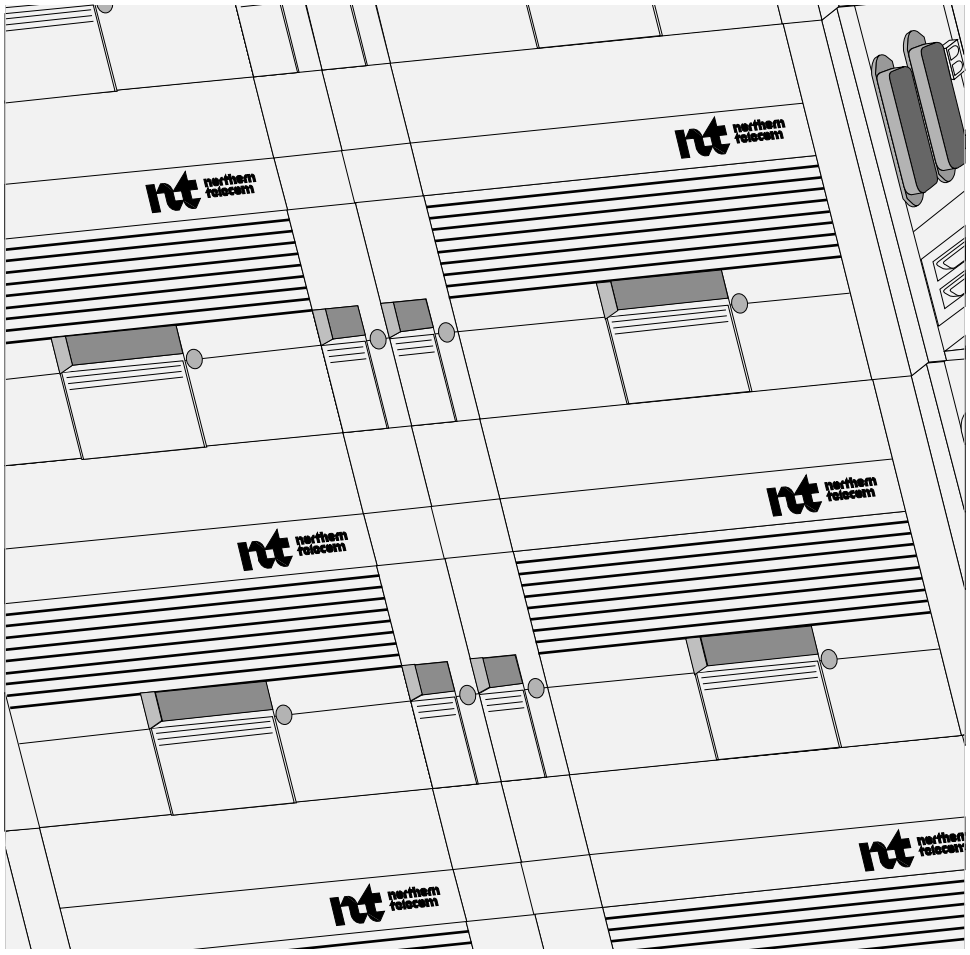
NT4K00KA **323-3001-300**

SONET Products

AccessNode

Network Element User Interface Description

Issue 1.0 February 1999



NORTEL NETWORKS™

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AN16 Standard release of the document, Issue 1.0. Changes include the following:

- updated network element ID range in Chapter 2 and 3
- added LNADJCI tool to list of files that can be downloaded

June 1998

New NTP focusing on network element user interface for AN15.

Contents

About this document

This document contains the following chapters:

- Overview of the network element user interfaces, which describes two types of user interface
- Using the network element user interface, which describes the features available with the network element user interface (NEUI)
- Connecting and logging in to the network element user interface, which contains procedures for common NEUI tasks
- Using the CI tool user interface, which contains procedures for opening and closing command interpreter (CI) tools as well as a procedure on how to get help within a CI tool

Audience

This document is for the following groups who use the AccessNode NEUI:

- network administrators
- field maintenance
- maintenance engineers
- system lineup and testing (SLAT) engineers/technicians

How to use this document

This document describes the tools you need when performing the procedures in this volume and should be used as a reference.

Warnings and safety precautions

This section has samples of the danger and caution warnings for proper handling and operation of equipment.

To avoid injury, follow all danger warnings included with this product, as well as safety procedures established by your company.

To avoid damage to equipment or service interruptions, follow all caution warnings included with this product, as well as procedures established by your company.

Samples of danger and caution warnings follow.

DANGER
Risk of personal injury
Danger warnings indicate a risk of personal injury.

CAUTION
Risk of service interruption or equipment damage
Caution warnings indicate a risk of service interruption or equipment damage.

DANGER
Risk of electric shock
These warnings indicate possible electrical hazards. When you see this warning, proceed with care to avoid personal injury.

General keyboard entries

The keys used to enter commands to the network elements are shown in bold. Where a function key is required, the first letter is capitalized as follows:

press **Enter**

The Return key used in command sequences is represented by the following symbol:

↵

The Control, Delete, and Escape key names are abbreviated to Ctrl, Del, and Esc.

Onscreen buttons and menu items

Onscreen buttons and menu item names (regardless of terminal type) are printed in bold type and capitalized. They appear on the screen as follows:

click **Cancel** or **OK**
select **Sort** from the Applications menu

References in this document

This document refers to the following volumes in the AccessNode Northern Telecom Publication (NTP) library.

Engineering, Configuration, and Ordering Guide, Volume 1

- *About the AccessNode Library,* 323-3001-030
- *Engineering and Ordering Information*, 323-3001-032

Operations, Administration, and Provisioning, Volume 4A

- *OPC User Interface Description,* 323-3001-301

Operations, Administration, and Provisioning, Volume 4B

- *Provisioning and Operations Procedures,* 323-3001-310

Overview of the network element user interfaces

This chapter describes the tools you can use to control network elements (NE) from different locations.

Depending on the equipment type you are using and the functions you are performing, several user interfaces are available. The following two user interfaces are most commonly used on the AccessNode:

- network element user interface (NEUI)
- operations controller (OPC) user interface

In addition, the Network Manager is an optional software application that runs on a UNIX workstation, providing a centralized facility for managing OPC and NE software.

The Network Manager offers the following:

- a single point of access to the existing operations, administration, maintenance, and provisioning functions of your system
- a consolidated network-level view of your AccessNode installations
- a graphical end-to-end view of the alarms collected from the NEs in your system.

  Note: The Network Manager is the only software discussed in this chapter that does not run on an AccessNode.

This document contains information about the NEUI only. For instructions on the use of the operations controller (OPC) user interface, see the *OPC User Interface Description,* 323-3001-301. For information about Network Manager, see the *Network Manager User Guide,* 323-4001-050.

Network element user interface

The network element user interface (NEUI) allows you to control an individual network element. For example, you can change the status of equipment from out-of-service to in-service.

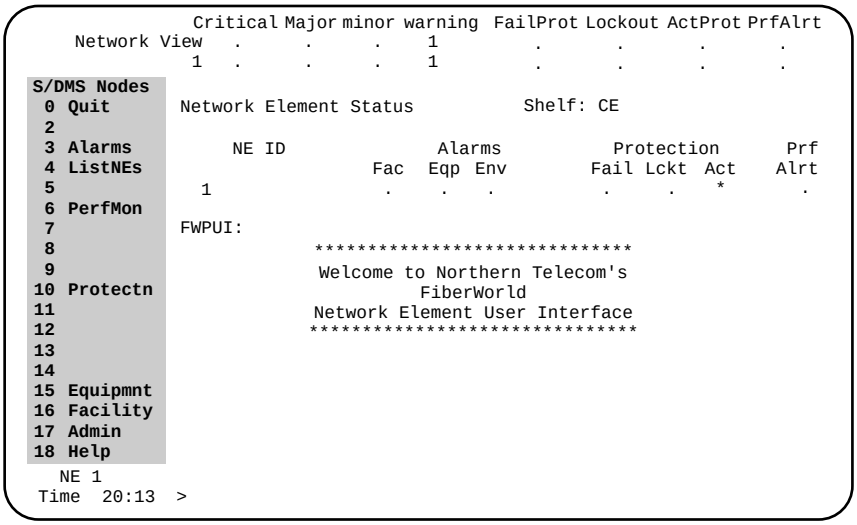
The NEUI has two parts:

- a set of menu-based screens that control the equipment in the shelves
- a set of command increments that allow you to query and set system parameters

Figure 1-1 shows the Network Element Status screen.

Figure 1-1
Network Element Status screen

FW-10313



Each option accesses the base screen of a tree structure (the “parent” screen) of several menu-based screens for that function (“child” screens). To move through the tree structure from one screen to another, you type commands in the input area at the bottom of the screen.

Access to the NEUI

You can access the NEUI locally at the NE, or you can access it from a remote location.

Local access to the NEUI

At the NE, connect a VT100-compatible terminal to the user-interface port on local craft access panel (LCAP).

Remote access to the NEUI

You can remotely access the NEUI as follows:

- If you have a modem connection to the NE, you can access the NEUI through the modem. At the NE, the modem connector is the J08 connector on the access bandwidth manager (ABM) shelf or the J10 connector on the transport bandwidth manager (TBM) shelf.
- If you are using the OPC user interface, you can use the NE Login Manager software tool to log in to the NEUI of any network element within its cluster. A cluster includes all the NEs within the span of control of the OPC.

  Note: From one NE in a cluster, you can log in to the OPC user interface remotely, and then use the NE Login Manager software tool to log in to another NE in the same cluster. See *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A.

NEUI tasks

Table 1-1 shows the procedures for complete NEUI tasks.

Table 1-1
NEUI task list

If you want to	Then go to	See
Learn how to use the NEUI	Chapter 2 Using the network element user interface	page 2-1
Connect a local terminal to the network element LCAP	Procedure 3-1 Connecting a local terminal to the network element local craft access panel (LCAP)	page 3-2
Connect a remote VT100-compatible terminal using the optional BIP modem	Procedure 3-2 Connecting a remote VT100-compatible terminal using the optional BIP modem	page 3-6
Connect a remote VT100-compatible terminal using an external modem	Procedure 3-3 Connecting a remote VT100-compatible terminal using an external modem	page 3-9
Log in to the network element and log out	Procedure 3-4 Logging in to the NEUI and logging out of the NEUI and terminal	page 3-11
Log in to the far-end NE from the local NE	Procedure 3-5 Logging in to the far-end NE from the local NE	page 3-15
Log in to a network element from the OPC and log out	Procedure 3-6 Logging in to a network element from the OPC and logging out	page 3-17
Open a NEUI session from other levels of the interface	Procedure 3-7 Opening a network element user interface session from other levels of the interface	page 3-20

CI tools

To query and set system parameters, use the following command interpreter (CI) tool:

- PSTN CI - the public switching telephone network (PSTN) CI tool that users in Hong Kong use to load the PSTN for Hong Kong

For more information on PSTN CI see *Provisioning and Operations Procedures*, 323-3001-310, in *Operations, Administration, and Provisioning*, Volume 4B.

Table 1-2 shows the procedures to use for CI tool tasks.

Table 1-2
CI tool task list

If you want to perform this task	Then perform these procedures	See
Open a CI tool	Procedure 4-1 Opening a CI tool	page 4-4
Display the help screen for a CI tool	Procedure 4-2 Displaying help for a CI tool	page 4-5
Enter a CI command	Procedure 4-3 Entering a CI command	page 4-6
Close the CI tool	Procedure 4-5 Closing the CI tool	page 4-9

Network Manager user interface

The Network Manager can monitor up to 50 OPC pairs (a pair consisting of a primary OPC and a backup OPC), or up to 100 individual OPCs. Communication between the Network Manager and the OPCs is through an Ethernet transmission control protocol/internet protocol (TCP/IP) network.

Documentation for Network Manager

For information about Network Manager, see the *Network Manager User Guide*, 323-4001-050. For instructions on how to order that document, see *About the AccessNode Library*, 323-3001-030, or see *Engineering and Ordering Information*, 323-3001-032, in the *Engineering, Configuration, and Ordering Guide*, Volume 1.

Using the network element user interface

This chapter describes the features available with the network element user interface (NEUI) in the full-screen layout mode.

> ***Note:*** A subset of these features is available when using the single-line mode.

All the command menus in the NEUI, as well as the provisioning defaults for the terminal shelf, are listed at the end of this chapter.

Features

The AccessNode NEUI is a menu-based interface to the transmission network.

The menu options on the Network Element Status screen give you access to the following services:

- alarms
- configuration and provisioning
- performance monitoring
- maintenance
- protection switching
- online inventory

The user interface has the following screen attributes:

- screen partitioning
- display of alarms, alerts, and other log messages
- access control through user IDs and passwords
- recall of the last three commands
- online command help
- paging of the output
- command entry macros
- command entry by menu number
- command line editing features
- onscreen alarm indicators that are categorized
- automatic parameter prompting
- remote access to other network elements (NEs)
- use of appropriate defaults and context for commands

Multiple users can connect to each AccessNode NEUI. Up to three local and eight remote users (NE login sessions from the operations controller (OPC)) can be connected at one time. The NEUI also allows single-ended maintenance. Therefore, a user at one central location can remotely monitor, provision, maintain, and troubleshoot several NEs that are within the OPC span of control.

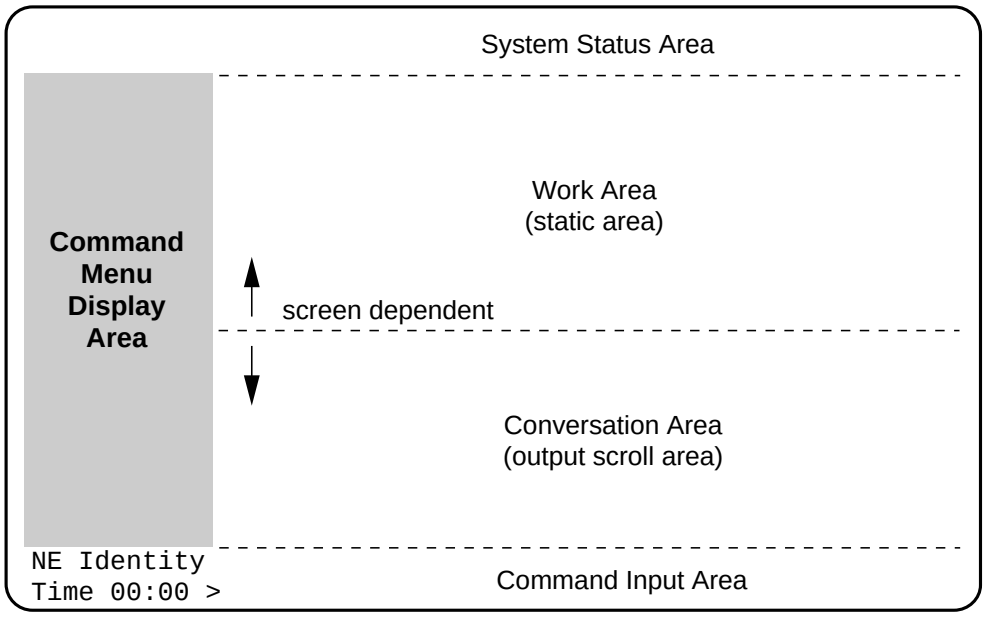
Screen layout

The user interface allows you to access all system alarms, status and control information, and commands.

Figure 2-1 shows the screen template.

Figure 2-1
Typical screen

FW-1134



As shown above, the screen is divided into six areas:

- system status area
- command menu display area
- work area (static area)
- conversation area (output scroll area)
- NE identity (NE ID) and time area
- command input area (command line)

System status area

The system status area at the top of the screen consists of three lines of 78 characters. This area displays a count of the critical, major, and minor alarms and warnings for the network (span of control) and the current NE. Changes to the critical, major, minor, and warning fields are shown in inverse video, indicating that new alarms have been generated that should be investigated. The system status area also contains fields showing current protection activity failures and lockouts, and a field to indicate degradation.

Note 1: A ? (question mark) in the top left corner of the system status area indicates that system level data may be incorrect because of a temporary loss of communication with the OPC.

Note 2: During periods of peak processing, some user interface screens may not be dynamically updated because traffic and fault handling activities are a priority. To update a screen, back out of it, then re-enter the screen. An up-to-date equipment or facility status will appear.

The system status area changes depending on the application. See Table 2-1.

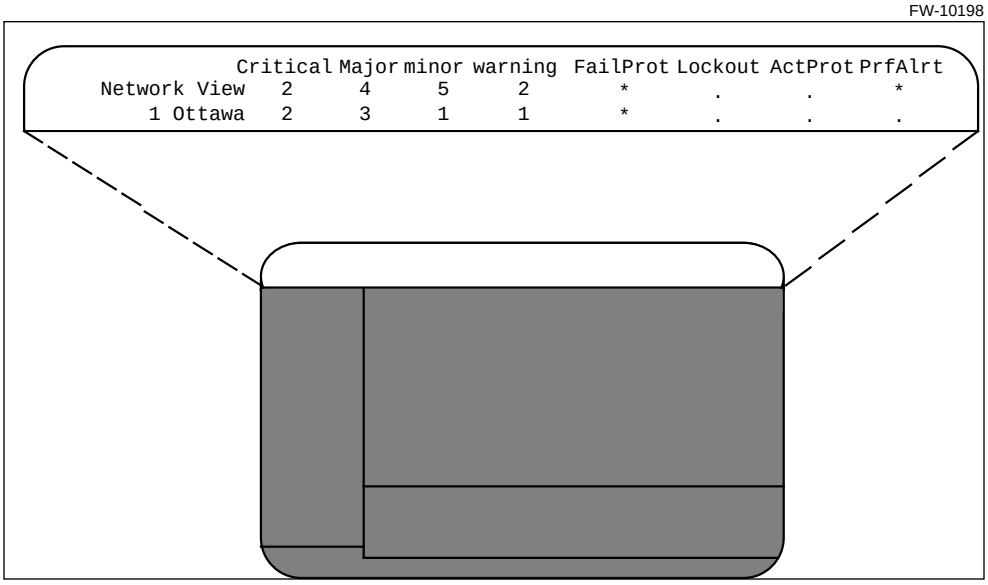
Table 2-1
System status area

System	Banner shown in system status area
virtual tributary bandwidth manager (VTBM) ring	Network View
point-to-point	System View
single-ended and DS1-fed	None

The Network View for VTBM shows two rows of alarm counts; one for all NEs in the OPC's span of control and one for the NE currently being accessed. The System View shows only the alarm counts for the NEs in the point-to-point configuration. Figure 2-2 shows the three-line status area.

Figure 2-2
System status area

FW-10198

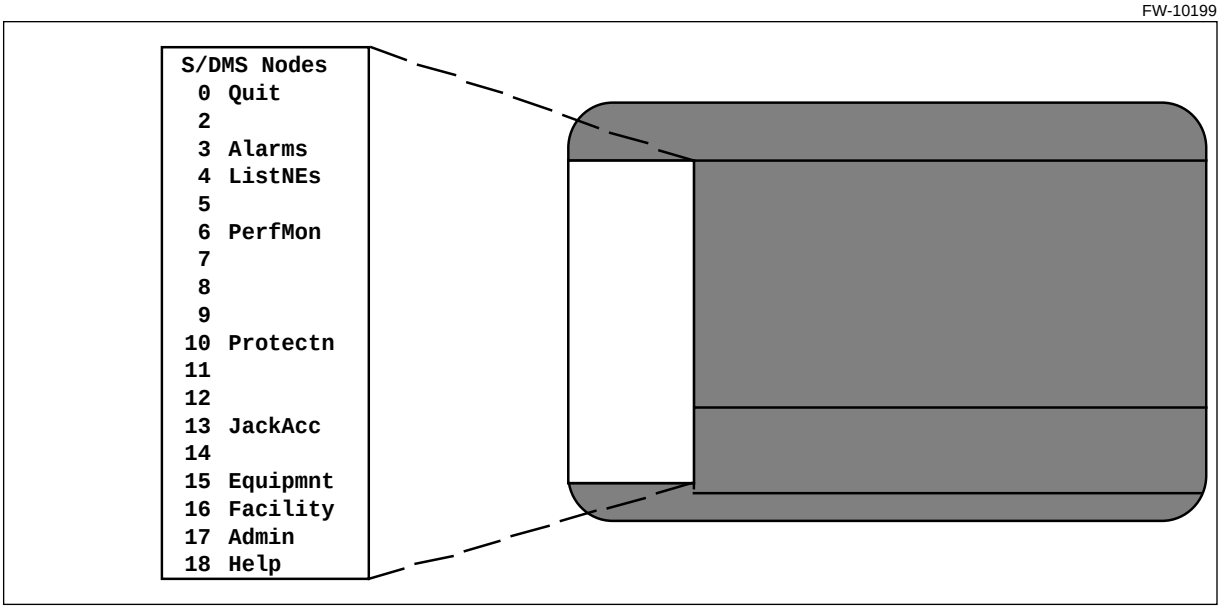


Command menu display area

The command menu display area consists of 19 lines of 12 characters located at the leftmost part of the screen. The first line contains the title of the current display followed by a numbered list showing the available options or functions at each menu level. The list changes to reflect the appropriate choices as you move up or down the hierarchy of commands.

Figure 2-3 shows an example of the command menu display area.

Figure 2-3
Command menu display area



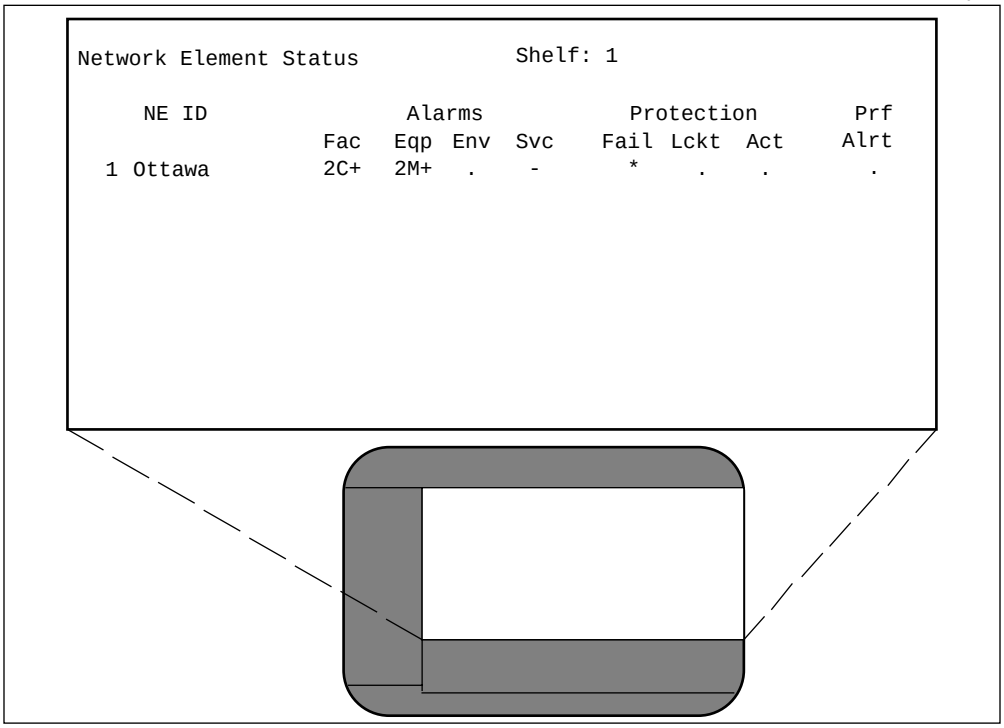
Work area

The work area displays information that results from command line entries, the current system status, or data that is relevant to the option or function that was chosen. Work area information is displayed in a page format.

Figure 2-4 shows sample data displayed in the work area of the screen.

Figure 2-4
Work area

FW-10217

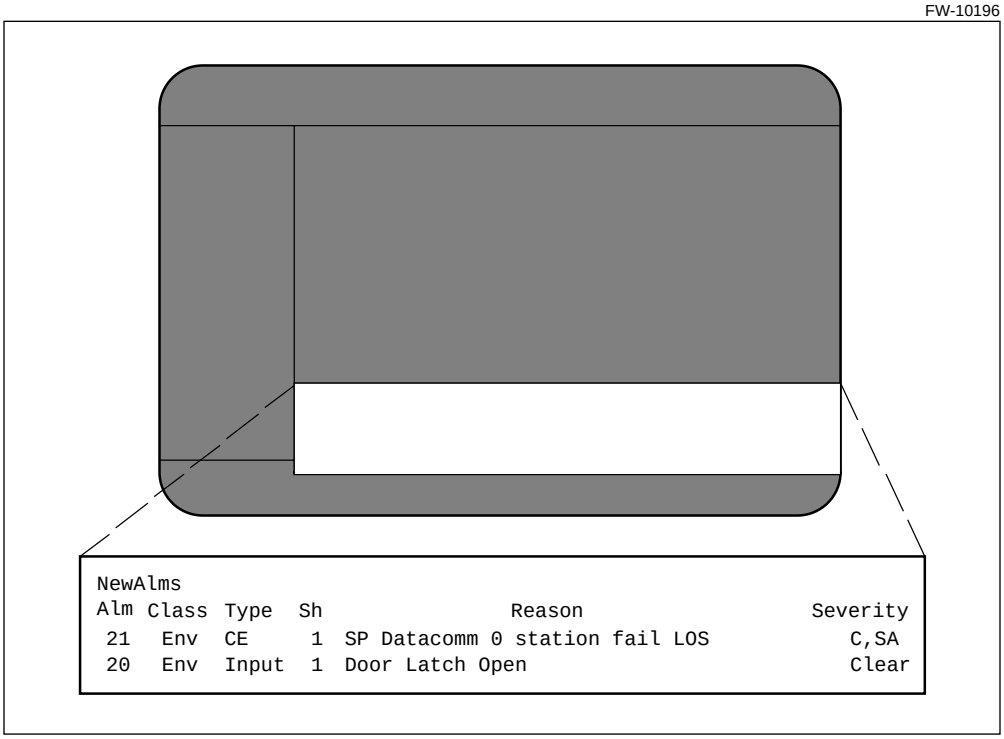


Conversation area

The conversation area is located just below the work area and just above the command line. It consists of 20 lines of 68 characters. The conversation area allows you to scroll through large amounts of data.

Figure 2-5 shows the conversation area.

Figure 2-5
Conversation area



NE identity and time area

The NE identity and time area consists of two lines of 12 characters located at the bottom left of the screen. (See Figure 2-6.) The first line displays the NE number (1 to 32767) that the terminal is physically connected to or remotely logged in to; the second line shows the current time. The Time area is separated from the Command input area by the input (>) prompt.

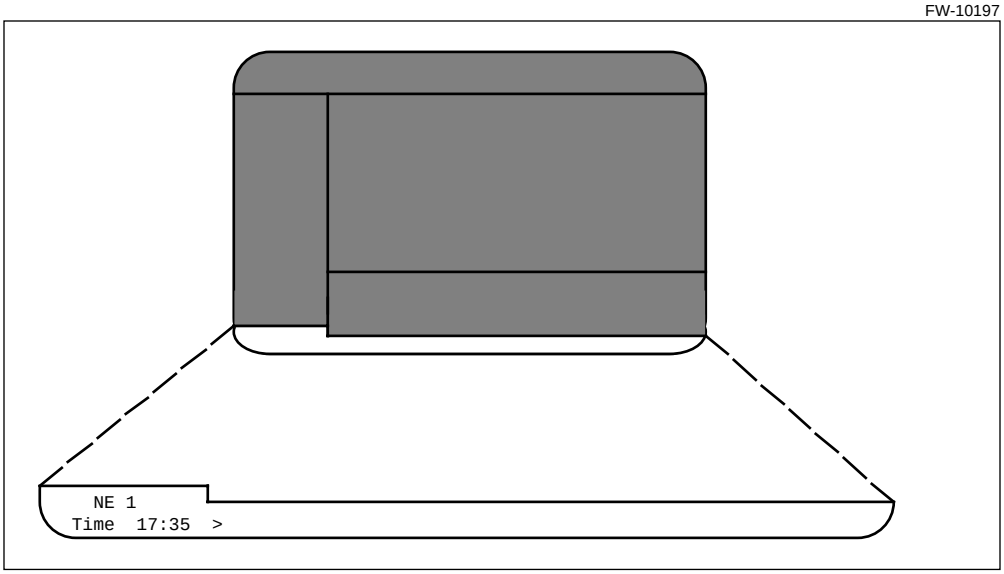
Command input area

The command input area is the bottom line of the screen and allows up to 64 characters of input. The prompt for user input is the “greater than” (>) symbol. The commands that you enter appear in this area.

Figure 2-6 shows the bottom portion of the screen that contains the NE ID, the time, and the command input (>) prompt.

Figure 2-6
NE identity, time, and command input area

FW-10197



Header information

Although the contents of the screens are monitored, the header information of some screens in monitor mode is not. For example, when you are viewing protection switching information in monitor mode, the header information (NE, shelf, CLLI, and so forth) is not monitored. However, this header information rarely, if ever, changes once provisioned.

> ***Note:*** When you delete an object, its screen is not updated in monitor mode. You must reselect the screen to display the new status of deleted objects.

Entering commands

The command entry instructions in this document are based on the VT100 key set. Some variations in identification of keys can exist if you use another type of keyboard.

Throughout this document, to enter a command means to type the specified information, then press the Return or Enter key.

When entering commands from the command menu display area list, you can enter either the entire string or just the number of the command.

You can enter character input in either uppercase or lowercase. The system converts lower case input. However, you can enforce lowercase for string input by using single quotes (‘ ’) (for example, when entering an NE name or FacID string). You must also use single quotes if you enter spaces or special characters (!, ?, =), or if the first character is a number.

Entering command strings

Command strings are shown in bold type, followed by a (↵) Return or Enter symbol, as follows:

admin nep ↵

Type the command string exactly as shown (including spaces), then press the Return key. If a command string shows characters in uppercase letters, enter them in uppercase on your keyboard.

When a command string continues to a second line, an ellipsis (...) is used at the end of the first line to indicate a space and not a carriage return. Press the Return key only when you see the ↵ symbol in the instructions.

Variable parameters are enclosed by angle brackets. Explanations of variables, (including ranges of values) follow command strings, as shown here:

edit strttime <item> ↵

where

<item>	**1** for the exerciser and **2** for backup

Optional parameters are enclosed by square brackets, as follows:

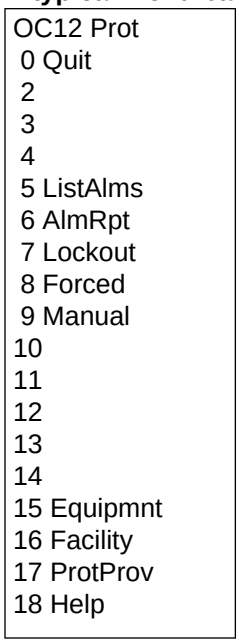
strttime <item2> [<hour>][<minute>] ↵

In this example, you can press the Return key after <item2> and the system assigns a default time is assigned as the start time for the exerciser backup routine. Otherwise, you can assign a specific time (hour, minute).

You can use typing shortcuts to invoke commands. Instead of entering the command name, you can enter the number for that command in the menu bar.

Figure 2-7 show a list of options that may appear in a menu bar.

Figure 2-7
A typical menu bar



If you want to display the OC-12 Equipment screen for the OC-12 unit in context, you can enter:

equipmnt ↵

or, you can enter:

15 ↵

Note: To obtain the desired result, ensure that the cursor is at the first position after the command line prompt.

Figure 2-8 shows the cursor position as a black rectangle.

Figure 2-8
Command line prompt

To aid understanding, this document uses the command name (or its short form, if one exists). For example: *equipmnt* (or *eq*), when describing what to enter on the command line.

System prompts and responses are printed and capitalized as they appear on the screen, as follows:

```
Type your password.
```

The result of an action is described in italic type, as follows:

The alarm screen appears.

Common menu commands or options

Table 2-2 lists menu commands or options that appear throughout the menus to simplify operating procedures.

Table 2-2
Common commands or options

Command	Description
Forceout	Allows a user with admin privileges to log in to an NE either locally or remotely through the OPC and to log out another user of that NE. The command is issued by entering **forceout <UserID>** ↵ where userID is the identity of the user to be logged out.
FWP	Brings the user to the main menu (system level status screen). FWP can be used at the FWPUI command interpreter level
Help	Displays help text specific to the current option (for example, Alarms help, Facility help)
ListNEs	Lists all NEs (by name and number) that the user can view
Logout	Logs you out of the user interface
Mainmenu	Displays the main menu and selects the NE that the user is physically connected to
Msg	Allows a user to send messages to one or all other users logged into an NE. To send a message, type: **msg all <message>** You can replace “all” with a specific userID to send the message to only one user.
Nelogin	Logs you in to a remote NE. You must enter the NE number.
New	Displays any new alarms since the last new command.
Printer users	Lists all users who are logged into the NE in context.
Query	Displays the requested data in the output scroll area and does not delete the original data. The data is displayed in snapshot mode and is not updated if changes occur.
Quit	Returns you to the parent level menu of the current hierarchy.
Note: When you use a shortcut to move from one hierarchy to another, the quit command does not return you to the previous hierarchy. A “number of levels” parameter can be assigned optionally to the quit command. This parameter indicates the number of levels to return upward to in the hierarchy. Enter **Quit** # (or **0 #**). Quit all returns you to the command interpreter (CI) level.	
—continued—	

Table 2-2 (continued)
Common commands or options

Command	Description
Quit all; MAPCI	This command can be used to determine who is logged in at a terminal. The userID appears in the bottom left corner.
Qusers	Lists all users (currently logged in) and the device they are attached to. Ul_X indicates user interface port X. RMAPSVRO indicates a user using the NE login tool from the OPC.
show users	Lists all users who have access to the NE in context. (This command is available only to users with command classes 1, 2, and 3.)
Showval	Shows values in full precision (that is, 52E2 as 5243) on the performance screen
SelectNE	Allows the user to display the NEUI screens of a remote NE. When you enter SelectNE #, the screen of the remote NE that corresponds to the currently displayed screen appears. After you enter the command, all subsequently displayed screens are for the selected remote NE. Return to the local NEUI screens by entering the local NE # using the SelectNE command again.
—end—	

Line editing commands

Table 2-3 lists line editing key combinations that can be used in the command input area.

Table 2-3
Line editing commands

Editing keys	Description
Ctrl_E	Deletes all characters from the cursor position to the end of the line
Ctrl_F	Moves the cursor one position to the right
Ctrl_I	Switches the cursor to insert mode
Ctrl_U	Deletes the entire input line
Ctrl_X	Switches the cursor to overwrite mode. Any subsequent input overwrites existing characters.
-	Moves the cursor one position to the left (also called the Backspace key)
Del	Deletes the character in the cursor position

If you use an editing command inappropriately, the terminal may beep, depending on the keyboard setup.

Operational commands

Table 2-4 lists commands that allow you to control processes started by the interface commands. They are available at every level of the user interface.

Table 2-4
Operational commands

Command	Description
<break> HX	Clears the screen and exits to the command interpreter (CI) level
SIL	Stops all flashing on-screen indicators and inverse video until the next status change occurs
ABORT	Halts the prompting and cancels the associated command when entered in response to a request for parameters for a command
ACO	Turns off audible alarms in a defined environment.
HT	Halts the currently scrolling output
REFRESH	Redraws the current screen
leave	Returns to the parent screen

Note: The <break> command is sent using the Break key on the VT100 terminal (usually F5). The <break> command is always received at the NE that you are logged in to. However, if you logged in to a NE remotely using the NE Login Manager or the rlogin command, you must use Ctrl_B instead of <break>.

Paging commands

When the amount of data generated in response to a command exceeds the available display area, a prompt appears indicating the number of pages. Table 2-5 lists the commands you can use to view the pages.

Table 2-5
Paging commands

Command	Description
F	Move forward to the next page of data
B	Move back to the previous page of data
H	Go to home or to the first page of data
P <n>	Go to page <n> of data

Scrolling

When the amount of data generated in the conversation area exceeds the available display area (for example, during parameter prompting), the prompt “more...” appears. Use the Return (↵) key to view additional data, which will scroll automatically after a brief period. Enter ht to halt the scrolling. The last page of data is identified by the absence of the “more...” prompt.

Help for commands

Prefixing any command with Q (query) displays the function and format of that command. A space is required between Q and the command being queried.

If a parameter is missing or invalid when you enter a command, a parameter description appears in the output scroll area and a prompt for the associated parameter appears in the command input area.

When you enter the Help command, which is available on each menu, the following information appears:

- a description of the current screen
- the primary functions available
- a list of hidden commands
- definitions of symbols
- other useful information

Using commands effectively

When you select a main menu option, the displayed commands remain available when you access a child screen. The commands on the parent screen continue to be accessible throughout each hierarchy, from the main level to the currently displayed screen.

> ***Note:*** If you use a shortcut to move from one hierarchy to another (for example, moving from the equipment to the facility screens), only the commands in the new hierarchy are available.

Commands on the main menu (the parent of all other menus) are available at all levels. Table 2-6 lists the commands and abbreviations.

Table 2-6
Commands and abbreviations

Command	Abbreviation
Alarms	AL
ListNES	
PerfMon	PM
Protectn	Prot
Equipment	EQ
Facility	FA
Admin	AD

Context

When selected using a menu command, a specific NE and shelf become the context for any further commands. If upi do not select an NE or shelf, the local NE and shelf are used as a default context. The circuit pack and, in some cases, port number can also be specified and included as part of the context.

> ***Note:*** Some menu screens are specific to a certain type of context; therefore, changing the context is not always possible. If you cannot change the context, you must return to the main menu to enter the new context command.

Fields that can be edited

A field that appears within angle brackets (<. . .>) indicates the field has a string that can be edited. The maximum string size is the number of characters that fit within the brackets.

Toggled fields

Some fields require you to select a value. You can select the value by entering a command or by toggling the values shown. When two values are available, the parameter toggles between the two possible selections. When more than two values can be selected, the parameter toggles from its current value to the next larger value.

You cannot toggle a parameter on a number of objects simultaneously.

Command parameter prompting

If you enter a command with missing parameters, the system prompts you for the required data. If more than one parameter is required, a previously entered value is scrolled up into the output scroll area. Enter **Abort** to halt parameter prompting for a command.

Last command recall

If you enter = (equal sign) or ? (question mark) at the first column of the command input area, the last command you entered is recalled and displayed. You can repeat this step to recall the last three commands.

Multiple command entry

You can enter a series of commands, each separated by a ; (semi-colon).

The menu number shortcut is permitted only for the first command in a multiple command entry.

Macros

Command macros are built into the operating system for using repetitive commands that do not require confirmation with a yes or a no. You can group frequently used sequences of commands as user-defined macros and call them from the NEUI. For example, macros are used when you log out of the operating system (using **Logout**).

To create a macro, type:

Command <macro name> (use semi-colons to separate menu commands)

where <macro name> is a string of up to 16 characters (valid characters are A to Z, a to z, and 0 to 9).

Examples:

Command DS3prot (FWP; PROTECTN; DTLProt DS3)

Command DS3AlmPts (FACILITY DS3 G1 1; ALMPROV)

A macro command can call another macro, or several macros; for example:

Command macro3 (macro2; macro1)

Note: Do not use macro names that are commands that already exist on the system. This can cause a macro to trap.

To use a macro, type:

<macro name> ↵

Note: Do not enter multiple commands to add and edit the added object. The edit may begin while status messaging for the newly added object is still occurring. An error message `object does not exist` is displayed.

Use caution when you create a recursive macro (that is, the macro name appears in the menu command brackets). The system may become caught in a loop.

System responses

The system informs you when an operation is successful. When a command cannot be carried out or fails, the output scroll area displays the command fail notification and gives additional instruction.

- Operation was successful.
- The XXXXXXXX command failed. Please re-enter the command.
- If the problem persists, call the NT Technical Assistance Service and quote error number NNN.

Command confirmation

When you enter service-affecting commands, such as deleting data, a command confirmation sequence appears. This function prompts you to confirm the associated command by entering a y (yes) or n (no).

Status messages

The first line of the static work area or fourth line of the screen is normally blank (see Figure 2-1 on page 2-3). This line displays important messages. A message in this line remains on the screen until the condition is cleared or is no longer relevant (that is, you leave the screen, or a subsequent message appears). Messages displayed in the scrolling conversation area are lost when the conversation area is updated.

Table 2-7 lists the conditions that create status messages.

Table 2-7
Status message conditions

Message	Condition
*** Monitoring Unavailable***	Autonomous updating of the current screen (that is, monitor mode) is not possible. Messaging, which supports queries (data retrieval) or edits, is still functional with the user interface and is automatically updated as data values change.
*** Communications Lost ***	The communications link to the NE has failed. The NEUI attempts to reestablish this link periodically and whenever you invoke a command targeted to the NE with the failed link.
***Object Deleted ***	The object instance represented on the current screen is deleted, possibly from another user interface instance. Additionally, any further operations against this unit are rejected because the unit is no longer provisioned. The unit can be a circuit pack group, a facility or a protection group. This status message appears on any provisioning screen (for example, equipment, facility, or protection) if the unit has been deleted.
*** Could Not Retrieve Screen Data ***	The data required to post the current screen could not be retrieved. The reason associated with this message appears in the conversation area. Either the requested data does not exist (but can be added) or a messaging failure occurred. The most likely messaging failure is a timeout (that is, no response received) caused by either congestion of the OAM network or loading of the target NE.
—continued—	

Table 2-7 (continued)
Status message conditions

Message	Condition
"*** Fields Remain Blank Until You Change Them ***"	When you access a screen with all instances of an object selected, no data is initially displayed because the values for different object instances are usually not the same. For any fields that you can edit with all instances selected, a value appears in the field if you successfully edit that field.
"*** Operation In Progress, Please Wait ***"	When you first access the Network Element Status screen, the system attempts to display the network view by establishing a link with an OPC. This attempt can take approximately one minute, depending on the proximity of the OPC and other OAM activity. This message remains on the fourth line until the OPC link is established or a timeout occurs.
"*** Network Data Unavailable ***"	The data used to maintain the network banner line is unavailable; therefore, this display is not automatically updated. This message appears when the link between the NE hosting the login session and the OPC fails. The NEUI periodically attempts to reestablish the link. When you reenter the Network Element Status screen from CI or MAPCI, the NEUI also attempts to establish the link.
—end—	

Event logs

The event log system records all status changes in the network element. The event log messages can be automatically routed to a printer on a local RS-232 port that is provisioned as a printer port. They can also be printed at the operator's request through a printer attached to the VT100 or compatible user terminal.

The following five categories of event messages are generated:

- facility (FAC)
- equipment (EQP)
- communications (COML)
- database (FWDB)
- exceptions (miscellaneous - EXCP)

Each buffer handles 40 event messages. When a buffer is full, additional incoming messages are handled on a first-in first-out basis.

Reports can be set up and printed based on the different categories. To get a list of available reports, enter ListReps in LOGUTIL

Command menus

The figures in this section summarize all of the menus in the user interface.

Table 2-8 lists the figure numbers for each of the menus represented.

Table 2-8
Command menus

Menu	See
MAPCI (maintenance and administration position command interpreter) menus	Figure 2-9
Alarms menus	Figure 2-10
Protection menus	Figure 2-11
Performance monitoring menus	Figure 2-12 through Figure 2-15
Jack access menus	Figure 2-16
Facility menus	Figure 2-17 and Figure 2-18
Equipment menus	Figure 2-19 through Figure 2-21
Administration menus	Figure 2-22 and Figure 2-23
Help menus	Figure 2-24

Note: The user's command class determines which commands will be available on each screen.

Figure 2-9
MAPCI menus

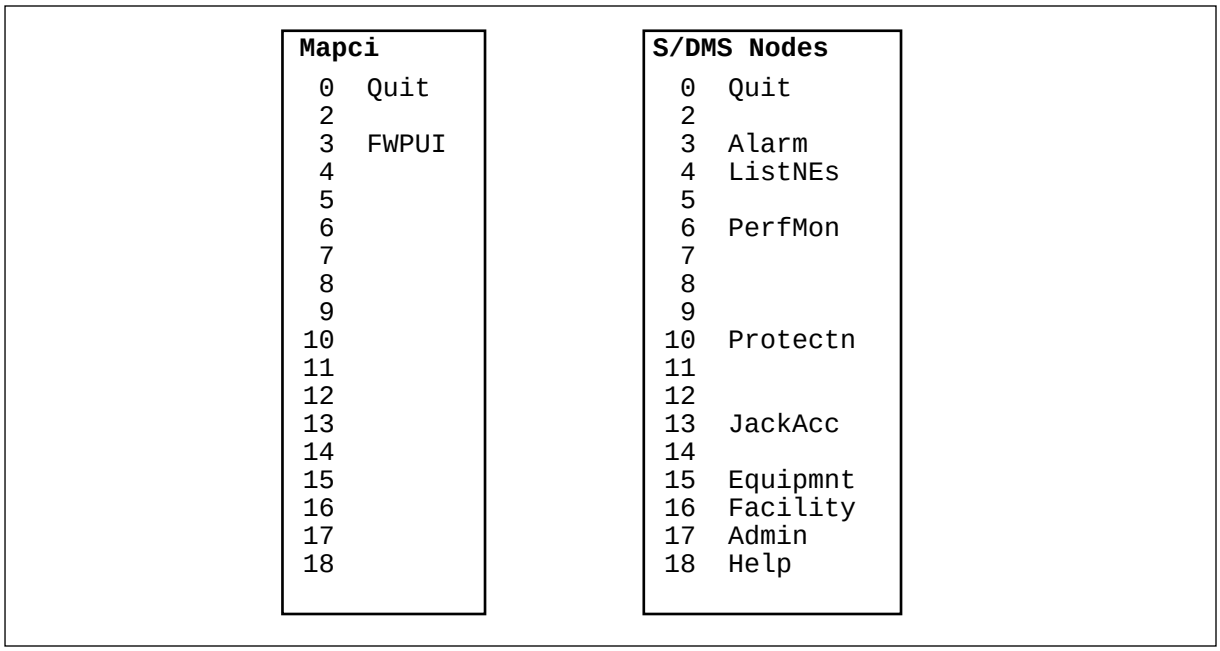


Figure 2-10
Alarms menus

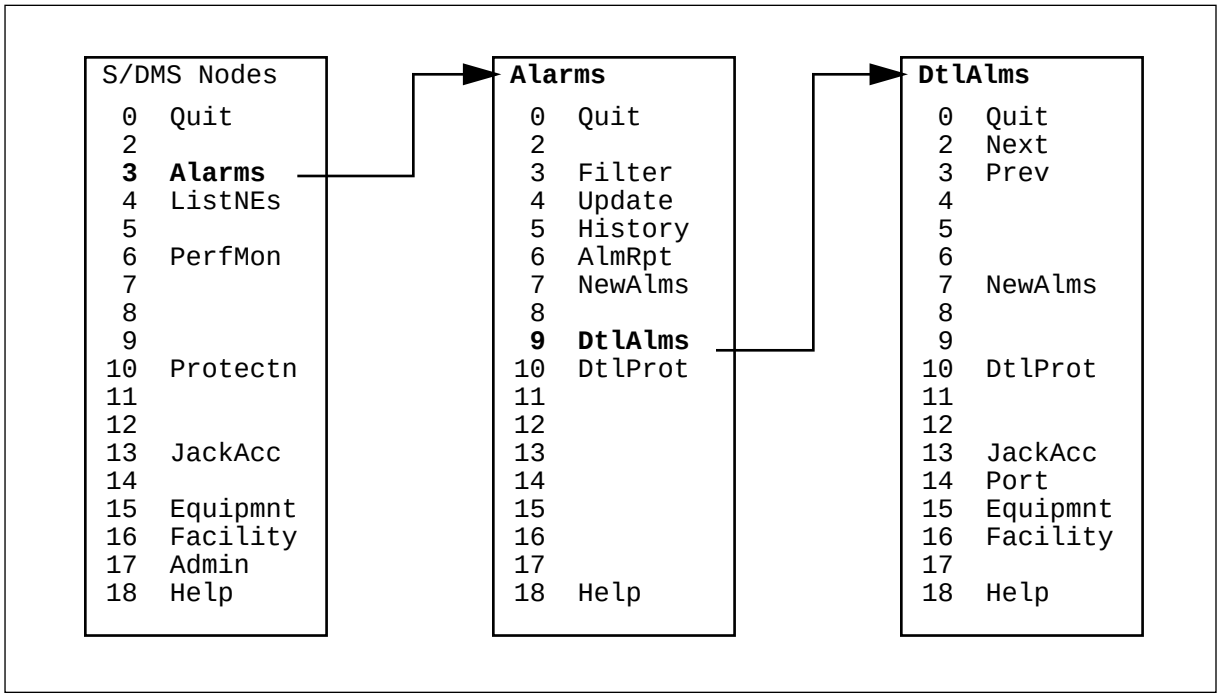


Figure 2-11
Protection menus

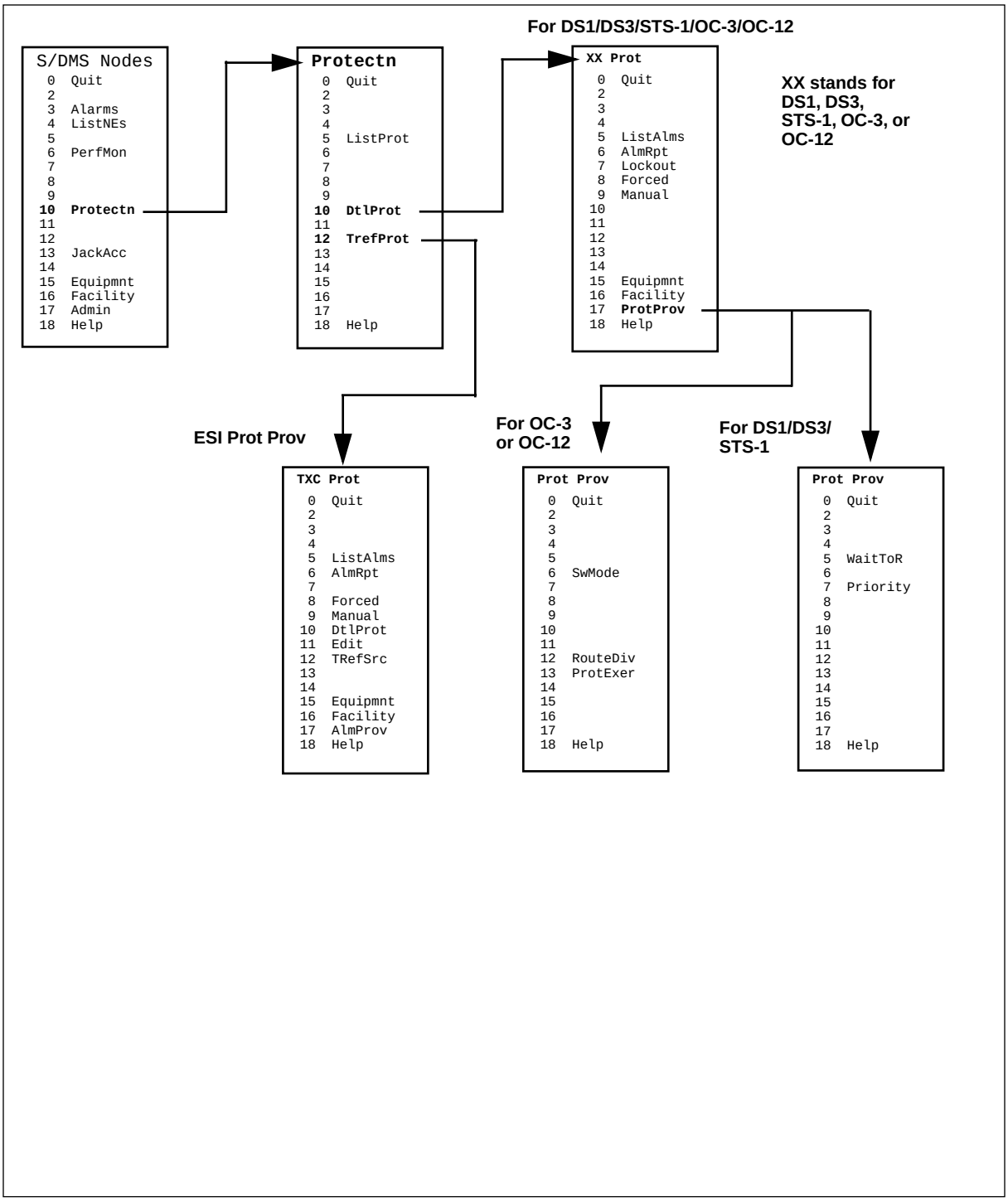


Figure 2-12
Performance monitoring menus (page 1 of 4)

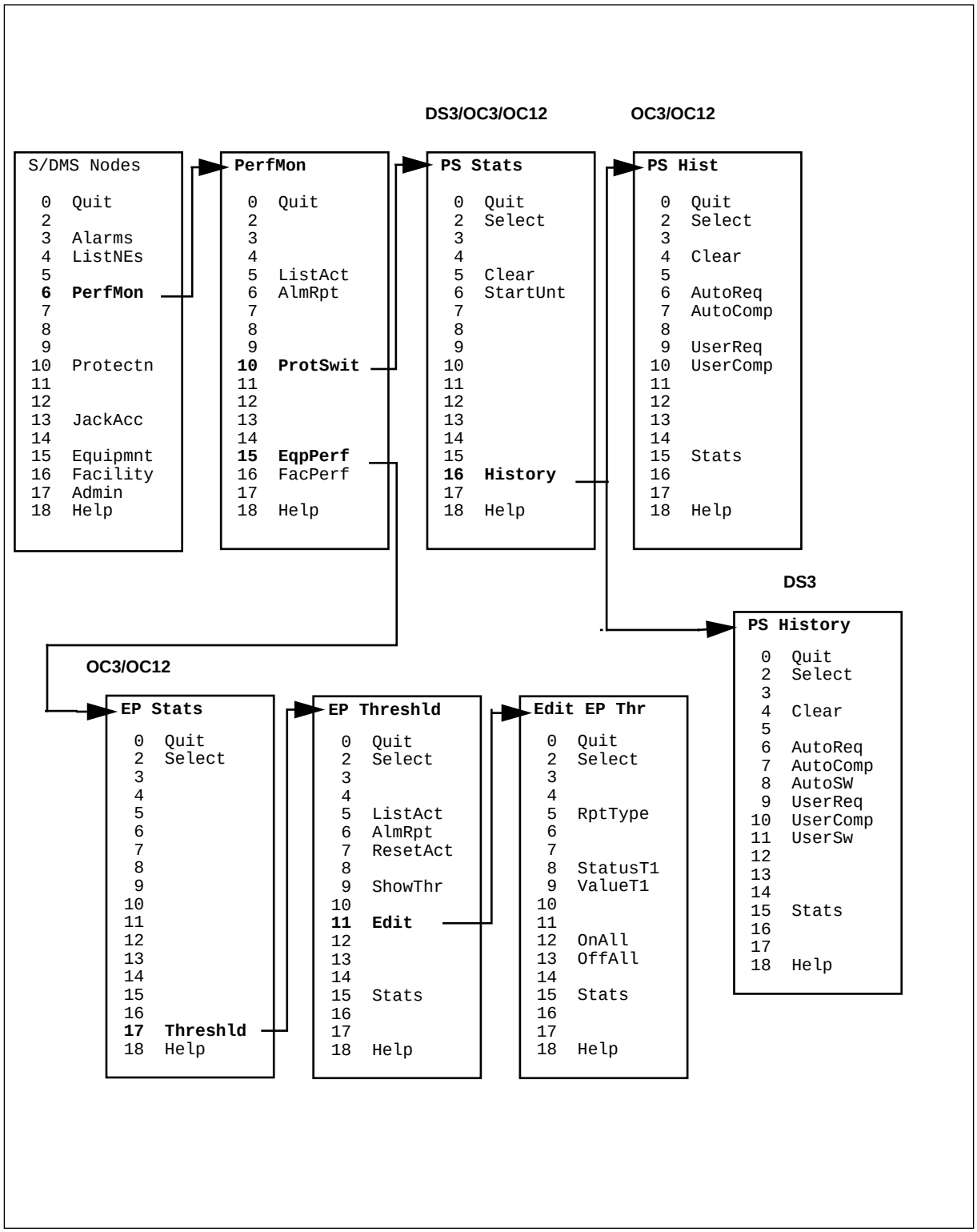


Figure 2-13
Performance monitoring menus (page 2 of 4)

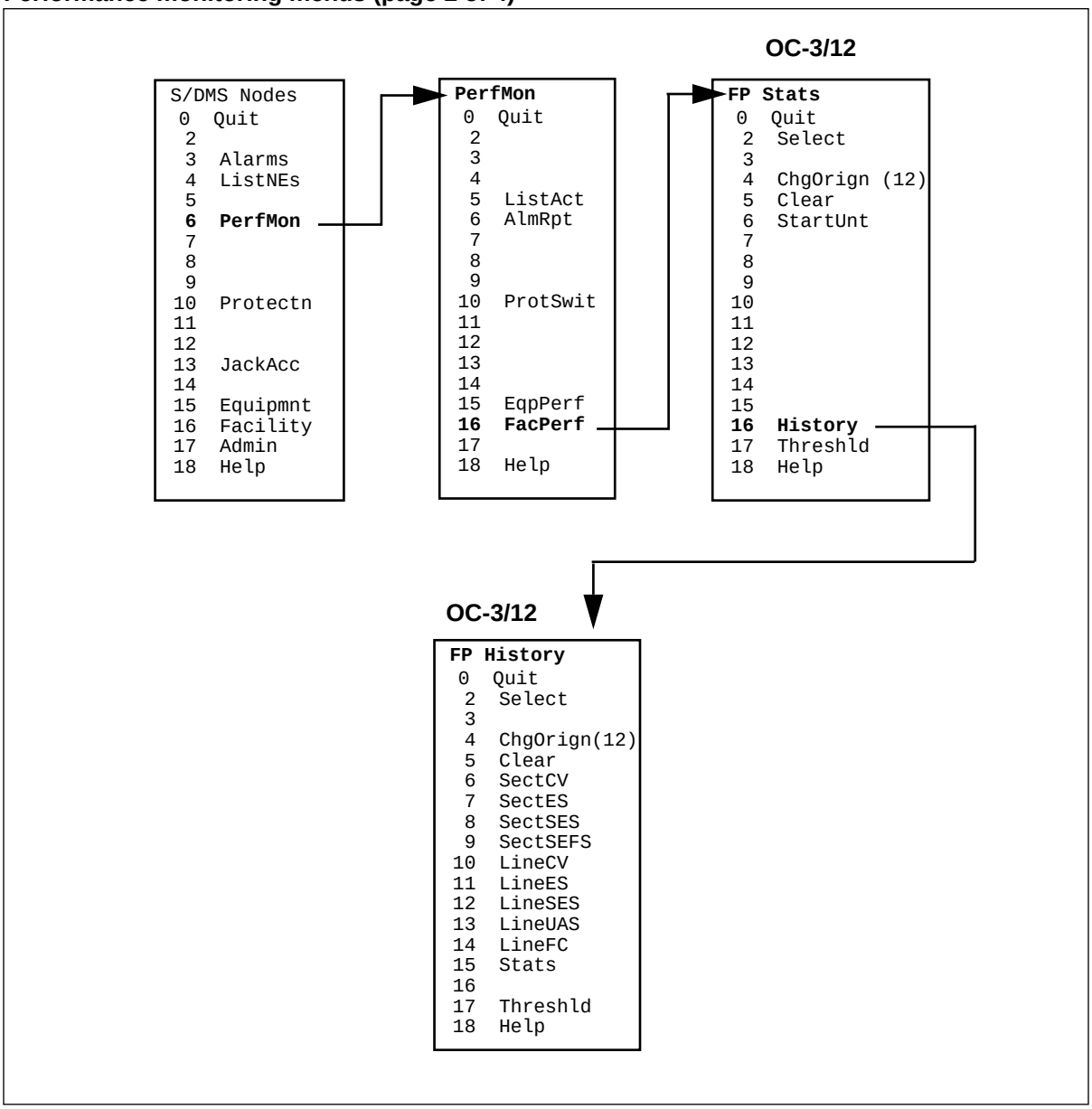


Figure 2-14
Performance monitoring menus (page 3 of 4)

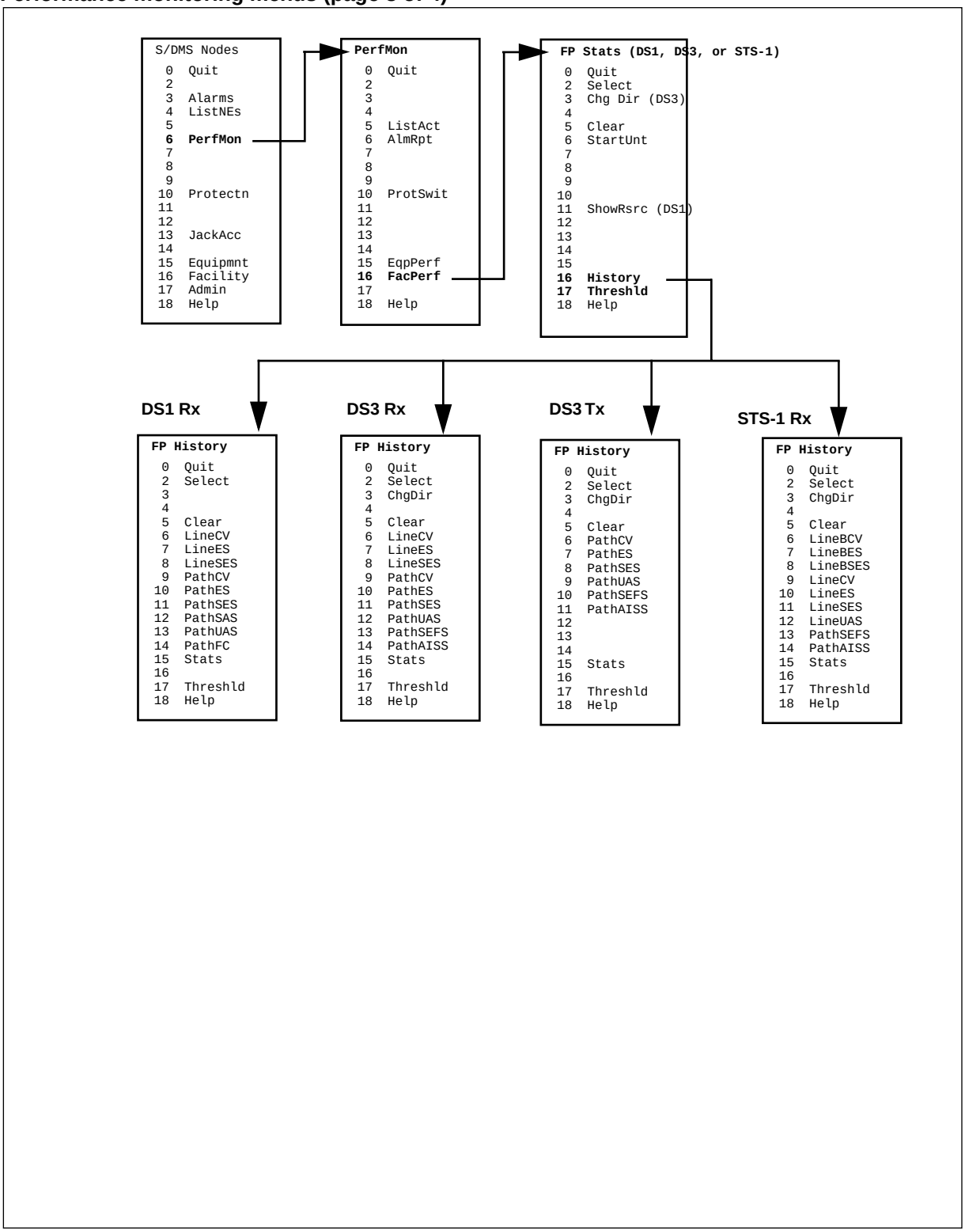


Figure 2-15
Performance monitoring menus (page 4 of 4)

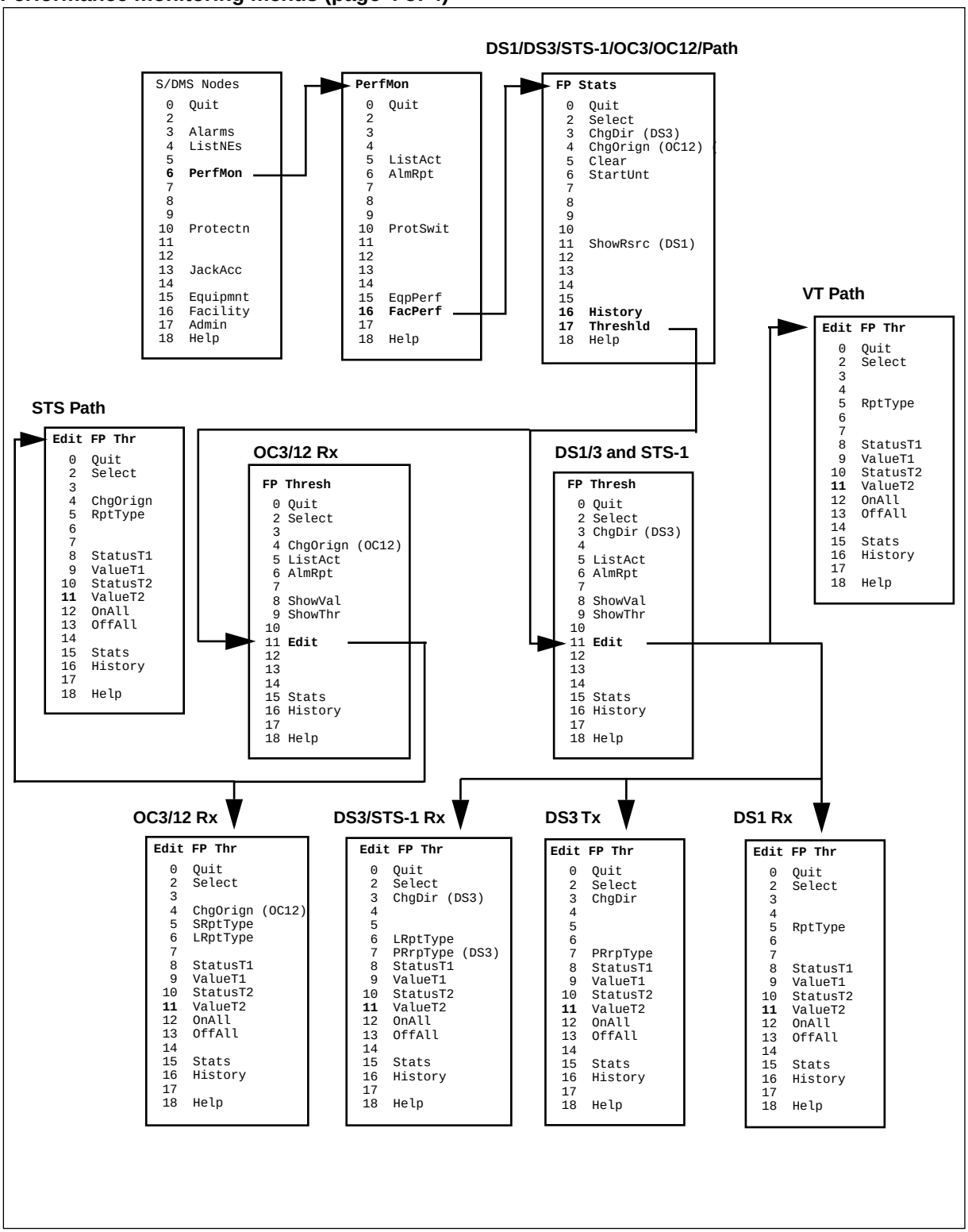


Figure 2-16
Jack access menus

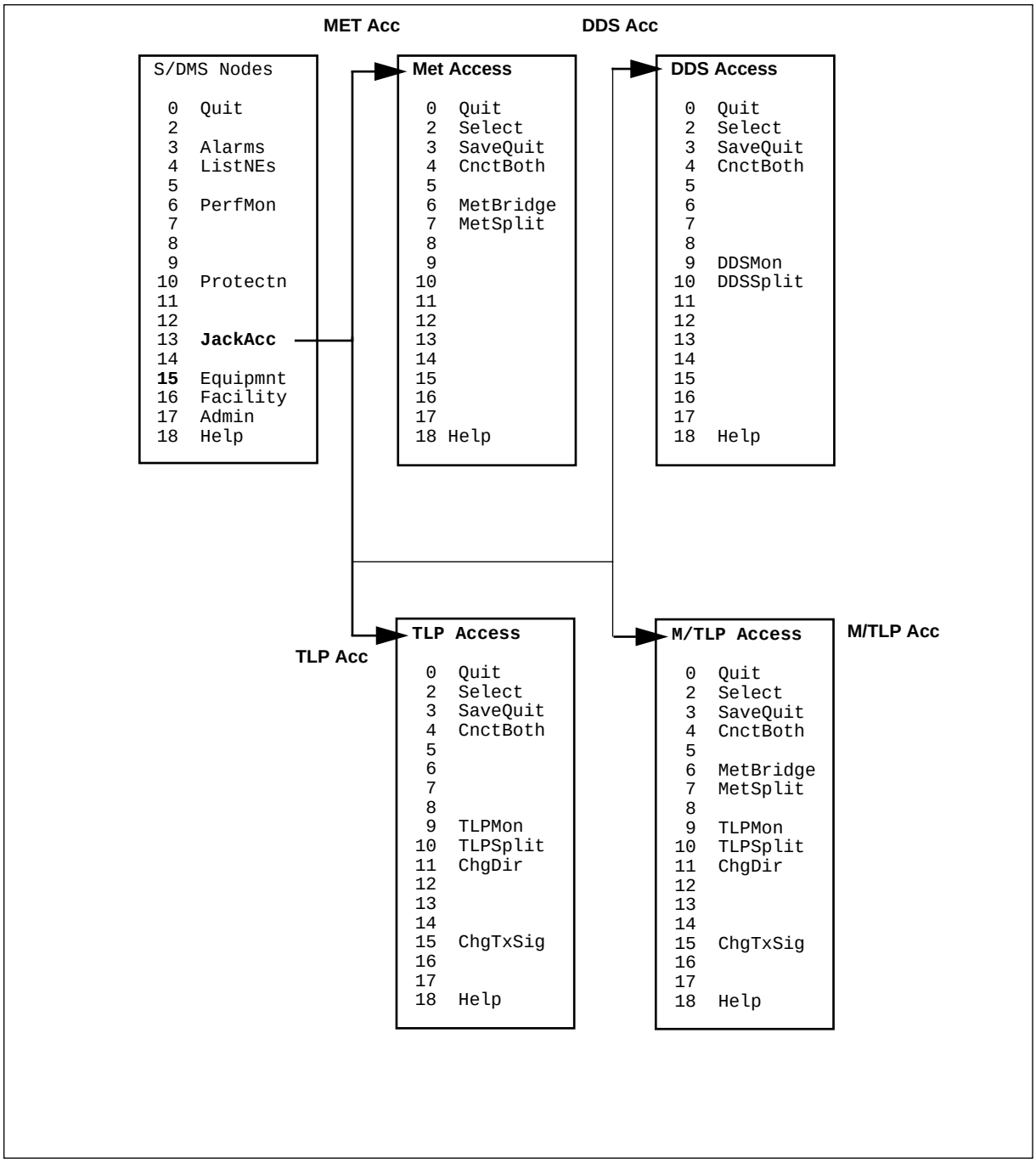


Figure 2-17
Facility menus (page 1 of 2)

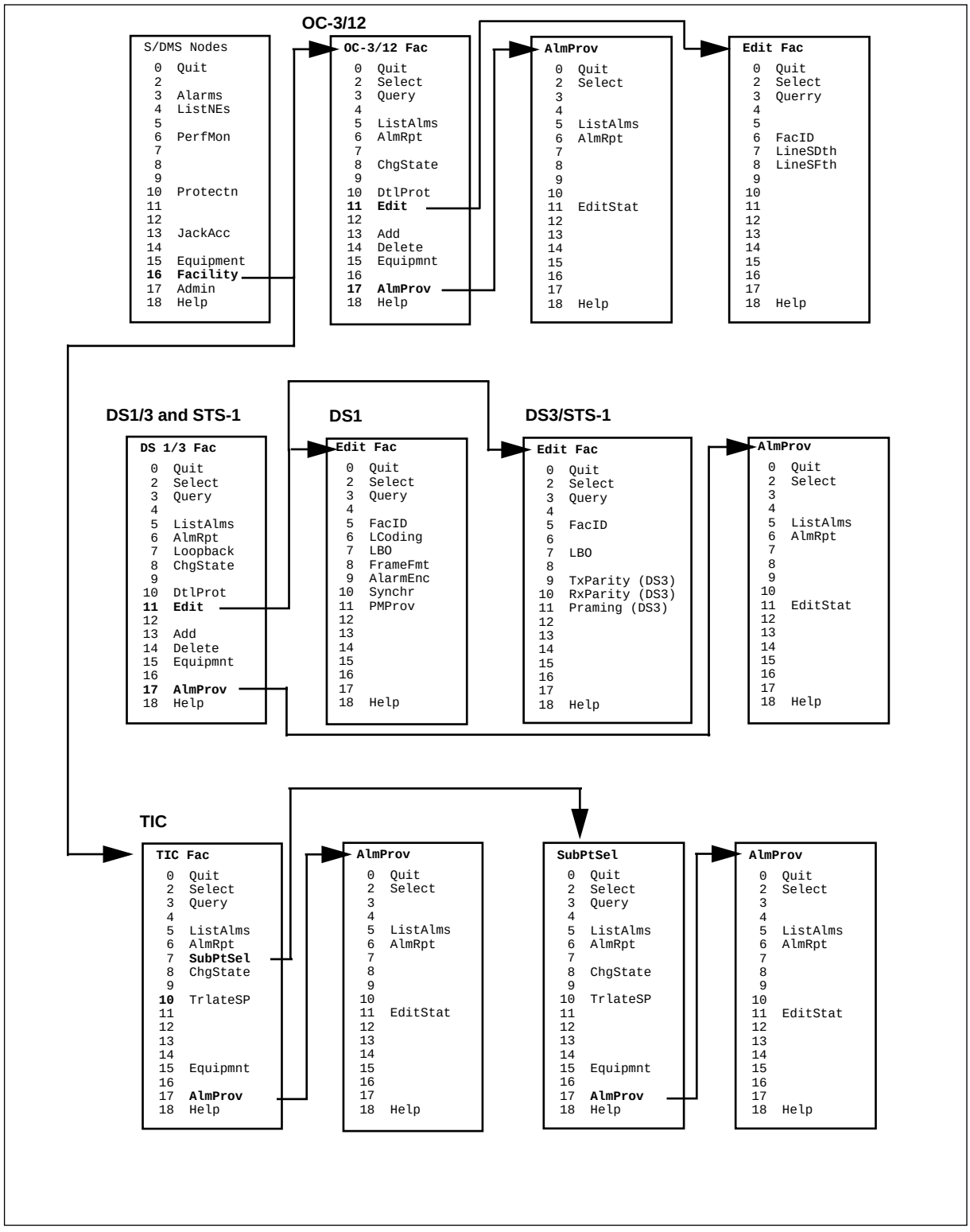


Figure 2-18
Facility menus (page 2 of 2)

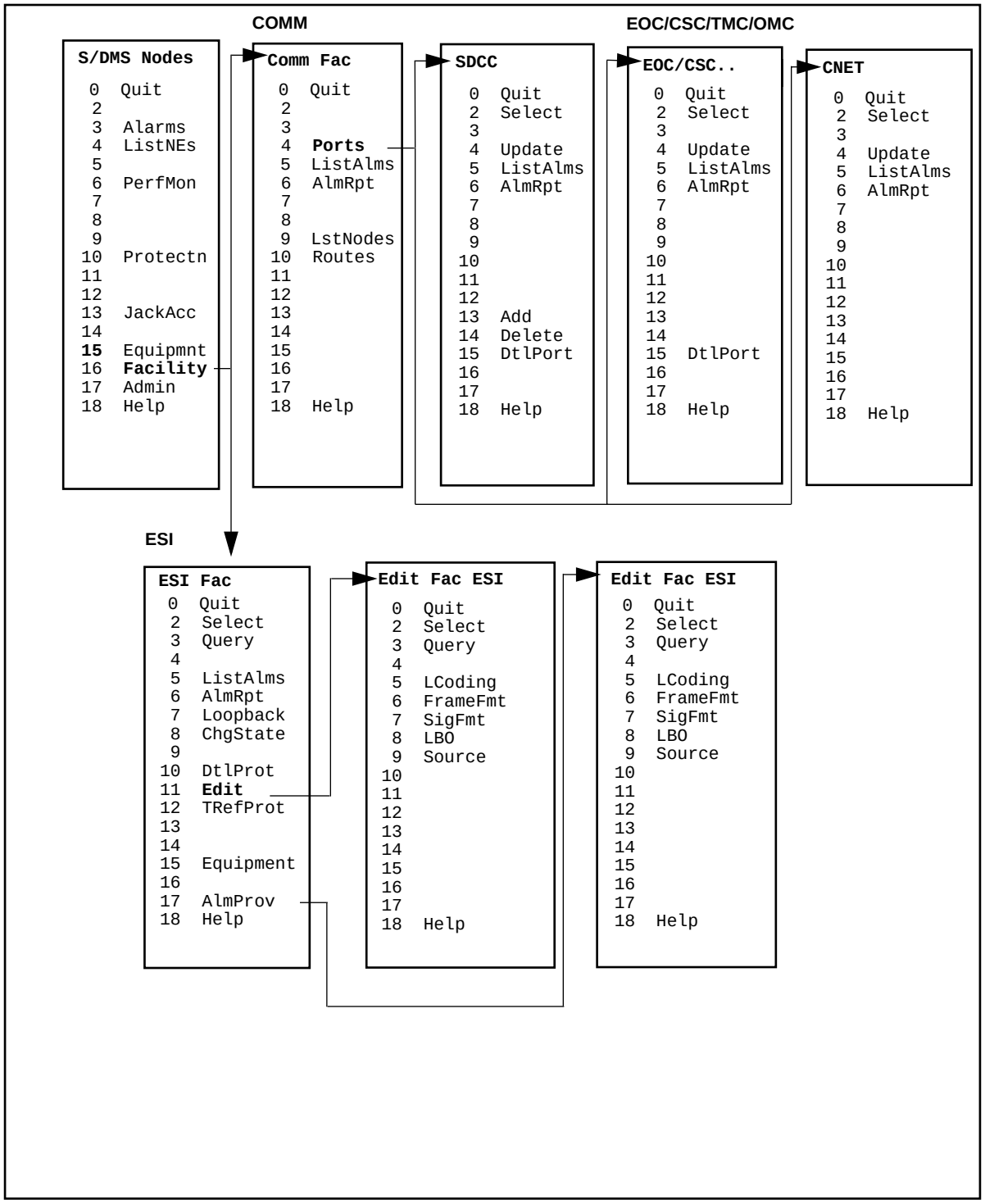


Figure 2-19
Equipment menus (page 1 of 3)

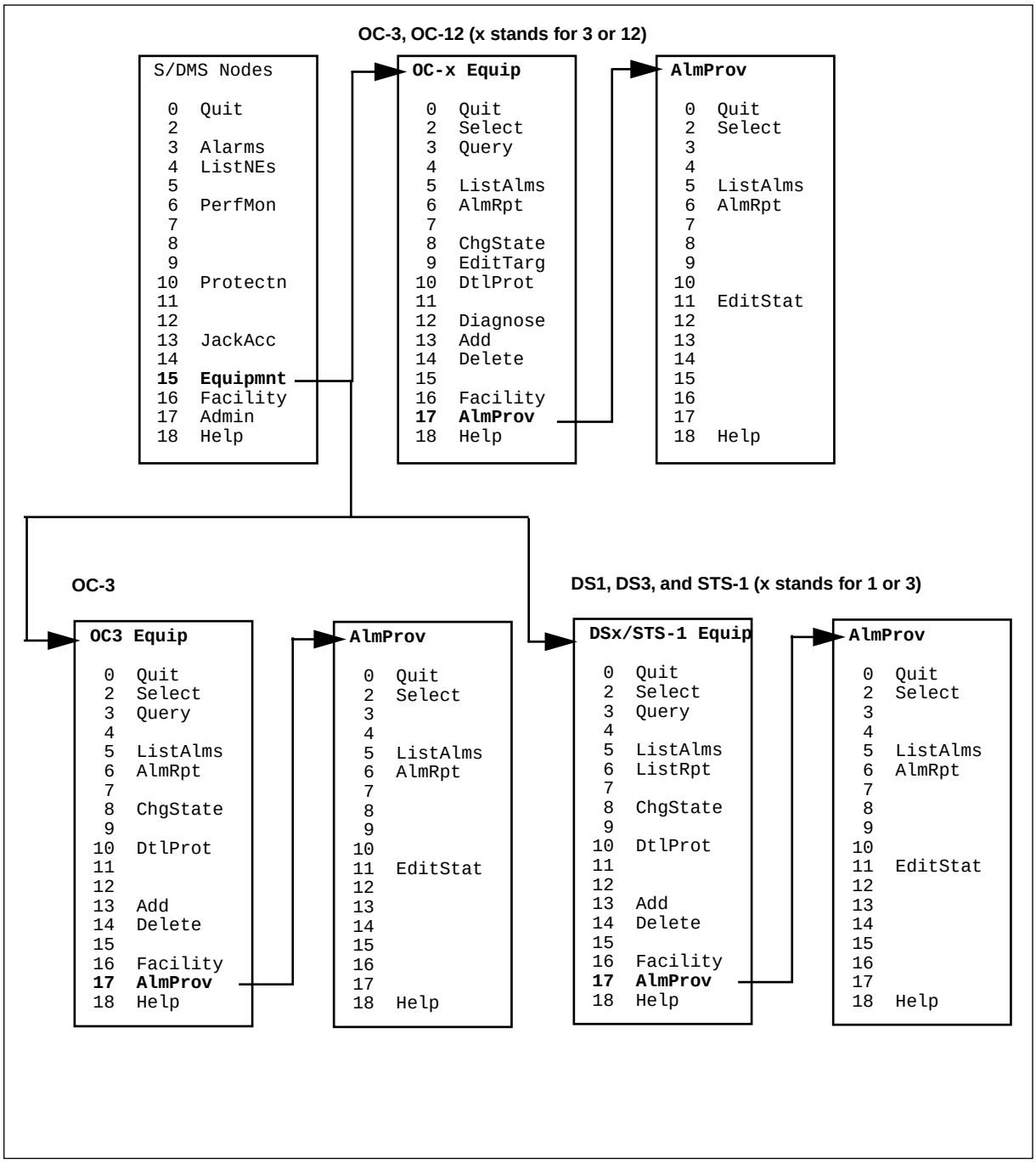


Figure 2-20
Equipment menus (page 2 of 3)

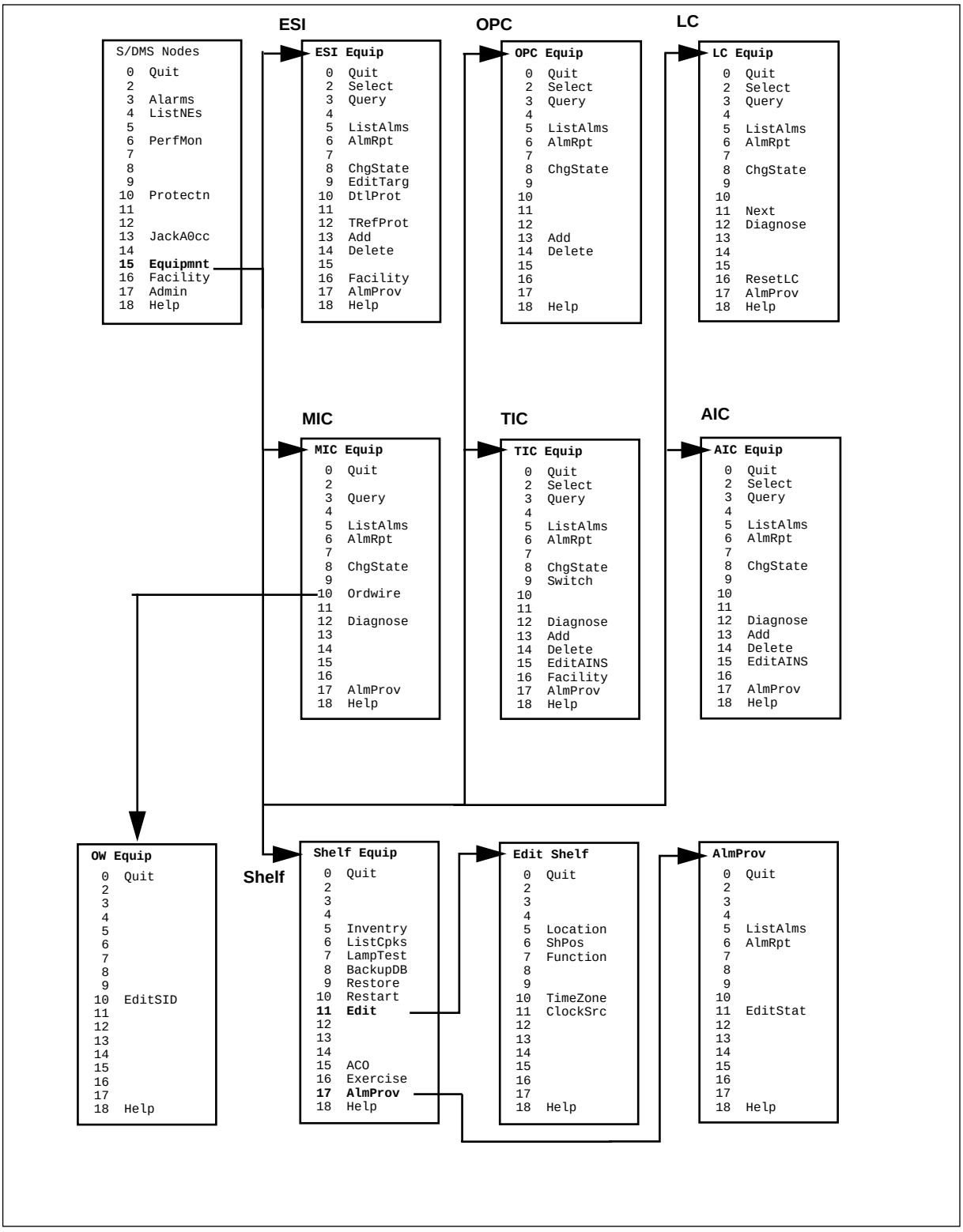


Figure 2-21
Equipment menus (page 3 of 3)

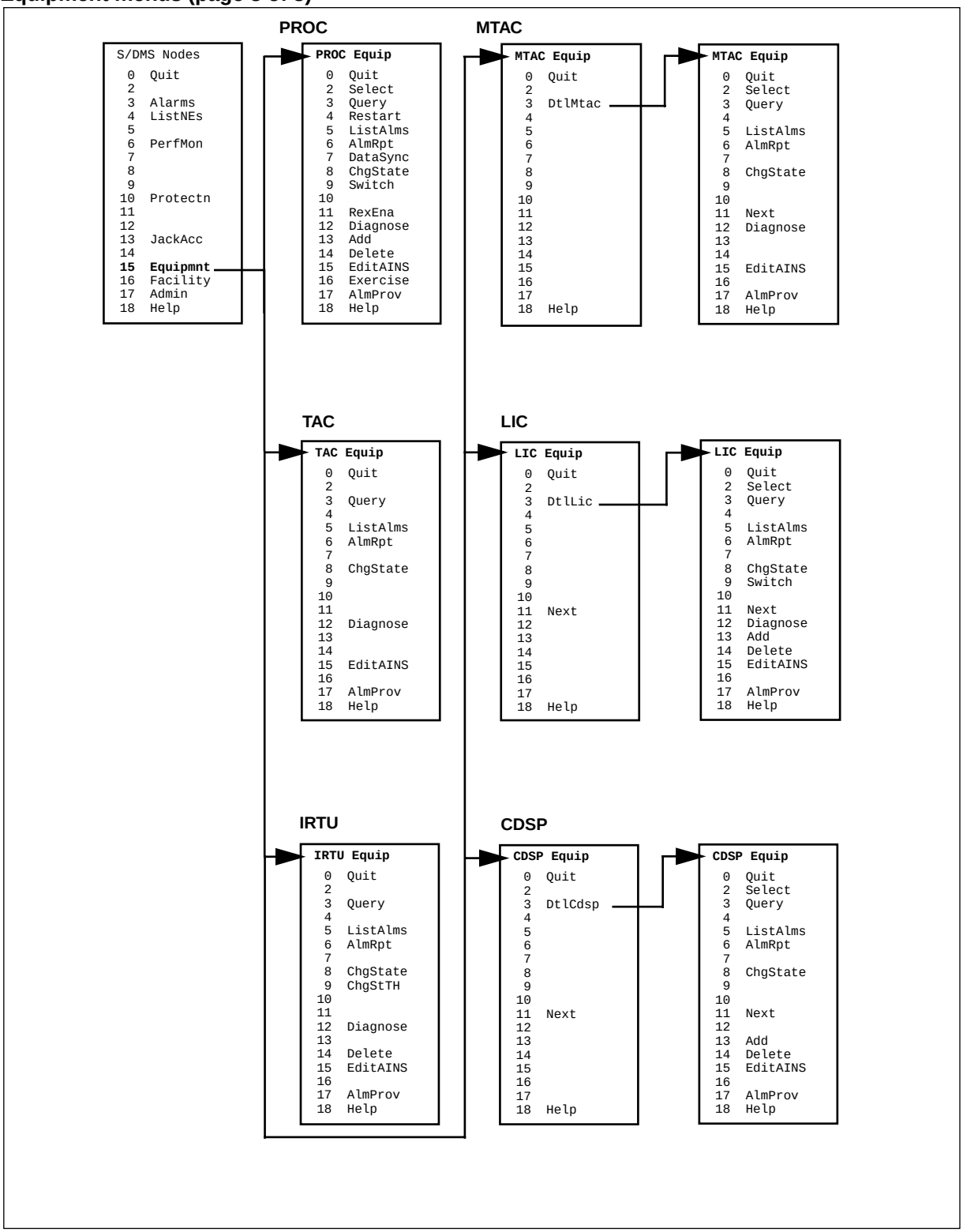


Figure 2-22
Administration menus (page 1 of 2)

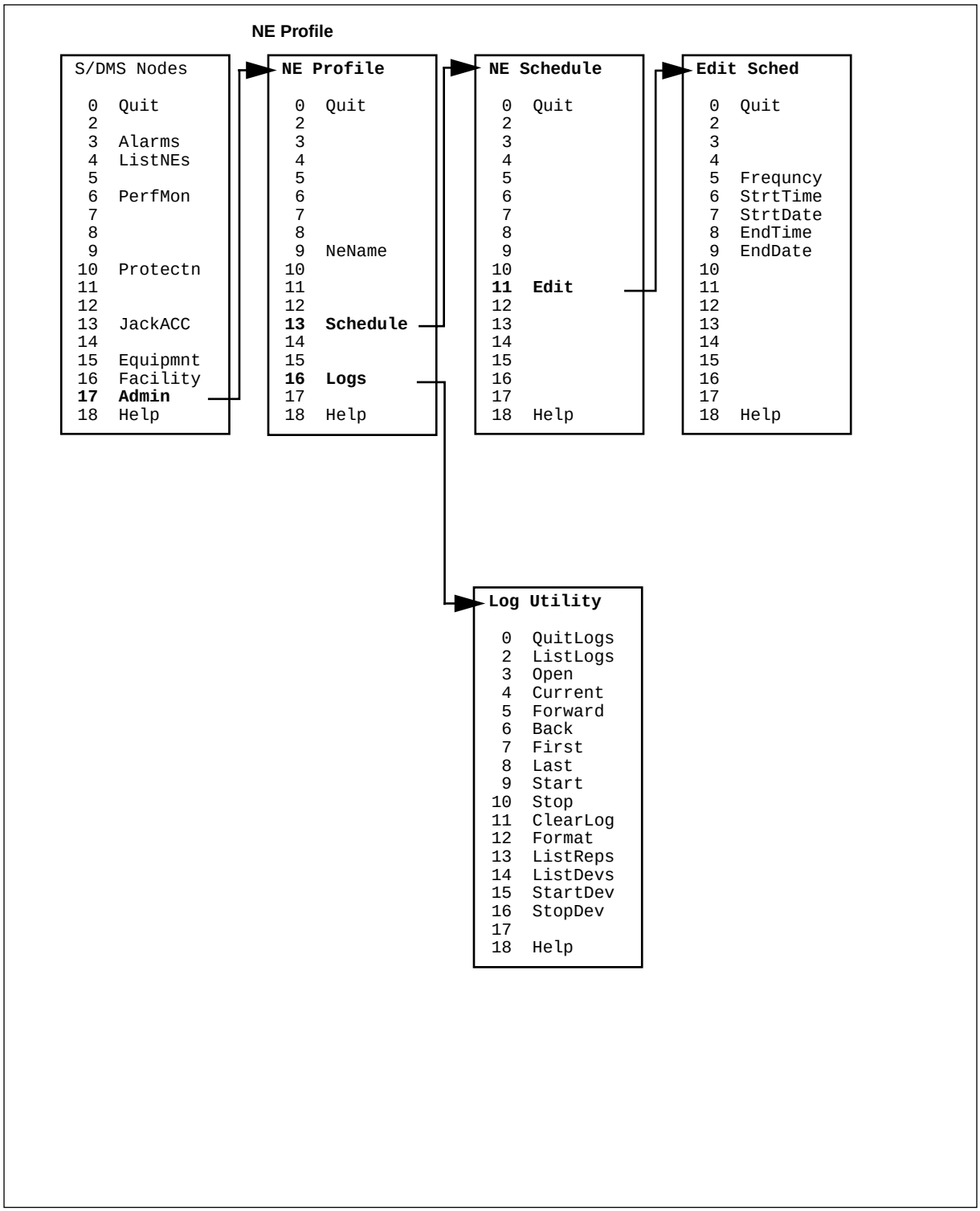


Figure 2-23
Administration menus (page 2 of 2)

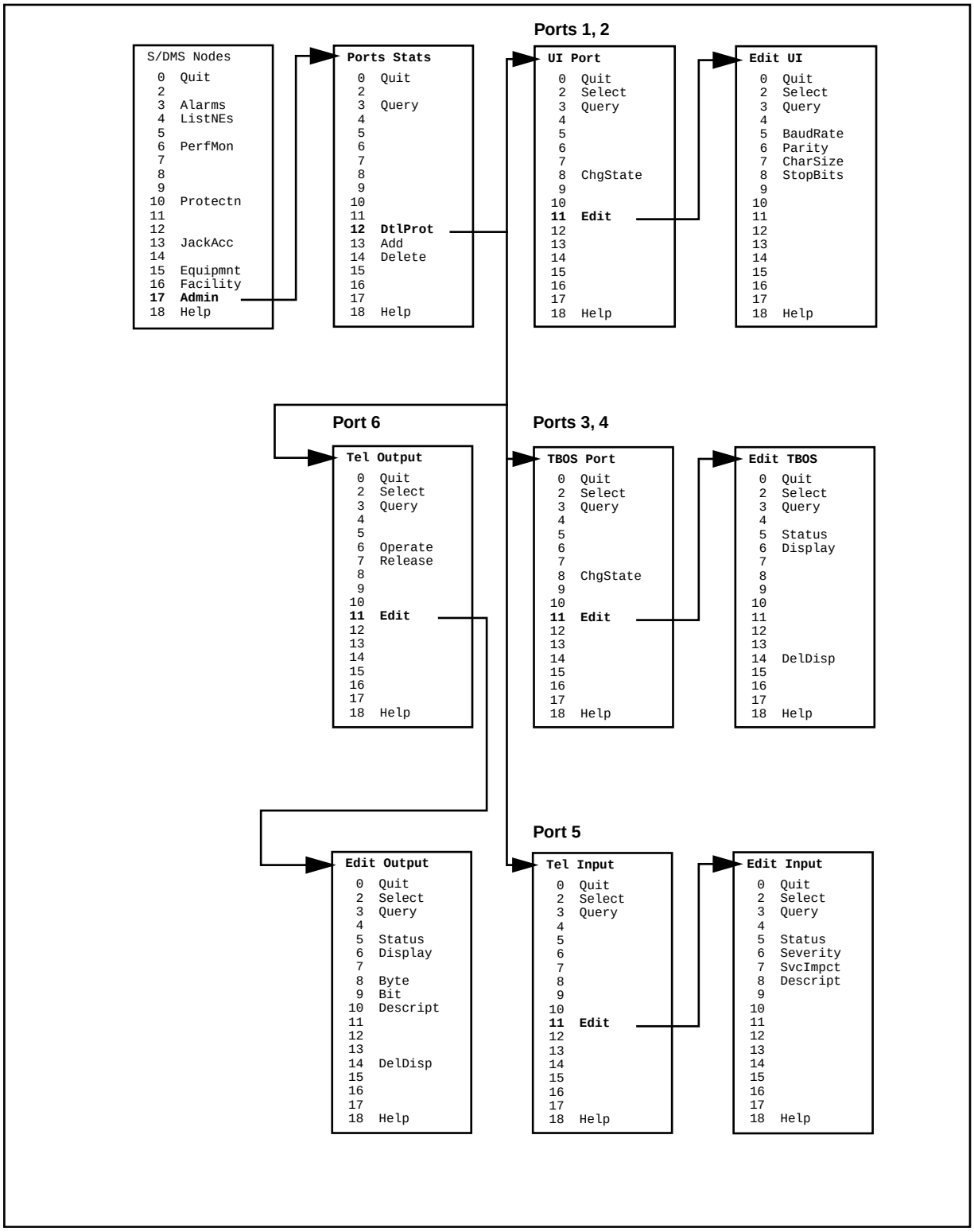
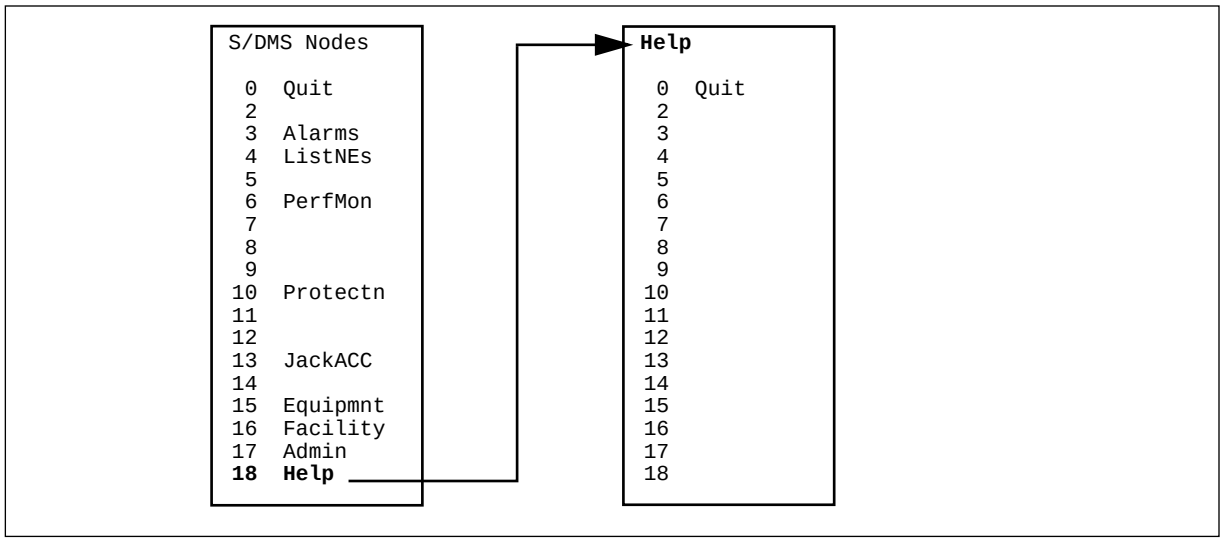


Figure 2-24
Help menu



Connecting and logging in to the network element user interface

This chapter contains procedures for common tasks that are performed from the network element user interface (NEUI). Use these procedures as required during testing or when they are referenced in other procedures.

Chapter task list

This chapter includes the following tasks:

Procedure	Task	See
3-1	Connecting a local terminal to the network element local craft access panel (LCAP)	page 3-2
3-2	Connecting a remote VT100-compatible terminal using the optional BIP modem	page 3-6
3-3	Connecting a remote VT100-compatible terminal using an external modem	page 3-9
3-4	Logging in to the NEUI and logging out of the NEUI and terminal	page 3-11
3-5	Logging in to the far-end NE from the local NE	page 3-15
3-6	Logging in to a network element from the OPC and logging out	page 3-17
3-7	Opening a network element user interface session from other levels of the interface	page 3-20
3-8	Changing your network element password	page 3-22

Note 1: If you cannot successfully complete these procedures, contact your next level of support.

Note 2: In AccessNode systems, the operations controller (OPC) maintains user identifiers and passwords. As a result, you must log in to the OPC to change your password as described in Procedure 3-8, “Changing your network element password.”

Procedure 3-1
Connecting a local terminal to the network element local craft access panel (LCAP)

Use this procedure to

- connect a local user terminal to the network element
- set the communication parameters of the user terminal
- display the login screen

Requirements

Network element software must be loaded.

The following equipment is required:

- a VT100-compatible user terminal
- an RS-232C cable terminated with D-subminiature 25-pin male connectors, such as NT7E44FA (5 m, 16 ft.) or NT7E44FB (20 m, 66 ft.)

  Note: A VT100-compatible terminal with a 9-pin connector supports only some of the standard RS-232 signals. The standard RS-232 signals are CD, TXD, RXD, CTS, DSR, DTR, and RTS. Terminals with 9-pin connectors, such as North American models of the VT320 and VT420, support only TXD, RXD, DSR, and DTR. These terminals are not recommended. However, if you use such a terminal, connect pin 1 (CD) and pin 4 (DTR) of an NT7E44RA (or RB) at the 25-pin end. Even this modification does not permit you to communicate from these terminals.

—continued—

Procedure 3-1 (continued)
Connecting a local terminal to the network element local craft access panel (LCAP)

Action

Step	Action
1	Connect the RS-232C cable to the user terminal according to the manufacturer's instructions.
2	Connect the RS-232C cable to the female D-subminiature 25-pin connector on the local craft access panel (LCAP). Figure 3-1 on page 3-4 shows the connection to the LCAP of the access bandwidth manager (ABM) shelf. Figure 3-2 on page 3-4 shows the connection to the LCAP of the transport bandwidth manager (TBM) shelf.
3	Plug in the power cord and switch on power to the user terminal.
4	Set the terminal communication parameters according to the manufacturer's instructions. The following table lists the factory default values for the LCAP port:

Parameter	**Value**
data bits	8
baud rate	9600
stop bits	1
parity	none
echo	no local echo (full duplex)

5	If the Autobaud feature is turned on, press **Return** twice. Otherwise, press the **Break** key once. *The pre-login screen appears with a question mark (?) displayed.* If the pre-login screen does not appear, try the following, as necessary: • Check whether your VT100-compatible terminal has a 9-pin connector. If so, see the note on page 3-2. • Find out from your system administrator if the communications parameters for this LCAP have been altered. • Try a different RS-232C cable.
6	Leave the terminal powered up.

—continued—

Procedure 3-1 (continued)
Connecting a local terminal to the network element local craft access panel (LCAP)

Figure 3-1
Terminal connector on the LCAP of the ABM shelf

FW-11339

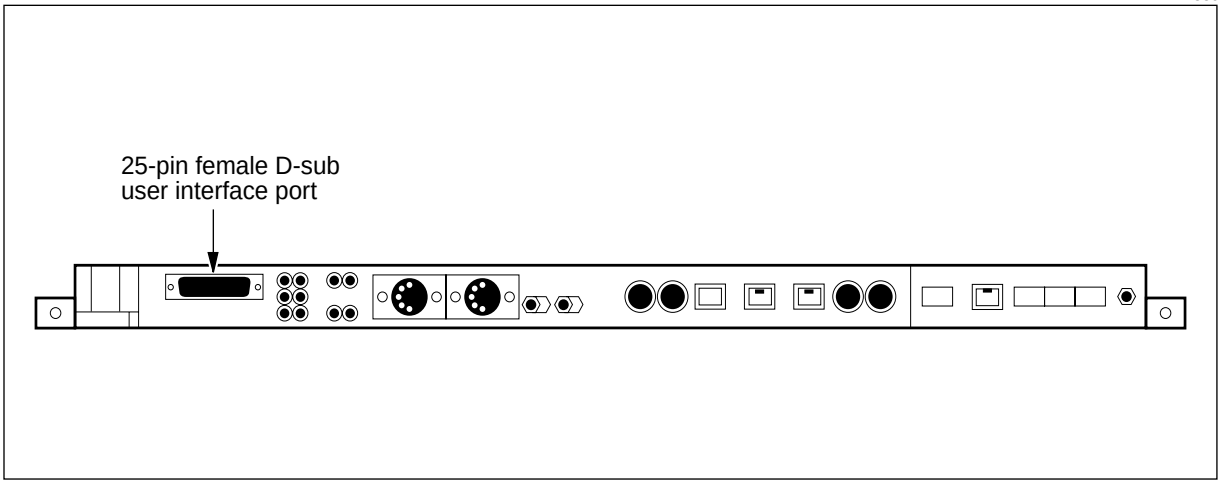
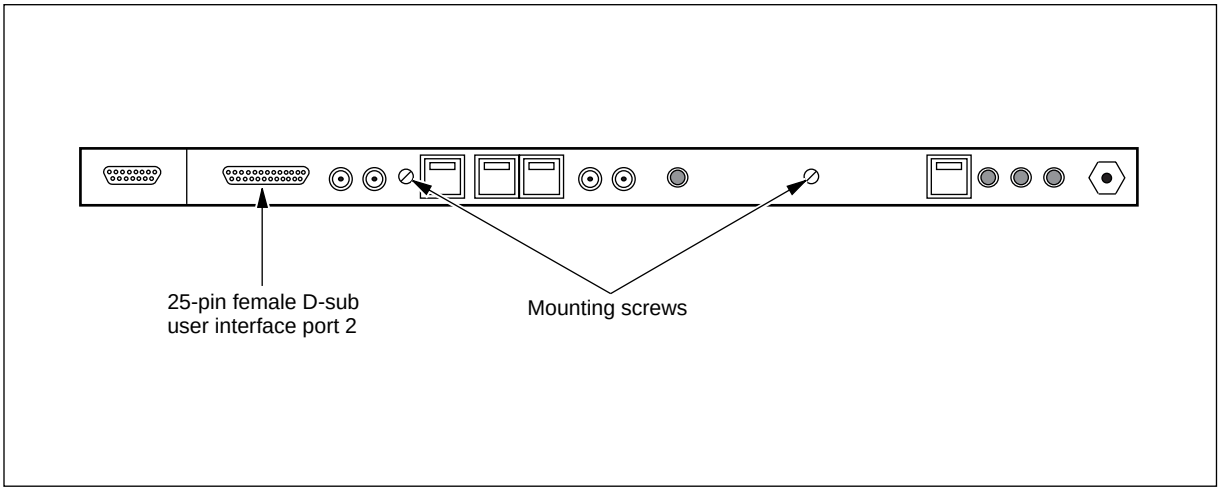


Figure 3-2
Terminal connector on the LCAP of the TBM shelf

FW-10601

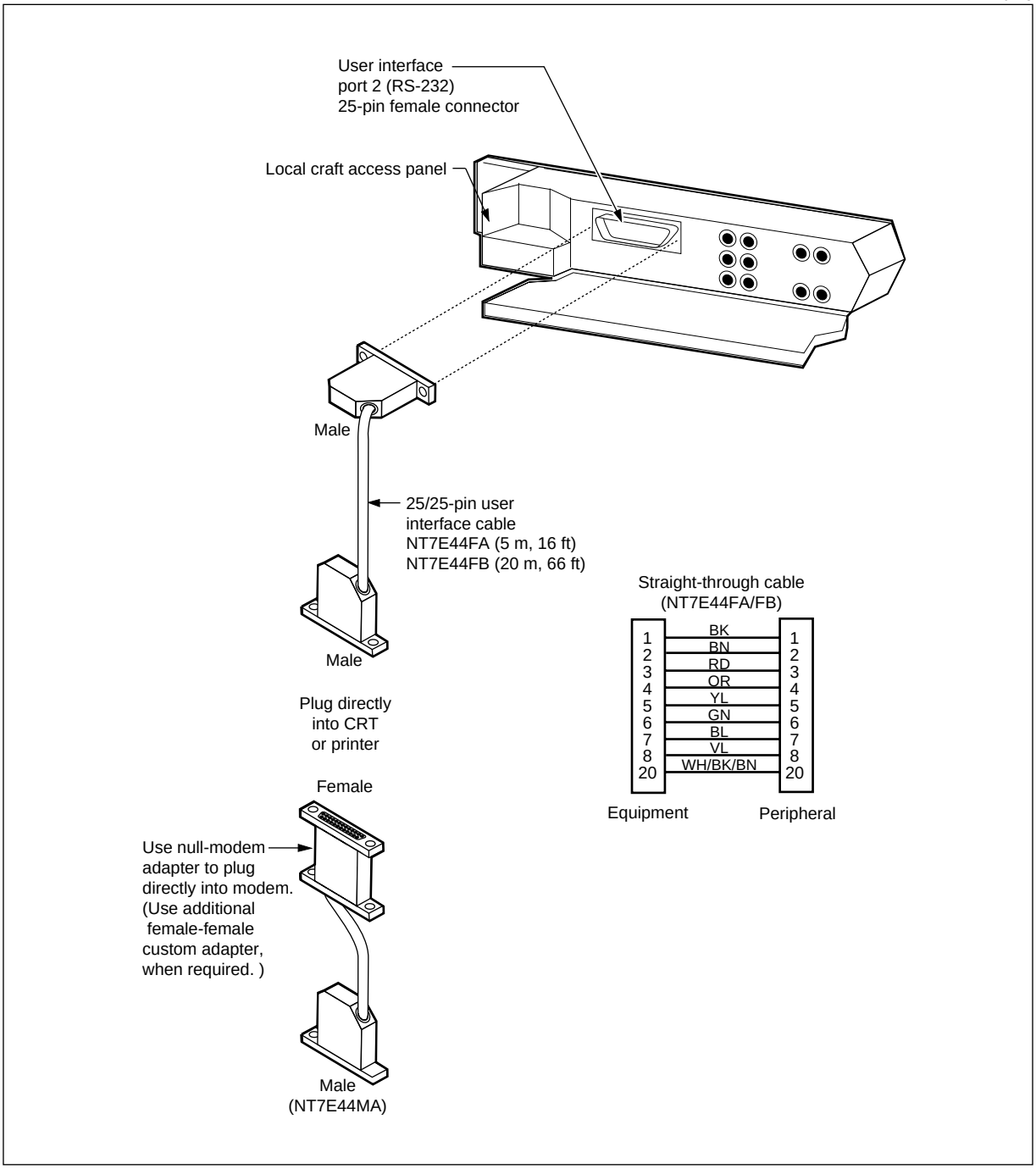


—continued—

Procedure 3-1 (continued)
Connecting a local terminal to the network element local craft access panel (LCAP)

Figure 3-3
Connecting a terminal to a network element

FW-10773



—end—

Procedure 3-2
Connecting a remote VT100-compatible terminal using the optional BIP modem

Use this procedure to connect a remote user terminal to the network element through a modem. This procedure assumes that you are using the modem in the breaker interface panel (BIP).

Requirements

The modem is installed in the BIP of the transport bandwidth manager (TBM) shelf.

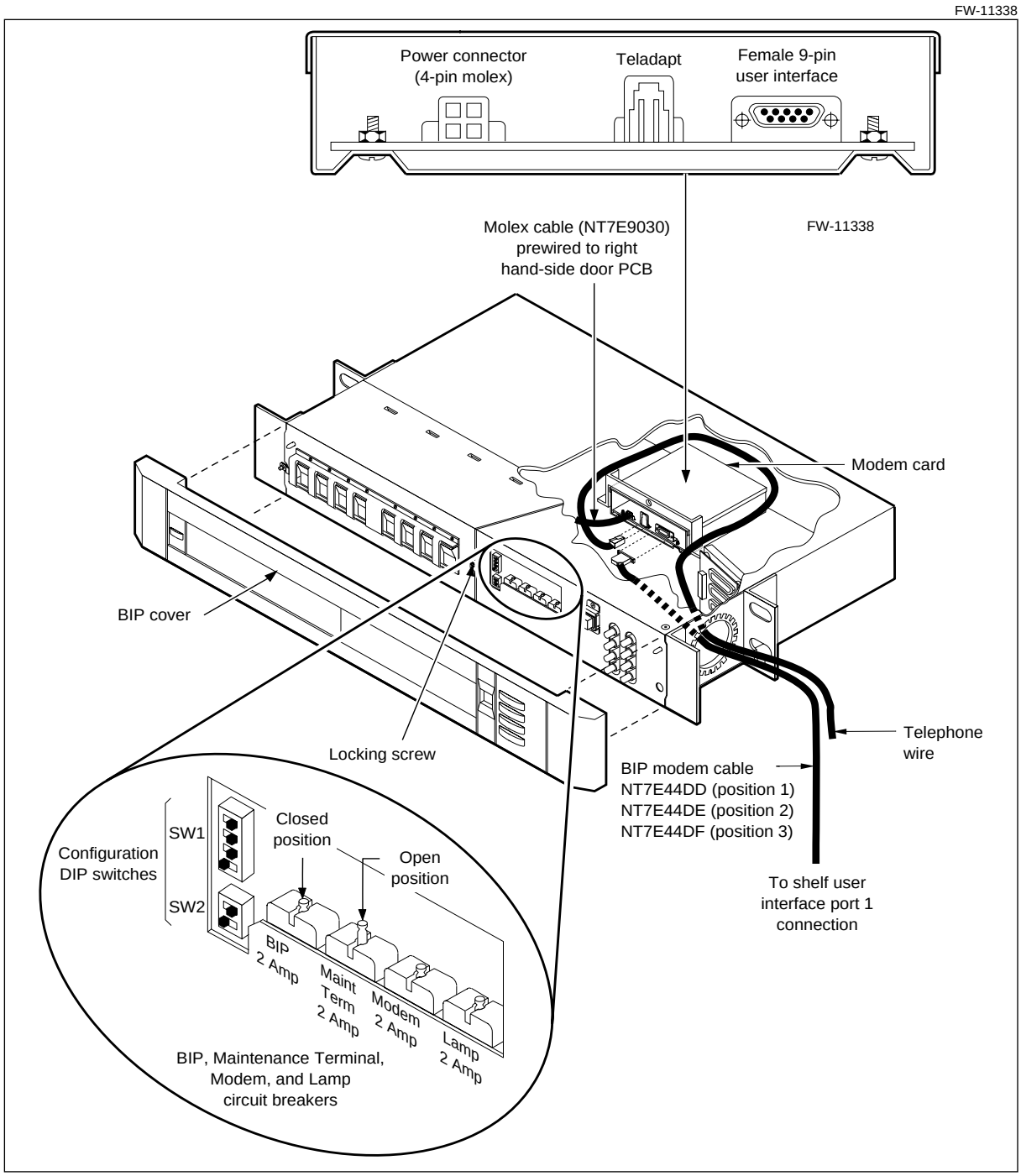
Action

Step	Action
1	Connect the BIP modem cable, the telephone wire, and the molex cable to the BIP modem as shown in Figure 3-4 on page 3-7.
2	Connect the other end of the BIP modem cable to the 9-pin connector for network element user interface port 1 on the left side of the TBM shelf.
3	In the BIP, locate the lower DIP switch (SW2) as shown in Figure 3-4 on page 3-7. Set SW2 position 1 to 1 (right) and SW2 position 2 to 0 (left).
4	Verify that the four BIP 2-amp breakers (BIP, Maintenance Terminal, Modem, and Lamp) are set in the positions shown in Figure 3-4 on page 3-7.
5	Verify that the baud rate for user interface port 1 is set to 2400, by entering: **admin ip** ↵ **dtlport 1** ↵ **chgstate oos** ↵ **y** ↵ **edit** ↵ **baudrate 2400** ↵ **chgstate is** ↵

—continued—

Procedure 3-2 (continued)
Connecting a remote VT100-compatible terminal using the optional BIP modem

Figure 3-4
Connect the 9-pin user interface connector to the modem inside the BIP



—continued—

Procedure 3-2 (continued)
Connecting a remote VT100-compatible terminal using the optional BIP modem

Step	Action

6 For an external modem, set the following parameters:

Parameter	ON or OFF
Enable DTR recognition	ON
Provide word result codes	ON
Send result codes	ON
Echo commands	OFF
Auto-answer enable	ON
Carrier detect	ON
RJ-11 jack	ON
Enable commands	OFF

7 Configure the remote terminal for VT100 emulation and use the following default parameters which are on the terminal communication setup screen:

Parameter	Default
emulation	VT100
data bits	8
stop bits	1
parity	none
echo	no local echo (full duplex)
baud rate	2400 (default for modem port)

Note: The default configuration parameters in this table are for user interface port 1. These default configurations are used when the shelf is first installed, or after a system reboot without a system backup. However, these user interfaces can be reprovisioned, and the terminal or modem, or both, must be reconfigured accordingly.

—end—

Procedure 3-3
Connecting a remote VT100-compatible terminal using an external modem

Use this procedure to connect a remote VT100-compatible terminal to user interface port 1 using an external modem.

Requirements

Verify that the remote terminal has been configured for VT100 emulation. The following are default parameters that are on the terminal communication setup screen:

- VT100
- data bits (8)
- stop bit (1)
- parity (none)
- no local echo (full duplex)
- baud rate = 2400 (most modems, default for modem [DTE] port on shelf right wing)

To perform this procedure, one user interface cable, NT7E44EA or EB, is required.

CAUTION
Risk of fiber damage
Perform any cabling very carefully to avoid damaging fibers.

Action

Step	Action
1	Connect one end of the NT7E44EA/EB 9/25-pin user interface cable to the 9-pin user interface port 1 connector J10 (on the left side of the transport bandwidth manager (TBM) shelf), or J08 (on the left of access bandwidth manager (ABM) shelf).

—continued—

Procedure 3-3 (continued)
Connecting a remote VT100-compatible terminal using an external modem

Step	Action

2 Connect the 25-pin end of the cable directly to the modem. The following table lists the pin assignments for the shelf connector:

Pin	Function	Pin	Function
8	DCD	6	DSR
3	Rx	4	RTS
2	Tx	5	CTS
20	DTR	1	N/C
7	GND		

N/C = Not connected

3 Verify that the User Interface Port 1 baud rate is set to 2400 by entering:

admin ip ↵
dtlport 1↵
chgstate oos ↵
yes ↵
edit ↵
baudrate 2400 ↵
quit ↵
chgstate is ↵

4 Set the following parameters for the external modem:

Assignment	ON or OFF
Enable DTR recognition	ON
Provide word result codes	ON
Send result codes	ON
Echo commands	OFF
Auto-answer enable	ON
Carrier detect	ON
RJ-11 jack	ON
Enable commands	OFF
Enable RTS detection	OFF
Constant CTS	ON

Note: The default configuration parameters in this table are for user interface port 1. These default configurations are used when the shelf is first installed, or after a system reboot without a system backup. However, these user interfaces can be reprovisioned, and the terminal or modem, or both, must be reconfigured accordingly.

—end—

Procedure 3-4
Logging in to the NEUI and logging out of the NEUI and terminal

Use this procedure to

- log in to the network element user interface (NEUI) from a local terminal
- log out of the NEUI and log out of the terminal

Requirements

The network element software, FiberWorld product user interface (FWPUI), is downloaded.

The VT100-compatible terminal is connected to the AccessNode local craft access panel (LCAP) and powered up. For additional information, see Procedure 3-1, "Connecting a local terminal to the network element LCAP," on page 3-2.

To log in to the network element, you need a userID and password. If you have difficulty connecting to the network element, see "If you cannot log in to the FWPUI" on page 3-14.

Note 1: Ask your system administrator for the current values. If the factory default values are still current, they should be changed for security purposes; coordinate this change with your system administrator.

Note 2: The FWPUI can be accessed through two local physical ports and up to eight remote login sessions. However, FWPUI can be in use by up to eight users at any time, not ten.

Action

Step	Action
1	Decide what you want to do based on the information in the following table:

If you want to	Then do
log in to FWPUI	steps 2–5
log in to FWPUI at a line-by-line terminal	steps 2–6
display the FWPUI main menu at any point	step 7
log out of FWPUI and display the CI prompt	step 8
log out of the terminal	step 9

—continued—

Procedure 3-4 (continued)
Logging in to the NEUI and logging out of the NEUI and terminal

Step	Action
	Logging in
2	Display the login screen by pressing the **Break** key. If your terminal has the Autobaud feature turned on, press **Return** twice instead. *The terminal displays the prompt: ?*
3	Enter: **login** ↵ *The terminal responds with the following message:* `Enter User Name`
4	Enter: **<userID>** ↵ *The terminal responds with the following message:* `Enter Password`
5	Enter: **<password>** ↵ *The Network Element Status screen appears. You are now logged in.* ***Note 1:*** If you cannot log in, obtain the current user ID and password from your system administrator. ***Note 2:*** If you are the ninth person trying to log in, your login attempt will be rejected. See page 3-14 for more information. ***Note 3:*** If the system locks you out while you are typing your user name or password, you or someone at another terminal may have accidentally typed Ctrl_s. Typing Ctrl_s prevents further keyboard input from any terminal connected to the serial data terminal equipment port (DTE)) and data communication equipment (DCE) port of the network element. To correct the lockout, type **Ctrl_q** at your terminal, then retry this procedure. If you are still locked out, connect a terminal to the other port (DCE or DTE), type **Ctrl_q**, then retry this procedure.
	Logging in at a line-by-line terminal
6	To provide a usable display at a line-by-line terminal, enter: **mapci nodisp** ↵ **fwpui** ↵ ***Note:*** The line-by-line terminal has a very limited display capability, so only experienced system users should use it.

—continued—

Procedure 3-4 (continued)
Logging in to the NEUI and logging out of the NEUI and terminal

Step	Action

Displaying the main menu

7 From any screen in the user interface, including the command interpreter (CI) level, you can display the main menu (Network Element Status screen) of the NEUI. At a VT100-compatible terminal, enter:

fwp ↵

Note: If the system does not recognize fwp, enter the following command string:

mapci;fwpui ↵

Closing FWPUI

8 At any level in the menu hierarchy, you can close the NEUI session and display the CI by entering:

quit all ↵

CI prompt (>) appears.

Logging out

9 At any level in the menu hierarchy, including the CI level, you can log out by entering:

logout ↵

Note: The user interface ports on the network element have an auto-logout feature. If you did not log out normally, the user interface session automatically terminates five seconds after any of the following events:

- when you turn off power to the user terminal
- if the DTE connection is lost, such as if the RS-232 cable to the LCAP is unplugged
- if the DCE connection is lost, such as if the modem carrier signal is lost, or if the cable to the MODEM connector on the left-side interconnect is unplugged

—end—

If you cannot log in to the FWPUI

The FWPUI can be used by up to eight users at any time. The local ports are the DTE port on the LCAP and the DCE port on the side interconnect left circuit pack. Each local port can support one login session to the FWPUI. The eight remote login sessions can include a login session from another network element and rlogin sessions from an operations controller (OPC) using the rlogin manager.

If eight remote login sessions are in progress, then one of the following messages appears to anyone who tries to log in to a ninth FWPUI session:

```
Unable to connect to remote host: no session entity
(if attempted from an OPC rlogin session)
```

```
Could not connect to server
(if attempted from another network element FWPUI session)
```

These messages appear because the communication connection to the network element cannot be established when all remote communication ports are in use. The messages also appear if the network element is not operational (software is not running) or if connection to the network element is not possible because of network connectivity problems.

If eight remote login sessions are in progress, and at least one of the sessions is through the local port, then the following message appears to anyone who tries to log in to a ninth FWPUI session:

```
Maximum of 8 FWPUI sessions already active. Try again
later when some of the users currently logged in have
logged out or quit from FWPUI.
```

Although the communication connection to the network element is established (one local port and one remote port were available, or two remote ports), the maximum number of FWPUI login sessions already exists. In this condition, you are locked out of the FWPUI, but retain the communication connection with access to the CI and MAPCI. You can continue in a CI or MAPCI session, or cancel the communication connection using the logout command.

Procedure 3-5
Logging in to the far-end NE from the local NE

Use this procedure to log in to the far-end network element (NE) from the local network element.

This procedure is useful for testing the far-end NE from your local NE, or for setting up a far-end loopback when performing end-to-end tests from the local NE.

Requirements

You must be logged in to the user interface of the local NE, not the operations controller (OPC). If you are logged in to the OPC user interface, then use Procedure 3-4 on page 3-11 to access another NE.

You must have a username (userID) and password for the far-end NE.

Action

Step	Action
1	If you do not know the number (NE#) of the far-end NE, you can display a list of NEs by entering: **listnes** ↵ *A list of NE numbers appears.*
2	From any screen of the local network element user interface (NEUI), log in to the far-end NE by entering: **rlogin ne <NE #>** ↵ where <NE #> the network element number of the far-end NE**: 1** to **32767** *The login screen for the far-end NE appears, with the following prompt:* `Enter User Name`
3	Enter: **<username>** ↵ *The terminal responds with the following prompt:* `Enter Password`

—continued—

Procedure 3-5 (continued)
Logging in to the far-end NE from the local NE

Step	Action
4	Enter: **<password>** ↵ *You are now logged in to the far-end NE. You also remain logged in to the local NE.* ***Note:*** If you cannot log in, obtain the current userID and password from your system administrator. ***Note:*** If you are the ninth person trying to log in, your login attempt is rejected. See page 3-14 for more information.
5	To log out of the far end and return to the local NEUI, enter: **logout** ↵ *You are logged out of the far-end NE and the CI screen appears for the local NE.*
6	Display the main screen for the local NE: **fwp** ↵ *The Network Element Status screen appears for the local NE.*

—end—

Procedure 3-6
Logging in to a network element from the OPC and logging out

Use this procedure to log in to or out of a network element (NE) from the operations controller (OPC). For detailed information about the operations controller, see the *OPC User Interface Description*, 323-3001-301, *Operations, Administration, and Provisioning*, Volume 4A.

You can log in to the NE directly using the Auto login button, which uses the userID you entered for the current OPC session. You can also log in by specifying a new userID for this login session only. The maximum number of NE login sessions from an OPC is 12.

Requirements

To perform this procedure, you must do the following:

- have a userID and password that allow you access to the OPC
- read the command conventions for the type of interface you are using, CMT or graphical. (The OPC interfaces are described in *OPC User Interface Description*, 323-3001-301, *Operations, Administration, and Provisioning*, Volume 4A.)

Action

Step	Action
Logging in	
1	Log in to the OPC and open the NE Login Manager tool. If you do not know how to do this, see Procedure 3-4 on page 3-11. *The NE Login Manager main window appears.*

—continued—

Procedure 3-6 (continued)
Logging in to a network element from the OPC and logging out

Step	Action

2 Decide what you want to do based on the information in the following table:

If you	Then
know the NE ID or name you want to use	type the ID or name in the Network Element field and go to step 3. The Network Element field is case sensitive.Type the network element name exactly as it appears in the list.
do not know the NE ID or name that you want to use	tab to the Available Nodes list. Use the scroll bar to locate the NE that you want to log in to, then press **Ctrl_A** (or Keypad **0**).

Note: If you cannot access the node, return to the NE Login Manager main window by doing the following: Press **Ctrl_B**. When the question mark (?) prompt appears, type **logout** then press **Return**.

3 The ID and name of the selected node appears in the Network Element field.

If you want to	Then go to
log in with the same userID and password used to log in to the OPC	step 4
log in using another userID and password	step 5

4 To log in without reentering your userID and password, tab to the **Auto login** button, then press **Ctrl_A** (or Keypad **0**).

If a connection is possible at this time, you are logged in directly to the node. The main menu of the network element user interface (NEUI) appears. You can now enter network element commands.

If the auto login was not successful, the system prompts you for a different userID and password.

5 To log in by specifying a userID and password:

a. Tab to the **Login** button, then press **Ctrl_A** (or Keypad **0**).

A blank screen appears, followed by the userID prompt.

—continued—

Procedure 3-6 (continued)
Logging in to a network element from the OPC and logging out

Step	Action

b. Enter:

<userID> ↵

The password prompt appears.

c. Enter:

<password> ↵

If the userID and password are correct, and connection is possible at this time, you are logged in to the NE. The main menu of the NEUI appears. You can now enter NEUI commands.

Logging out

6 To log out of the NE, enter:

logout ↵

A message appears, prompting you to press the Return key.

7 Press **Return**.

The NE Login Manager tool main window appears.

8 To close the tool:

a. Display the window menu by pressing **Ctrl_L W** (or Keypad **6**).

The window menu appears.

b. Select **Exit** by pressing **Space** (or Keypad **0**).

The tool closes.

—end—

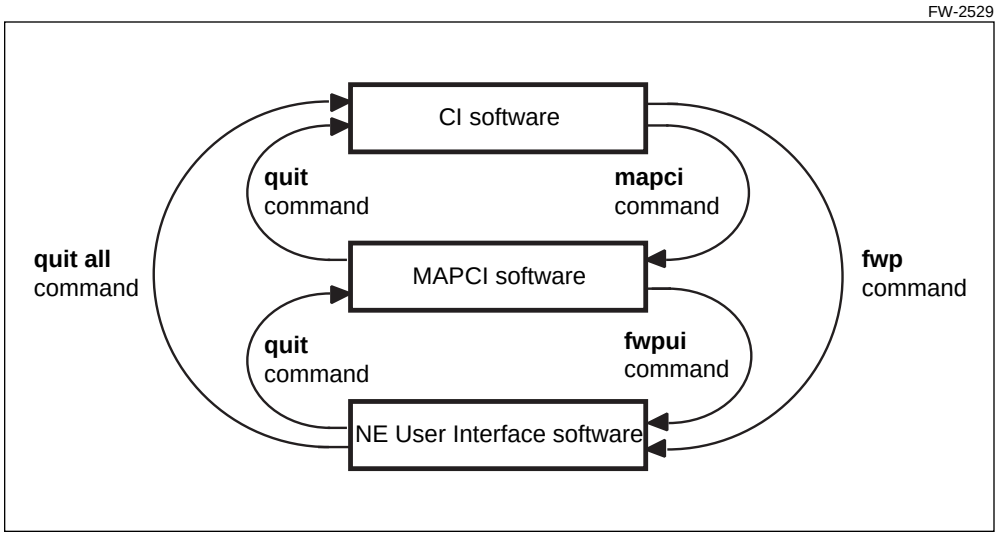
Procedure 3-7
Opening a network element user interface session from other levels of the interface

Use this procedure to open a network element user interface (NEUI) session at a different level, while already logged in. You can begin either a full-screen or a single-line session.

This procedure is most often used after you have finished an operations controller (OPC) session from the network element (NE) and you want to return to the NEUI.

Use Figure 3-5 to identify whether you are at the command interpreter (CI) level or the maintenance and administration position command interpreter (MAPCI) level.

Figure 3-5
Interface levels



Requirements

Before performing this procedure, you must:

- be logged into the NEUI
- identify the network user interface level you are accessing

—continued—

Procedure 3-7 (continued)
Opening a network element user interface session from other levels of the interface

Action

Step	Action

1 Decide what type of user session you want:

If you want a	Then go to
full-screen session	step 2
line-by-line session	step 3

Note: The line-by-line session offers very limited screen display capabilities and is intended for experienced users.

2 You can begin a full-screen session from both levels of the interface.

If your screen prompt is	Then enter
CI	**fwp** ↵
MAPCI	**fwpui** ↵

The Network Element Status screen appears.

3 You can begin a single-line session from both levels of the interface.

If your screen prompt is	Then enter
CI	**fwp nodisp** ↵
MAPCI	**fwpui nodisp** ↵

The single-line NEUI appears.

4 To end a session from any screen in the NEUI, enter:

logout ↵

—end—

Procedure 3-8
Changing your network element password

Use this procedure to change your network element password. In AccessNode systems, user identifiers and passwords are stored on the operations controller (OPC). Therefore, you must log in to the OPC to change your password. If you have one userID for some network elements and a different userID for others, you have to change the password for each userID separately.

Requirements

A new password must meet the following criteria:

- The password must have between five and eight characters.
- The first character must be alphabetic (a–z, lowercase only) or a $ symbol.
- The remaining characters can be alphabetic (a–z, lowercase only), digits 1–9, _ (underscore), or a $ symbol.

Before starting this procedure, you must be familiar with the OPC interface. To review how to use the interface, see *OPC User Interface Description*, 323-3001-301, in *Operations, Administration and Provisioning*, Volume 4A.

Action

Step	Action
1	Open the Password Update tool. *The Password Update tool main window appears.*
2	Enter your old password: **<old password>** ↵ *If you entered your password correctly, the text changes to "Type in new password followed by Return."* *If the password is incorrect, an X appears beside the field and the field label does not change.*

If	Then
the password is correct	go to step 3
the password is incorrect	repeat step 2
you want to exit the tool	go to step 6

—continued—

Procedure 3-8 (continued)
Changing your network element password

Step	Action

3 Enter your new password (the characters do not appear as you enter them, but the cursor moves):

<new password> ↵

If the password is accepted, the text changes to "Retype new password followed by Return."

If the password is rejected, an X appears beside the field. Repeat this step, then go to step 4.

If	Then
the new password is correct	go to step 4
the new password is incorrect	repeat step 3
you want to exit the tool	go to step 6

4 Reenter your new password:

<new password> ↵

If the password matches your previous entry, the text changes to "Password Match," and the field is removed. If the passwords do not match, an X is appears beside the field.

If	Then
the passwords match	go to step 5
the passwords do not match	return to step 3
you want to exit the tool	go to step 6

5 Select the **Update** button by pressing **Ctrl_A** (or Keypad **0**).

Your password is changed on all network elements that you have permission to access, and the new password is put into effect. The Password Update dialog appears.

6 Close the tool by pressing **Esc** or do the following:

a. Display the window menu by pressing **Ctrl_L** (or Keypad **6**).

The Window menu appears.

b. Select the **Exit** command by pressing **Space** (or Keypad **0**).

The Password Update tool closes.

—end—

Using the CI tool user interface

This chapter describes the command interpreter (CI) user interface. It describes how to open and close CI tools and how to display help for a CI tool.

Chapter task list

This chapter includes the following tasks:

Procedure	Task	See
4-1	Opening a CI tool	page 4-4
4-2	Displaying help for a CI tool	page 4-5
4-3	Entering a CI command	page 4-6
4-4	Removing a CI tool from a network element	page 4-7
4-5	Closing the CI tool	page 4-9

Note: If you cannot successfully complete these procedures, contact your next level of support.

Definition of CI tool

The CI tools are command-driven tools for querying and setting system parameters. Most CI tools are downloadable. If you start a CI tool from a network element, the operations controller (OPC) automatically downloads the tool to the network element. The tool remains on the network element until 120 minutes after you close the tool. After 120 minutes without use, the network element removes the tool from its memory.

The CI tools include the following examples:

- PSTN CI, the public switching telephone network tool, which loads the public switching telephone network (PSTN) for different countries
- MVIPROV CI, the MVI provisioning tool, which changes the call reference value (CRV) assigned to remote fiber terminal (RFT) line card slots and preassigns service to RFT line card slots

  Note: MVIPROV CI is not downloadable.
- RMVDL CI, the remove downloadable CI tool, which lets you remove a CI from a network element without waiting for automatic removal

Downloading CIs

Downloadable CIs reduce program storage and data storage on the network element. The system stores non-core CIs on the OPC as load68k files. When you enter a command from the network element to start a non-core CI tool, the OPC loads the tool into the network element and invokes it.

Two methods remove downloadable CI tools from a network element:

- The network element automatically removes a non-core CI tool from its memory 120 minutes after you close the tool.
- You can use RMVDL CI to remove the tool immediately.

The following tools are downloadable from the OPC to a network element:

AICBWMBUG CI	DRD CI	LCMTST CI	TBPCFG CI
AICFLT CI	E1TST CI	LCSA CI	TICBUG CI
AICXTRACE CI	FACTST CI	LCTRBL CI	TL1 CI
ANERTU CI	FACTTXC CI	LNADJ CI	TR08 CI
ANM CI	FLCE CI	MTA CI	TR8CFG CI
APCFIR CI	FLSMS CI	MTAC2 CI	TXCHW CI
APUCF CI	FLTIC CI2	MVICFG CI	TXCMTC CI
BERT CI	FOAM CI	MVIDL CI	TXCPLL CI
BWM CI	FWLCI	NBSH CI	TXCPRT CI
CHRX CI	IRTU CI	PSTN CI	TXCRBT CI
COMMSTAT CI	LAIC CI	SMCSTM CI	TXCTST1 CI
CSVMON CI	LCLDR CI	SYSTEM CI	
DDL CI		TAC CI	

Error messages

Table 4-1 lists the error messages that might appear when you invoke a downloadable CI tool.

Table 4-1
Downloadable CI error messages

Error message	Explanation
Not enough memory to load the CI. Please quit any previously invoked downloadable CIs tools and free up memory on the NE.	The network element does not have enough free memory for the OPC to download the tool you requested. Use RMVDL CI to remove some CI tools. (See “Removing a CI tool from a network element” on page 4-7 for more information.)
Communication to OPC is currently unavailable. Please try again. If the problem persists, contact the next level of support.	The OPC cannot download the CI module. This message may appear if the OPC has lost its association to the network element. Make sure the OPC has an association with the network element. If the association is down, restore the association and retry the command. If the association is up, retry the command later. If the problem persists, call the next level of support.
Cannot load CI. Please try again later. If the problem persists, contact the next level of support.	Loading the CI into the network element failed after the OPC downloaded the CI. Retry the command later. If the problem persists, contact the next level of support.
Undefined command “CItool”	Contact the next level of support.
Another user is currently downloading the same CI. Please retry after a delay.	Another user is downloading the CI from the OPC. Retry downloading the tool later. If the problem persists, contact the next level of support.
READ -- Parameter 1 is of wrong type	Contact the next level of support.
Any other message	Contact the next level of support.

Procedure 4-1
Opening a CI tool

Use this procedure to open a CI tool.

Action

Step	Action
1	Log in to the OPC and open the NE Login Manager tool. For directions, see *OPC User Interface Description, 323-3001-301*, in *Operations, Administration and Provisioning*, Volume 4A.
2	Log in to the network element as described in Procedure 3-4 on page 3-11. *The Network Element User Interface (NEUI) screen appears.*
3	At the prompt, enter the following: **quit all** ↵ *The CI prompt appears.*
4	Open the CI tool by entering the name of the CI tool. For example: **pstnci** ↵ *The CI tool loads.* ***Note:*** If the tool does not open, follow the instructions in Table 4-1 on page 4-3.

—end—

Procedure 4-2
Displaying help for a CI tool

Use this procedure to display the help screen for a CI tool.

Action

Step	Action
1	Open the CI tool.
2	Display the list of commands for the CI tool by entering: **help** ↵ *The help screen appears.*

—end—

Procedure 4-3
Entering a CI command

Use this procedure to enter a CI command.

Action

Step	Action
1	Type the name of the command, then press **Return** (↵). *The CI displays any parameter that you need to enter before it can execute the command. After you enter the necessary parameters, the CI displays the system responses.* Table 4-2 lists PSTN CI commands as examples of the type of commands you might enter.

Table 4-2
PSTN CI command summary

This command	Performs this action
selna	Selects the PSTN software load for North America
selhk	Selects the PSTN software load for Hong Kong
seljp	Selects the PSTN software load for Japan
qpstn	Displays the present status of the system
help	Displays the list of commands for the PSTN CI tool
quit	Closes the PSTN CI tool

—end—

Procedure 4-4
Removing a CI tool from a network element

Use this procedure to remove a downloadable CI tool from a network element. If you do not remove a tool, the network element automatically removes it from its memory 120 minutes after you close the tool.

Action

Step	Action
1	Log in to the network element user interface. *The Network Element Status screen appears.*
2	Start the RMVDL CI tool by entering: **rmvdlci** ↵ *The RMVDL CI prompt appears.*
3	Determine the task you want to perform:

If you want to	Then go to
list the downloadable CIs and their status	step 4
remove a downloadable CI tool from a network element	step 5
display help for RMVDL CI commands	step 6
exit this procedure	step 7

Listing downloadable CIs

4 Review the list of downloadable CIs and their status by entering:

dlciquery ↵

The Network Element Status screen appears displaying a list of downloadable CIs.

Removing a downloadable CI tool

5 Remove a CI tool from the network element by entering:

remove <xxxx> ↵

where

<xxxx> the CI tool to be removed

The CI tool is removed from the network element.

Note: If the CI tool is in use, an error message appears.

—continued—

Procedure 4-4 (continued)
Removing a CI tool from a network element

Step	Action
	Displaying help for RMVDL CI commands
6	View the list of RMVDL CI commands by entering: **help** ↵ *The list of RMVDL CI commands appears.*
	Exiting this procedure
7	Close the RMVDL CI tool and return to the Network Element Status screen by entering: **quit** ↵ *The CI prompt appears.*
8	Enter: **fwpui** ↵ *The Network Element Status screen appears.*

—end—

Procedure 4-5
Closing the CI tool

Use this procedure to close a CI tool.

Action

Step	Action
1	Close a CI tool by entering: **quit** ↵ *The CI prompt appears.*
2	Log out of the network element by entering: **logout** ↵ *The NE Login Manager screen appears.*
3	To close the NE Login Manager tool: **a.** Display the window menu by pressing **Ctrl_L W** (or Keypad **6**). *The window menu appears.* **b.** Select the **Exit** command by pressing **Space** (or Keypad **0**). *The tool closes.*
4	Log out of the OPC. For directions, see the procedure for logging out of the OPC in the *OPC User Interface Description*, 323-3001-301, in *Operations, Administration and Provisioning*, Volume 4A.

—end—

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SONET Products

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