Datum Inc
Telecommunications

NetSync^{PLUS}™

User Guide

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Contents

Using This Book

Index

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Using This Book

This section describes the contents of this guide and the typographical conventions it uses.

About this book

This book describes how to use NetSync^PLUS to manage DATUM network elements. It is intended for operators responsible for managing, maintaining, and monitoring telecommunications networks.

How this book is organized

This book is organized as follows:

- **Chapter 1, Introduction,** provides an overview of NetSync^PLUS.

- **Chapter 2, Network Scenarios,** describes how to perform common tasks using NetSync^PLUS.

- **Chapter 3, Fault Management,** describes the module that you use for day-to-day monitoring of the network elements in your network.

- **Chapter 4, Configuration Management,** describes the module that you use to add, modify, or delete network elements in your network.

- **Chapter 5, Performance Management,** describes the performance management module.

- **Chapter 6, Security Management,** describes the module that you use to add, modify, or delete users of NetSync^PLUS.

- **Chapter 7, System Administration,** describes the module that you use to create filters that specify what information to include on the NetSync^PLUS displays.

- **Appendix A, Backups and Restores,** describes how to perform backups and restores of your data.

This book also contains an Index.

Typographical conventions

Source code, screen displays, filenames, and directory names. These are shown in boldface Courier. For example:

The file `my_file.c` is located in `/my_path/my_directory`.

Optional text and **variables**. Text that you can optionally enter is enclosed in square brackets. Variables that you replace with actual values are shown in italic boldface courier. For example:

To make a copy of the file, enter:

`cp [-ip]` *`filename1 filename2`*

`cp` is the command that you enter. *`filename1`* and *`filename2`* are mandatory user-supplied arguments that you replace with the actual names of the desired source and destination files. `-i` and `-p` are optional arguments.

User input, optional user input, and user-supplied variables. User input (text that you type) is shown in italic, boldface Courier.

Keyboard combinations. Keys that you press together are shown with a plus sign between them. For example:

Press CTRL+E, then ALT+F4.

Filename nomenclature. When a filename is mentioned, the full pathname is usually omitted. You should provide the required pathname.

Command line nomenclature. This manual assumes that you press RETURN after you enter a command, and that a command fits on a single line. When a command line extends beyond one line in this manual, it is shown with a backslash (\) at the end of the line to indicate that the command continues. You should not press RETURN until you have entered the entire command.

☞ **Important.** The Important notation is used to highlight information from the preceding text. It may be used to point out something notable that was not stated explicitly or to make recommendations for specific circumstances, for example.

💣 **Caution.** The Caution notation is used to warn readers of possible system failure, loss of data or damage to network elements.

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1 Introduction

This chapter provides an overview of NetSync^PLUS.

1.1   Overview

NetSync^PLUS provides an easy-to-use interface for managing network elements (NEs). The network elements that NetSync^PLUS manages are the PRR10, PRS-50, and TSG3800 .

1.1.1   Regions and sites

NetSync^PLUS uses the concepts of regions and sites to group NEs. Regions and sites are mainly containers.

- Region: contains one or more sites. The only other attribute of a region is its geographical location.

- Site: contains one or more NEs. Other attributes of a site include the name and telephone number of the site manager, the site's street address, and its geographic location.

Figure 1.1 illustrates this the relationship between regions, sites, and NEs:
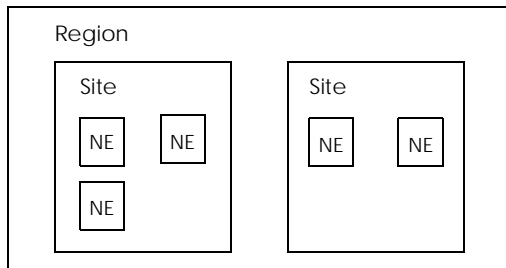
Figure 1.1 *Regions, sites, and NEs*

NetSync^PLUS has two defaults that enable you to enter your network information in a bottom-up, as well as a top-down, manner:

UnassignedEquipment	The default site.
UnassignedSites	The default region.

When you add an NE or create a site, you can initially create it under one of these defaults. Then, you can later assign it to the site or region to which it actually belongs.

1.1.2   NE identification

Each network element has the following attributes that identify it to NetSync^PLUS:

name   The name assigned to the network element. When a network element is initially
              installed, it has a factory-assigned name, which is the same for all NEs of a
              particular NE type.

              You can assign a unique, descriptive name to an NE, either directly using the
              craftperson interface for the device or using NetSync^PLUS. For information on
              using NetSync^PLUS to assign a name, see page 4-11.

IP address   The network address of the NE's terminal server. Equivalent to host name.

Port number   The port number used by the NE's terminal server. Equivalent to service name.

The combination of the IP address and the port number uniquely identify the NE.
However, when you select an NE in the NetSync^PLUS dialog boxes, you select it using its
name. For this reason, you want to be sure to assign a descriptive name to the NE.

1.2   Starting NetSync^PLUS

When you log in to the operating system, the NetSync^PLUS login dialog box, a clock, and a
console icon are displayed. You use the login dialog box, illustrated in Figure 1.2, to log in to
NetSync^PLUS.
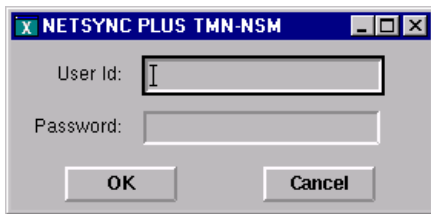
Figure 1.2 Login dialog box

Using the console icon, illustrated in Figure 1.3, you can open the console window and view diagnostic messages pertaining to the NetSync^PLUS software. This console window has no function in the management of your network or NEs. You cannot type anything in the console window.

Figure 1.3 *Console icon*

When you log in to the NetSync^PLUS product, the tool bar shown in Figure 1.4 is displayed.
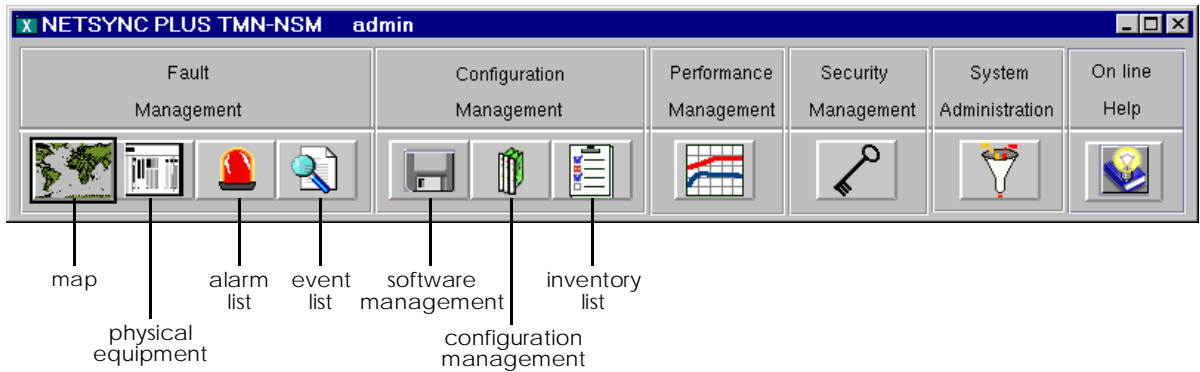
Figure 1.4 *NetSync^PLUS tool bar*

You use this tool bar to access the NetSync^PLUS functions. The following table describes each of these functions:

Fault Management	Use this function to perform fault management for your network. This function is represented by four buttons on the tool bar, which enable you to view the following information:
	• a map display to monitor your network
	• a physical equipment display that provides details about specific physical network element
	• an alarm list that lists alarms
	• an event list that lists events
Configuration Management	Use this function to manage the configuration of NEs on your network. This function is represented by three buttons on the tool bar, which enable you to:
	• download firmware to the equipment
	• add, modify, or delete NEs on your network
	• print reports about the NEs on your network
Performance Management	Use this function to view and print performance monitoring graphs for the NEs on your network.
Security Management	Use this function to add, modify, or delete users of the NetSync^PLUS product.
System Administration	Use this function to create filters that specify the information you want to see on the map display and alarm list.
Online Help	Use this function to view online product documentation.

1.3   Product navigational aids

This section provides two navigational aids to help you find your way around the NetSync^PLUS graphical user interface (GUI).

- Table 1.1 lists tasks and the paths through the GUI and shows you how to reach the appropriate dialog box to perform a particular task.

- Figures 1.5 through 1.7 provide a map of the GUI that shows you how the menus and dialog boxes are organized to help you locate a specific dialog box.

These two navigational aids are meant to be used together. You can look up the task you want to perform in the table and then trace the path of dialog boxes and menus using the map.

☞ **Important.** The GUI provides keyboard shortcuts to speed your navigation through the menus. For each menu and menu item, the shortcut is underlined.

Table 1.1 lists some of the tasks that you might want to perform and describes the path to reach the appropriate dialog box. All paths begin with one of the buttons on the tool bar.

Table 1.1 *Tasks and paths*

Task/Dialog Box	Path through the GUI
Alarms	
Acknowledge alarms/alarm list	alarm list->Action Menu->Acknowledge Selected Alarms
Clear alarms/alarm list	alarm list->Action Menu->Clear Selected Alarms
View alarm details/alarm list	alarm list->Action Menu->Alarm Detail Display
Change the alarm list format/alarm list	alarm list->Configure Menu->Add Column, Delete Column, and Move Column
Change the alarm list sorting/alarm list	alarm list->File Menu->Sort->By Time or By Severity
Save or print the alarm list/alamr list	alarm list->File Menu->Export
Configure the alarm log/alarm list	alarm list->Configure Menu->Alarm Log
Events	
View event details/event list	event list->Action Menu->Event Detail Display
Change the event list format/event list	event list->Configure Menu->Add Column, Delete Column, and Move Column
Save or print the event list/event list	event list->File Menu->Export
Configure the event log/event list	event list->Configure Menu->Event Log
Filtering	
Change the filter for the map display/Use Filter	map display->File Menu->Use Filter
Change the filter for the Alarm List/Use Filter	alarm list->File Menu->Use Filter
Change the filter for the alarm log/Use Filter	alarm list->Configure Menu->Alarm Log->Use Filter
Create a filter/Alarm Filter Manager	System Administration
Changing an existing filter/Alarm Filter Manager	System Administration

Table 1.1 *Tasks and paths*

Task/Dialog Box	Path through the GUI
Network Elements	
Add an NE/Add a Network Element	Configuration Management->Add
Modify an NE's routing information (such as IP address, port, and so on)/Modify Network Element	Configuration Management->Modify->Modify Equipment->Modify Network Element->Routing Information button
Delete an NE	Configuration Management->Delete->Delete Equipment
View an NEs status/physical equipment display	physical equipment display->Open Equipment
Communicate directly with an NE/TL1 Session	alarm list->Tools Menu->TL1
Network Element Cards	
Configure input cards/Input Configuration	Configuration Management->Modify->Modify Equipment->Input Card # button
Configure input ports/Input Ports	Configuration Management->Modify->Modify Equipment->Input Port # button
Configure input port thresholds/Threshold Configuration	Configuration Management->Modify->Modify Equipment->Input Port # button->Edit Menu->Thresholds
Configure input reference ports/Reference port	Configuration Management->Modify->Modify Equipment ->Input Card # button->Edit Menu->Reference Port
Configure CPU card/CPU Card Configuration	Configuration Management->Modify->Modify Equipment->CPU button
Configure clock card/Clock Card Configuration	Configuration Management->Modify->Modify Equipment->Clock button
Configure reference clock/Reference CLK./FG	Configuration Management->Modify->Modify Equipment->Reference button
Configure frame generator/Frame Card Configuration	Configuration Management->Modify->Modify Equipment->Frame Generator button
Configure reference frame generator/Reference CLK./FG	Configuration Management->Modify->Modify Equipment->Reference button
Configure controller card	Configuration Management->Modify->Modify Equipment->Controller A or Controller B button

Table 1.1   Tasks and paths

Task/Dialog Box	Path through the GUI
Configure output card/Output Configuration	Configuration Management->Modify->Modify Equipment->Output Card button
Configure alarm severities	Configuration Management->Modify->Modify Equipment ->CTL-A Alarm Severities or CTL-B Alarm Severities button
Performance Graphing	
Create performance graph	Performance Management
Printing	
Print the map display/map display	map display->File Menu->Print
Print the physical equipment display/physical equipment display	physical equipment display->File Menu->Print
Print the alarm list/alarm list	alarm list->File Menu->Export
Print the event list/event list	event list->File Menu->Export
Program Users	
Add users/Security Manager	Security Management->Edit Menu->Add User
Modify users/Security Manager	Security Management->Edit Menu->Modify User
Delete users	Security Management->Edit Menu->Delete User
Regions	
Add a region/Region Editor	map display->Configure Menu->Region->Add Region
Modify a region/Region Editor	map display->Configure Menu->Region->Modify Region
Delete a region	map display->Configure Menu->Region->Delete Region
Sites	
Add a site/Site Details	map display->Configure Menu->Site->Add Site
Modify a site/Site Details	map display->Configure Menu->Site->Modify Site
Delete a site	map display->Configure Menu->Site->Delete Site
View site details/Site Details	map display->File Menu->Show Detail

NetSync^PLUS
tool bar

map
display

File Menu
— Use Filter
— Site Details —— Open Site
— Print
            └— Add Network Element

Edit Menu
— Undo
— Cut
— Copy
— Paste
— Find

Tools Menu
— Alarm Filter Manager
— Alarm List Manager
— physical equipment display

Configure
Menu
— Region Editor
— Site Details —— Open Site
            └— Add Network Element

physical
equipment
display

File Menu
— Open Equipment
— Print

Tools Menu
— Alarm List Manager
— map display

Configure
Menu
— System Configuration
— Input Configuration —— Input Port —— Threshold Configuration
            └— Reference Port
— CPU Card Configuration
— Clock Card Configuration — Reference CLK/FG
— Frame Card Configuration — Reference CLK/FG
— CTL Card Configuration —— CTL Card Inventory
            — OSC CM
            └— Alarm Severities
— Output Card Configuration — Output Card Inventory
— Alarm Severities Configuration

Figure 1.5 GUI map

```
                                                       ┌─ Use Filter
                                     ┌─ File Menu ──────┤              ┌─ By Time
                                     │                  ├─ Sort ───────┤
                                     │                  │              └─ By Severity
                                     │                  ├─ Export
                                     │                  └─ Save Layout
                                     │
                                     │                  ┌─ Add Column
                                     │  Configure ──────┤  Delete Column
                                     │  Menu            ├─ Move Column
                                     │                  └─ Alarm Log ── Use Filter
                          ┌─ alarm ──┤
                          │  list    │                  ┌─ Acknowledge Selected Alarms
                          │          │  Action Menu ────┤  Clear Selected Alarms
                          │          │                  ├─ Select All Alarms
                          │          │                  └─ Alarm Detail Display
                          │          │
                          │          │                  ┌─ Alarm Filter Manager
                          │          │  Tools Menu ─────┤  physical equipment display
NetSync^PLUS ────────────┤          │                  ├─ map display
tool bar                 │          └                  └─ TL1 Session
                          │
                          │                             ┌─ Use Filter
                          │                ┌─ File Menu ─┤  Export
                          │                │             └─ Save Layout
                          │                │
                          │                │             ┌─ Add Column
                          │  Configure ────┤  Delete Column
                          │  event         │  Menu       ├─ Move Column
                          └─ list ─────────┤             └─ Event Log ── Use Filter
                                           │
                                           │  Action Menu ──── Event Detail Display
                                           │
                                           └─ Tools Menu ───── Alarm Filter Manager
```

Figure 1.6 GUI map (continued)

NetSync^PLUS
tool bar

Configuration
Management

Add ———————— Add Network Element

Modify

Routing Information

Input Configuration ————— Input Port ——— Threshold Configuration

Reference Port

Input Port ———————————— Threshold Configuration

CPU Card Configuration

Clock Card Configuration ——— Reference CLK/FG

Frame Card Configuration ——— Reference CLK/FG

Reference CLK/FG

CTL Card Configuration ———— CTL Card Inventory

OSC CM

Alarm Severities

Output Card Configuration —— Output Card Inventory

Alarm Severities Configuration

Delete ——————— Delete Network Element

Performance
Management ————— Performance graphing

Security
Manager ————— Security Editor

System
Administration

File Menu

New

Open Filter

Save

Save Filter As

Delete Filter

Edit Menu

Add Row

Delete Row

Verify Filter

Figure 1.7 GUI map (continued)

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2 Network Scenarios

This chapter describes some common network scenarios using NetSync^{PLUS}.

2.1 Overview

This chapter describes some common scenarios using NetSync[PLUS]. The scenarios in this chapter refer to later chapters in this book which describe in detail how to use the NetSync[PLUS] graphical user interface (GUI).

This chapter includes the following types of scenarios:

- Setting up your network

- Reconfiguring your network

- Monitoring your network for alarms

2.2 Setting up your network

To set up your network, you need to add the regions, sites, and network elements it contains. You can add regions, sites, and network elements in any order. This section describes how to set up your network in both a top-down and a bottom-up manner.

To set up your network top-down:

1. Add a region.

    From the map display, select Region from the Configuration menu. Then, select Add Region from the cascade menu.

    On the Region Editor dialog box, specify the geographic coordinates for your region's location. Then, save your region. For more information on adding a region, see page 3-7.

2. Add a site.

    From the map display, select Site from the Configuration menu. Then, select Add Site from the cascade menu.

    On the Site Details dialog box, specify the region to which this site belongs. Enter a site name and the geographic coordinates for site's location. Then, save your site. For more information on adding a site, see page 3-10.

3. Add a network element.

   You use the configuration management function to add network elements. Select Add from the Configuration Management tool bar.

   On the Add Network Element dialog box, specify the site to which this NE belongs. Complete all the other fields on this dialog box as described on page 4-9.

☞ **Important.** When a network element is initially installed, it has a factory-assigned name, which is the same for all NEs of a particular NE type. You can assign a unique, descriptive name to an NE, either directly using the craftperson interface for the device or by entering it on the Add Network Element dialog box. Since you use the NE's name to select it in NetSync^{PLUS} dialog boxes, you want to be sure to assign a descriptive name to the NE.

4. Enter any configuration and inventory information for the NE.

   Select Modify from the Configuration Management tool bar. On the Modify Network Element dialog box, click any of the buttons to enter configuration and inventory information for the cards that this NE contains.

   For more information on modifying an NE, see page 4-11.

To set up your network bottom-up:

1. Add a network element.

    You use the configuration management function to add network elements. Select Add from the Configuration Management tool bar.

    On the Add Network Element dialog box, use the default (UnassignedEquipment) as the site to which the NE belongs and complete all other fields (see page 4-9).

☞   **Important.** When a network element is initially installed, it has a factory-assigned name, which is the same for all NEs of a particular NE type. You can assign a unique, descriptive name to an NE, either directly using the craftperson interface for the device or by entering it on the Add Network Element dialog box. Since you use the NE's name to select it in NetSync^PLUS dialog boxes, you want to be sure to assign a descriptive name to the NE.

2. Enter any configuration and inventory information for the NE.

    Select Modify from the Configuration Management tool bar. On the Modify Network Element dialog box, click any of the buttons to enter configuration and inventory information for the cards that this NE contains.

    For more information on modifying an NE, see page 4-11.

3. Add a site.

    From the map display, select Site from the Configuration menu. Then, select Add Site from the cascade menu.

    On the Site Details dialog box, use the default (UnassignedSites) as the region to which this site belongs. Enter a site name and the geographic coordinates for site's location. In the Network Elements group box on the Site Details dialog box, click the Add button to add network element to the site. Then, save your site. For more information on adding a site, see page 3-10.

4. Add a region.

From the map display, select Region from the Configuration menu. Then, select Add Region from the cascade menu.

On the Region Editor dialog box, specify the geographic coordinates for your region's location. Use the two list boxes at the bottom of the Region Editor dialog box to add sites to your region. Then, save your region. For more information on adding a region, see page 3-7.

2.3 Reconfiguring your network

This section provides information on the following tasks:

- It describes how to move NEs from one site to another and how to move sites from one region to another.

- It provides pointers to information on how to delete regions, sites, and NEs from your network.

- It describes how to change configuration parameters for NEs

2.3.1 Moving regions, sites, and NEs

To move an NE:

1. Modify the site to which you want to move the NE.

From the map display, select Site from the Configuration menu. Select Modify Site from the cascade menu, and select the site from the Modify Site dialog box.

2. In the Network Elements group box on the Site Details dialog box, click the Add button to add network element to the site.

When you add the NE to this site, it is automatically removed from the site to which it was previously assigned.

3. Save the site.

For more information on modifying a site, see page 3-12.

To move a site:

1. Modify the region to which you want to move the site.

   From the map display, select Region from the Configuration menu. Select Modify Region from the cascade menu, and select the region from the Modify Region dialog box.

2. Use the two list boxes at the bottom of the Region Editor dialog box to add the site to this region.

   When you add the site to this region, it is automatically removed from the region to which it was previously assigned.

3. Save the region.

   For more information on modifying a region, see page 3-8.

2.3.2 Deleting regions, sites, or NEs

- For information on deleting a region, see page 3-9.

- For information on deleting a site, see page 3-12.

- For information on deleting an NE, see page 4-14.

2.3.3 Changing NE configuration parameters

There are several ways to access a dialog box where you can change NE configuration parameters. The two most obvious ways to change an NE's configuration are using configuration management (see page 4-11) or the physical equipment display (see page 3-13). However, you can also easily change an NE's configuration from the map display or alarm list as described below.

If a site contains a single NE, you can change its configuration parameters as described below:

1. On the map display, double-click the region containing the NE.

   The map display zooms in to display the sites in that region.

2. Click a particular site to select it.

3. Click the physical equipment display quick-access button.

4. On the graphical representation of the NE, double-click a card to view the configuration parameters set for that card.

5. Make any changes and save the configuration.

    For more information about the map display, see page 3-4. For more information on using the physical equipment display, see page 3-13.

To change NE configuration from the alarm list:

1. Select an alarm reported by the NE whose configuration parameters you want to change.

2. Click the physical equipment display quick-access button.

3. On the graphical representation of the NE, double-click a card to view the configuration parameters set for that card.

4. Make any changes and save the configuration.

    For more information on using the alarm list, see page 3-16. For more information on using the physical equipment display, see page 3-13.

2.4 Monitoring your network

In the day-to-day operation of your network, you will probably use the map display, alarm list, and event list most often to monitor your network. Each of these displays provides a different view of network activity. This section provides some tips on how to use these displays to monitor alarms and events.

2.4.1 Using the map display

The map display provides a geographical map display of your network. Typically, regions appear as green boxes on the map display. If a region contains a NE with an alarm, the color of the region changes to indicate the severity of the alarm. For more information about the map display, see page 3-4.

You can customize the regions and alarms that the map display indicates by applying a filter to the display. To apply a filter, select Use Filter from the File menu. For information on creating filters, see page 7-4.

To zoom in on a particular region and site to view more information about an alarm:

1. Double-click the region on the map display.

   The map display zooms in to display the sites in that region.

2. Click a particular site to select it.

   Once you have selected a site, you can view detailed information about that site.

3. If the selected site contains a single NE, you can click the physical equipment display quick-access button to view a graphical representation of the NE.

   On the graphical representation of the NE, you can double-click any card to view or change information about that card. For more information on using the physical equipment display, see page 3-13.

4. To view details about the alarm and acknowledge or clear it, click the alarm list quick-access button.

   For more information on using the alarm list to view alarm details, acknowledge alarms, or clear alarms, see page 3-16.

2.4.2   Using the alarm list

The alarm list lists the alarms that have been reported. The alarms are color-coded according to severity. For more information on using the alarm list, see page 3-16.

You can customize the alarms that the alarm list lists by applying a filter. To apply a filter, select Use Filter from the File menu. For information on creating filters, see page 7-4.

To view details about an alarm:

1. Select the alarm from the alarm list.

2. Select Alarm Detail Display from the Action menu.

To view information about the region and site the alarm occurred:

1. Click the map display quick-access button.

   The map display shows the region in which the alarm occurred.

2. Double-click the region.

   The map display zooms in to display the sites in that region.

3. Click a particular site to select it.

   For more information about the map display, see page 3-4.

4. If the selected site contains a single NE, you can click the physical equipment display quick-access button to view a graphical representation of the NE.

   On the graphical representation of the NE, you can double-click any card to view or change information about that card. For more information on using the physical equipment display, see page 3-13.

To acknowledge or clear the alarm:

1. Return to the alarm list.

2. With the alarm selected, select Acknowledge Selected Alarms from the Action menu to acknowledge the alarm.

   Or

   Select Clear Selected Alarms from the Action menu to clear the alarm.

   When an alarm has been both acknowledged and cleared, it is removed from the Alarm List.

To save or print the alarm listing displayed:

1. Select Export Data from the File menu.

2. Select File or Printer as the destination of the alarm list.

3. Enter a file name to export the alarm list to a file.

    Or,

    Enter a printer name to send the alarm list to a printer.

4. Click OK.

2.4.3 Using the event list

The event list lists the events that have been reported. The events are color-coded according to severity. For more information on using the event list, see page 3-23.

You can customize the events that the event list lists by applying a filter. To apply a filter, select Use Filter from the File menu. For information on creating filters, see page 7-4.

To view events for a particular time span:

1. Enter the earliest date and time for which you want to see events in the Start Time text box.

    Enter the start date and time in the following format: `dd/mm/yyyy hh:mm:ss`

2. Enter the latest time for which you want to see events in the Stop Time text box.

3. Click Fetch! to fetch events within the specified time span.

To view details about an event:

1. Select the event from the event list.

2. Select Event Detail Display from the Action menu.

To save or print the event listing displayed:

1. Select Export from the File menu.

2. Select File or Printer as the destination of the event list.

3. Enter a file name to export the event list to a file.

   Or,

   Enter a printer name to send the event list to a printer.

4. Click OK.

2.5 Monitoring performance

TBD.

3 Fault Management

This chapter describes how to use the fault management function of NetSync^{PLUS} to monitor the day-to-day operation of the NEs in your network.

3.1   Overview

You use the fault management function of NetSync^{PLUS} to monitor the day-to-day operations of your NEs. This function is represented by four buttons on the NetSync^{PLUS} tool bar, which enable you to view the following information:

map display	Provides a map display of your network
physical equipment display	Provides details about specific physical NE
alarm list	Lists the currently-active alarms
event list	List the events that have occurred

Figure 3.1 illustrates the four buttons on the NetSync^{PLUS} tool bar that you use to access this information.
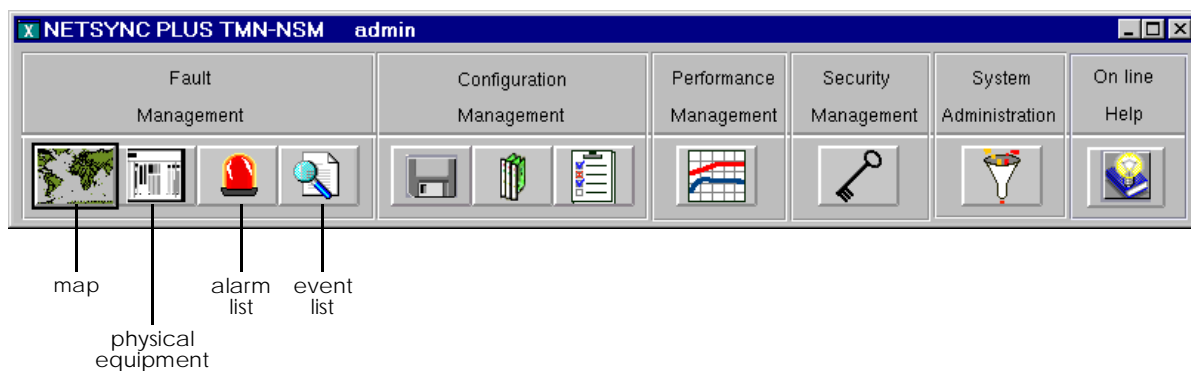
Figure 3.1 *Accessing the fault management function*

The following sections provide detailed information about how to use these displays.

3.2   Map display

When you click the map display button on the NetSync[PLUS] tool bar, the map display appears as shown in Figure 3.2.

Provides options to access all other program functions

Accesses the alarm list

Accesses filter management

Accesses the physical equipment display
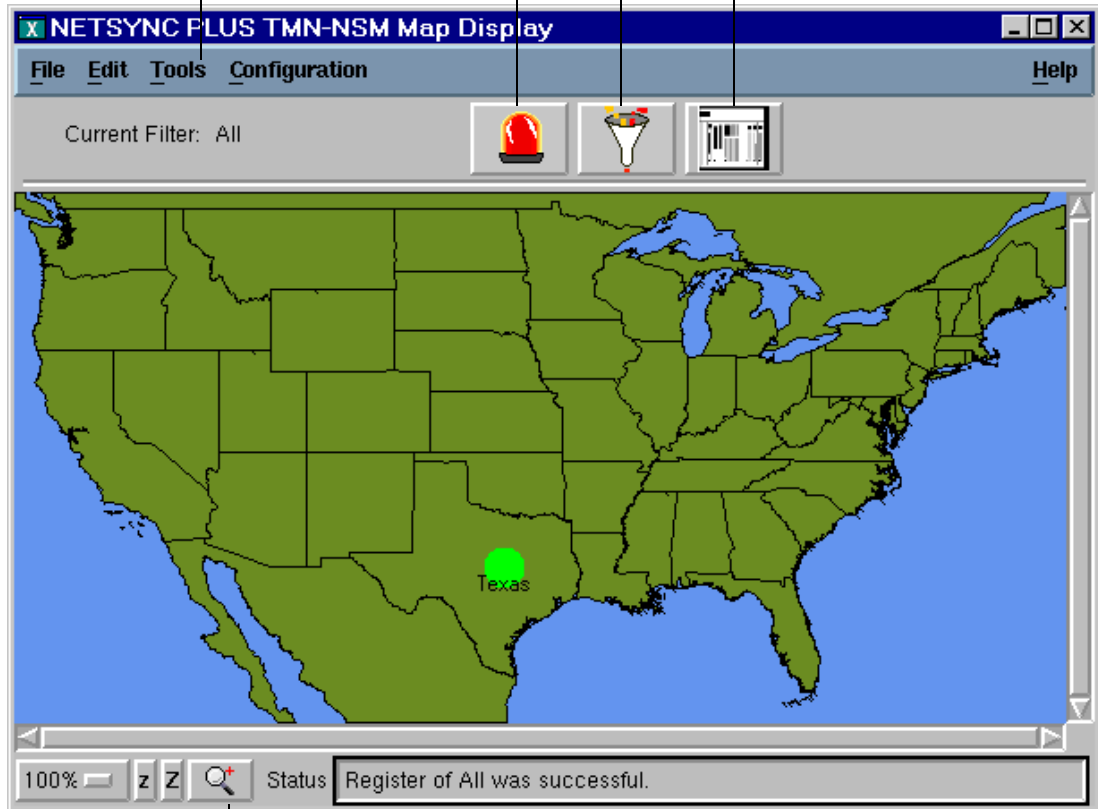
Change the magnification

Zoom in on the specified area

Figure 3.2 Map display

☞ **Important.** From this display, you can use the Tools menu options or the three quick access buttons to access other areas of NetSync[PLUS].

3.2.1 Zooming

You can zoom in on a particular region or site, or you can select an area of the map display that you want to zoom in on.

If a region contains a NE with an alarm, the color of the region changes to indicate the severity of the alarm. You can easily view more information about the alarm by zooming in on the region and site. To zoom in on a particular region and site:

1. Double-click the region on the map display.

   The map display zooms in to display the sites in that region.

2. Click a particular site to select it.

   At this point, you can select Show Detail from the File menu to view details about the site. For more information, see "Adding, modifying, and deleting sites" on page 3-10.

   If the selected site contains a single NE, you can click the physical equipment display quick access button to view and modify information about it. For more information, see page 3-13,

   You can also click the alarm list quick-access buttons to view any alarms at that site. For more information, see page 3-16.

To select an area of the map display to zoom in on:

1. Click the magnifying glass icon at the bottom of the map display.

   The cursor changes to cross-hairs.

2. Click and drag from one corner of the selection area you to the diagonally-opposite corner.

   As you drag the cursor, a selection rectangle indicates the selection area. When you finish selecting the area, the map display changes to present a closer view of the selected area.

3.2.2 Changing the filter

When you open the map display, it uses a default filter called All that displays all regions and all alarms. You can apply a filter that displays only specific regions or sites.

☞ **Important**. On the map display, you can only use filters that filter based on regions and sites. Filters that use other criteria are not available from the map display.

To change the filter used:

1. Select Use Filter from the File menu.

   The Use Filter dialog box lists the available filters.

2. Select the filter you want to use.

   The selection dialog only lists those filters that can be applied to the map display; it lists only those filters that filter only on regions and sites. Filters that use other criteria are not listed.

   Filters are created using the System Administration function. For more information on filters, see **Chapter 7, System Administration**.

3.2.3   Adding, modifying, and deleting regions

To add a region:

1. From the Configuration menu, select Region. Then, select Add Region from the cascade menu.

   The Region Editor dialog box is displayed as shown in Figure 3.3.
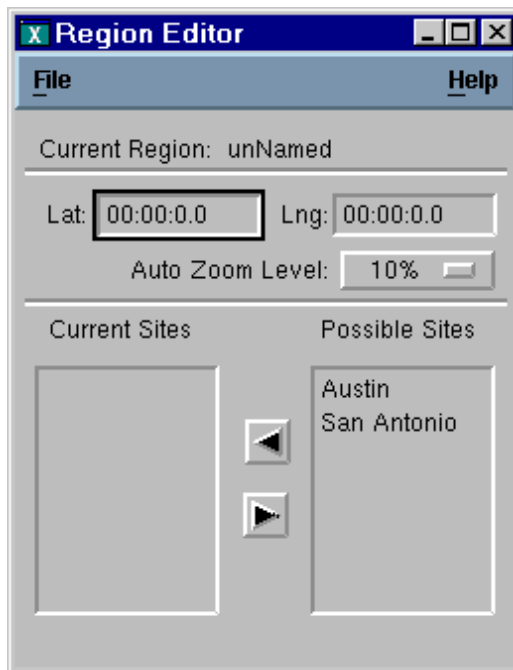
Figure 3.3   Region Editor dialog box

2. Enter the latitude and longitude that describe this region's location.

   Typically, you specify a region's location in general terms (degrees of latitude and longitude, but not minutes or seconds).

3. Optionally, specify the level of zooming you want to occur when you double-click on the region in the map display.

4. Optionally, double-click each site that you want to include in this region.

For information on how to add sites, see page 3-10.

5. Select Save from the File menu to save this region.

    A dialog box prompts you for a name for this region.

6. Enter a name and click OK.

    A message box confirms that the region was added successfully.

To modify an existing region:

1. Optionally, select a region on the map display.

2. From the Configuration menu, select Region. The, select Modify Region from the cascade menu.

    If you already selected a region on the map display, the Region Editor dialog box is displayed, and you skip the next step.

    If you did not already select a region, the Modify Region dialog box is displayed listing the available regions.

3. Select the region you want to modify.

4. On the Region Editor dialog box, make any changes to the region.

    If a region is marked as moveable, you can change its location either by entering new latitude and longitude values on the Region Editor dialog box.

5. Select Save or Save As from the File menu to save the region.

    If you select Save, the modified region is saved under the same region name. If you selected Save As, a dialog box prompts you for the name of the region.

6. If you selected Save As, enter a name for the region and click OK.

To delete a region:

1. Optionally, select a region on the map display.

2. From the Configuration menu, select Region. Then, select Delete Region from the cascade menu.

    If you already selected a region on the map display, a message box appears asking you to confirm the deletion. In this case, skip the next step.

    If you did not already select a region, the Delete Region dialog box is displayed listing the available regions.

3. Select the region you want to delete.

    A message box appears asking you to confirm the deletion.

4. Click OK to delete the region.

☞ **Important.** When you delete a region, any sites that were assigned to that region are moved to UnassignedSites. The NEs assigned to those sites remain assigned. You can then reassign the sites (and the NEs they contain) to other regions using the Region Editor dialog box.

3.2.4 Adding, modifying, and deleting sites

To add a site:

1. From the Configuration menu, select Site. The, select Add Site from the cascade menu.

    The Site Details dialog box is displayed as shown in Figure 3.4.

Figure 3.4 Site Detail dialog box

2. Select the region to which you want to add the site using the Region menu button.

3. Type the name of the new site in the Site Name text box.

4. Enter any other information for this site.

   Typically, you specify a site's location more specifically than the region (not only in degrees of latitude and longitude, but also minutes and seconds).

   You can optionally add NEs.

To add an NE:

1. Click Add.

   The Add Network Element dialog box is displayed listing available NEs.

2. Select the NE you want to add to this site.

   The NE you selected appears in the Network Elements group box on the Site Details dialog box.

To remove an NE from a site:

1. Select the NE you want to remove in the Network Elements group box on the Site Details dialog box.

2. Click Remove.

   The NE disappears from the Network Elements group box. The NE you removed from this site is moved to UnassignedEquipment. You can then reassign the NE to another site using the Site Details dialog box.

To save the site:

1. Select Save or Save As from the File menu.

   When you save a new site, a dialog box prompts you for the name of the site.

2. Enter a name for the site and click OK.

   A message box confirms that the site was saved successfully.

To modify an existing site:

1. Optionally, select a site on the map display.

2. From the Configuration menu, select Site. Then, select Modify Site from the cascade menu.

    If you already selected a site on the map display, the Site Details dialog box is displayed, and you skip the next step.

    If you did not already select a site, the Modify Site dialog box is displayed listing sites.

3. Select the site you want to modify.

    The Site Details dialog box is displayed.

4. Make any changes to the site.

5. Select Save or Save As from the File menu to save the site.

    If you select Save, the modified site is saved under the same site name. If you selected Save As, a dialog box prompts you for the name of the site.

6. If you selected Save As, enter a name for the site and click OK.

To delete a site:

1. Optionally, select a site on the map display.

2. From the Configuration menu, select Site. Then, select Delete Sites from the cascade menu.

    If you already selected a site on the map display, a message box appears asking you to confirm the deletion. In this case, skip the next step.

    If you did not already select a site, the Delete Site dialog box is displayed listing the available sites.

3. Select the site you want to delete.

    A message box appears asking you to confirm the deletion.

4. Click OK to delete the site.

You can also delete a site by selecting Delete from the File menu on the Site Details dialog box.

☞ **Important.** When you delete a site, any NEs that were assigned to that site are moved to UnassignedEquipment. You can then reassign the NEs to other sites using the Site Details dialog box.

3.3   Physical equipment display

When you click the physical equipment display button on the NetSync^PLUS tool bar, the physical equipment display appears. When you initially access this display, it does not show any information about the physical NEs. You first need to select the NE for which you want to see information.

To view information for a particular NE:

1. Select Open from the File menu.

    The Open Equipment dialog box lists the available NEs.

2. Select the NE for which you want to view information.

    A graphical representation of the NE is displayed in the physical equipment display as shown in Figure 3.5. The exact appearance of this display depends on the type of NE you selected.
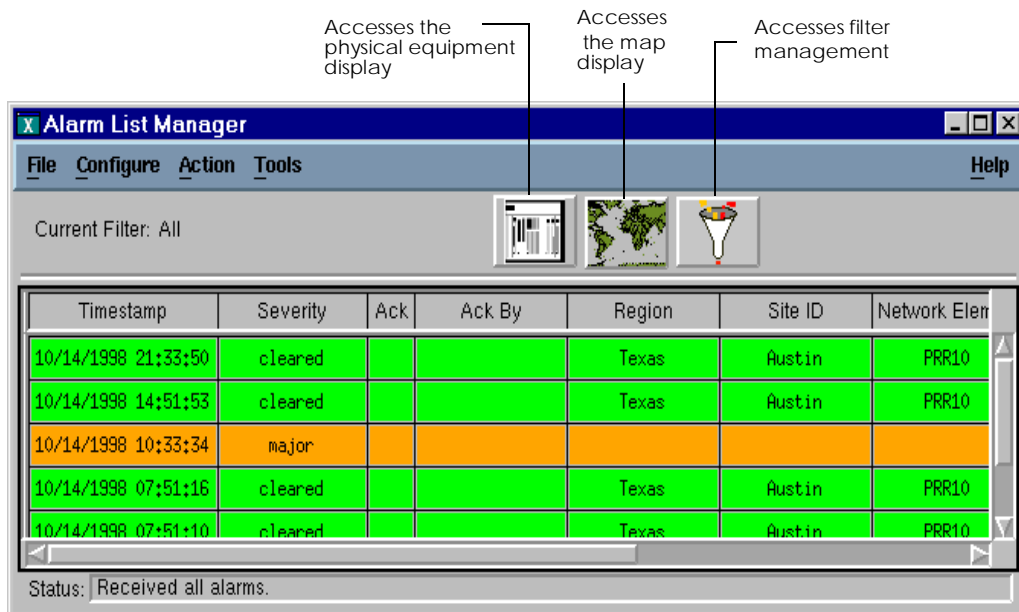
☞ **Important.** From this display, you can use the Tools menu options or the three quick access buttons to access other areas of NetSync^PLUS.

From this display, you can also use the Configure menu to access the configuration dialog boxes for each card in this NE. For more information on configuration, see **Chapter 4, Configuration Management**.

Accesses the configuration
dialog box for the selected
card

Accesses
the map
display

Accesses
the alarm list
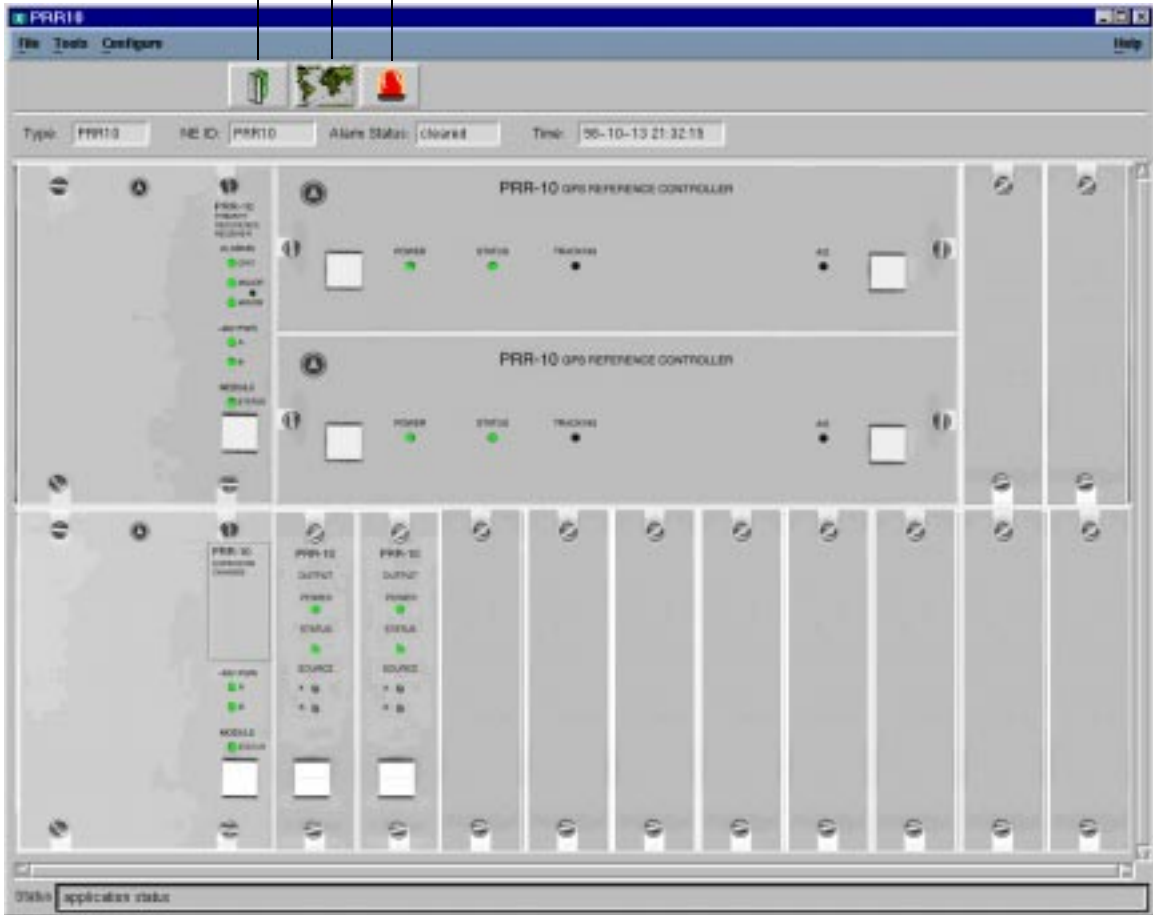
Figure 3.5 Physical equipment display

The physical equipment display contains a graphical representation of the LEDs on the physical NE that indicate alarms. The color of the LED on the physical equipment display indicates the severity of the alarm.

The physical equipment display does not represent all of the LEDs that the physical device has. The LEDs that the physical equipment display represents depend on the type of NE.

TSG3800   For all cards except the CPU card, the color of the Fault LED indicates the most severe alarm that has occurred on that card. The Power LED is always green.

For the CPU card, the color of the Maj LED indicates the most severe alarm that has occurred on any of the cards on this NE. The Power and Run LEDs are always green.

PRR10   For the controller and output cards, the color of the Status LED indicates the most severe alarm that has occurred on that card. The Power LED is green unless a power alarm has occurred.

For the main chassis OSC card, the color of the Crit LED indicates the most severe alarm that has occurred on any of the cards on this NE. All other LEDs represented on this card are always green.

For the expansion chassis OSC card, all the represented LEDs are always green.

3. To view information about a particular card, double-click that card in the graphical representation.

Or,

Click a status LED to select it. Then, click the configuration quick access button (the left-most button at the top of the display).

The configuration dialog box for the card you selected is displayed. For more information on configuration, see **Chapter 4, Configuration Management**.

3.4   Alarm list

When you click the alarm list button on the NetSync^PLUS tool bar, the alarm list appears as shown in Figure 3.6. The alarms listed are color coded to indicate severity.

Figure 3.6   Alarm list

☞ **Important.** From this display, you can use the Tools menu options or the three quick access buttons to access other areas of NetSync^PLUS.

By default, the alarm list is sorted by the alarm time with the latest alarms at the top of the list. To sort the alarm list by severity, select Sort from the File menu. Then, select By Severity from the cascade menu.

You can change which alarm attributes the alarm list displays as described on page 3-28. The alarm list can contain the following attributes for each alarm:

Attribute	Description
Ack	Whether the alarm has been acknowledged.
Ack By	Logon ID of the operator who acknowledged the alarm
AID	Access identifier for the alarm
Alarm Type	Type of alarm
Additional Text	Any additional text associated with the alarm.
Cleared	Whether the alarm has been cleared
Cleared By	Logon ID of the operator who cleared the alarm
Cleared Time	Time that the alarm was cleared
Description	Description of the alarm
Fault	Type of condition that caused the alarm
Network Element	Network element on which the alarm occurred.
Region	Region in which the alarm occurred
Severity	Alarm severity
Sequence Number	Sequence number for this alarm
Site ID	ID of the site in which the alarm occurred
System Affecting	Whether this alarm is service affecting
Timestamp	Time that the alarm was reported.

3.4.1 Changing the filter

When you open the alarm list, it uses a default filter called None, which does not show any alarms. To change the filter used:

1. Select Use Filter from the File menu.

   The Use Filter dialog box lists the available filters.

2. Select the filter you want to use.

   Filters are created using the System Administration function. For more information on filters, see **Chapter 7, System Administration**.

3.4.2 Printing or saving the alarm list

To save or print the alarm listing displayed:

1. Select Export Data from the File menu.

   The Export Alarm Data dialog box is displayed as shown in Figure 3.7.
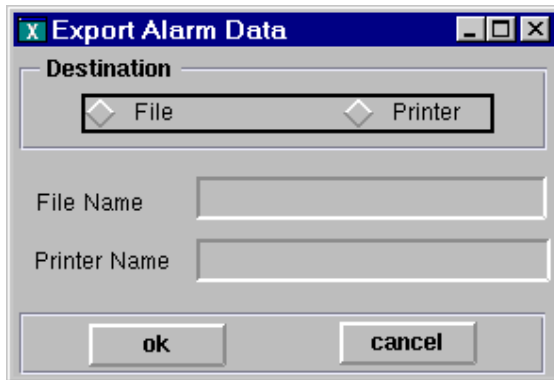
Figure 3.7 Printing or saving the alarm list

2. Select File or Printer as the destination of the alarm list.

3. Enter a file name to export the alarm list to a file.

   Or,

   Enter a printer name to send the alarm list to a printer.

4. Click OK.

3.4.3   Configuring the alarm log

By configuring the alarm log, you can specify a filter that determines which alarms are stored in the database. To specify the filter to use for the alarm log:

1. Select Alarm Log from the Configure menu.

    The Alarm Log dialog box is displayed as shown in Figure 3.8.
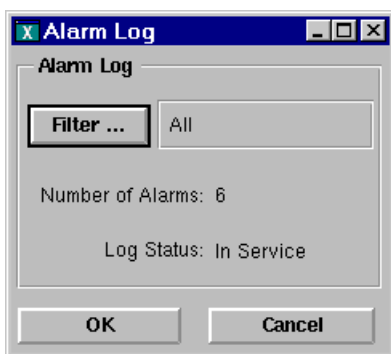
Figure 3.8 *Alarm Log dialog box*

2. To change the filter used to determine which alarms are logged, click Filter.

    The Use Filter dialog box lists the available filters.

3. Select the filter you want to use.

    Filters are created using the System Administration function. For more information on filters, see **Chapter 7, System Administration**.

4. Click OK on the Alarm Log dialog box to close it.

3.4.4 Acknowledging and clearing alarms

To acknowledge specific alarms:

1. Select the alarms you want to acknowledge from the alarm list.

    Alternatively, you can select Select All Alarms from the Action menu to select all the alarms in the alarm list.

2. Select Acknowledge Selected Alarms from the Action menu to acknowledge the alarms you have selected.

    If the alarm list contains an Ack and/or Ack ID column, those columns are updated for the alarms you acknowledged.

To clear specific alarms:

1. Select the alarms you want to clear from the alarm list.

    Alternatively, you can select Select All Alarms from the Action menu to select all the alarms in the alarm list.

2. Select Clear Selected Alarms from the Action menu to clear the alarms you have selected.

    If the alarm list contains a Severity column, that column is updated for the alarms you cleared.

When an alarm has been both acknowledged and cleared, it is removed from the Alarm List.

3.4.5　　　　　Viewing alarm details

To view detailed information about an alarm:

1. Select the alarm for which you want to view alarm details from the alarm list. Then, select Alarm Detail Display from the Action menu.

    Or,

    Double-click the alarm for which you want to view alarm details.

    The Alarm Detail Display dialog box for the selected alarm is displayed as shown in Figure 3.9.
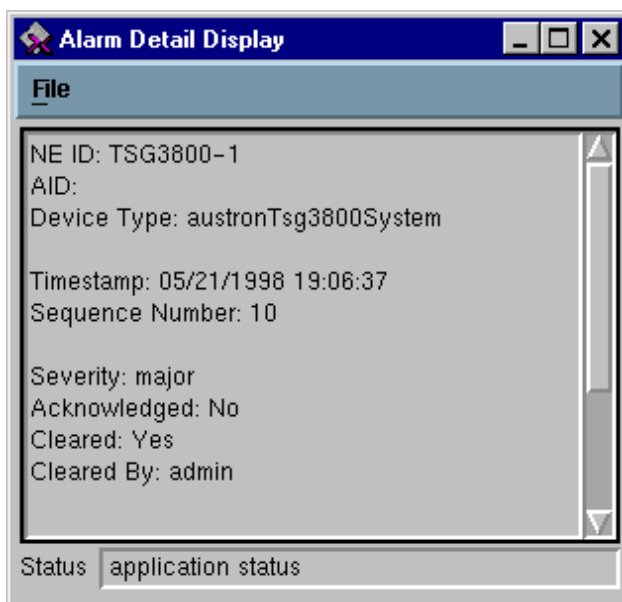
Figure 3.9 *Alarm Details dialog box*

2. When you finish viewing alarm details, select Close from the File menu.

3.4.6 Communicating directly with an NE

NetSync^PLUS provides a mechanism by which you can enter TL1 command to communicate directly with an NE. To do this:

1. Select TL1 from the Tools menu.

   The TL1 Session dialog box is displayed as shown in Figure 3.10.
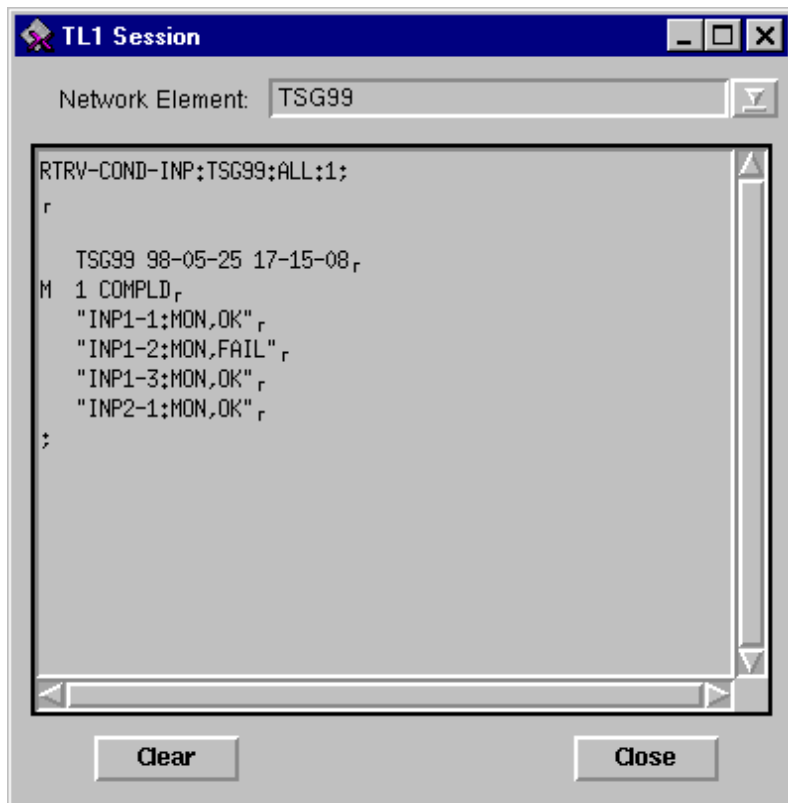
Figure 3.10 TL1 Session dialog box

2. Select the NE to which you want to send TL1 commands from the Network Element drop-down list box.

3. Type any TL1 commands in the text box.

   If you need to clear the contents of the text box, click Clear.

4. When you are finished with the TL1 session, click Close.

3.5   Event list

When you click the event list button on the NetSync^PLUS tool bar, the event list appears as shown in Figure 3.11. Unlike the alarm list (see page 3-16), the event list is a static log; it is not updated as new events are generated, and events are not acknowledged or cleared. The events listed are color coded to indicate severity. Events that have no color have no severity.

Accesses filter management

Timestamp	Severity	Region	Site ID	Network Elemen	AID	
10/13/1998 13:47:04	major					led
10/13/1998 09:10:27	N/A			TSG		
10/13/1998 09:09:21	N/A			PRR10		
10/13/1998 09:06:43	N/A			TSG		

X Event Browser

File Configure Action Tools   Help

Current Filter: All

Start Time: [   ]   Stop Time: [   ]   Fetch !

Status: Received all events.
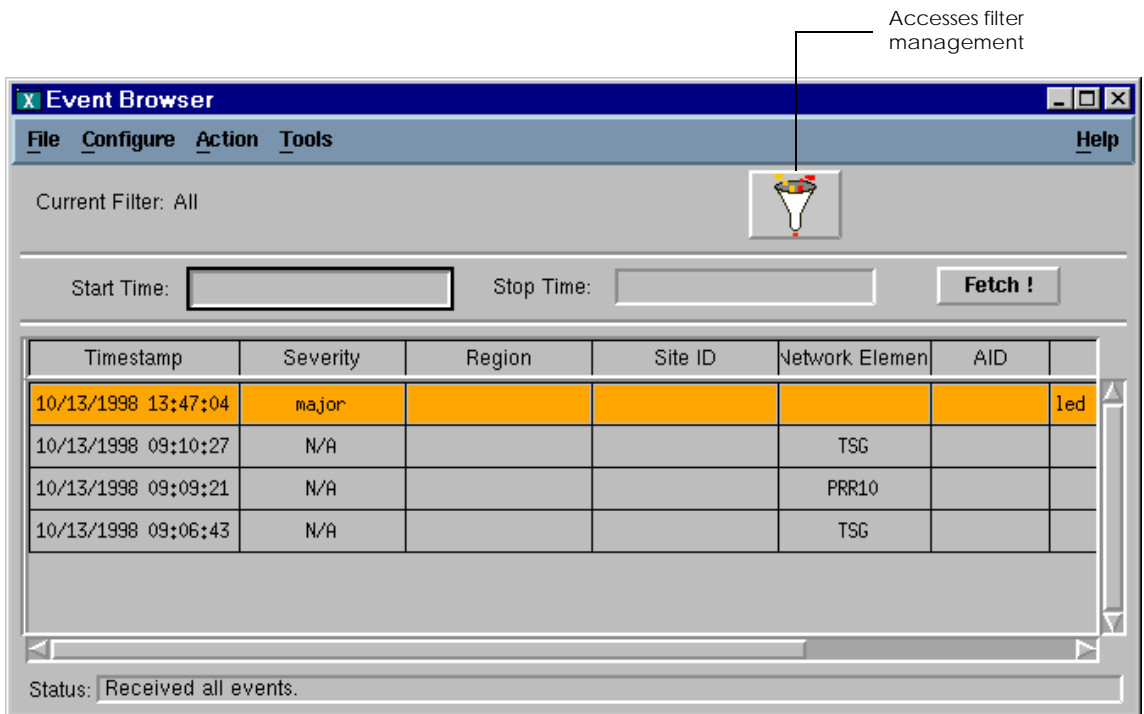
Figure 3.11 Event list

You can change which event attributes the event list displays as described on page 3-28. The event list can contain the following attributes for each event:

Attribute	Description
AID	Access identifier for the event
Additional Information	Any additional information associated with the event.
Additional Text	Any additional text associated with the event.
Description	Description of the event
Event Type	Type of event
Fault	Type of condition that caused the event
Network Element	Network element on which the event occurred.
Region	Region in which the event occurred
Severity	Event severity
Sequence Number	Sequence number for this event
Site ID	ID of the site in which the event occurred
System Affecting	Whether this event is service affecting
Timestamp	Time that the event was reported.

3.5.1 Changing the filter

When you open the event list, it uses a default filter called None, which does not show any events. To change the filter used:

1. Select Use Filter from the File menu.

   The Use Filter dialog box lists the available filters.

2. Select the filter you want to use.

   Filters are created using the System Administration function. For more information on filters, see **Chapter 7, System Administration**.

3.5.2 Specifying a time span for the event list

By default, the event list shows all the logged events up to the current time. To view events for a particular time span:

1. Enter the earliest date and time (in *dd/mm/yyyy hh:mm:ss* format) for which you want to see events in the Start Time text box.

2. Enter the latest time for which you want to see events in the Stop Time text box.

3. Click Fetch! to fetch events within the specified time span.

3.5.3 Printing or saving the event list

To save or print the event listing displayed:

1. Select Export from the File menu.

   The Export Event Data dialog box is displayed as shown in Figure 3.12.
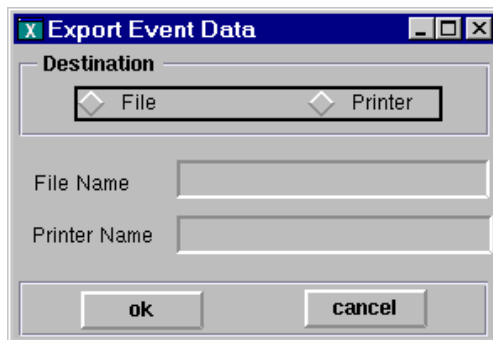
Figure 3.12 *Printing or saving the event list*

2. Select File or Printer as the destination of the event list.

3. Enter a file name to export the event list to a file.

   Or,

   Enter a printer name to send the event list to a printer.

4. Click OK.

3.5.4 Configuring the event log

By configuring the event log, you can specify a filter that determines which events are stored in the database. To specify the filter to use for the event log:

1. Select Event Log from the Configure menu.

   The Event Log dialog box is displayed as shown in Figure 3.13.
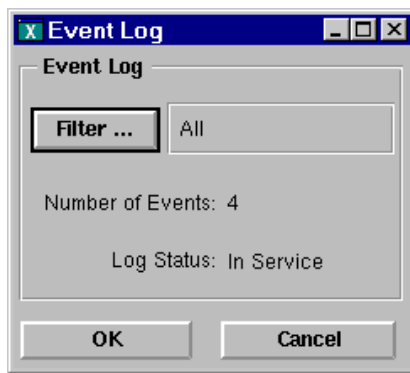
Figure 3.13 Event Log dialog box

2. To change the filter used to determine which events are logged, click Filter.

   The Use Filter dialog box lists the available filters.

3. Select the filter you want to use.

   Filters are created using the System Administration function. For more information on filters, see **Chapter 7, System Administration**.

4. Click OK on the Event Log dialog box to close it.

3.5.5   Viewing event details

To view detailed information about an event:

1. Select the event for which you want to view event details from the event list. Then, select Event Detail Display from the Action menu.

   Or,

   Double-click the event for which you want to view event details.

   The Event Detail Display dialog box for the selected event is displayed as shown in Figure 3.9.
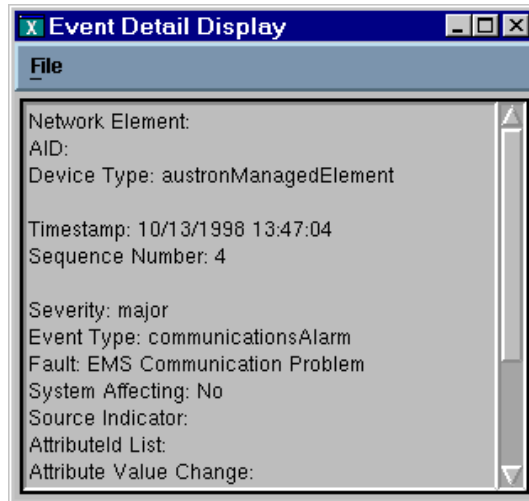
Figure 3.14 *Event Details dialog box*

2. When you finish viewing event details, select Close from the File menu.

3.6   Changing the format of the alarm or event list

You can easily customize the alarm and event lists to show the attributes you need to see in the most convenient order.

To add a column for an attribute to the format:

1. From the alarm or event list, select Add Column from the Configure menu.

    The Add Column dialog box is displayed as shown in Figure 3.15.
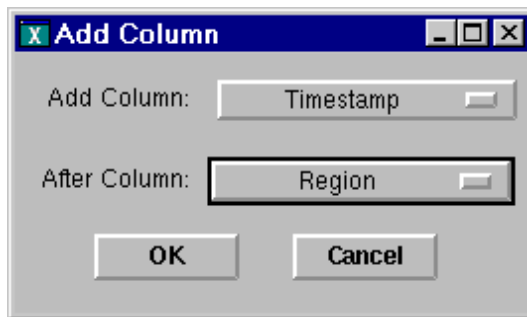
Figure 3.15 Add Column dialog box

2. Select the attribute for which you want to add a column to the format using the Add Column menu button.

3. Select the column after which you want to add the new column using the After Column menu button and click OK.

    The alarm or event list is updated to include the column you added.

4. To save the new format, select Save Layout from the File menu.

To delete a column from the format:

1. Select Delete Column from the Configure menu.

   The Delete Column dialog box is displayed as shown in Figure 3.16.
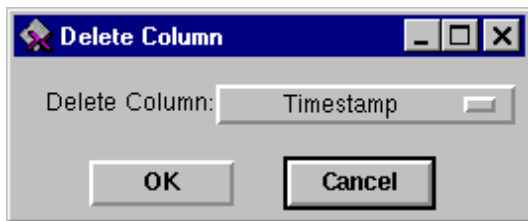
Figure 3.16 *Delete Column dialog box*

2. Select the column you want to delete from the format using the Delete Column menu button and click OK.

   The alarm or event list is updated to exclude the column you deleted.

3. To save the new format, select Save Layout from the File menu.

To change the order of the columns in the format:

1. Select Move Column from the Configure menu.

    The Move Column dialog box is displayed as shown in Figure 3.17.
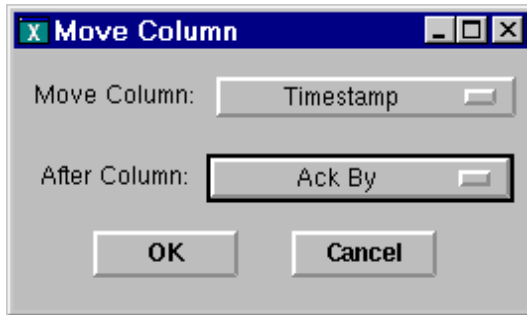
Figure 3.17 Move Column dialog box

2. Select the column you want to move from the Move Column menu button.

3. Select the column after which you want to place the column from the After Column menu button and click OK.

    The alarm or event list is updated to reflect the new column order.

4. To save the new format, select Save Layout from the File menu.;

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4 Configuration Management

This chapter describes how to use the configuration management function of NetSync^{PLUS}.

4.1   Overview

The configuration management function of NetSync^{PLUS} is represented by three buttons on the NetSync^{PLUS} tool bar, which enable you to perform the following tasks:

software management	Download firmware to the equipment on your network.
configuration management	Add, modify, or delete NEs in your network, and enter configuration and inventory information about the cards in an NE.
inventory list	Export inventory reports about the NEs in your network to a file or printer.

Figure 4.1 illustrates the four buttons on the NetSync^{PLUS} tool bar that you use to perform these tasks:
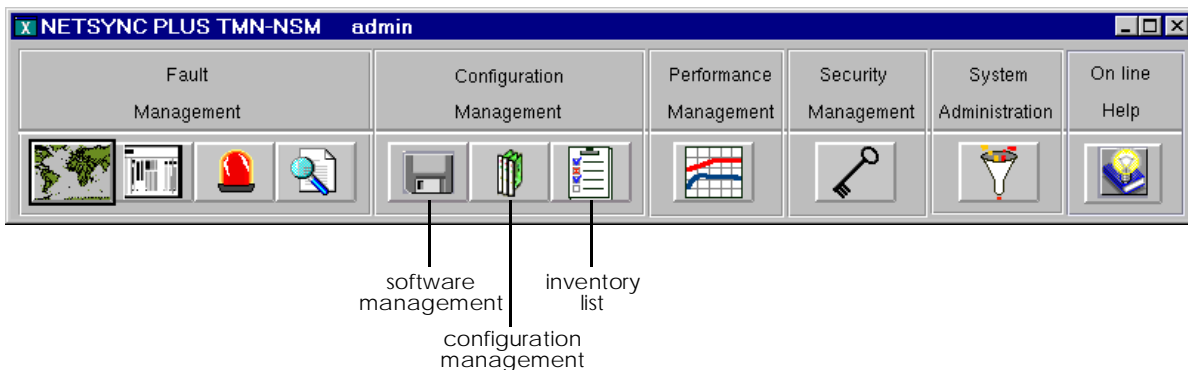
Figure 4.1 Accessing the configuration management function

The following sections provide detailed information about how to use these displays.

4.2   Software management

You can use the software management function to download firmware to equipment in your network. To download software, you need to:

1. Load the firmware into NetSync^{PLUS}.

2. Download the firmware from NetSync^{PLUS} to the equipment.

NetSync^{PLUS} can store up to ten firmware packages, which you can then download as needed. If any previously-loaded package becomes obsolete or unneeded, you can easily delete it from NetSync^{PLUS}.

When you click the Software Management button on the NetSync^{PLUS} tool bar, the Software Management tool bar is displayed as shown in Figure 4.2.
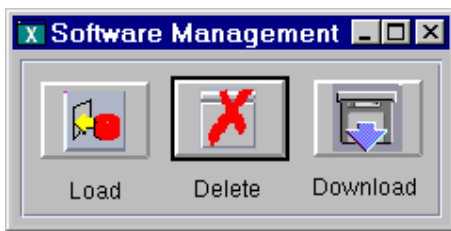
Figure 4.2   *Software Management tool bar*

The following table describes each of these buttons on this tool bar:

Load	Click this button to load firmware into NetSync^{PLUS}.
Delete	Click this button to delete previously-loaded firmware from NetSync^{PLUS}.
Download	Click this button to download firmware from NetSync^{PLUS} to the equipment.

Each of these buttons is described in detail in the following sections.

4.2.1   Loading firmware into NetSync^{PLUS}

You can easily load firmware into NetSync^{PLUS} and then download it whenever you need it. To load firmware:

1. Click Load on the Software Management tool bar.

   The dialog box shown in Figure 4.3 prompts you for the location of the firmware to load.
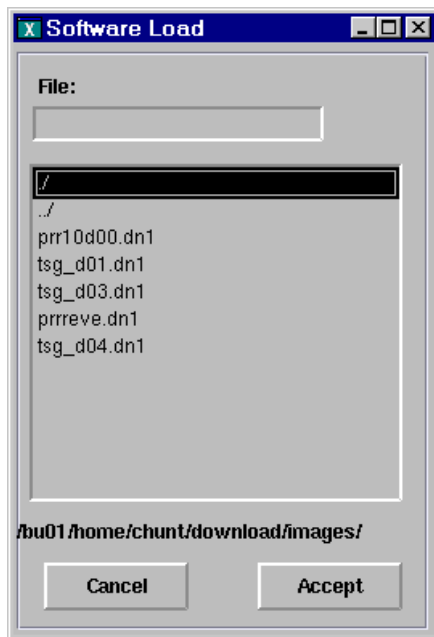
Figure 4.3 *Loading firmware*

2. Enter the directory and filename for the firmware package, and click Accept.

   The firmware is loaded into NetSync^{PLUS}.

3. When the firmware finishes loading, click OK.

   You return to the File Selection dialog box so that you can select another firmware package to load.

4. When you are finished loading firmware, click Cancel to close this dialog box.

4.2.2 Deleting firmware from NetSync^PLUS

NetSync^PLUS can store up to ten firmware packages at one time. Different versions of the same firmware package are counted as separate packages. For this reason, you may need to delete unneeded firmware packages in order to load new ones. To delete a firmware package from NetSync^PLUS:

1. Click Delete on the Software Management tool bar.

   The dialog box shown in Figure 4.4 lists the name and version for all firmware packages currently loaded into NetSync^PLUS.
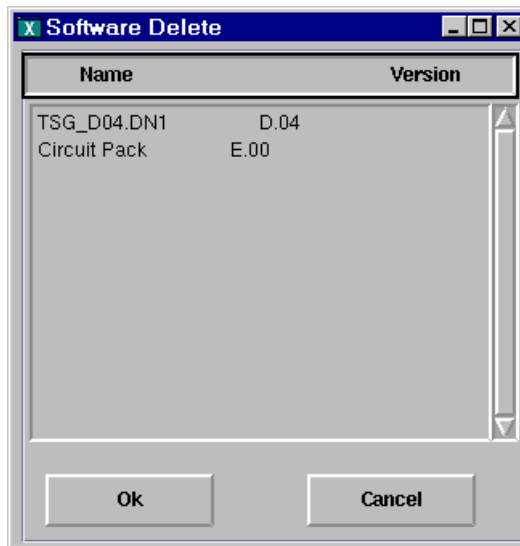
Figure 4.4 Deleting firmware

2. Select the firmware package you want to delete, and click OK.

4.2.3　　　　　Downloading firmware to the equipment

Once you have loaded firmware into NetSync[PLUS] as described on page 4-5, you can download it to the equipment. To download the firmware:

1. Click Download on the Software Management tool bar.

   The dialog box shown in prompts for the device to which you want to download and the firmware package you want to download.
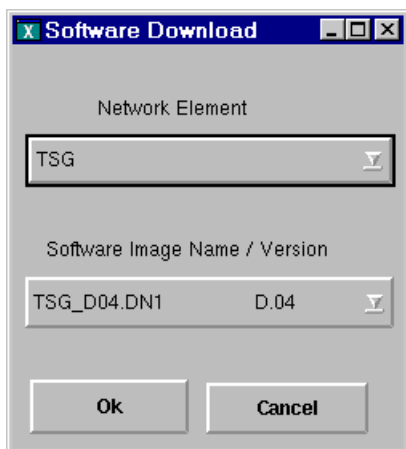
Figure 4.5　Downloading firmware

2. Select the network element to which you want to download the firmware package.

3. Select the name and version number of the firmware package you want to download, and click OK.

   A dialog box confirms that the firmware is being downloaded and indicates when the download process finishes.

4.3　　Configuration management

You use the configuration management function to add, modify, or delete NEs on your network. When you click the Configuration Management button on the NetSync^{PLUS} tool bar, the Configuration Management tool bar is displayed as shown in Figure 4.6.
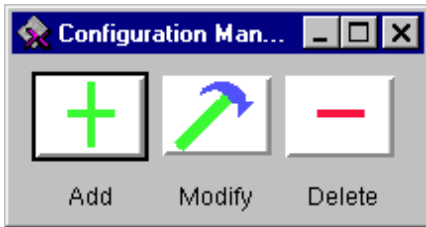
Figure 4.6 *Configuration Management tool bar*

The following table describes each of these buttons on this tool bar:

Add　　Click this button to add an NE to your network.

Modify　Click this button to modify information about an NE in your network or to enter configuration or inventory information for the cards in the NE.

Delete　Click this button to delete an NE from your network.
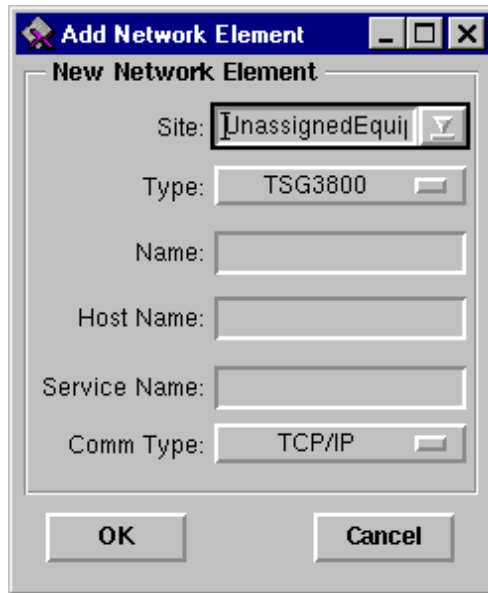
Each of these buttons is described in detail in the following sections.

4.3.1 Adding an NE

To add an NE:

1. Click Add from the Configuration Management tool bar.

   The Add Network Element dialog box shown in Figure 4.7 is displayed:

Figure 4.7 Add Network Element dialog box

2. Enter the information for the NE you want to add in the fields on this dialog box and click OK.

The following table describes each field in the Add Network Element dialog box.

Field	Description
Site	The site to which this NE is associated. This drop-down list box lists all the sites that are available for your network. To add a site to your network, see page 3-10.
Type	The type of NE you want to add. This menu button lists three types of DATUM NEs.
Name	Enter the name assigned to the NE you want to add.
	When a network element is initially installed, it has a factory-assigned name, which is the same for all NEs of a particular NE type. You can assign a unique, descriptive name to an NE, either directly using the craftperson interface for the device or using NetSync^{PLUS}. Since you use the NE's name to select it in NetSync^{PLUS} dialog boxes, you want to be sure to assign a descriptive name to the NE.
Host Name	Enter the network address of the NE's terminal server. Equivalent to IP address.
Service Name	Enter the port number used by the NE's terminal server. Equivalent to port number.
Comm Type	Select the type of network communication the NE uses. At present, the only available communication type is TCP/IP.

After you enter this information and click OK, a message box confirms that the NE was successfully created and added to the network.

4.3.2   Modifying an NE

You use this option to enter information about each card in the NE, assign a descriptive name to the NE, or change the information entered when the NE was added to the network.

To modify an NE:

1. Click Modify on the Configuration Management tool bar.

    The Modify Equipment dialog box is displayed listing available NEs.

2. Select the NE you want to modify.

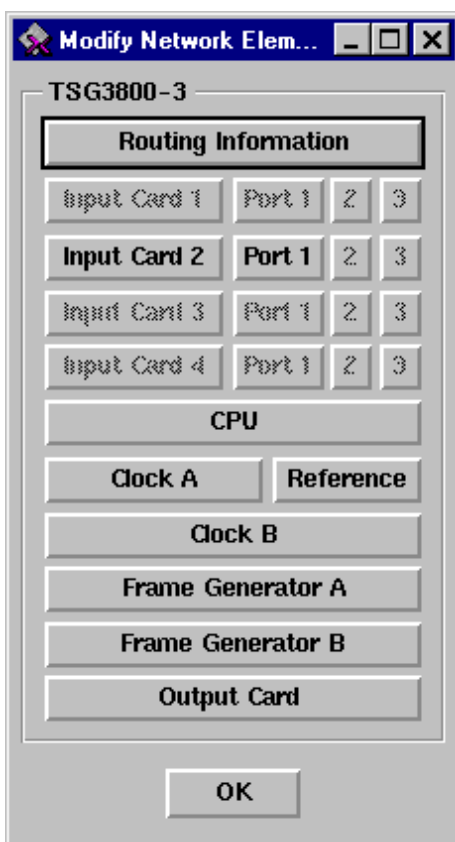   The Modify Network Element dialog box shown in Figure 4.8 is displayed.

Figure 4.8 *Modify Network Element dialog box*

This dialog box contains buttons that you can use to enter information about each of the cards in the NE you selected. The buttons that appear on this dialog box depend on the type of NE you selected to modify.

In most cases, the name of the button indicates the card to which it applies. However, the Routing Information button allows you to change the information entered when the NE was added to the network.

3. Click a button to enter or change the associated configuration or inventory control information.

A dialog box similar to the example in Figure 4.9 is displayed. The appearance of this dialog box depends on the button you clicked on the Modify Network Element dialog box.

Figure 4.9 *Input Configuration dialog box*

In some cases, the configuration information fields take up the entire dialog box. In this case, you select Inventory from the File menu to access a dialog box to enter inventory information.

In addition, some configuration dialog boxes have an Edit menu. Using this menu, you can access more dialog boxes where you can enter information related to this card, such as the ports available on an input card or the thresholds for each port.

4. When you have finished entering information on a configuration dialog box, select Save from the File menu to save the information.

   To close the dialog box without saving the modified information, select Exit from the File menu.

5. When you finish entering or modifying information for the NE, click OK to close the Modify Network Element dialog box.

4.3.3 Deleting an NE

To delete an NE from the network:

1. Click Delete from the Configuration Management tool bar.

   The Delete Equipment dialog box is displayed listing available NEs.

2. Select the NE you want to delete.

   A dialog box appears asking you to confirm that you want to delete the NE.

3. Click OK to delete the NE.

   A message box confirms that the NE was successfully deleted.

4.4   Inventory list

Using the inventory list function, you can export information about any NE on your network to a file or printer. To export this information:

1.   Click inventory list on the Configuration Management tool bar.

     The dialog box shown in Figure 4.10 appears.
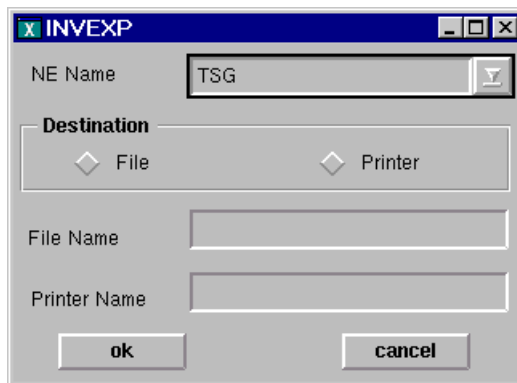
Figure 4.10 *Exporting inventory information*

2.   Select the NE for which you want to print inventory information.

3.   Select File or Printer as the destination of the inventory report.

4.   Enter a file name to export the report to a file.

     Or,

     Enter a printer name to send the report to a printer.

5.   Click OK.

5   Performance Management

This chapter describes how to use the performance management function to create performance graphs.

5.1   Overview

You use the performance management function to create graphs that track the performance of the NEs in your network. You can create phase, MTIE, and TDEV graphs of your TSG3800 network elements.

To access the performance management function, click Performance Management on the NetSync^PLUS tool bar, shown in Figure 5.1.

performance
management
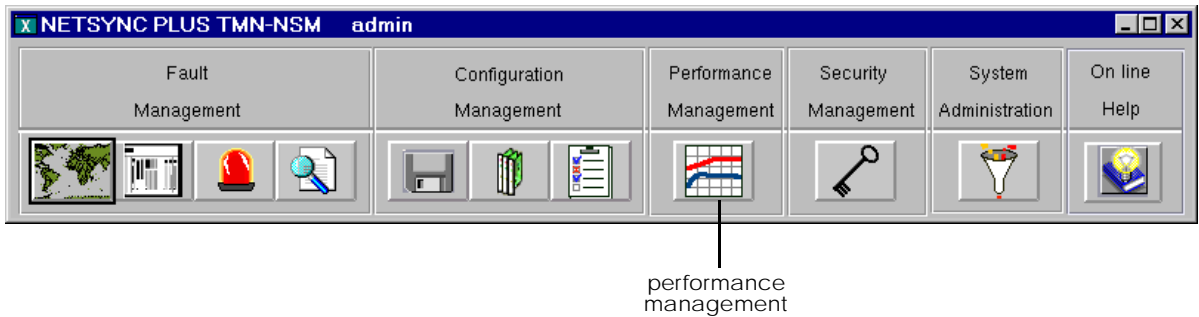
Figure 5.1 *Accessing the performance management function*

When you click the performance management button on the NetSync^PLUS tool bar, the Graph Selection dialog box shown in Figure 5.2 is displayed.
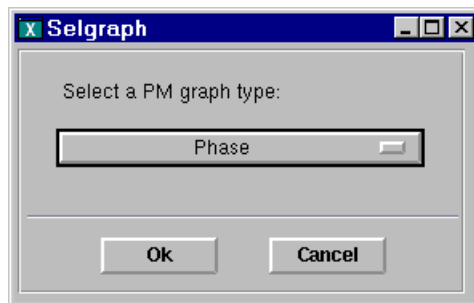
Figure 5.2 *Graph selection*

5.2   Creating a graph

To create a performance management graph:

1. Select the type of graph you want to create on the Graph Selection dialog box.

    A dialog box similar to Figure 5.3 is displayed. You use this dialog box to select the options for the graph you want to create.
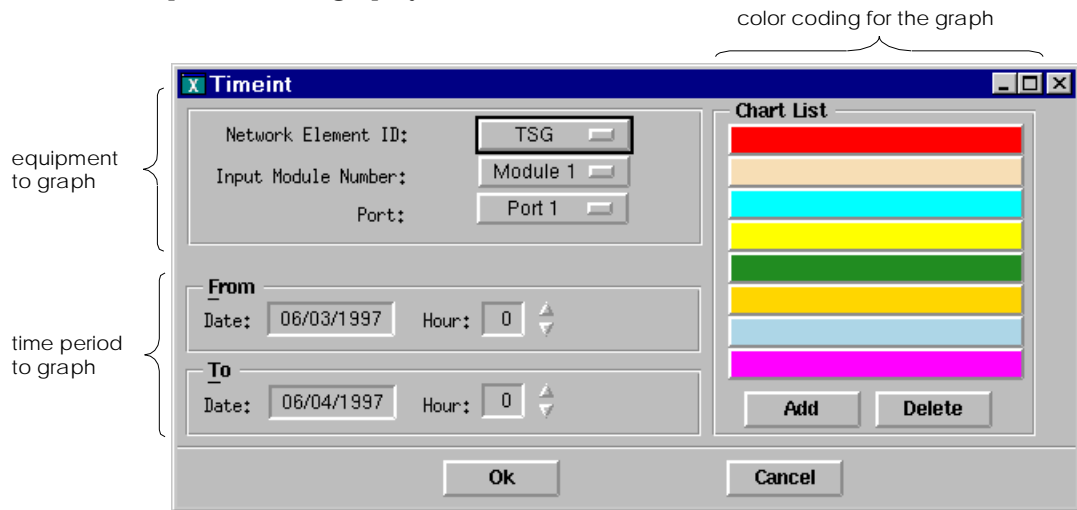
Figure 5.3 Graphing options

The options on this dialog box depend on the type of graph you chose. In all cases, however, this dialog box contains the following group boxes:

- •   equipment to graph

- •   time period for the graph

- •   a chart list that indicates the color coding that will be used on the graph

2. Select a piece of equipment to add to the graph using the menu buttons in the top-left group box (equipment to graph).

3. If you are creating an MTIE or TDEV graph, select the masks you want to use for the chart.

4. Specify the time period for the chart.

5. Click Add.

When you select a piece of equipment and add it to the graph, the chart list changes to indicate what color will be used to graph that equipment's performance. For the phase graph, each piece of equipment you select results in two entries in the chart list, one for each reference clock, as shown in Figure 5.4 .
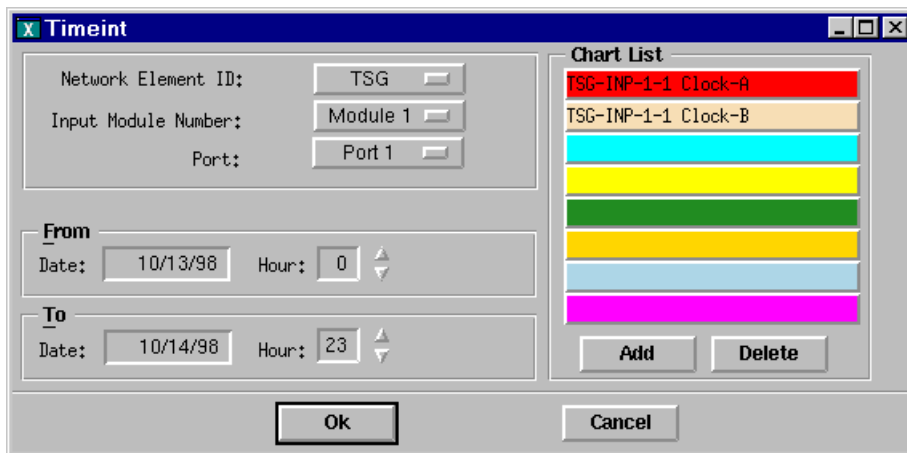

Figure 5.4 *Creating a phase graph*

For MTIE and TDEV graphs, each piece of equipment you select results in one entry in the chart list as shown in Figure 5.5.
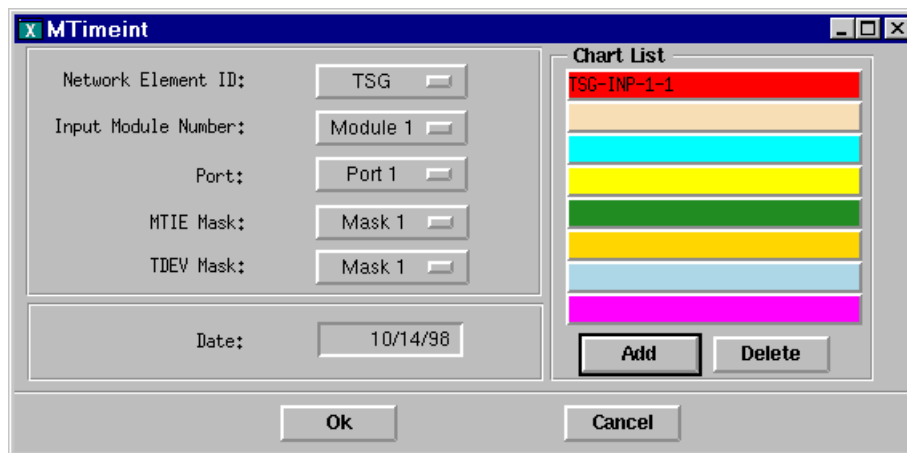
Figure 5.5 *Creating an MTIE graph*

If you selected a piece of equipment for which no performance data is available, an error message is displayed.

If you need to remove a piece of equipment from the graph, you can select it's entry from the chart list and click Delete.

6. Repeat steps 2 through 5 to add any other pieces of equipment that you want to include on this graph.

7. Specify the time period that this graph should reflect using the text boxes in the lower-left group box (time period to graph).

8. When you finish adding equipment, click OK to create the graph.

The graph is displayed. Figure 5.6 illustrates a phase graph.
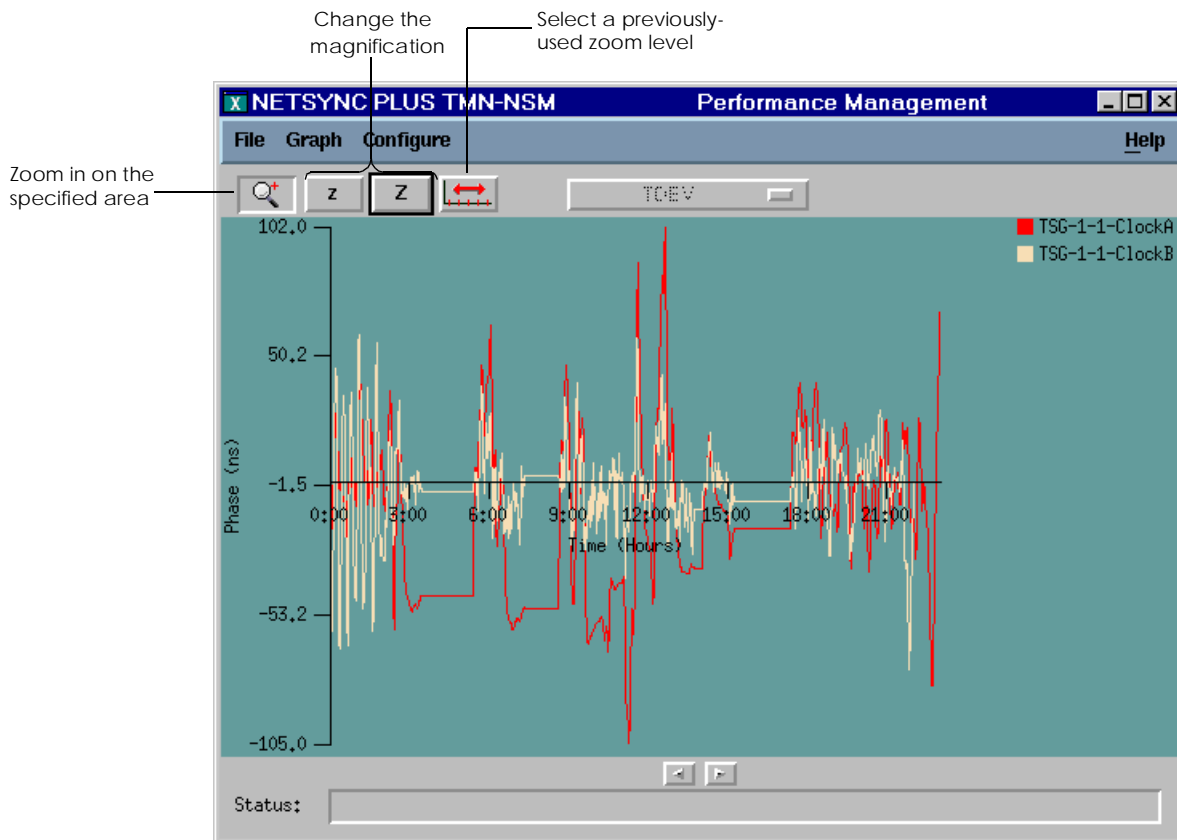
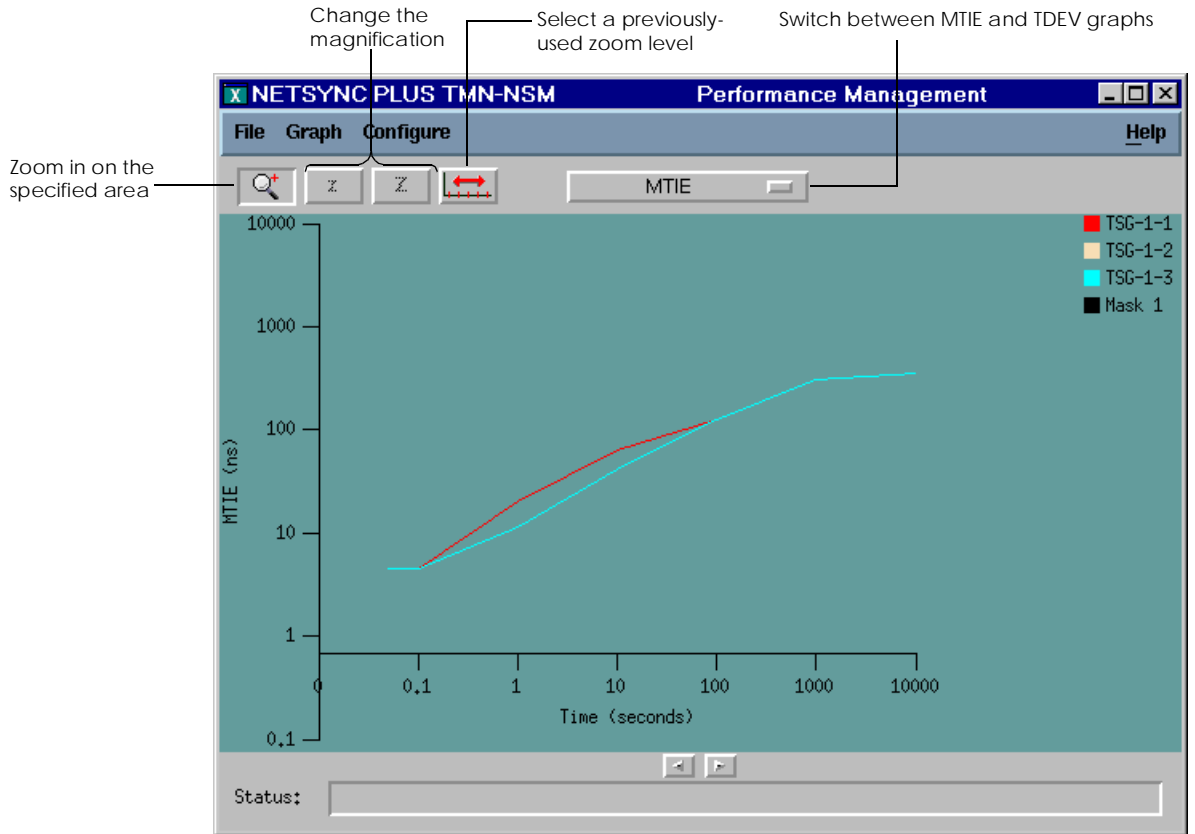*Figure 5.6 Example phase graph*

Figure 5.7 illustrates an MTIE graph.

Figure 5.7 Example MTIE graph
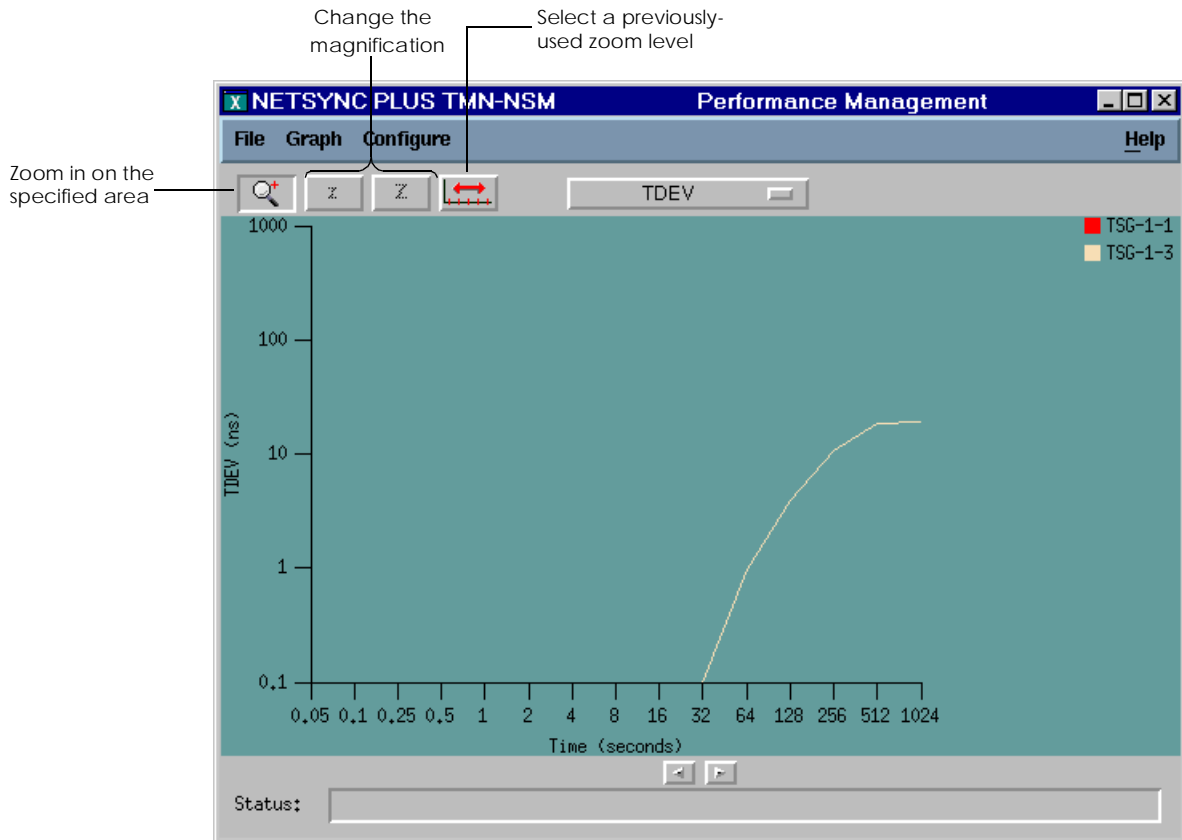
Figure 5.8 illustrates a TDEV graph.

Figure 5.8 Example TDEV graph

9. When you have finished viewing the graph, select Exit from the File menu to return to the graphing options dialog box.

    Or,

    Select another type of graph from the Graph menu to begin creating that type of graph.

5.3   Zooming

You can zoom in on a particular area of the graph to view it more closely. In addition, you can select a previously-used zoom level to view that level of detail again. To select an area of the graph to zoom in on:

1. Click the magnifying glass icon at the top of the graph display.

    The cursor changes to cross-hairs.

2. Click and drag from one corner of the selection area you to the diagonally-opposite corner.

    As you drag the cursor, a selection rectangle indicates the selection area. When you finish selecting the area, the display changes to present a closer view of the selected area.

To select a previously-used zoom level:

1. Click the zoom level list icon.

    A dialog box appears from which you can select a zoom level.

2. Select one of the zoom levels, and click OK.

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6   Security Management

This chapter describes how to use the security management function to manage users to NetSync^{PLUS}.

6.1   Overview

You use the security management function to add, modify, or delete users of NetSync^PLUS. To access the security management function, click Security Management on the NetSync^PLUS tool bar, shown in Figure 6.1.
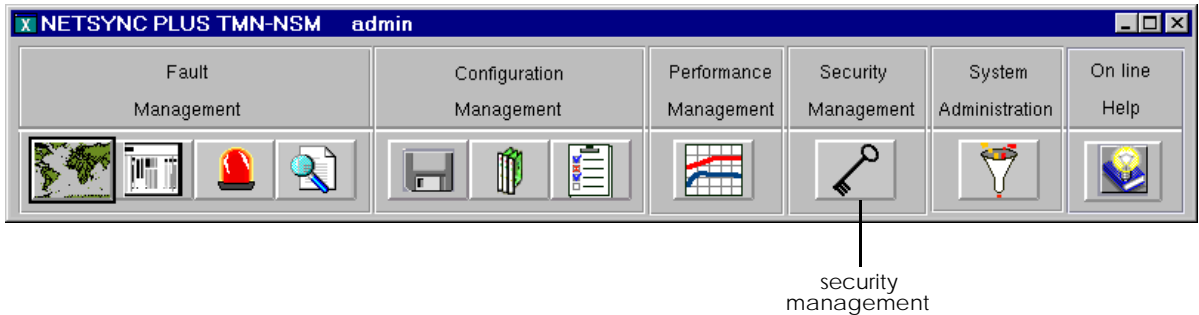

Figure 6.1 Accessing the security management function

When you click the security management button on the NetSync^PLUS tool bar, the Security Manager dialog box is displayed as shown in Figure 6.2.
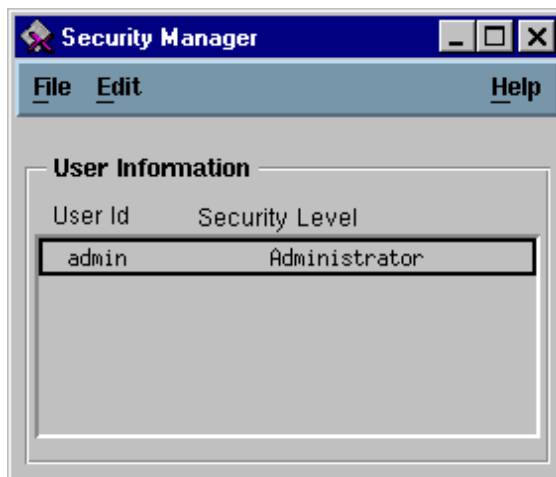

Figure 6.2 Security Manager dialog box

NetSync^PLUS provides the following security levels:

User	Has view-only access to the network management operations.
Technician	Has both view and change access to the network management operations.
Administrator	Has both view and change access to all system functions including operations for administrating NetSync^PLUS.

6.2   Adding a user

To add a user:

1. Select Add User from the Edit menu.

    The Security Editor dialog box shown in Figure 6.3 is displayed:

Figure 6.3 Security Editor dialog box

2. Enter a user ID and password for the user you want to add.

3. Select a security level for this user ID and click OK.

    After you enter this information and click OK, a message box confirms that the user was successfully added.

6.3   Modifying a user

To modify the password or security level for a user:

1. Select the user you want to modify from the Security Manager dialog box.

2. Select Modify User from the Edit menu.

    The Security Editor dialog box displays the current information about the user as shown in Figure 6.4.
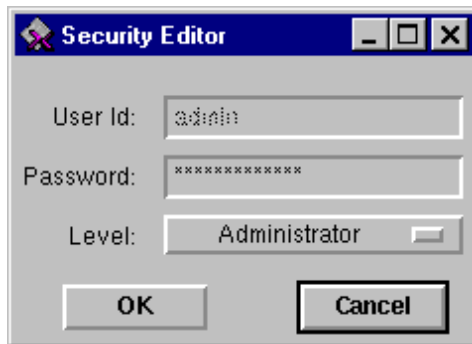

Figure 6.4 *Security Editor dialog box with user information*

3. Change the password and/or security level and click OK.

    A message box confirms that the user was successfully modified.

6.4   Deleting a user

☞ **Important**. The administrator cannot delete the administrator user ID.

To delete a user:

1. Select the user you want to delete from the Security Manager dialog box.

2. Select Delete User from the Edit menu.

   A dialog box appears asking you to confirm that you want to delete the user.

3. Click OK to delete the user.

   A message box confirms that the user was successfully deleted.

7   System Administration

This chapter describes how to use the system administration function of NetSync^{PLUS} to construct CMISE filters.

7.1 Overview

You use the system administration function to construct CMISE filters. NetSync^PLUS uses filters to determine what information is displayed on the map display, the alarm list, and the event list. For example, you can create a filter that only displays alarms from specific sites.

☞ **Important**. On the map display, you can only use filters that filter based on regions and sites. Filters that use other criteria are not available from the map display. For the alarm list, alarm log, event list, and event log, you can use any filter.

A CMISE filter is comprised of one or more filter expressions, each of which has the form:

    attributeID operator value

An example filter expression might be:

    Region = REGIONONE

A filter expression may consist of one or more simpler filter expressions connected by logical operators and optionally grouped by parenthesis. For example:

    ((Region = REGIONONE) AND
    NOT (Severity = Warning))

In addition, a filter can contain nested filter expressions as shown in the following example:

    (((Region = REGIONONE) AND
    NOT ((Severity = Warning) OR
    (Severity = Minor)))

After you have constructed a filter, you can apply it to the map display, alarm list, or event list to view only the information that passes the filter. The example filter shown above would list only those alarms or events that occurred in REGIONONE and were not of Warning or Minor severity. For more information on applying a filter, see page 3-6, page 3-17, or page 3-24.

To access the system administration function, click System Administration on the NetSync^PLUS tool bar, shown in Figure 7.1.
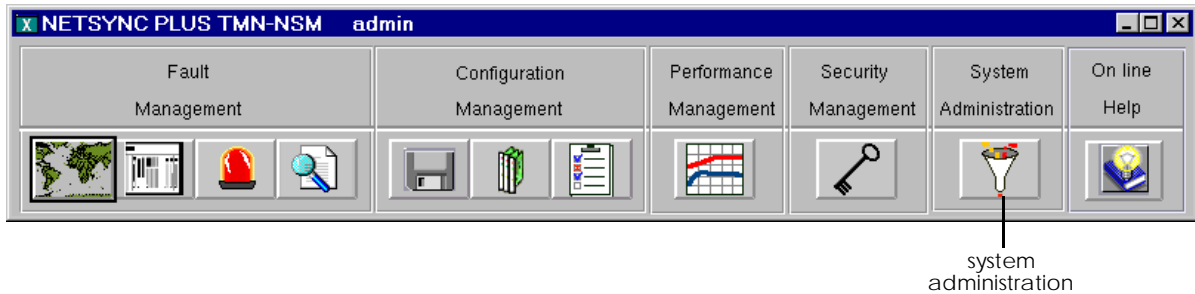
Figure 7.1 *Accessing the system administration function*

7.2 Constructing a filter

When you click System Administration on the NetSync^{PLUS} tool bar, the Alarm Filter Manager dialog box is displayed as shown in Figure 7.2.
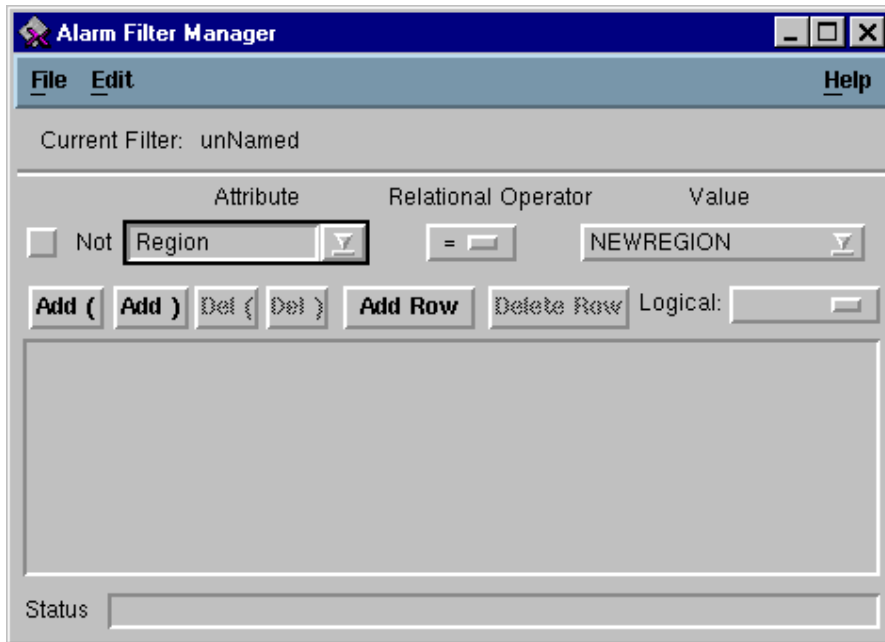

Figure 7.2 *Alarm Filter Manager dialog box*

You use the buttons and drop-down list boxes in this dialog box to construct filter expressions one at a time. You can also add additional rows (lines) to the filter and parenthesis to group filter expressions. In this way, you can build up complex filters.

The following table describes the elements of this dialog box that you use to construct a CMISE filter:

Element	Description
Not	Click this check box to insert a logical NOT before the current filter expression.
Attribute	Select the attribute that you want to use for the current filter expression.
Relational Operator	Select a relational operator that you want to use between the attribute and value in this filter expression.
Value	Select the value that you want to use for the current filter expression.
Add (	Select this button to add an open parenthesis before the current filter expression.
Add)	Select this button to add a close parenthesis after the current filter expression.
Del (	Select this button to delete an open parenthesis from before the current filter expression.
Del)	Select this button to delete a close parenthesis from after the current filter expression.
Add Row	Select this button to add a row (line). You can add a row either above or below the selected row. When you select this button, the current filter expression is copied to the new row. You can also select Add Row from the Edit menu to add a row.
Delete Row	Select this button to delete the current row (line). You can also select Delete Row from the Edit menu to delete the current row.
Logical	Select a logical operator from this drop-down list box to add that operator to the end of the current line. In this way, you can add logical operators between filter expressions.

☞ **Important**. NetSync^{PLUS} reads in the current values for network, sites, and regions when you access the system management function. If you make changes to this information while you have the Alarm Filter Management dialog box open, you request that NetSync^{PLUS} re-read the information by selecting Refresh Options from the File menu.

To construct a filter:

1. Construct the filter expressions for your filter using the buttons and drop-down list boxes on the Alarm Filter Manager dialog box.

   To add a row (line) to the filter, including the first line, click Add Row. When you add the first row, NetSync[PLUS] simply adds the row to the text box in the lower half of the dialog box using the currently-selected filter options. When you add a new row to a filter that already contains rows, NetSync[PLUS] asks whether the new row should go before or after the selected row.

   To change a row, select it and then select other filter options.

2. When you have finished constructing the filter, select Verify Filter from the Edit menu.

   A message box appears confirming that the filter is valid or indicating an error.

3. When you have corrected any errors in the filter, select Save or Save As from the File menu to save the filter.

   When you save a new filter for the first time or if you selected Save As, a dialog box prompts you for the name of the new filter.

4. Enter a name for the filter and click OK.

   The status bar at the bottom of the dialog box indicates that the filter was successfully saved.

7.3 Modifying an existing filter

To open and modify an existing filter:

1. Select Open from the File menu on the Alarm Filter Manager dialog box.

   The Open Filter dialog box lists the currently defined filters.

2. Select the filter you want to modify.

   The filter you selected is displayed in the Alarm Filter Management dialog box.

3. Make any changes to the filter.

4. Select Save to save the filter or Save As to save the modified filter under another name.

7.4   Deleting a filter

To delete a filter:

1. Select Delete from the File menu.

    The Delete Filter dialog box lists the available filters.

2. Select the filter you want to delete.

    A dialog box appears asking you to confirm that you want to delete the filter.

3. Click OK to delete the filter.

    The status bar at the bottom of the dialog box indicates that the filter was deleted.

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A   Backups and Restores

This appendix describes how to back up and restore the data about your network stored in NetSync^{PLUS}.

A.1   Overview

This appendix describes how to back up the information about your network that is stored in NetSync[PLUS] and how to restore that information in case of data loss.

There are several types of backups that you can perform depending on the type of data you want to save. You can perform these backups interactively or you can schedule them to complete at a specific time.

- Backup of everything

  This backup type creates an image of the entire system with virtually every file including the operating system, the NetSync[PLUS] application and databases. This backup type can take from 45 minutes to several hours, depending on how much data is on your system.

  At a minumum, it is recommended that you perform a back up everything at least once each month. Perform this backup when there is little or no activity on the system. For example, you might perform this backup on the first Sunday evening of each month.

- Backup of the file system

  This backup type creates an image of all file systems including the operating system, and the NetSync[PLUS] application binaries and data. It does not save the NetSync[PLUS] databases. It can take from 45 minutes to several hours, depending on how much data is on your system.

  You can perform this backup if you cannot find a convenient time to back up everything. However, since it does not back up the NetSync[PLUS] databases, you should back them up soon after this backup (within a couple of days).

- Backup of the NetSync[PLUS] databases

  This backup type creates an image of the NetSync[PLUS] databases. It does not save the operating system or the NetSync[PLUS] application binaries.

  You should perform this backup whenever there is a significant change in the configuration of your network devices. Perform this backup when there is little or no activity on the system.

  If you have not backed up everything during the month (you backed up only the file system), you need to perform this backup to make sure your databases are saved at least once each month.

- Backup of the NetSync[PLUS] application binaries and data, excluding the databases

  This backup type creates an image of the NetSync[PLUS] application binaries and data. It does not save the operating system or the NetSync[PLUS] databases.

  At a minumum, you should perform this backup after successfully installing or upgrading the NetSync[PLUS] program. You can perform this backup if you cannot find a convenient time to back up everything or to back up the file system.

If you need to restore from your backups, you can restore everything, the file system, the NetSync[PLUS] databases, or the NetSync[PLUS] application binaries and data (excluding the databases).

The following sections describe how to perform backups and restores.

A.2 Performing a backup

NetSync[PLUS] includes several backup programs that perform the different types of backups. This section describes how to use these programs to perform your backups interactively or to schedule a backup to be performed later.

To perform a backup of any type, you need one blank 4mm dat tape.

A.2.1 Performing an interactive backup

With an interactive backup, you start the backup when you want to perform it and respond to the backup program's prompts.

1. Log into the operating system as root (superuser).

2. Make sure the backup tape is write-enabled (check the read-write tab) and mount it in the tape drive.

3. Change to the NetSync[PLUS] installation directory by typing the following command:

   ```
   cd /ems/CurrentVersion/bin
   ```

4. Start the backup program for the type of backup you want to perform.

   To back up everything, type the following command at the prompt:

```
./backup.everything
```

To back up the file system, type the following command at the prompt:

```
./backup.system
```

To back up the NetSync^PLUS databases, type the following command at the prompt:

```
./backup.databases
```

To back up the NetSync^PLUS application binaries and data, excluding the databases, type the following command at the prompt:

```
./backup.ems
```

The backup program begins. Follow the backup program's prompts to perform the backup.

If you are backing up everything or backing up the NetSync^PLUS databases, the following prompt appears when the database backup begins:

```
Please mount tape 1 on /dev/rmt/0 and press Return to continue...
```

This prompt appear regardless of whether the tape is already mounted. Since you have already mounted the tape, just press Return.

5. Remove the tape from the tape drive, set the read-write tab to read-only, label the tape with the date and backup type, and store the tape in a safe place.

A.2.2 Performing a scheduled backup

With a scheduled backup, you specify the type of backup you want to perform and when to perform it. The backup program for a scheduled backup does not prompt for any information. It simply performs the backup based on the arguments you provided on the command line when you scheduled the backup.

You can only schedule one backup at a time. If you try to schedule a new backup before a previously scheduled backup completes, the new backup schedule will overwrite the previous backup schedule.

☞ **Important.** When performing a scheduled backup, you need to make sure that a write-enabled backup tape is mounted in the tape drive before the backup begins.

To schedule the backup:

1. Log into the operating system as root (superuser).

2. Change to the NetSync[PLUS] installation directory by typing the following command:

   ```
   cd /ems/CurrentVersion/bin
   ```

3. Start the scheduled backup program by typing the following command at the prompt:

   ```
   ./schedule.backup -type everything | database | ems
      [ [-date MM/DD -time HH:MM] | [-weekly dayofweek -time HH:MM] |
      [-daily -time HH:MM] ]
   ```

The following table describes these command line options:

-type	Specifies the type of backup to perform. Possible backup types are: • everything: backs up everything. • database: backs up the NetSync^PLUS databases. • ems: backs up the NetSync^PLUS application binaries and data, excluding the databases.
-date	Specifies the date on which you want the backup performed. Specify the date using two digits each for the month and year (*MM/YY*).
-time	Specifies the time that you want the backup performed. Specify the time using two digits each for the hour and minutes (*HH/MM*) using a 24-hour clock.
-weekly	Specifies that the backup should be performed weekly on the specified day of the week.
-daily	Specifies that the backup should be performed daily.

For example, to schedule a backup of everything to be performed weekly on Sunday at 11:00 pm, you would enter:

```
schedule.backup -type everything -weekly Sun -time 23:00
```

To schedule a backup of the NetSync^PLUS databases at 1:00 am each day, you would enter:

```
schedule.backup -type database -daily -time 1:00
```

To schedule a backup of the NetSync^PLUS application binaries and data, excluding the databases, to be performed on 5/23 at 11:00 pm, you would enter:

```
schedule.backup -type ems -date 5/23 -time 23:00
```

If you specify only the **-type** option, the specified type of backup will be scheduled immediately.

You can also get help on the **schedule.backup** program by typing the following command:

```
./schedule.backup -help
```

A.3　Performing a restore

You can restore any of the information that you have backed up: everything, the file system, the NetSync^PLUS databases, or the NetSync^PLUS application binaries and data (excluding the databases). You can only restore interactively.

If you are restoring everything or the file system, you need to boot your system from the Solaris operating system CD-ROM. The operating system version of the CD-ROM you use to boot the system must match your systems current operating system version.

This section describes how to boot your system from the operating system CD-ROM and how to restore your data.

A.3.1　Booting from the operating system CD-ROM

You only need to boot your system from the Solaris operating system CD-ROM if you are restoring everything or the file system. For other types of restores, you can skip this section.

To boot from the operating system CD-ROM:

1. Mount the Solaris operating system CD-ROM in the CD-ROM drive.

    The operating system version of the CD-ROM you use to boot the system must match your system's current operating system version.

2. Halt your system by typing STOP+A.

    The command monitor prompt (OK) is displayed.

3. Type the following command to boot from the operating system CD-ROM:

    ```
    boot cdrom - s
    ```

    The system boots from the CD-ROM into mini-root. It may take a few minutes for the prompt (#) to appear.

A.3.2　　　　Restoring everything

To restore everything, you need the most recent backup tape on which you backed up everything. Then, you need to boot the system from the operating system CD-ROM as described above.

To restore everything, you first restore the file system. Then, you restore the NetSync[PLUS] databases. Both of these procedures are described below.

To restore the file system:

1. Insert the backup tape in the tape drive.

2. Type the following commands at the mini-root prompt (#):

    ```
    cd /tmp
    TAPE=/dev/rmt/0n
    export TAPE
    mt rewind
    tar xv
    ```

    At this point, you are ready to start the restore program.

3. To start the restore program, type the following command at the mini-root prompt (#):

    ```
    ./restore.system
    ```

4. Follow the restore program prompts to restore the file system.

    When the file system restore completes, a prompt appears letting you know that the system is about to reboot.

5. Press any key to reboot.

    When the system reboots, it ejects the tape.

To restore the databases:

1. Reinsert the tape into the tape drive.

2. Log in a root (superuser).

3. Change to the NetSync[PLUS] installation directory by typing the following command:

    ```
    cd /ems/CurrentVersion/bin
    ```

4. Type the following command:

    ```
    ./restore.databases
    ```

5. Follow the restore program prompts to restore the databases.

    The following lists the responses you should provide to those prompts for which the proper answer may not be obvious:

    •   When the database restore begins, the following prompt appears:

        ```
        Please mount tape 1 on /dev/rmt/0 and press Return to
        continue...
        ```

        This prompt appear regardless of whether the tape is already mounted. Since you have already mounted the tape, just press Return.

    •   Answer **n** when the following restore program prompt appears:

        ```
        Do you want to back up the logs? (y/n)
        ```

    •   Answer **n** when the following prompt appears:

        ```
        Restore a level 1 archive (y/n)
        ```

    •   Answer **n** when the following prompt appears:

        ```
        Do you want to restore log tapes? (y/n)
        ```

    When the database restoration completes, a prompt appears asking you if you want to reboot the system.

6. Type **y** to reboot.

    Your system reboots.

A.3.3 Restoring the file system

To restore the file system, you need the most recent backup tape on which you backed up the file system or on which you backed up everything. Then, you need to boot the system from the operating system CD-ROM as described on page A-8.

To restore the file system:

1. Insert the backup tape in the tape drive.

2. Type the following commands at the mini-root prompt (#):

   ```
   cd /tmp
   TAPE=/dev/rmt/0n
   export TAPE
   mt rewind
   tar xv
   ```

   At this point, you are ready to start the restore program.

3. To start the restore program, type the following command at the mini-root prompt (#):

   ```
   ./restore.system
   ```

4. Follow the restore program prompts to restore the file system.

A.3.4 Restoring the databases

To restore the databases, you need the most recent backup tape on which you backed up the databases or on which you backed up everything.

To restore the databases:

1. Insert the backup tape in the tape drive.

2. Log into the system as root (superuser).

3. Change to the NetSync^{PLUS} installation directory by typing the following command:

   ```
   cd /ems/CurrentVersion/bin
   ```

4. Type the following command:

```
./restore.databases
```

5. Follow the restore program prompts to restore the databases.

    The following lists the responses you should provide to those prompts for which the proper answer may not be obvious:

    • When the database restore begins, the following prompt appears:

        ```
        Please mount tape 1 on /dev/rmt/0 and press Return to
        continue...
        ```

        This prompt appear regardless of whether the tape is already mounted. Since you have already mounted the tape, just press Return.

    • Answer **n** when the following restore program prompt appears:

        ```
        Do you want to back up the logs? (y/n)
        ```

    • Answer **n** when the following prompt appears:

        ```
        Restore a level 1 archive (y/n)
        ```

    • Answer **n** when the following prompt appears:

        ```
        Do you want to restore log tapes? (y/n)
        ```

    When the database restoration completes, a prompt appears asking you if you want to reboot the system.

6. Type **y** to reboot.

A.3.5 Restoring the NetSync^{PLUS} application binaries and data

To restore the NetSync^{PLUS} application binaries and data (excluding the databases), you need the most recent backup tape on which you backed up this information.

To perform the restore:

1. Insert the backup tape in the tape drive.

2. Log into the system as root (superuser).

3. Change to the NetSync^{PLUS} installation directory by typing the following command:

   ```
   cd /ems/CurrentVersion/bin
   ```

4. Type the following command:

   ```
   ./restore.ems
   ```

5. Follow the restore program prompts to restore the application binaries and data.

Index