network Manager Connectivity*, 323-4001-053.

—**end**—

Procedure 2-3
Controlling alarm notification

Use this procedure to control the method of notification for alarms raised on the network you are monitoring. Display options available for the notification of alarms are

- the Alarm Banner, a small window that shows the total number of new and acknowledged alarms for each severity.

- audible beeping that indicates when a new critical or major alarm occurs. The number of beeps indicates the severity of the alarm: four beeps indicates a critical alarm, and two beeps indicates a major alarm. Minor alarms and warnings do not have audible alarms.

- raising the root group window to the forefront of the display when a new alarm is raised.

- automatic updating of the Alarms dialog when a new alarm is raised.

  Note: The Alarm Banner is automatically displayed when you start GNB. Only one Alarm Banner can be displayed at a time.

Additional Requirements

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

- make sure that the audio is properly adjusted on your workstation. To learn how to adjust the audio on the workstation, see the *HP Visual User Environment User's Guide*.

Action

Step	Action
1	Display the Options menu and select the **Set Preferences** command.
	The Preferences dialog appears.
	Note: A check mark next to a command indicates the command is active. When a command is active, the display option specified is implemented for the selected window range.
2	Select the desired alarm-related display preferences for your session.

—continued—

Procedure 2-3 (continued)
Controlling alarm notification

Step	Action
3	The display preference can be implemented for the session, or as a default display value for GNB.

If you want to	**Then**
implement the display preference for the session	step 4
implement the display preference as a default display value	step 5

Step	Action
4	Select the **OK** button.
	The display preference is implemented for the session.
	Go to step 6.
5	Select the **Save** button.
	The display preference is set as a default display value.
6	The **Use Default** button in the Preferences dialog allows you to revert to the default display preferences set by GNE.

—end—

Procedure 2-4
Viewing threshold crossing details

Use this procedure to view detailed information about alarms caused by threshold crossings. This procedure describes how to use the Alarms dialog to investigate the cause of the threshold crossing.

Threshold crossings must be provisioned at the network element as alarms if they are to be reported on S/DMS Network Manager. Once provisioned, an alarm (typically a warning) is raised for each threshold crossing. As a result, when a threshold crossing occurs, an alarm balloon appears on the network element and the group.

> *Note:* Threshold crossings provisioned as alerts are not collected by S/DMS Network Manager, and are not reported by GNB.

In addition to the alarm balloon which appears, threshold crossings are brought to your attention by a threshold crossing indicator. The threshold crossing indicator can appear on group and network element nodes.

Additional Requirements

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

- see "Understanding performance monitoring" in *S/DMS Network Manager Performance Monitoring*, 323-4001-056.

- ensure that performance monitoring threshold crossings are provisioned as alarms at the network element. For Northern Telecom network elements, see *Performance Monitoring Procedures*, 323-nnnn-520.

- ensure that performance statistics collection is enabled on the controllers. For Northern Telecom OPCs, see "Configuring the OPC" in *S/DMS Network Manager Installation and Administration*, 323-4001-202.

Procedure 2-4 (continued)
Viewing threshold crossing details

Action

Step	Action

1 Check for groups or network elements displaying a threshold crossing indicator.

The threshold crossing indicator appears on group and network element nodes that have raised alarms as the result of threshold crossings.

NM-10629.1 (R6)
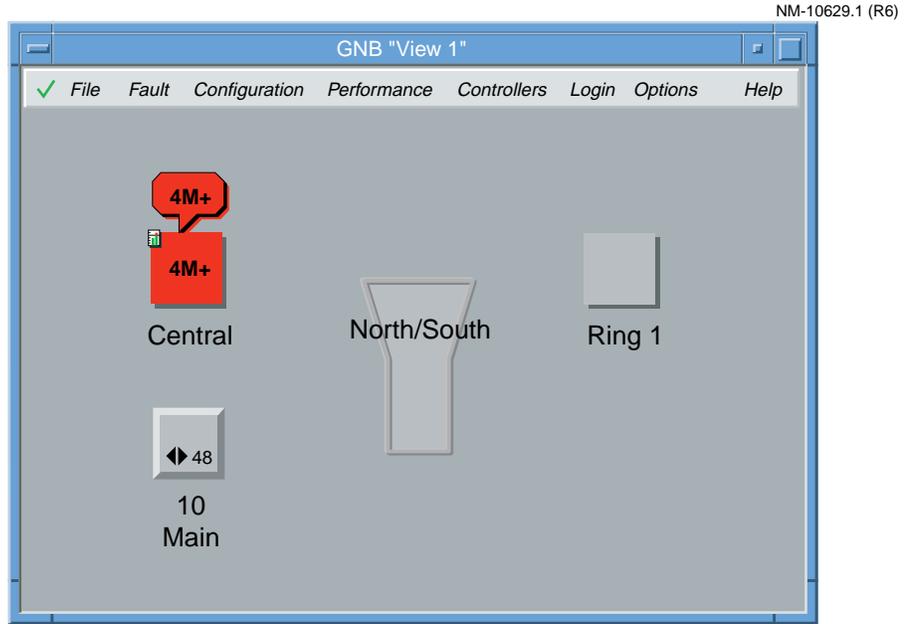
2 Move to the group or network element highlighted with the threshold crossing indicator and display the object menu.

3 Select the **Show Alarms** command.

The Alarms dialog appears.

Note: Verify that the threshold crossing filter button is active (check mark).

The Reason column in the alarms list identifies the alarms raised as a result of a threshold crossing.

If you open this dialog from a group, the alarms list shows the threshold crossings currently active on all network elements in the group.

If you open this dialog from a network element, the alarms list shows the threshold crossings currently active on the network element.

—**continued**—

Procedure 2-4 (continued)
Viewing threshold crossing details

Step	Action
4	Select the threshold crossing alarm for which you want to view details.
	The details appear in the Details of Selected Alarm box. The Details of Selected Alarm box identifies the network element and unit affected by the threshold crossing, the specific threshold parameter crossed, the predefined threshold limit, the actual measurement that caused the threshold to be crossed, and the time the threshold was crossed.
5	To view Performance Statistics for the unit associated with the threshold crossing, see "Retrieving Performance Statistics" in *S/DMS Network Manager Performance Monitoring*, 323-4001-056.
6	To manipulate the information in the Alarms dialog, see Procedure 2-5, "Viewing alarm details" on page 2-16.

<div align="center">**—end—**</div>

Procedure 2-5
Viewing alarm details

Use this procedure to open an Alarms dialog and display detailed information about new or active alarms. Use the dialog to investigate the cause of an alarm. You can view alarms for groups, network elements, and specific circuit packs in a shelf.

The Alarms dialog lists the alarms and provides detailed information about each alarm. If an alarm is the result of a performance threshold crossing, the Alarms dialog identifies the threshold that was exceeded.

If desired, you can have the list automatically updated when new alarms occur, or when alarms are cleared on a network element.

You can view the details of all alarm severities, or you can customize the Alarms dialog so that it displays the details of only certain alarms. Also, the information displayed can be sorted by alarm severity, network element ID, time, or alarm ID.

Before starting this procedure, read "Requirements" on page 2-2.

Action

Step	Action
1	You can view new and active alarms on a specific circuit pack, network element, or group of network elements.

If you want to view the	**Then**
active alarms in a group or network element	step 4
active alarms on a specific circuit pack	step 2
new alarms in a group or network element	step 8
new alarms on a specific circuit pack	step 6

2	Select the network element with the alarms you want to view.

—continued—

Procedure 2-5 (continued)
Viewing alarm details

Step	Action
3	Display the Configuration menu and select the **Open Shelf View** command.

The Shelf View window for the selected group or network element appears.

NM-10511.1 (R6)
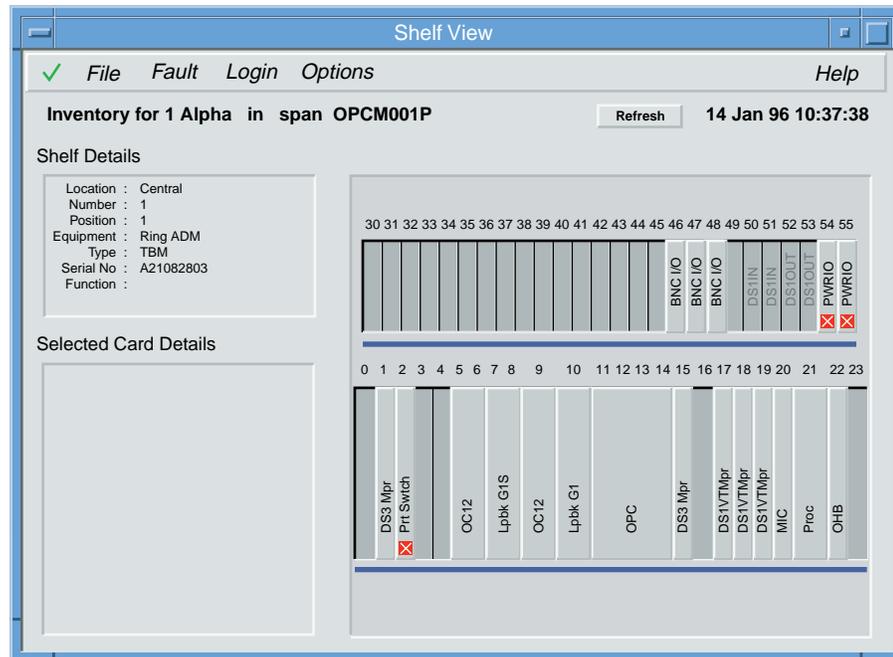
Note: The Shelf View window also displays alarms associated with the environment, facilities, and equipment.

4   Select the object with the alarms you want to view.

—**continued**—

Procedure 2-5 (continued)
Viewing alarm details

Step	Action
5	Display the object menu and select the **Show Alarms** command.
	An Alarms dialog for the selected object appears. This dialog shows the active alarms associated with the selected object. The alarms can be sorted by alarm severity, network element ID, time, or alarm ID.
	New alarms are identified by an alarm balloon in the column at the far left of the alarms list.
	The alarm list identifies the network elements that raised the alarm, the alarm type, the alarm severity, the time that the alarm occurred, and the reason for the alarm.
	When you select an alarm from the list, the Details section of the dialog provides information about the selected alarm. This information includes the location of the equipment affected by the alarm, and the full text of the reason for the alarm.
	Go to step 10.
6	Select the network element with the alarms you want to view.
7	Display the Configuration menu and select the **Open Shelf View** command.
	The Shelf View window appears.
	Note: The Shelf View window also displays alarms associated with the environment, facilities, and equipment.
8	Select the alarm balloon associated with the object for which you want to view alarm details.

—continued—

Procedure 2-5 (continued)
Viewing alarm details

Step	Action
9	Display the object menu and select the **Show New Alarms** command.
	Note: You can also display the Alarms dialog by double-clicking on the alarm balloons associated with group and network elements.
	An Alarms dialog appears. This dialog shows the active alarms associated with the selected object. The alarms can be sorted by alarm severity, network element ID, time, or alarm ID.
	New alarms are identified by an alarm balloon in the column on the far left of the alarms list.
	The alarm list identifies the network elements that raised the alarm, the type of each alarm, the severity of the alarm, the time that the alarm occurred, and an abbreviated reason for the alarm.
	Note 1: Some alarms for DV45 network elements might not have a time stamp. If so, the alarms without a time stamp should be treated as being older than the alarms that have a time stamp.
	Note 2: The time and date displayed for OC-3 Express network elements can be wrong. This problem occurs when the time and date are changed on the network element. It can take 15 minutes for TL1 MOA to resynchronize time settings with the network element. The Alarms dialog also displays the wrong date if the date on the network element and the TL1 MOA platform differ by more than 365 days. Reset the time and date on the network element.
	When you select an alarm from the list, the Details section of the dialog provides information about the selected alarm. This information includes the location of the equipment that is affected by the alarm, and the full text of the reason for the alarm.
10	The Alarms list provides information about the alarms you selected.
	You can have new alarms automatically displayed, or filter the list so that only certain alarms appear. You can also change the list options so the next time you open the Alarms dialog, any new alarms are added to the current list, or they replace the current list.
	You can also investigate an alarm by logging in to a network element or the controller that controls the network element that raised an alarm.
	Once you investigate the alarm, you can acknowledge the alarm.

If you want to	**Then**
have the alarms list automatically updated	step 11
filter the alarms list	step 13
sort the alarms list	step 15
change the list options	step 16
investigate or acknowledge an alarm	step 5
exit the Alarms dialog	step 30

—continued—

Procedure 2-5 (continued)
Viewing alarm details

Step	Action
11	Select the **Auto** button in the Display Options area of the Alarms dialog.
	A check mark indicates that the alarm list automatically updates with new alarms as soon as they are raised by the network element.
	Note: You can also automatically update the alarms list by selecting the Auto Update Alarms dialog command in the Preferences dialog. (See Procedure 2-3, "Controlling alarm notification".)
12	To turn automatic updating off, select the **Auto** check button and verify that the check mark is removed.
	Go to step 10.
13	Move to each of the check buttons for Critical, Major, minor, warnings, and threshold crossings in the Display Options area of the Alarms dialog. Select the buttons that correspond to the alarms you want to display in the Alarms list.
	A check mark indicates that the alarms appear in the alarms list, if there are any. Alarms that do not have a check mark do not appear in the list.
	Note: Although threshold crossings have a warning severity, threshold crossing alarms appear in the list only if the threshold crossing button is selected.
14	If you do not want certain alarms to appear in the alarms list, deselect the check button corresponding to the alarm and verify that the check mark is removed.
	The deselected alarms are removed from the list.
	Go to step 10.
15	Use the data selector in the Sorted by: field to specify t the sorting option for the alarms list. The default option is Severity.
	The alarms are sorted using the specified option.
16	The List Options enable you to change the information in the alarms list.

If you want to	**Then**
reset the alarms list	step 17
manually update the alarms list	step 18
replace the list with other alarms	step 19
add alarms to the list	step 20

Step	Action
17	Select the Alarms dialog List Options **Reset List** button.
	All entries in the Alarms list are removed.
	Go to step 10.

—continued—

Procedure 2-5 (continued)
Viewing alarm details

Step	Action
18	Select the **Update List** button, if it is enabled (not grayed out).
	Note: The **Update List** button indicates that additional alarms occurred since you opened the Alarms dialog. The button can be enabled as a result of new alarms being raised, or active alarms being cleared. The **Update** button is disabled if the **Auto** button in the Display Options is enabled.
	The Alarms list is updated with the new alarms that have occurred since the dialog was opened.
	If alarms have been cleared since the dialog was opened, those alarms are removed from the list. To learn more about viewing cleared alarms, see Procedure 2-6, "Viewing cleared alarms" on page 2-23.
	Go to step 10.
19	Select the List Options **Replace list with requested alarms** radio button.
	The button is highlighted.
	The next time you select a show alarms command, the Alarms list contains only the alarms on the selected group or network element.
	Go to step 10.
20	Select the List Options **Add requested alarms to list** radio button.
	The button is highlighted.
	The next time you select a show alarms command, the Alarms list contains whatever alarms are currently in the list, plus the alarms on the selected group or network element.
	Go to step 10.
21	Move to the alarm in the Alarms list that you want to investigate or acknowledge.
22	Display the Alarms list menu.
	The Alarms list menu appears.
23	You can raise the network element affected by an alarm to the foreground of the network display. You can also log in to a network element or a network element controller, acknowledge an individual alarm for a network element, or view performance statistics for a network element.

If you want to	**Then**
raise a network element with an alarm to the foreground of the network display	step 24
auto-login to the network element	step 25
log in to the active controller	step 26
acknowledge the alarm	step 11
view performance statistics	step 29

—continued—

Procedure 2-5 (continued)
Viewing alarm details

Step	Action
24	Select the **Go To this NE** command.
	The network element affected by an alarm is raised to the foreground of the network display. If the network element is within a group, the subgroup window for the network element is displayed.
25	Select the **Auto-login to <ne>** command.
	The network element user interface appears in a separate window.
	For more information on the Northern Telecom MAPCI network element user interface, see *User Interfaces Description*, 323-nnnn-301.
	Go to step 27.
26	Select the **Auto-login to <controller>** command.
	The controller user interface appears in a separate window.
	Note: If S/DMS Network Manager-cannot determine which is the active controller, a Controller login dialog appears. Select the controller that you want to log in to from this dialog.
	For more information on the Northern Telecom OPC user interface, see *User Interfaces Description*, 323-nnnn-301.
27	When you complete your controller or network element session, continue with this procedure.
28	Select the **Acknowledge Alarm** command.
	This command acknowledges only the selected alarm. The alarm count in the group or network element alarm balloon is reduced by one.
	Note: To acknowledge all alarms on the object at once, see Procedure 2-7, "Acknowledging alarms on an object".
29	Select the **Show Performance Statistics** command.
	A progress dialog, followed by the Performance Statistics dialog appears.
	Note: To learn more about the Performance Statistics dialog, see "Retrieving Performance Statistics" in *S/DMS Network Manager Performance Monitoring*, 323-4001-056.
30	Select the **Done** button to close the Alarms dialog.
	The Alarms dialog disappears.
	—**end**—

Procedure 2-6
Viewing cleared alarms

Use this procedure to view information about alarms that have been cleared on a network element.

Cleared alarms are brought to your attention by the Cleared Alarm indicator. This indicator is represented by a small alarm balloon icon that is located in the bottom, left corner of the Alarm Banner.

Use this procedure to display information about a cleared alarm, using the Cleared Alarms dialog.

Before starting this procedure, read "Requirements" on page 2-2.

Action

Step	Action
1	The alarms are updated in real time. If an alarm on a network element is cleared, the cleared alarm is brought to your attention.

A Cleared Alarms indicator (small alarm balloon icon in the bottom left corner) appears on the Alarm Banner.

NM-10510.1

Netman 1	Critical	Major	minor	warnings
?	11	85	41	52

Show Graphical Network Browser

—continued—

Procedure 2-6 (continued)
Viewing cleared alarms

Step	Action
2	Click on the Cleared Alarms indicator.
	The Cleared Alarms dialog appears. This dialog lists all network elements that have had alarms cleared since the time shown at the top of the dialog.
	Note: Selecting the **Show NEs with Cleared Alarms** from the Fault menu also displays the Cleared Alarms dialog.
3	If the **Update List** button is enabled (not grayed out) there are additional cleared alarms not shown in the Cleared Alarms list. Select the **Update List** button.
	The Cleared Alarms list updates with the alarms that have been cleared since the time shown at the top of the dialog.
4	Once you review the Cleared Alarms list, you can reset the Cleared Alarm indicators on the network elements, or you can investigate the alarm by logging in to the controller.

If you want to	**Then**
log in to the controller	step 5
reset the cleared alarms indicators	step 9

Step	Action
5	Move to the alarm in the Cleared Alarms list that you want to investigate.
6	Display the Cleared Alarms list menu.
	The Cleared Alarms list menu appears.
7	The Cleared Alarms list menu enables you to log in directly to an active controller of a network element in the list or to automatically log in to a network element.

If you want to	**Then**
log in to the active controller	"Logging in to a Northern Telecom OPC" in *S/DMS Network Manager Connectivity*, 323-4001-053.
	"Logging in to a remote TL1 MOA controller" in *S/DMS Network Manager Connectivity*, 323-4001-053.
auto-login to the network element	"Logging in to a network element" in *S/DMS Network Manager Connectivity*, 323-4001-053.

Note: If you log in to the controller, use the Event Browser to view a historical list of the alarms. Set the time field in the Event Browser to the same time shown at the top of the Cleared Alarms dialog.

Step	Action
8	When you complete your controller session, continue with this procedure.

—**continued**—

Procedure 2-6 (continued)
Viewing cleared alarms

Step	Action
9	Select the **Reset** button in the Cleared Alarms dialog.
	The entries in the Cleared Alarms list are removed, and the Cleared Alarms indictors are removed from the group and network elements. The time stamp at the top of the dialog changes to the current time.
10	Select the **Done** button to close the Cleared Alarms dialog.
	The Cleared Alarms dialog disappears.
11	Acknowledge any other remaining alarms on the GNB screen.
	For more information, see Procedure 2-7, "Acknowledging alarms on an object" on page 2-26.

<div align="center">**—end—**</div>

Procedure 2-7
Acknowledging alarms on an object

Use this procedure to acknowledge all alarms on an object.

Using GNB to acknowledge an alarm only removes the alarm highlighting from the selected object. The acknowledgment does not clear the alarm condition.

When you acknowledge an alarm on a group, the color of the selected group, and all network elements associated with the group, change to gray. The alarm balloons, network elements, and threshold crossing indicators (if present) are removed from the group. The alarm count shown inside the group and network elements does not decrease until the alarms are cleared on the network element.

When you acknowledge the alarms on a network element, the color of the selected network element changes to gray, and the alarm balloon and threshold crossing indicator (if present) are removed.

When you acknowledge the alarms on a circuit pack, the color of the selected object changes to gray and the alarm balloon is removed.

Acknowledging the alarms makes it easier to tell when new alarms occur. When new alarms occur, the affected objects are highlighted to indicate the severity of the new alarm. An alarm balloon appears on the object, and any name and numbers associated with the object appear, if hidden.

Before starting this procedure, read "Requirements" on page 2-2.

Action

Step	Action
1	You can acknowledge all the active or new alarms on a group, network element, or circuit pack.

If you want to	**Then**
acknowledge all active alarms on an object	step 2
acknowledge all new alarms on an object	step 9

Note: If you acknowledge an alarm on a group, the highlighting is automatically removed from all network elements associated with that group.

—*continued*—

Procedure 2-7 (continued)
Acknowledging alarms on an object

Step	Action
2	Select the group or network element with the alarms that you want to acknowledge.

If you want to acknowledge the	**Then**
active alarms on a group or network element	step 4
active alarms on a circuit pack	step 3

Step	Action
3	Display the Configuration menu and select the **Open Shelf View** command.

The Shelf View window appears.

Note: The Shelf View window also displays alarms associated with the environment, facilities, and equipment.

Step	Action
4	Select the object with the alarms you want to acknowledge.
5	Display the Fault menu and select the **Acknowledge Alarms**.

If you select a group, the alarm balloon and threshold crossing indicator (if present) are removed from the group and all network elements associated with the group. The color of the group changes to gray. To remind you of the alarm, the highlight color remains on the outline of the group. The alarm count inside the group does not change.

If you select a network element, the alarm balloon is removed from only the selected network element. If a threshold crossing indicator is present on the network element, it is also removed. However, if the selected network element is the only network element in a group with an active alarm, the alarm balloon is also removed from the associated group. The color of the network element changes to gray. To remind you of the alarm, the highlight color remains on the outline of the network element.

If you select an object in the Shelf View window, the alarm balloon is removed. The color of the object changes to gray. To remind you of the alarm, the highlight color remains on the outline of the object.

Go to step 11.

Step	Action
6	You can acknowledge new alarms on a group, network element, or circuit pack.

If you want to acknowledge	**Then**
new alarms on a group or network element	step 9
new alarms on a circuit pack	step 7

Step	Action
7	Select the group or network element with the alarms you want to acknowledge.

—continued—

Procedure 2-7 (continued)
Acknowledging alarms on an object

Step	Action
8	Display the Configuration menu and select the **Open Shelf View** command.

The Shelf View window appears.

Note: The Shelf View window also displays alarms associated with the environment, facilities, and equipment.

9	Select the alarm balloon on the object with the alarms you want to acknowledge.
10	Display the alarm balloon object menu and select the **Acknowledge Alarms** command.

If you select a group, the alarm balloon is removed from the group and all network elements associated with the group. The color of the group changes to gray. To remind you of the alarm, the highlight color remains on the outline of the group. The alarm count inside the group does not change.

If you select a network element, the alarm balloon is removed from only the selected network element. However, if the selected network element is the only network element in a group with an active alarm, the alarm balloon is also removed from the associated group. The color of the network element changes to gray. To remind you of the alarm, the highlight color remains on the outline of the network element.

If you select an object in the Shelf View window, the alarm balloon is removed. The color of the object changes to gray. To remind you of the alarm, the highlight color remains on the outline of the object.

11	When a new alarm occurs, an alarm balloon reappears on the affected group, network element, or circuit pack.

<div align="center">

—end—

</div>

Procedure 2-8
Acknowledging an individual alarm

Use this procedure to acknowledge an individual alarm on a group, network element, or circuit pack.

Individual alarms can be acknowledged only from the Alarms dialog alarms list.

Before starting this procedure, read "Requirements" on page 2-2.

Action

Step	Action
1	You can acknowledge an individual alarm for a group, network element, or circuit pack.

If you want to acknowledge an	**Then**
individual alarm for a group or network element	step 3
individual alarm for a circuit pack	step 2

Step	Action
2	Display the Configuration menu and select the **Open Shelf View** command.
	The Shelf View window appears.
	Note: The Shelf View window also displays alarms associated with the environment, facilities, and equipment.
3	Display the object menu for the group, network element, or circuit pack for which you want to acknowledge the alarms.

—continued—

Procedure 2-8 (continued)
Acknowledging an individual alarm

Step	Action
4	Select the **Show Alarms** command.
	An Alarms dialog for the selected object appears.
	If you select a group, the Alarms dialog shows all active alarms on all network elements in the group.
	If you select a network element, the Alarms dialog shows all active alarms on the network element.
	If you select a circuit pack, the Alarms dialog shows all active alarms on the circuit pack.
	The new alarms are identified by an alarm balloon in the column on the far left of the alarms list.
	The alarms list identifies the network elements that raised the alarm, the alarm type, the alarm severity, the time the alarm occurred, and the reason for the alarm.
	When you select an alarm from the list, the Details section of the dialog provides information about the selected alarm. This information includes the location of the equipment affected by the alarm, and the full text of the reason for the alarm.
5	Move to the alarm in the Alarms list you want to acknowledge.
6	Display the Alarms list menu.
	The Alarms list menu appears.
7	Select the **Acknowledge Alarm** command.
	This command acknowledges only the selected alarm. The alarm count in the group or network element alarm balloon is reduced by one.
	Note: If you want to acknowledge all alarms on the object at once, see Procedure 2-7, "Acknowledging alarms on an object".
8	Select the **Done** button to close the Alarms dialog.
	The Alarms dialog disappears.

—**end**—

Procedure 2-9
Changing the network element icon display size

Use this procedure to change the size of the icons used to represent network elements on the S/DMS Network Manager screen.

S/DMS Network Manager can display three sizes of icons: small, variable, or large. When you use the Preferences dialog to change the icon size, the network elements in all windows change to the selected size.

For more information on network elements and the information associated with the icon display size, see "Understanding GNB" on page 1-1.

Before starting this procedure, read "Requirements" on page 2-2.

Action

Step	Action

1   Display the Options menu and select the **Set Preferences** command.

The Preferences dialog is displayed.

2   Select the network element icon size using the NE Size radio buttons.

If you want to	**Then**
change icon size for the current GNB session	step 3
change the default icon size for GNB	step 4

3   Select the **OK** button.

All network elements change to the selected size for that session of the GNB.

4   You can override the default preferences set in the GNE by selecting the **Save** button in the Preferences dialog or by saving the new S/DMS Network Manager configuration. For more information, see "Saving or reverting the configuration" in *S/DMS Network Manager Configuration*, 323-4001-054.

The default display size for all network element icons is changed for GNB.

For more information on network elements, see "Understanding GNB" on page 1-1.

—**end**—

Procedure 2-10
Controlling the display of the name or number of an object

Use this procedure to control the display of group names and network element names and numbers. You can display or hide the name and number of network elements. Also, you can control the font size and background color used to display group names and network element names and numbers.

> *Note:* The name and number of a network element cannot be hidden if the network element has an active alarm.

If the names and numbers for a network element are hidden, they are redisplayed when a new alarm is raised on the network element.

Display preferences set in the GNE become the defaults for the GNB. You can reset the default display preferences by choosing new preferences and selecting the Save command in the Preferences dialog.

Before starting this procedure, read "Requirements" on page 2-2.

Action

Step	Action
1	When you first start GNB, the group and network element names and the network element numbers are shown.

If you want to	**Then**
display or hide the names or numbers for the network elements in an individual window	step 2
display or hide the names or numbers for the network elements in all windows	step 3
set the font size for group names and network element names and numbers	step 6
set the background color for group names and network element names and numbers	step 9

Note: A check mark next to a command indicates that the command is active. When a command is active, the display option specified is implemented for the selected window range.

—continued—

Procedure 2-10 (continued)
Controlling the display of the name or number of an object

Step	Action
2	Display the Options menu in the desired window and select the **Display NE Names** or the **Display NE Numbers** command.
	The names or numbers for network elements are displayed or removed from the specified window.
	Go to step 11.
3	Display the Options menu and select the **Set Preferences** command.
	The Preferences dialog appears.
4	Select the **NE Names** or the **NE Numbers** check button.
5	Select the **OK** button.
	The names or numbers for all network elements are displayed or removed.
	Go to step 11.
6	Display the Options menu and select the **Set Preferences** command.
	The Preferences dialog appears.
7	Select the font size using the NE Font Size and the Group Font Size radio buttons.
	Note: The font size setting is independent of the network element size. However, if the font size is set to variable, the font changes in response to the network element activity.
8	Select the **OK** button.
	The font size is changed in all windows.
	Go to step 11.
9	Display the Options menu and select the **Set Preferences** command.
	The Preferences dialog appears.
10	Select **Group Names Background** or the **NE Names Background** check buttons.
	The background color for group names and network element names and numbers is changed to grey.
11	You can implement the selected display preference for the current session, or you can make the setting the default for future sessions.

If you want to	**Then**
implement the selections for the current session	step 12
make the selections the default	step 13

Step	Action
12	Select the **OK** button.
	The display preferences is implemented in all windows for the current session of GNB.
	Go to step 14.

—continued—

Procedure 2-10 (continued)
Controlling the display of the name or number of an object

Step	Action
13	Select the **Save** button.
	The display preference is implemented in all windows for the current session, and the display preference becomes the default for future sessions of GNB. This default setting can be changed.
	Note: The Use Default button in the Preferences dialog allows you to revert to the default display preferences set in the GNE.
14	Display preferences set using the Preferences dialog replace the display preferences set using the check commands in the Options menu.

—end—

Procedure 2-11
Displaying background maps

Use this procedure to display background maps. Background maps can be displayed in an individual window, or in all windows in the session.

Note: The default display preferences are set in GNE. You can reset the default display preferences by choosing new preferences and selecting the Save command in the Preferences dialog.

Before starting this procedure, read "Requirements" on page 2-2.

Action

Step	Action
1	The display of background maps can be controlled for an individual window or all windows in the session.

If you want to	**Then**
display a background map for an individual window	step 2
display a background map for all windows	step 3

Note: A check mark next to a command indicates the command is active. When a command is active, the display option specified is implemented for the selected window range.

Step	Action
2	Display the Options menu in the desired window and select the **Display Background Map** command.
	Go to step 8.
3	Display the Options menu and select the **Set Preferences** command.
	The Preferences dialog is displayed.
4	Select the **Background Maps** command.
5	You can implement the selected display preference for the current session, or you can make the setting the default for future sessions.

If you want to	**Then**
implement the selections for the current session	step 6
make the selections the default	step 7

Step	Action
6	Select the **OK** button.
	The background map is displayed in all windows for the current session.
	Go to step 8.

—continued—

Procedure 2-11 (continued)
Displaying background maps

Step	Action
7	Select the **Save** button.
	The background map is displayed in all windows for the current session, and the display preference becomes the default for future sessions of GNB. This default setting can be changed.
	Note: The Use Default button in the Preferences dialog allows you to revert to the default display preferences set in the GNE.
8	For more information on controlling the display of background maps, see "Managing background maps" in *S/DMS Network Manager Configuration*, 323-4001-054.
	Note: Display preferences set using the Preferences dialog replace the display preferences set using the check commands in the Options menu.

—**end**—

Procedure 2-12
Monitoring a TA-1230 ring

Use this procedure to monitor the traffic and protection status of a TA-1230 ring. You can do this procedure only if your S/DMS Network Manager monitors a system that contains a TA-1230 ring.

If your S/DMS Network Manager is configured to monitor a TA-1230 ring, GNB provides a graphical representation of the ring. Each ADM in the ring is represented by a network element node. If regenerators have been configured as part of the ring, they also appear in the ring configuration displayed on GNB.

The interconnection of the ring ADMs and regenerators is shown by graphical links called traffic display links. These links allow you to monitor the activity of the ring, and to view the protection status of the ring.

Special treatment, including color and graphical line patterns are applied to the ring ADMs, regenerators, and links. This treatment helps you to identify alarms, link activity, and protection status of the ring. Each link is treated independently.

If there is a problem with a ring ADM or regenerator, an alarm is raised by the network element. The alarm is highlighted in the same manner as in a non-ring configuration (color highlighting and alarm balloons are applied to the ADM or regenerator that raised the alarm). If the ring is part of a group, an alarm balloon is also applied to the group in the network window.

The ADMs in a TA-1230 ring configuration can be located in the network window, in a subnetwork window, or in a combination of both. If the ADMs that make up the ring are located in separate windows, a link continuation icon appears at the end of the traffic display link in each window.

The ADMs or regenerators in a TA-1230 ring can be connected to network elements that are not part of the ring. These connections are shown as standard link types such as fiber, electrical or CNet links.

GNB applies special graphical treatment to show the state and protection status of each link in the ring. This treatment allows you to identify link failures and protection switching to or from the ring you are monitoring.

Procedure 2-12 (continued)
Monitoring a TA-1230 ring

GNB allows you to obtain the following information about the ring:

- the activity of the ring (active or inactive)

- the protection state

- trouble on the link

- traffic rerouted due to trouble on the link

- channels on which a lockout is in effect (lockouts prevent traffic from being switched from the channel in the event of a failure)

For more information on ring traffic link states, see "Understanding GNB" on page 1-1.

Action

Step	Action
1	Log in to S/DMS Network Manager and open GNB.
	The GNB network window appears.
2	If necessary, double-click on the group that contains the TA-1230 ring configuration, or a portion thereof.
	The subnetwork window appears.

NM-10630.1
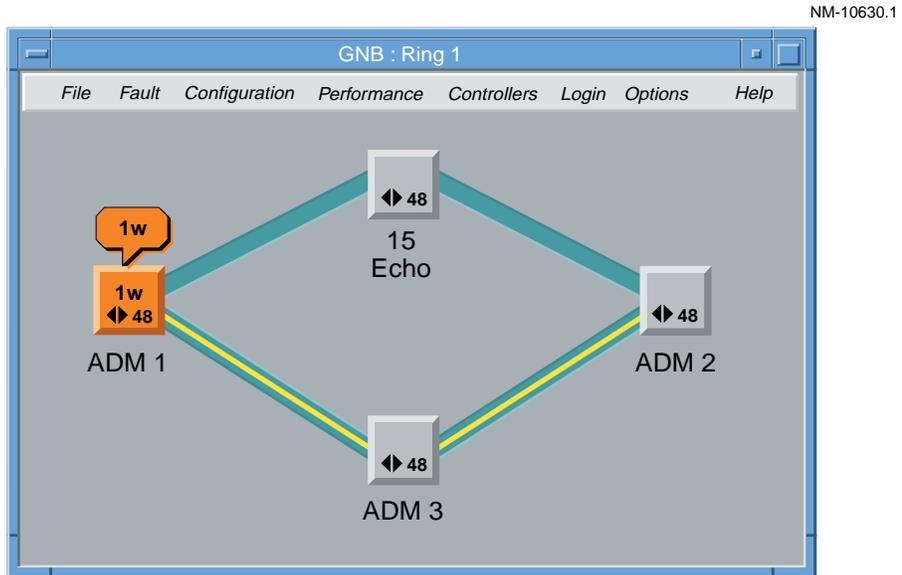
—**continued**—

Procedure 2-12 (continued)
Monitoring a TA-1230 ring

Step	Action

3   The ring configuration shows the alarms raised by the ADMs in the ring, and the interconnection of the ADMs. The traffic display links provide information on the link state and protection status within the ring. The information provided by the ring configuration allows you to analyze the operation of the ring and to identify problems.

If you want to	**Then**
analyze the ring traffic display links	see "Ring traffic link states" on page 1-36
monitor the alarms raised by the ADMs	step 4

4   Monitor the alarms on the ADMs and regenerators in the ring. If desired, you can log in to a controller and use the Network Summary tool to monitor the protection switching activity in the ring. You can also log in to the network element and view protection switching data for each network element in the ring.

If you want to	**Then** see
monitor the alarms	Procedure 2-2, "Browsing the network for alarms"
view alarm details	Procedure 2-5, "Viewing alarm details"
log in to a controller	"Logging in to a Northern Telecom OPC" in *S/DMS Network Manager Connectivity*, 323-4001-053.
	"Logging in to a remote TL1 MOA controller" in *S/DMS Network Manager Connectivity*, 323-4001-053.
log in to a network element	"Logging in to a network element" in *S/DMS Network Manager Connectivity*, 323-4001-053.

—end—

Procedure 2-13
Viewing controller details

Use this procedure to view the current status of the controllers that S/DMS Network Manager monitors, and to view the controller details. The Controller List dialog enables you to determine the state of the S/DMS Network Manager alarm collection process and the alarm reporting from individual controllers.

The Controller List dialog can also be used to view the comments that GNE users have entered about each controller, and to determine the software release installed on each controller monitored by S/DMS Network Manager.

The Bridging status button is not used for TL1 MOA controllers.

> *Note:* If the name of a controller is changed, the name displayed in the Controller Details dialog is updated only when the controller is re-added to the network configuration. It is not updated dynamically.

To learn more about the information displayed in the Controller List dialog and the Controller Details dialog, see "Understanding GNB" on page 1-1.

Before starting this procedure, read "Requirements" on page 2-2.

Action

Step	Action
1	Display the Controllers menu and select the **Show List of Controllers** command. *The Controller List dialog appears. The dialog lists each controller monitored by S/DMS Network Manager.*

—continued—

Procedure 2-13 (continued)
Viewing controller details

Step	Action
2	The Controller List dialog enables you to view the status of each controller, the comments entered by GNE users for a controller, or the software release installed on a controller. You can also use the Controller List dialog to view the details of a controller.

If you want to	**Then**
view the status of a controller	step 3
view the comments for a particular controller	step 4
view information about the software releases installed on a controller	step 5
view the software bridging status of a controller	step 6
view the details of a controller	step 7
exit the Controller List dialog	step 10

Step	Action
3	If not already selected, select the **Display Controller Status** button.
	The Controller List dialog shows the activity and status of each controller.
	The Collection Status field shows the current status of the S/DMS Network Manager alarm collection process. The possible values are Running and Stopped.
	The Status column shows the current status of alarm reporting for each controller that S/DMS Network Manager monitors.
	Go to step 2.
4	Select the **Display Span Comments** radio button.
	The Controller List dialog displays the comments entered for each controller.
	Go to step 2.
5	Select the **Display S/W Releases** radio button.
	The Controller List dialog displays the software releases installed on each controller.
	Go to step 2.
6	Select the **Bridging Status** radio button.
	The Controller list displays the controller server software bridging status for each controller.
	Go to step 2.
7	Select the controller whose details you want to view and display the Controller List dialog list menu.
	The controller list menu appears.

—**continued**—

2-42 Monitoring a network

Procedure 2-13 (continued)
Viewing controller details

Step	Action
8	Select the **View** command from the menu.
	The Controller Details dialog appears.
	The Controller Details dialog gives the details of the controllers. If S/DMS Network Manager collects alarms from only one controller, the details of that controller are listed on the left side of the dialog. The right side of the dialog is blank.
9	When you finish viewing the controller details, select the **Done** button in the Controller Details dialog.
	Go to step 2.
10	Select the **Done** button to close the Controller List dialog.

—**end**—

Trouble clearing

This chapter describes how to use S/DMS Network Manager to identify problems brought to your attention through the status icon. The status icon identifies a communication problem between S/DMS Network Manager and a controller, or a controller and the network elements in a span. The status icon also identifies when alarm counts are not reliable because alarms from certain controllers are not reported on GNB.

You can log in to the controller or network elements and use the available tools to isolate and resolve a problem. For Northern Telecom operations controllers (OPC), the *Alarm and Trouble Clearing Procedures*, 323-nnnn-543, provide detailed instructions on how to isolate and resolve problems from the controller and network elements.

Requirements

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

*   read the conventions described in "About this guide" on page ix

*   read "Understanding GNE" in *S/DMS Network Manager Configuration*, 323-4001-054 and "Understanding GNB" on page 1-1

*   ensure you have a userID and password that allow you access to GNB (admin or surveillance access class)

*   log in to S/DMS Network Manager and open GNB. If you do not know how to do this, see "Logging in and opening an S/DMS Network Manager tool" in *S/DMS Network Manager Connectivity*, 323-4001-053.

Chapter task list

The following table lists the problem identification task.

Task	Page
Investigating error conditions	3-2

Procedure 3-1
Investigating error conditions

Use this procedure to investigate abnormal conditions brought to your attention by the status icon.

The status icon is located to the left of the menu bar in the GNB and GNE network windows. It is used to indicate the operating state of the controllers monitored by S/DMS Network Manager, and to bring abnormal conditions to your attention.

When all controllers are all operating normally, the status icon is a green check mark. Normal operation is considered to be true if each controller monitored by S/DMS Network Manager is in the active state, and its backup controller, if there is one, is in the inactive state. Any other state, for whatever reason, is considered abnormal, resulting in a change in the status icon.

The status icon changes to a red X if a controller enters an abnormal state. The red X also appears if S/DMS Network Manager cannot collect alarm information from a network element. This condition can be caused by a communication problem between S/DMS Network Manager and a controller, or a controller and a network element. The red X also appears if the S/DMS Network Manager alarm collection process is stopped, preventing S/DMS Network Manager from collecting alarms from any controller. Whatever the cause, S/DMS Network Manager cannot guarantee the accuracy of alarm counts when the status icon is a red X.

In some cases, a controller can report numerous alarms while operations such as provisioning and maintenance are carried out on the network elements. Alarm reports can be suspended on an individual controller basis. If alarm reporting from one or more controllers is suspended, the status icon changes to an inverted yellow triangle. While alarm reporting is suspended, S/DMS Network Manager continues to collect alarms from the controller, but they are not displayed on GNB until alarm reporting resumes.

Note: Only GNE users can control alarm collection and reporting.

Before starting this procedure, read "Requirements" on page 3-1.

Procedure 3-1 (continued)
Investigating error conditions

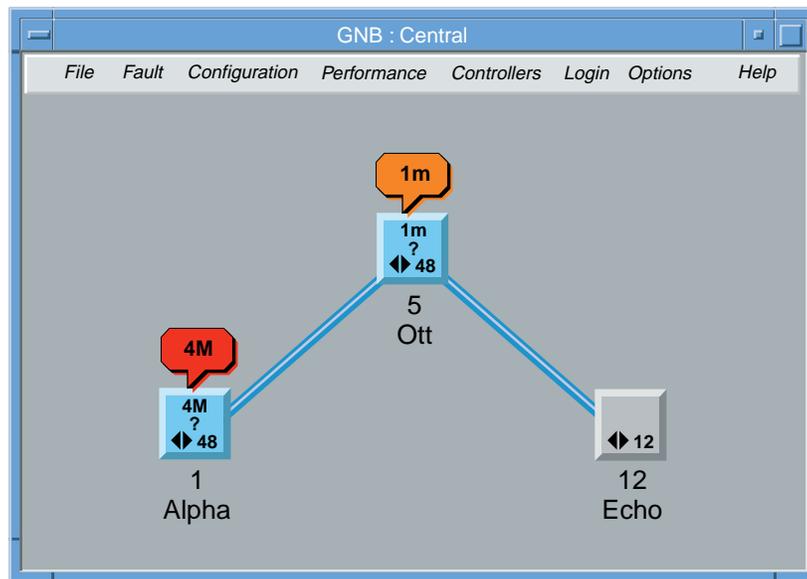## Action

Step	Action

1   Check the status icon located to the left of the menu bar.

If the status icon is	**Then**
a red X	step 2
an inverted yellow triangle	step 10
a green check mark	the procedure is complete

2   Double-click on each group to open all subnetwork windows.

3   Look at the network elements in each subnetwork window.

> ⚠️ **CAUTION**
> **Risk of unreliable alarm counts**
> If a network element is blue, there is a possibility that the alarm counts from that network element are not reliable.

GNB applies blue highlighting to the network elements affected by the problem. A question mark (?) also appears inside the network elements.

NM-10632.1

—continued—

Procedure 3-1 (continued)
Investigating error conditions

Step	Action

If a single network element is blue, there can be a communication problem between the network element and the controller of the network element.

If all network elements are blue, there can be a communication problem between S/DMS Network Manager and the controllers controlling those network elements, or the alarm collection process can be completely stopped. Also, if certain operations are done on a controller, such as a software upgrade, the nodes associated with that controller can be blue.

4   Display the network window Controllers menu and select the **Show List Of Controllers** command.

The Controller List dialog appears.

5   Use this dialog to determine whether a communication problem exists or the S/DMS Network Manager alarm collection process is stopped.

If	Then
there is an X in the column on the far left	step 6
the S/DMS Network Manager Collection Status field is "Stopped"	step 8
you want to close the Controller List dialog	step 13

6   A communication problem exists between S/DMS Network Manager and the controllers that have the X next to them, or a communication problem exists between the controller and the network elements in its span of control.

The X identifies the controllers causing the problem.

NM-10505.1

Controller List

Network Manager Collection Status: Running

Display   ◆   Controller Status
         ⌄   Controller Comments
         ⌄   S/W Releases
         ⌄   Bridging Status

Primary Controller	Activity	Status	Backup Controller	Activity	Status
☒ OPCM001P/47.45.0.246	Unknown	Not collecting	\<none>	n/a	n/a
OPCM002P/47.46.3.218	Active	Collecting	\<none>	n/a	n/a
OPCM003P/47.46.0.255	Active	Collecting	OPCM0038/47.46.1.14	Inactive	Not collecting
OPCM004P/47.45.1.12	Active	Collecting	\<none>	n/a	n/a

Done   Alt+Return

—continued—

Procedure 3-1 (continued)
Investigating error conditions

Step	Action
7	Log in to the controller to investigate the problem.
	If you do not know how to log in to a controller, see "Logging in to a Northern Telecom OPC" or "Logging in to a remote TL1 MOA controller", both located in *S/DMS Network Manager Connectivity*, 323-4001-053.
8	Check the S/DMS Network Manager Collection Status field.
	If this field is "Stopped", the alarm collection process has been stopped by a GNE user. S/DMS Network Manager cannot collect alarm counts from any controller when collection is stopped.
9	To restart the S/DMS Network Manager alarm collection process, see "Controlling alarm collection" in *S/DMS Network Manager Configuration*, 323-4001-054.
	Note: You must have admin access privileges to start the alarm collection process. Contact your system administrator.
	Go to step 5.
10	Look for groups and network elements with an NR (not reporting) notation inside them.
	When alarm reporting is suspended on one controller, the status icon appears as an inverted yellow triangle. Also, an NR (not reporting) notation appears inside all groups and network elements associated with a controller whose alarm reporting is suspended.

NM-10631.1 (R6)
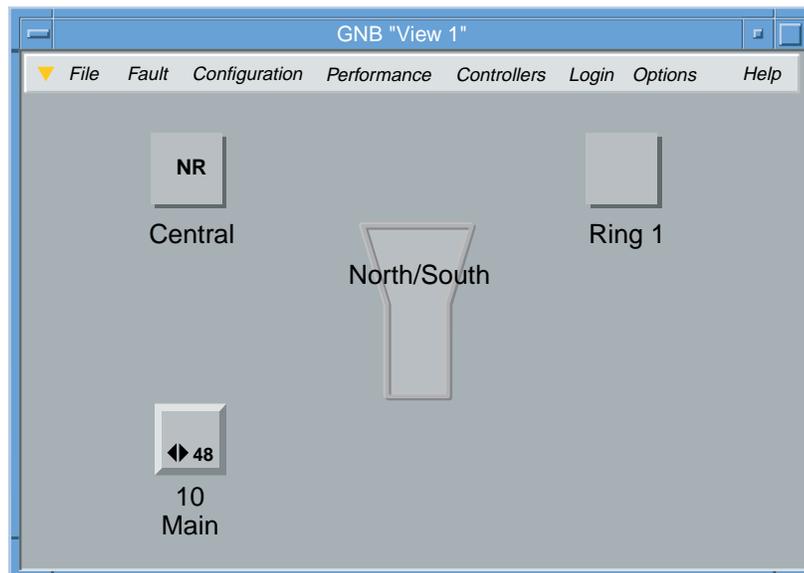
—continued—

Procedure 3-1 (continued)
Investigating error conditions

Step	Action

Note: If a controller enters an abnormal state, the inverted yellow triangle changes to a red X status icon. If the X status icon appears, go to step 2.

11 Display the network window Controllers menu and select the **Show List Of Controllers** command.

The Controller List dialog appears.

NM-10507.1
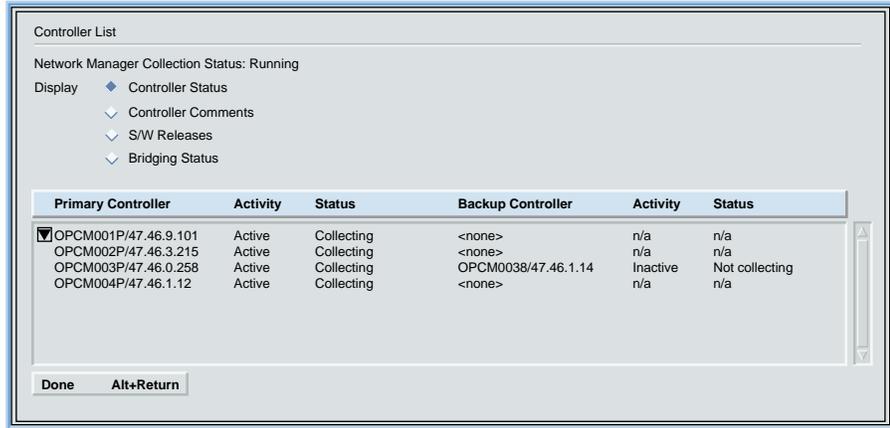
The controller whose alarm reporting is suspended is identified by an inverted triangle in the column on the far left of the dialog. Also, the Status field for the controller shows "Suspended".

12 To resume alarm reporting for this controller, see "Controlling alarm reporting" in *S/DMS Network Manager Configuration*, 323-4001-054.

Note: You must have admin access privileges to start the alarm collection process. Contact your system administrator.

13 Select the **Done** button in the Controller List dialog.

The Controller List dialog is removed from the display.

—end—

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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