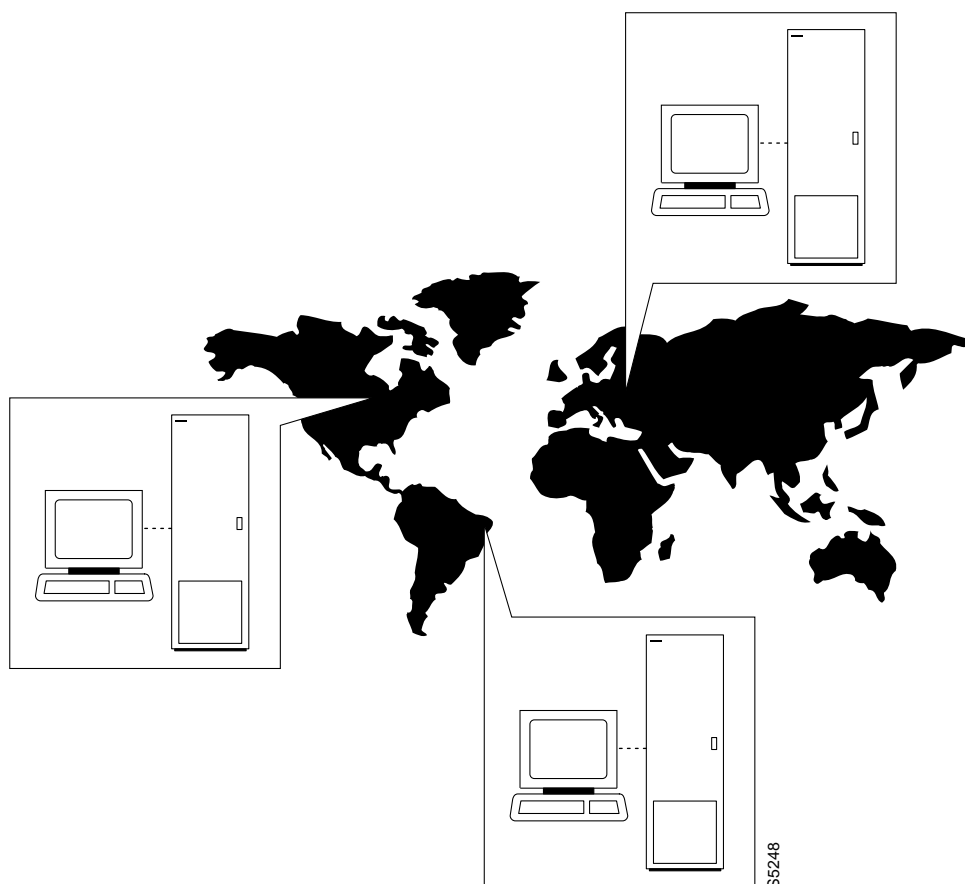# Setting Up Network Nodes

This chapter describes the commands for setting up an IPX, IGX, or BPX node. You must set up each node before you build the network. Sections with task descriptions and command summaries appear before the full command descriptions. The task descriptions tell you how to:

- Configure a node name and time zone

- Add and remove a network node

- Add and remove and interface shelf in a tiered network

- View a node's configuration

- Specify Y-cable redundancy for cards in the node

- Start a window session to an external device or specify an interface to an attached terminal

Naming a Node

Before a node can be added to the network, a unique node name must be assigned. All nodes initially have the default name **NODENAME**. The node name consists of 1 to 8 printable characters (beginning with a letter), and cannot contain spaces. If you are naming the node after a city or place that contains more than eight characters, you will have to abbreviate the name for use as a node name. The name must be unique across the network. To assign the node the name of **alpha**, enter:

cnfname alpha

To change a node name, do the following:

Step 1   Sign on to (or establish a virtual terminal connection with) the node whose name you want to change.

Step 2   Change the name of the node using the cnfname command:

The name of the node you are connected to changes to the new name. This new name is distributed automatically to other nodes in the network.

Configuring the Time Zone

Each node must be set to a time zone. To set the time zone for the node to **G**reenwich **M**ean **T**ime, enter:

cnftmzn GMT

Removing a Trunk From the Network

Since Rel. 7.0 Packet Lines are referred to as **Trunks**. Use the letters "**trk**" in all commands referring to packet lines. To remove a trunk from the network, do the following.

Step 1   Sign on to (or establish a virtual terminal connection with) the node.

Step 2   Delete all packet (trunk) lines attached to the node using the **deltrk** command. For example, to delete line 5, enter: deltrk 5

Adding an Interface Shelf

An interface shelf is a non-routing device that drives ATM cells to and from a BPX routing hub in a tiered network. An interface shelf is either an IPX configured as an interface shelf (IPX/AF) or an MGX 8220 shelf. For an IPX or IGX to serve as an interface shelf, Cisco personnel must first configure it for that purpose. Furthermore, the shelves must be configured to use STI cell headers and BPX Addressing Mode (BAM). An MGX 8220 must have been brought up in the network before you can add it to the tiered network (for instructions, see the MGX 8220 reference documentation.) To add a feeder shelf, use **addshelf**. To delete a feeder shelf, use **delshelf**. To view conditions on a feeder trunk, use **dspnode**. Note that **addshelf** and **addtrk** are mutually exclusive commands.

Specifying Card Redundancy

Redundancy is established by installing two identical front and back card sets, connecting them with a Y-cable for each paired port, then specifying redundancy with the **addyred** command. The commands for setting up and displaying card redundancy are **addyred**, **delyred**, **dspyred**, and **prtyred**. Redundancy applies to the entire card and is not port or line-specific.

During normal operation, the primary set is "active" and carrying traffic, while the secondary set is in "standby." The primary set determines the configuration of the pair, so the secondary and primary card sets have the same configuration. If the primary is reset or otherwise becomes inactive, the secondary card set becomes active.

IGX card sets may consist of the following:

- HDM front card and SDI back card

- LDM front card and LDI back card

- FRM front card and an FRI back card

- UFM front card and a UFI back card

- FTM front card and an FTI back card

- CVM front card and a BC-T1 or BC-E1 back card

- NTM front card and a BC-E1 or BC-T1 back card

- BTM front card and a AIT-T3 or AIT-E3 back card

- ALM and a BC-UAI back card

IPX card sets may consist of the following:

- SDP front card and SDI back card

- LDP front card and LDI back card

- FRP front card and an FRI back card

- FTC front card and an FTI back card

- CDP front card and a BC-T1 or BC-E1 back card

- NTC front card and a BC-E1 or BC-T1 back card

- AIT front card and a BC-T3 or BC-T3 back card

BPX card sets may consist of the following:

- BCC front card

- BNI front card and T3, E3, or OC3 back card

- ASI front card and T3, E3, or OC3/STM-1 back card

The following applies to redundant card sets:

- The primary and secondary card sets must be identical.

- Secondary card sets must not be already active.

- Neither the primary nor secondary card set may already be part of a redundant card set pair.

- If an active card fails, is downed, or removed, data automatically goes through the secondary set.

- All service cards on the IPX, IGX, and BPX support Y-cable redundancy. (The trunk cards also support trunk redundancy. See Chapter 5 "Setting Up Trunks" for a description)

The following illustrates a typical Y-cable connection of primary and secondary card sets.

Figure 4-1
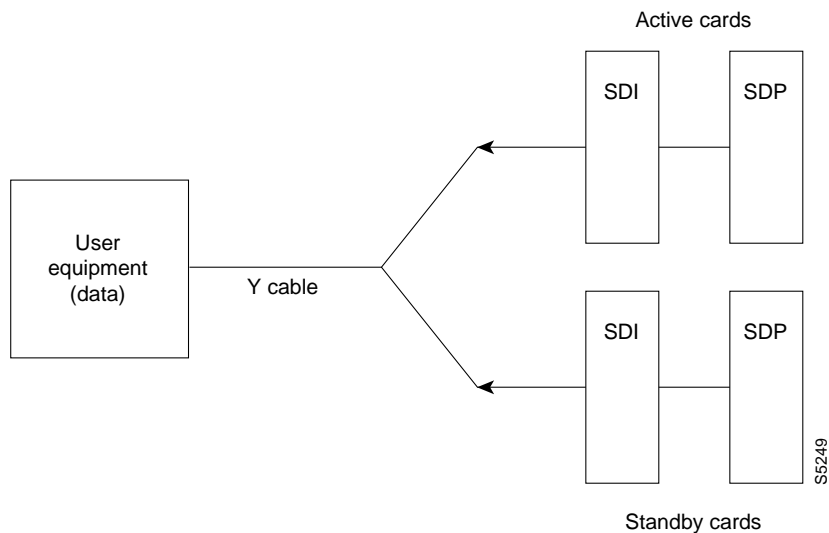
As depicted in the illustration above, the single end of a Y-cable goes to the user equipment. One of the two connectors at the split end goes to the primary back card, and the other connector goes to the secondary back card.

Switching to the standby card occurs only if the secondary card set is in a Standby or a Standby-T state (not if it is Failed). See the **dspcds** definition for information on these states.

Note Terminating connections is possible at a primary slot only and not at a secondary slot. See the **addcon** description.

On multi-port card sets, each primary port is connected by a Y-cable to a secondary (redundant) port. Port 1 of the primary card set must be paired to port 1 of the secondary card set, and so on. The following illustrates the cabling for a multi-port card set.

Figure 4-2
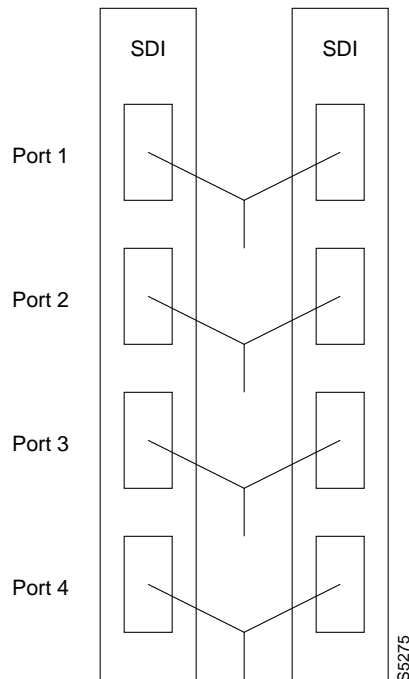
If the secondary card set becomes active, the primary card set becomes the backup. For the primary card set to serve as a backup, it must be a complete set and not have failed status. These requirements apply to single and multi-port cards.

The **addyred** command is applicable even if the primary and secondary slots are empty. If cards are in place in the primary and secondary slots, the system checks for card compatibility. Two types of incompatibility can occur: back card and jumper or cable. (On SDI, FRI, and FTI cards, jumpers determine whether a port is configured as DCE or DTE. On LDI cards, either a DCE or DTE adapter cable connects to the LDI port, as applicable).

If incompatibilities exist, the message "Y-Cable Conflict" appears on screen. Specific conflicts are listed in reverse video in the Y-Cable Redundancy screen. See the **dspyred** description for details. V.35 redundancy requires special redundant jumpers on the SDI or FRI cards that are Y-cabled together. Always use the applicable Y-Cable Redundancy kit for a card.

Controlling External Devices

If your system is configured to control an external device, such as a multiplexer, you can establish a **window** session to it from the control terminal. While in a **window** session, any characters you type at the control terminal go to the external device for processing. Any characters generated by the external device appear on the control terminal screen.

The Window to External Device (**window**) command establishes a *window* session. You can use this command only if the external device connects to the local node. You can, however, enter the **window** command during a virtual terminal session so that you have a window session with any external device in the network. To start a window session, use the Virtual Terminal (**vt**) command to access the node cabled to the device, then invoke the **window** command. Before starting a window session, you must have configured the port and the port function with **cnfterm** and **cnftermfunc**. In addition, you must know whether the external window device is cabled to a node's Control Terminal (RS-232) port or Aux Port (RS-232) port. The format for the **window** command is:

window [a | c]

Enter an **a** if the external device is attached to the node's Aux Port or **c** if the device is attached to the node's Control Terminal port. The default for this parameter is Aux Port. To establish a **window** session with an external device attached to a node's Control Terminal port, enter:

window c

The system responds by redrawing the terminal screen. You can now enter commands and send data to the external device as if you were locally connected to its Control Terminal port. While in the **window** session, only commands used to control the external device are recognized. IPX/IGX/BPX commands are not recognized. You might notice a slight transfer delay in transmission, due to the IPX/IGX/BPX bundling of characters before transmitting them. Transfers are delayed until the transfer buffer is filled, or until the keyboard has been inactive for over 50 milliseconds.

To end a **window** session, enter an escape sequence. Escape sequences are one-to-eight characters in length and are configured with the Configure Terminal Port Function (**cnftermfunc**) command. For example, if you have specified "signoff" as the escape sequence in the Configure Terminal Port Function, enter the following to end the **window** session:

signoff

The default escape sequence is:

^^ (SHIFT 66)

If this escape sequence does not work and you do not know the configured escape sequence, leave the keyboard idle for four minutes. After four minutes, the system terminates the window session.

Figure 4-3   Set-up nodes
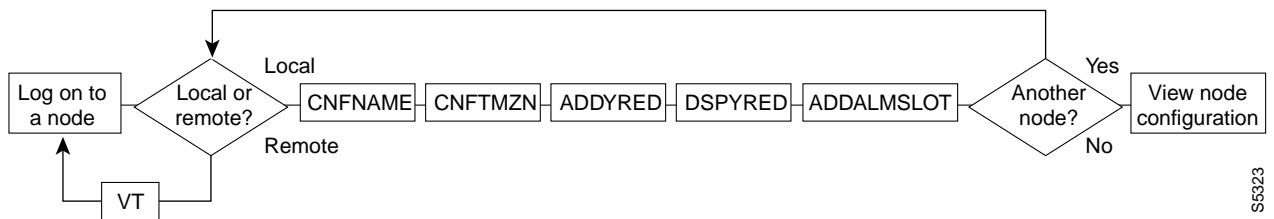
Figure 4-4   View node configuration
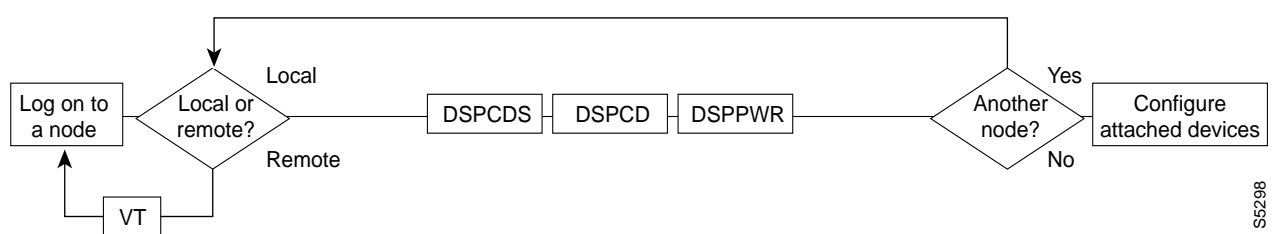
Figure 4-5   Configure the node interface for a terminal attached to the node
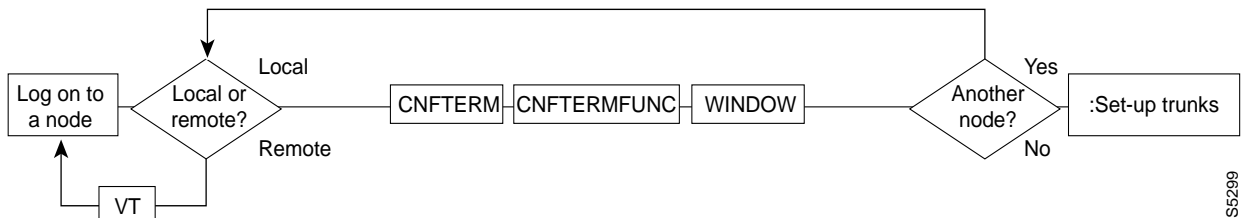
Figure 4-6   Remove a node from the network

Log on to a node → Local or remote? → (Local) DELTRK (see chapter 4 for more information) → Another node? → (Yes) / (No) End

Remote → VT → Log on to a node
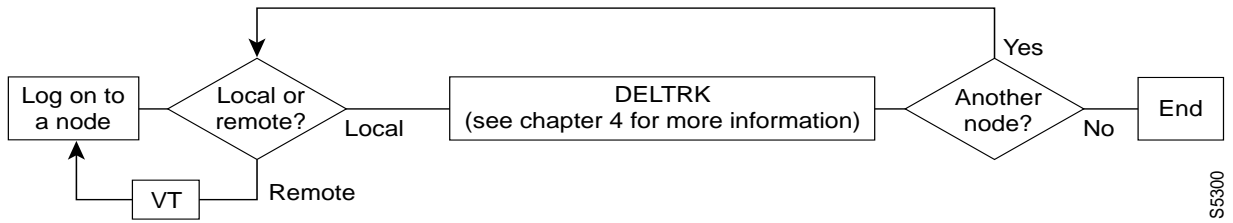
S5300

Figure 4-7   Add an interface shelf to the network

Log on to a node → Local or remote? → (Local) ADDSHELF → Another node? → (Yes) / (No) End

Remote → VT → Log on to a node
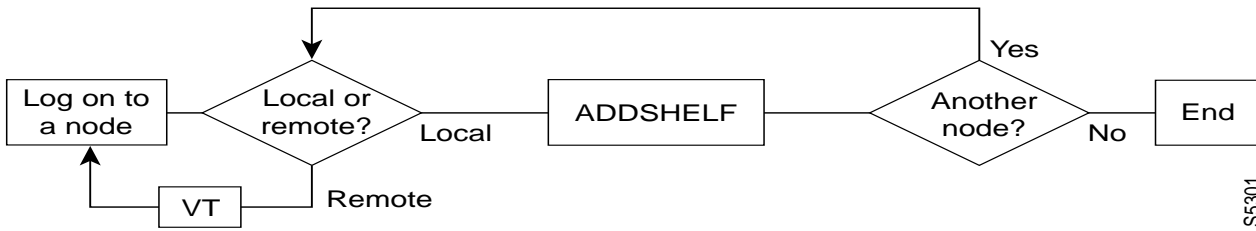
S5301

Summary of Commands

The following list shows the full command name and starting page for the description of each node command.

Mnemonic	Description	Page
addalmslot	Add an alarm slot	4-9
addshelf	Add a trunk between the hub node and access shelf.	4-11
addyred	Add Y-cable redundancy	4-13
cnfasm	Configure ASM card	4-15
cnffunc	Configure system function	4-17
cnfname	Configure node name	4-20
cnfprt	Configure printing functions	4-22
cnfterm	Configure terminal port	4-24
cnftermfunc	Configure terminal port functions	4-26
cnftmzn	Configure time zone	4-29
delalmslot	Delete alarm slot	4-31
delshelf	Delete a trunk between a hub node and access shelf	4-33
delyred	Delete Y-cable redundancy	4-35
dspasm	Display ASM card configuration	4-36
dspcd	Display card	4-38
dspcds	Display cards	4-40
dsplancnf	Display LAN configuration	4-42
dsplmistats	Display LMI Statistics	4-44
dspnds	Display nodes	4-46
dspnode	Display summary information about interface shelves	4-48
dsptermcnf	Display terminal configuration	4-50
dsptermfunc	Display terminal port configuration	4-52
dspprtcnf	Display print configuration	4-54
dsppwr		4-56
dspyred	Display Y-cable redundancy	4-58
prtyred	Print Y-cable redundancy	4-60
upcd	Up card	4-62
window	Window to external device	4-64

addalmslot

Enables the MAJOR and MINOR alarm indicators on an Alarm Relay Card (ARC) or Alarm Relay Module (ARM) front card. It also configures the slot to provide external alarms from the Alarm Relay Interface (ARI) back card. This command should be used at each node equipped to provide external alarm indications to the customer alarm reporting system. The slot specified for the ARC or ARM may be any shelf slot but is usually the slot farthest to the right.

Upon command execution, the system places the alarm card set in the active state and displays the current alarm status.

Full Name

Add alarm slot.

Syntax

addalmslot <slot number>

Related Commands

delalmslot, dspalms

Attributes

Privilege	1–4
Jobs	NO
Log	Yes
Node	IPX, IGX
Lock	Yes

Example 1

addalmslot 16

Description

Enable alarm reporting from slot 16 in a node. (The system then displays alarm status.)

System Response

```
beta            TRM   YourID:1        IPX 32    8.2       Mar. 3 1996 14:27 MST

Alarm summary   (Configured alarm slots: 16)
Connections Failed:       None
Groups Failed:            None
PLN Alarms:               1 Major
CLN Alarms:               None
Cards Failed:             1
Missing Cards:            None
Remote Node Alarms:       1 Major
Remote Domain Alarms:     None



Last Command: addalmslot 16


Next Command:
```

Table 4-1   addalmslot – Parameters

Parameter	Description
slot number	Specifies the slot number of the alarm card set to activate.

addshelf

Adds a trunk between a BPX hub node and an interface shelf in a tiered network. The trunk for an interface shelf must be "added" to the network before it can be used for traffic. Before a trunk can be added to the network, the line must be activated (or "upped") on both the interface shelf and the hub node with the **uptrk** command.

The interface shelf can be either an MGX 8220 shelf or an IPX configured as an interface shelf (IPX/AF). If the interface shelf is an IPX, it must be configured as an interface shelf by Cisco before you add it with **addshelf**. If the interface shelf is an MGX 8220 shelf, it must also already be established in the system through MGX 8220-specific commands. See the MGX 8220 reference documentation for the procedures.

Interface shelves take only frame relay input on the circuit side and drive one ATM T3 trunk with an interworking connection type (ATFR) on the trunk side. Each IPX/AF or MGX 8220 shelf has one T3 trunk connected to an BPX serving as an access hub. Each access hub can support up to 16 T3 trunks to the interface shelves. Attempting to add more than 16 shelves to a hub triggers an error message.

The **addshelf** command requires that the trunk configuration include STI header format and BPX Addressing Mode (BAM) mode. A trunk must be free of major alarms before it can be added.

Full Name

Add a feeder shelf.

Syntax

addshelf <trunk> <shelf-type> <vpi> <vci>

Related Commands

delshelf, dspnode, dsptrk

Attributes

Privilege	1–4
Jobs	Yes
Log	Yes
Node	BPX
Lock	No

Example 1

addshelf

Description

Add trunk 11.1 as an MGX 8220 shelf. After the addition, the screen displays confirmation of the addition and shows the name of the shelf. The example already shows the name of the MGX 8220 shelf at trunk 11.2 is A242.

System Response

```
nmsbpx23        TN    SuperUser      BPX 15   8.2   Aug. 16 1996 13:28 PST

                        BPX Interface Shelf Information

Trunk    Name      Type      Alarm
 1.3     AXIS240   AXIS      OK
11.2     A242      AXIS      OK










This Command: addshelf 11.1


Enter Interface Shelf Type: I (IPX), A (AXIS)
```

Table 4-2   addshelf - Parameters

Parameter	Description
trunk	Specifies the slot and port number of the trunk.
shelf type	Specifies the type of interface shelf. I = IPX/AF. A = AXIS.
vpi vci	Specifies the vpi and vci (Annex G vpi and vci used). For the MGX 8220 shelf only, the valid range for vpi is 5–14 and for vci is 16 –271. For an IPX/AF interface shelf, the valid range for both vpi and vci is 1–255.

addyred

Enables card redundancy for the IPX, IGX, and BPX cards. Use the **addyred** command to specify the slots of the primary and secondary (standby) cards that form the redundant pair. Refer to the section titled "Specifying Card Redundancy" at the beginning of this chapter for a list of supported card sets. Redundant card sets have the following characteristics:

- The primary and secondary card sets must be identical.

- Secondary card sets must not currently be active.

- Neither the primary nor secondary card set may already be part of a redundant set.

- Redundancy applies to the entire card and not specific trunks or lines.

In both the single and multi-port card sets, if the secondary card set becomes active, the primary card set serves as its backup (assuming the primary card set is complete and not failed). The **addyred** command can be used even if the primary and secondary slots are empty. If cards reside in the primary and secondary slots, the system checks for card compatibility. Two types of incompatibility can occur: back card and jumper or cable inconsistencies. (On SDI, FRI, and FTI cards, jumpers determine whether a port is configured as DCE or DTE. On LDI cards, either a DCE or DTE adapter cable connects to the LDI port. For descriptions of the jumper positions and cabling, see the *IPX Installation Manual* or the *IGX Installation Manual*.)

If incompatibilities exist, the message "Y-Cable Conflict" appears on the screen. Specific conflicts are listed in reverse video in the **dspyred** display. See the **dspyred** description for more information.

Full Name
Add Y-cable redundancy.

Syntax
addyred <primary slot> <secondary slot>

Related Commands
delyred, dspyred, prtyred

Attributes

Privilege	1–4
Jobs	No
Log	Yes
Node	IPX, IGX, BPX
Lock	Yes

Example 1
addyred 25 26

Description

Add Y-cable redundancy to the SDP/SDI card sets in slots 25 and 26.

System Response

```
beta            TRM   YourID:1         IPX 32    8.2    Mar. 15 1996 14:27 MST

      Slot Other Front  Back    Channel Configuration
Slot Type Slot  Card   Card    1    2    3    4    5    6    7    8
25   Pri  26    SDP    RS232   DCE  DCE  DCE  DCE
26   Sec  25    SDP    RS232   DCE  DCE  DCE  DCE




      Last Command: addyred 25 26


      Next Command:
```

Table 4-3   addyred – Parameters

Parameter	Description
primary slot	Specifies the slot number of the primary card set.
secondary slot	Specifies the slot number of the secondary card set.

cnfasm

Allows the user to set various configurable parameters associated with the BPX Alarm and Status Monitor card in slot 15. Since this card is always in slot 15, entering the slot number is unnecessary.

Full Name
Configure ASM card

Syntax
cnfasm

Related Commands
dspasm

Attributes

Privilege	1
Jobs	Yes
Log	Yes
Node	BPX
Lock	Yes

Example 1
cnfasm

Description
Configure parameters for the ASM card.

System Response

```
D1.jea          TRM   SuperUser      BPX 15  8.2   Mar. 30 1996 12:25 GMT

[1] Cabinet temp threshold:      50 C [4] Polling interval (msec):    10000
[2] Power A deviation:            6 V [5] Fan threshold (RPM):         2000
[3] Power B deviation:            6 V


                    ALM                                        ALM
[6]  ACO button      -              [14] BPX card slot    -
[7]  History button  -              [15] PSU A failure    Y
[8]  Cabinet temp    Y              [16] PSU A removed    Y
[9]  Power A volt     Y              [17] PSU B failure    Y
[10] Power B volt     Y              [18] PSU B removed    Y
[11] Fan 1 RPM       Y
[12] Fan 2 RPM       Y
[13] Fan 3 RPM       Y


This Command: cnfasm


Which parameter do you wish to change:
```

cnffunc

Enables or disables a specified node function. Each function has an index number. By entering the command, the index parameter, and the letter "e" or "d," the function is either enabled or disabled.

Full Name
Configure system functions

Syntax
cnffunc <function_index> <e/d>

Related Commands
none

Attributes

Privilege	1–2
Jobs	Yes
Log	Yes
Node	IPX, IGX, BPX
Lock	Yes

Example 1
cnffunc 7 e

Description
Enables automatic card testing after card failure detection.

System Response

```
sw83          VT    SuperUser      IPX 16    8.2      May  20 1996 13:35 PST

Index Status    Function

1     Enabled   Automatic CLN/PLN Loopback Test on Local/Remote Alarms
2     Enabled   FDP Loopback button
3     Enabled   User Command Logging
4     Enabled   Automatic Card Reset on Hardware Error
5     Enabled   TXR Model D Download
6     Enabled   Card Error Record Wraparound
7     Disabled  Card Test After Failure
8     Enabled   Download From Remote StrataView
9     Enabled   Node-by-node Upgrade Compatibility
10    Disabled  Logging of conn events in local event log
11    Disabled  Logging of conn events in SV+ event log


This Command: cnffunc


Enter index:
```

Table 4-4   cnffunc – Index Parameters

Index	Function	Description	Default
1	Automatic CLN/TRK Loopback Test on Local/Remote Alarms	A remote end loopback is automatically set up on a failed circuit line or trunk. Used to check the health of the back card alarm detection circuitry.	**enabled**
2	FDP Loopback button	For IPX/IGX, enables loopback button on SDP card faceplate. (Disable it to prevent accidental operation by contact.)	**enabled**
3	User Command Logging	All commands entered by the user is entered in the system log when enabled. When disabled, system log does not become so large but there is no audit trail of operator commands kept.	**enabled**
4	Automatic Card Reset on Hardware Error	The controller card (BCC, NPC, or NPM) issues a hardware reset to card when firmware detects an error during normal operation. This allows the node to return a card to service after a firmware error.	**enabled**
5	TXR Model D Download	(Not used)	**enabled**
6	Card Error Record Wraparound	Allows the log entry for each card error to wrap for long entries. When disabled, only first ten failures are logged; others are discarded.	**enabled**
7	Card Test After Failure	Indicates card function selftests and background test should continue to be executed after a card has been declared as failing these tests.	**disabled**
8	Download from Remote StrataView Plus NMS	Allows a node to download Software images from a SV+ not directly connected to the node.	**disabled**
9	Node-by-node Upgrade Capability		**enabled**
10	Logging of connection events in local event log		**disabled**
11	Logging of connection events in SV+ event log		**disabled**

Table 4-5   cnffunc – Parameters

Parameter	Description
e/d	Enables or disables the previous functions.

cnfname

Specifies the name by which a node is known within the network. It may be changed at any time. The new node name is automatically distributed to the other nodes in the network. Node names are case sensitive. For example, an upper-case "A" is not considered to be the same as a lower-case "a". Duplicate names are not allowed in the same network. Node names may be configured from within a job sequence. If the node name is changed and the corresponding name in the job is not changed, the job will not function properly. In the following situations, the **cnfname** command cannot be executed:

- Another node is attempting to change the network topology by adding or deleting a trunk.

- Another node is notifying all nodes that it has been renamed. Another node is currently adding or deleting a channel connection in the network with the **addcon** or **delcon** commands.

- There is an unreachable node in the network.

- The name chosen is already being used for another node in the network.

Full Name
Configure node name

Syntax
cnfname <nodename>

Related Commands
cnfterm, cnfprt, and window

Attributes

Privilege	1
Jobs	No
Log	Yes
Node	IPX, IGX, BPX
Lock	Yes

Example 1
cnfname alpha

Description
Name is changed to alpha. The network topology screen displays indicating the new name. See the dspnw command for more information on the network topology screen.

System Response

```
alpha           TRM   YourID:1        IPX 16  8.2   Mar. 15 1996 12:02 PST


NodeName    Alarm  Packet Line        Packet Line        Packet Line
alpha              10- 7/beta         14- 13/beta
beta        MAJOR  7- 10/alpha        9- 10/gamma        13- 14/alpha
                   15- 15/gamma       20- 11/gamma
gamma       MAJOR  10- 9/beta         11- 20/beta        15- 15/beta




Last Command: cnfname alpha


Next Command:
```

cnfprt

Configures the printing function. To obtain local or remote printing at a node, a printer must connect to the AUX PORT. Also, the configuration must include the correct baud rate and printer type for the port. Use the **cnfterm** and **cnftermfunc** commands to do this.

The **cnfprt** and **cnftermfunc** commands interact. If the auxiliary port on the node is configured for either an External Device Window or the Network Management Log, a "local" printing configuration automatically changes to "no printing." Printing is not possible because the auxiliary port is being used for another purpose.

Establishing a virtual terminal connection with a node does not affect the printing location established for the node that initiates the virtual terminal connection. For example, if node *alpha* is configured so that all alpha information goes to a printer at node *beta* and if alpha establishes a virtual terminal connection with node *gamma*, the results of print commands entered on the *alpha* keyboard still print at *beta*. Furthermore, this occurs regardless of the printing location configured for node *gamma*.

Full Name

Configure printing functions

Syntax

cnfprt <mode> <remote node name>

Related Commands

cnfterm, dsptermfunc

Attributes

Privilege	1–6
Jobs	Yes
Log	Yes
Node	IPX, IGX, BPX
Lock	Yes

Example 1

cnfprt

Description

Change the configured printing.

System Response

```
alpha          TRM   YourID:1        IPX 16  8.2   Mar. 15 1996 13:17 PST


Printing Mode

Remote Printing at beta
Local Printing
No Printing








This Command: cnfprt


Select Local (l), Remote (r), or None (n):
```

Table 4-6   cnfprt – Parameters

Parameter	Description
mode	Specifies the printing mode. Enter "L" for local printing, "R" for remote printing, and 'n' for no printing.
remote node name	Specifies the remote node whose printer is used for print commands issued by a user who is physically logged on to this node. This option is only valid when remote printing has been selected. A remote node is one within the domain, but not the node where the command is entered.

cnfterm

Configures data transmission parameters for the control and auxiliary ports. The IPX, IGX, and BPX support two RS-232 serial ports on the upper bus expansion card. The top port is called the Control Terminal port. The lower port is called the Auxiliary Port (AUX). Parameters can vary with the equipment connected to the port. The control port may connect to a control terminal, a direct-dial modem, or an external RS-232 device. The auxiliary port may connect to either a printer or an external RS-232 device. Once the data transmission parameters have been set for a port, use the **cnftermfunc** command to specify the equipment attached to the port. The configuration parameters must match the equipment physically attached to the port.

Full Name
Configure terminal port

Syntax
cnfterm <a/c> <baud> <parity> <num_data_bits> <num_stop_bits>

Related Commands
cnfterm, cnfprt, and window

Attributes

Privilege	1–6
Jobs	No
Log	Yes
Node	IPX, IGX, BPX
Lock	Yes

Example 1
cnfterm

Description
Configure an auxiliary control port.

System Response

```
alpha           TRM   YourID:1        IPX 16  8.2    Mar. 15 1996 11:58 PST


Control port                          Auxiliary port

Baud Rate:          1200             Baud Rate:          9600

Parity:             None             Parity:             None
Number of Data Bits: 8               Number of Data Bits: 8
Number of Stop Bits: 1               Number of Stop Bits: 1
Output flow control: XON/XOFF        Output flow control: XON/XOFF
Input flow control:  XON/XOFF        Input flow control:  XON/XOFF
Use DTR signal:     Yes               DTR signal:         Yes




This Command: cnfterm


Select Control port (c) or Auxiliary port (a):
```

Table 4-7   cnfterrm – Parameters

Parameter	Description
a/c	Specifies a port, where a is the auxiliary port and c is the control port
baud rate	Specifies a baud rate. Valid baud rates are 1200, 2400, 4800, 9600, and 19200 bps
parity	Specifies parity checking for character transmission to and from the port. Valid parity choices are "E" for even parity, "O" for odd parity, and "N" for no parity
data bits	Specifies the number of bits to be sent for each transmitted character and the number of bits to be expected for each received character. A "7" indicates seven bits for each character; an "8" indicates eight bits for each character
stop bits	Specifies the number of stop bits to be sent with each transmitted character and the number of stop bits to be expected with each received character. A "1" indicates one stop bit with each character; a "2" indicates two stop bits with each character
output flow control	Specifies the output flow control. An "X" specifies XON/XOFF flow control; an "N" specifies no flow control
input flow control	Specifies input flow control. An "X" specifies XON/XOFF flow control; an "N" specifies no flow control
cts flow control	Configures cts flow control. An "X" specifies XON/XOFF flow control; an "N" specifies no flow control. This parameter should be turned off if working with modems on a BPX.
use DTR	Specifies whether the node requires DTR to be asserted to allow or maintain a login. A "Y" causes the node to require the presence of DTR before allowing a login. A "N" causes the node to ignore DTR entirely

cnftermfunc

Configures port functions for the IPX, IGX, or BPX control and auxiliary ports. The IPX and IGX support two RS-232 asynchronous serial ports on the SCC and SCM, respectively. The BPX supports two RS-232 asynchronous serial ports on the LMBCC. In all cases, the top port is the CONTROL TERMINAL port, and the lower port is the AUX PORT. Depending on the desired network configuration, the CONTROL TERMINAL port can connect to a control terminal, StrataView, a direct dial-in modem, or any external RS-232 device. The AUX PORT can connect to a printer, an auto-dial modem to call a control center, or any external RS-232 device.

The interface specified for the port must match the equipment physically attached to the port. The baud rate and other data transmission parameters for the port are set with the **cnfterm** command. If either port is configured as an external device window, enter the **window** command to begin a session with the external device.

If the auxiliary port is configured as an autodial modem, designate a "network ID" and a "phone number". Configuring the auxiliary port for an autodial modem enables the following to occur: When a change in alarm status happens anywhere in the network, the autodial modem attached to the auxiliary port dials the specified "phone number". If the call goes to the Cisco TAC, the alarm is logged under the specified "network ID". With this log, Cisco TAC engineers are automatically notified of any problems that occur on the network.

Full Name

Configure terminal port functions

Syntax

cnftermfunc <a/c> <index> [escape_string | (Network_ID Dial_String)]

Related Commands

cnfterm, cnfprt, dsptermfunc

Attributes

Privilege	1–6
Jobs	No
Log	Yes
Node	IPX, IGX, BPX
Lock	Yes

Example 1

cnftermfunc

Description

Configures an IPX, IGX, or BPX control or auxiliary port.

System Response

```
beta            TRM    YourID:1        IPX 32  8.2    Mar. 15 1996 14:46 MST


Control portAuxiliary port
1.VT100/StrataView1.Okidata 182 Printer
2.VT100        2.Okidata 182 Printer with LOG
3.External Device Window3.Alarm Message Collector
4.External Device Window
5.Autodial Modem
6.VT100




Last Command: cnftermfunc


Next Command:
```

```
Last Command: dsplancnf


Next Command:
```

Example 2

cnftermfunc   a TheCustomer   18007674479

Description

Configure an auxiliary port by issuing parameters. The port configuration screen appears with "Autodial Modem" highlighted to indicate that this interface has been chosen for the auxiliary port. When an alarm occurs on the network, the modem will dial 18007674479 to reach the Cisco TAC. The alarm will be logged on the TAC computer under the name "TheCustomer".

Table 4-8   cnftermfunc – Parameters

Parameter	Description
a	Specifies that the auxiliary port will be configured.
c	Specifies that the control port will be configured.

Table 4-9   **cnftermfunc – Index Parameters**

Index	Description
Control port	1.VT100/StrataView
	2.VT100
	3.External device window
Auxiliary port	1.Okidata 184 printer
	2.Okidata 184 printer with LOG
	3.Alarm message collector
	4.VT100
	5.Autodial modem
	6.VT100

Table 4-10   **cnftermfunc – Optional Parameters**

Parameter	Description
escape string	Specifies a string of 1 to 8 characters used to terminate a session with an external device. This parameter is valid only for "External Device Window" interfaces. The default escape string is "quit."
network id	Specifies a string of 1 to 12 characters used to identify the network during an autodial connection to the Cisco TAC. This parameter is valid only for "Autodial Modem" interfaces. Any alarm status change in the network is automatically logged at the TAC using this network ID. Contact the Cisco TAC for the ID to use.
dial string	Specifies the telephone number to be dialed when the network is reporting alarm status changes via the autodial modem. This parameter is valid only for "Autodial Modem" interfaces. The "phone number" can be up to 16 characters long and normally consists of digits and commas only. A comma is used to indicate that the autodial modem should pause two seconds before continuing to dial. For example, the number "9,4083700736" would cause the modem to dial a "9", pause two seconds, then dial the remaining digits. Contact the Cisco TAC for the number to use.

cnftmzn

Configures the time zone for the node. Configuring the time zone for a node ensures that the node's time is correct for the local area regardless of the node at which the network date and time are set. Once configured, the time zone for the node is saved in battery-backed memory. After a power failure, a node's date and time are restored if at least one other node in the network has the current time and date.

Full Name
Configure time zone

Syntax
cnftmzn <timezone | g+/- *hours*>

Related Commands
cnfdate

Attributes

Privilege	1
Jobs	Yes
Log	Yes
Node	IPX, IGX, BPX
Lock	Yes

Example
cnftmzn   pst

Description
Configures the time zone to Pacific Standard Time

System Response

```
alpha          TRM   YourID:1        IPX 16  8.2   Mar. 15 1996 13:19 PST
```

```
Last Command: cnftmzn pst


Next Command:
```

Table 4-11   cnflmzn – Parameters

Parameter	Description	
time zone	• gmt (or g)	Greenwich Mean Time
	• cst (or c)	Central Standard Time
	• est (or e)	Eastern Standard Time
	• mst (or m)	Mountain Standard Time
	• pst (or p)	Pacific Standard Time
	• yst (or y)	Yukon Standard Time
	• cdt	Central Daylight Savings Time
	• edt	Eastern Daylight Savings Time
	• mdt	Mountain Daylight Savings Time
	• pdt	Pacific Daylight Savings Time
	• ydt	Yukon Daylight Savings Time
hours from Greenwich Mean Time (GMT)	Specifies the difference in hours between local time and Greenwich Mean Time. The range is from -12 to +12 hours. Instead of entering the time zone, you can enter the hours from Greenwich Mean Time. For example, instead of entering pdt for Pacific Daylight Time, you could enter g-7, which is Greenwich Mean Time minus 7 hours.	

delalmslot

Disables the ARC (IPX) or ARM (IGX) alarm indicators and ARI external alarms. See the
addalmslot command for more information on ARC/ARM alarm relays and adding alarm slots.

Upon command execution, the system places the alarm card set in the standby state and displays the
current alarm status.

Full Name

Delete an alarm slot

Syntax

delalm <slot number>

Related Commands

addalmslot, dspalms

Attributes

Privilege	1–4
Jobs	No
Log	Yes
Node	IPX, IGX
Lock	Yes

Example 1

delalmslot 11

Description

Disable the alarm indicators on the ARM card set in slot 11. (The system subsequently displays
alarm status.)

System Response

```
pubsigx1       TN    SuperUser       IGX 32    8.2        July 16 1996 02:09 GMT

Alarm summary   (Configured alarm slots: None)
Connections Failed:        None
Groups Failed:             None
TRK Alarms:                None
Line Alarms:               None
Cards Failed:              None
Missing Cards:             None
Remote Node Alarms:        1 Minor
Remote Domain Alarms:      None

Routing Network Alarms:    None


                                        Cabinet Fan(s) Failed

FastPAD Node Alarms:       None

Last Command: delalmslot 11


Next Command:
```

Table 4-12   delamslot – Parameters

Parameter	Description
slot number	Specifies the slot number of the alarm card set to activate.

delshelf

Deletes an interface shelf from a tiered network. Trunks are specified as an IPX/AF or an MGX 8220 shelf. Normally, you should execute **delshelf** only on the BPX hub node. On an IPX, **delshelf** just lets you turn off LMI if the line to the BPX is not allowing communication. In contrast to **deltrk**, you can execute **delshelf** at any time if no connections terminate at the trunk.

Full Name

Delete an interface shelf.

Syntax

delshelf <trunk> | <shelf-name>

Related Commands

addshelf, dspnode

Attributes

Privilege	1
Jobs	Yes
Log	Yes
Node	IPX, IGX, BPX
Lock	Yes

Example 1

delshelf 4.1

Description

Delete shelf trunk 4.1 on an IPX/AF.

System Response

```
nmsbpx23        TN    SuperUser      BPX 15    8.2    Aug. 16 1996 13:26 PST

                         BPX Interface Shelf Information

Trunk     Name      Type      Alarm
 1.3      AXIS240   AXIS      OK
11.2      A242      AXIS      OK
```

```
Last Command: delshelf A241

Shelf has been deleted
Next Command:
```

Table 4-13   delshelf - parameters

Parameter	Description
trunk or name	Specifies the slot and port number or shelf name of the interface shelf.

delyred

This command disables the Y redundancy for the card set in the specified primary slot number. If the secondary card slot is being used as the active slot at the time you use the **delyred** command, the system attempts to switch back to the primary slot. The substitution takes place only if the primary slot card set is complete and the cards are in a Standby or a Standby-F state (not if they are Failed). See the **dspcds** description for information on card states. See the **addyred** and **dspyred** commands for more information on Y-cable redundancy.

Full Name

Delete Y-cable redundancy

Syntax

delyred <primary slot>

Related Commands

addyred, dspyred, prtyred

Attributes

Privilege	1–4
Jobs	No
Log	Yes
Node	IPX, IGX, BPX
Lock	Yes

Example

delyred 16

Description

Disable Y-cable redundancy at slot 16.

dspasm

Displays BPX node alarms that, when active, produce an external alarm output (relay closure). These alarms are associated with powering and cooling the node as well as a statistics count. For example, a minor alarm is generated when a fan speed drops below 2000 rpm. Since the single ASM card is always located in slot 15, no card slot need be entered for this command. The ASM alarms are configured with the **cnfasm** command (SuperUser level)

Full Name

Display ASM card

Syntax

dspasm

Related Commands

cnfasm

Attributes

Privilege   1

Jobs   No

Log   No

Node   BPX

Lock   Yes

Example

dspasm

Description

Display the ASM card parameters.

System Response

```
D1.jea          TRM   SuperUser     BPX 15   8.2    Mar. 30 1996 12:24 GMT

ASM Status:            Active         ASM Alarms
Statistics count:      7              Fan #1 RPM out of range
Statistics timeouts:   0              Fan #2 RPM out of range
Cabinet temperature:   21 C           Fan #3 RPM out of range
Power voltage A/B:     0.0 / 0.0 V

PSU  Ins Type Rev SerNum Failure
 A    N  N/A  N/A  N/A    N/A
 B    N  N/A  N/A  N/A    N/A

FAN    1    2    3
      0000 0000 0000 RPM




Last Command: dspasm


Next Command:
```

dspcd

Displays the status, revision, and serial number of a card. If a back card is present, its type, revision, serial number appear. Displayed information can vary with different card types.

Full Name
Display card

Syntax
dspcd <slot number>

Related Commands
dncd, dspcds, resetcd, upcd

Attributes

Privilege   1–6

Jobs   No

Log   No

Node   IPX, IGX, BPX

Lock   No

Example 1
dspcd   6

Description
Display status of the card in slot 6. The response shows a port capacity of 44, which is the maximum number of ports on a Port Concentrator Shelf. Therefore, the FRP in this case is an FRP-2.

System Response

```
minnow          TN    SuperUser      IPX 8    8.2      Aug. 13 1996 08:00 PST

Detailed Card Display for FRP in slot 6
(Global RAM: 4 Mbytes)
Status:         Standby              (Front Card Supports V.35, X.21)
Revision:       FA06                 (Front Card Supports Port Concentrator)
Serial Number:  165187               (Front Card Supports NNI, CLLM)
Port Capacity:  44                   (Front Card Supports ATFR/CGW)
Backplane Installed
Backcard Installed
  Type:         FRI-X21
  Revision:     P01
  Serial Number: 155558




Last Command: dspcd 6


Next Command:
```

Example 2
dspcd 6

Description
The card is the trunk version of the ALM. The "B" next to Revision shows the card set is the ALM/B

System Response

```
IGX32           TN    SuperUser      IGX 32   8.2 Nov. 12 1996 18:44 PST

Detailed Card Display for ALM in slot 6

Status:         Active
Revision:       B0310
Serial Number:  289417
Backplane Installed
Backcard Installed
  Type:         UAI-T3
  Revision:     HN
  Serial Number: 242007




Last Command: dspcd 6


Next Command:
```

dspcds

Displays the type, revision, and status of front and back cards. The "Status" field applies to the cards as a set. If lines or connections have been configured for a slot but no suitable card is present, the display shows the missing cards at the top of the screen. If a special backplane is present, or if a card was previously installed but has been removed, the display shows "reserved" for that item.

For an IPX 32 or IGX 32, the screen first displays the upper shelf and a "Continue?" prompt. Enter a "y" to see the cards in the lower shelf. To cause the display to show only the lower shelf, enter **dspcds** followed by the letter "l" (for lower shelf). For an IPX 8 or IGX 8, the information appears in only the left column. The status and update messages are as follows:

- Active   Card in use. No failures detected.

- Active—F   Card in use. Failure(s) detected.

- Active—T   Card active. Background test in progress.

- Active—F-T   Card active. Minor failures detected, background test in progress.

- Standby   Card idle. No failures.

- Standby—F   Card idle. Failure(s) detected.

- Standby—T   Card idle. Background test in progress.

- Standby—F-T   Card idle. Failure(s) detected, background test in progress.

- Failed   Card failed.

- Down   Card downed by user.

- Down—F   Card downed. Failure(s) detected.

- Down—T   Card downed. Failure(s) detected, background test in progress.

- Mismatch   Mismatch between front card and back card.

- Update *   Configuration RAM being updated from active control card.

- Locked*   Incompatible version of old software is being maintained for emergencies.

- Dnlding*   Downloading new system software from either the active controller card, an adjacent node, or StrataVIew Plus.

- Dnldr*   Looking to adjacent nodes or StrataView Plus for either software to load or other software needs you have not specifically requested.

In the preceding table, an asterisk (*) indicates an "additional" status for BCC, NPC, or NPM cards. "F" flag in the card status indicates that a non-terminal failure was detected. Cards with an "F" status are activated only when necessary (for example, when no other card of that type is available).

Full Name

Display cards

Syntax
dspcds [l]

Related Commands
dncd, dspcds, resetcd, upcd

Attributes

Privilege   1–6

Jobs   No

Log   No

Node   IPX, IGX, BPX

Lock   No

Example 1
dspcds

Description
Display status on all cards.

System Response

```
IGX32           TN    SuperUser      IGX 32   8.2 Nov. 12 1996 18:39 PST


   FrontCard  BackCard                      FrontCard  BackCard
   Type Rev Type     Rev Status            Type Rev Type      Rev Status
1  NPM   A0205             Active-T     9  Empty universal backplane
2  Empty reserved for NPM              10  Empty universal backplane
3  FRM   ESP FRI-T1   AC  Active       11  ALM   B0305UAI-T3   HN   Active
4  Empty universal backplane           12  Empty
5  Empty universal backplane           13  Empty universal backplane
6  ALM   B0310UAI-T3   HN  Active       14  BTM   BFF BTM-T3   P02  Standby
7  Empty universal backplane           15  Empty universal backplane
8  Empty universal backplane           16  CVM   AFF T1       AK   Active


Last Command: dspcds


Next Command:
```

Table 4-14   dspcds – Optional Parameters

Parameter	Description
l	Directs the system to display status of the cards on just the lower shelf.

dsplancnf

Displays the addresses and configuration for the LAN Ethernet. The description of the **cnflan** command has an explanation of the items that appear in the **dsplancnf** display.

Full Name

Display LAN interface configuration

Syntax

dsplancnf

Related Commands

cnflan

Attributes

Privilege	5
Jobs	No
Log	No
Node	IPX, IGX, BPX
Lock	No

Example 1

dsplancnf

Description

Display the LAN configuration for the current node.

System Response

```
sw81           TN    SuperUser     BPX 15   8.2      May  21 1996 10:51 PST

Active IP Address:                192.187.210.139
IP Subnet Mask:                   255.255.255.0
IP Service Port:                  5120
Default Gateway IP Address:       192.187.210.1
Maximum LAN Transmit Unit:        1500
Ethernet Address:                 00.C0.43.00.06.91

Type      State
LAN       READY
TCP       UNAVAIL
UDP       READY
Telnet    READY
TFTP      READY
TimeHdlr  READY
SNMP      READY

Last Command: dsplancnf


Next Command:
```

dsplmistats

Displays Annex G LMI statistics for the trunk that connects an IPX/AF interface shelf to the hub node. To execute this command from the IPX/AF, the user must telnet to the IPX/AF. This command can provide information to help analyze problems that may arise while setting up a tiered network.

Full Name

Display Annex G LMI statistics

Syntax

dsplmistats

Related Commands

Attributes

Privilege	1–6
Jobs	No
Log	No
Node	IPX/AF
Lock	No

Example 1

dsplmistats

Description

Display the LMI statistics for the trunk attached to the hub.

System Response

```
batman              SuperUser       IPX/AF    8.2       Jan. 30 1996 18:04 PST

              Annex G   LMI Statistics for slot:1 port:1
VPI.VCI:        0.0                      Lmi enabled         Lmi polling enabled
Invalid Pdu      Rx:          0          Status Polling Timer (T396)  :    10
Invalid Pdu Len  Rx:          0          Status Enquiry Timer (T393)  :    10
Unknown Pdu Type Rx:          0          Max Status Enquiry Retry (N394):    5
Unknown IE Type  Rx:          0          Update Status Timer (T394)   :    10
Bad Transaction  Rx:          0          Max Update Status Retry (N395) :    5
Status           Rx:       1384          Spc Polling Timer            :     3
Status Enq       Tx:       1384          Spc Retry Timer              :     0
Status Enq       Rx:       1384          Spc Retry Counter            :     1
Status           Tx:       1384          Node Status Retry Timer      :     0
Status Ack       Rx:          8          Node Status Retry Counter    :     0
Update Status    Tx:          8          Node Status Polling Timer    :     2
Update Status    Rx:          8
Status Ack       Tx:          8

Last Command: dsplmistats


Next Command:
```

Table 4-15   dspnds – Optional Parameters

Parameter	Description
domain number	Specifies the domain number (1 to 8) for which to display nodes. Only the nodes within the specified domain are displayed. If the number does not match a valid domain number, the message "No domain with this number" is displayed.

dspnds

Displays the name, type, and alarm status of all nodes within the domain of the node executing the command. The nodes are grouped per domain, with one domain per display. The remote node alarm status is provided only on a domain basis. Therefore, the user must virtual terminal (vt) to the remote node to get specific alarm information.

If a node is in alarm, its name is highlighted and the alarm type (major/minor), is displayed. A major alarm will be a flashing word. A junction node is identified with "Yes" printed under the Jct column.

Full Name
Display all nodes

Syntax
dspnds [+n | -p | -d | domain]

Related Commands
dspnw

Attributes

Privilege	1–6
Jobs	No
Log	No
Node	IPX, IGX, BPX
Lock	No

Example 1
dspnds

Description
Display the alarm status of all nodes within the domain.

System Response

```
alpha           TRM   YourID:1        IPX 16  8.2    Mar. 23 1996 09:42 PST

NodeName Alarm
alpha    MAJOR
beta     MAJOR
gamma    MAJOR




Last Command: dspnds


Next Command:
```

Table 4-16   dspnds – Optional Parameters

Parameter	Description
+n	The node number, which requires super user privilege to assign.
-p	Specifies that the display include the type of controller card in the node. The types are BCC, NPM, and so on.
-d	Specifies that the display include the type of node for each named node. The type is either IPX, IGX, or BPX.
domain number	Specifies the domain number (1 to 8) for which to display nodes. Only the nodes within the specified domain are displayed. If the number does not match a valid domain number, the message "No domain with this number" is displayed.

dspnode

Displays a summary of the interface shelves.

This command can isolate the shelf where an alarm has originated. The routing nodes in a network do not indicate the interface shelf where an alarm condition exists, so execute **dspnode** on a hub node to find out which interface shelf originated the alarm.

The first example shows a screen display with **dspnode** executed on a BPX. The second example shows a screen with **dspnode** executed on an IPX/AF. When executed on an IPX/AF, **dspnode** shows the name of the hub node and the trunk number. Note that to execute a command on an IPX/AF, you must either use an attached control terminal or telnet to the IPX/AF.

Full Name
Display interface shelves.

Syntax
dspnode

Related Commands
addshelf, delshelf, dsptrk

Attributes

Privilege   1–6

Jobs   No

Log   No

Node   IPX/AF, BPX

Lock   Yes

Example 1
dspnode

Description
Display information about the interface shelves (executed on the BPX hub node).

System Response

```
sw53            TN   SuperUser      BPX 15   8.2    July 21 1996 15:09 GMT

                         BPX Interface Shelf Information

Trunk     Name      Type       Alarm
 1.1      sw89      IPX/AF     OK
 1.2      SW93AXIS  AXIS       UNRCH
 1.3      SW77AXIS  AXIS       MAJ
 3.1      sw92      IPX/AF     OK
 3.2      sw91      IPX/AF     OK
 3.3      sw90      IPX/AF     OK
 4.1      sw24      IPX/AF     MIN
 4.3      sw25      IPX/AF     MIN




Last Command: dspnode


Next Command:
```

Example 2
dspnode

Description
Display information about the trunk to the hub node (executed on an IPX/AF).

System Response

```
sw24            TN   SuperUser      IPX 8    8.2    July 24 1996 10:59 GMT

                         BPX Switching Shelf Information

Trunk     Name      Type       Alarm
  8       sw53      BPX        MAJ









Last Command: dspnode


Next Command:
```

dsptermcnf

Displays the configuration for the control port and auxiliary port at a node. It includes all the asynchronous communications parameters that are specified using the **cnfterm** command.

Full Name

Display terminal port configurations

Syntax

dsptermcnf

Related Commands

cnfterm, cnftermfunc, dsptermfunc

Attributes

Privilege   1–6

Jobs   No

Log   No

Node   IPX, IGX, BPX

Lock   No

Example 1

dsptermcnf

Description

Display the terminal port configuration data.

System Response

```
batman          TN    SuperUser       BPX 15    8.2       Mar. 26 1996 02:55 PST


Control port                            Auxiliary port

Baud Rate:          9600                Baud Rate:          9600

Parity:             None                Parity:             None
Number of Data Bits: 8                  Number of Data Bits: 8
Number of Stop Bits: 1                  Number of Stop Bits: 1
Output flow control: XON/XOFF           Output flow control: XON/XOFF
Input flow control:  XON/XOFF           Input flow control:  XON/XOFF
CTS flow control:    No                 CTS flow control:    Yes
Use DTR signal:      Yes                Use DTR signal:      Yes




Last Command: dsptermcnf


Next Command:
```

dsptermfunc

Displays the port functions configured by the **cnftermfunc** command.

Full Name

Display terminal port functions

Syntax

dsptermfunc

Related Commands

cnfterm, cnftermfunc, dsptermcnf

Attributes

Privilege   1–6

Jobs   No

Log   No

Node   IPX, IGX, BPX

Lock   No

Example 1

dsptermfunc

Description

Display the terminal port configuration data.

System Response

```
swstorm        TN    SuperUser       BPX 15    8.2       Mar. 23 1996 09:42 PST


Control port                          Auxiliary port

1. VT100/StrataView                   1. Okidata 182 Printer
2. VT100                              2. Okidata 182 Printer with LOG
                                      3. VT100
                                      4. Alarm Message Collector
                                      5. External Device Window
                                      6. Autodial Modem




Last Command: dsptermfunc


Next Command:
```

dspprtcnf

Displays printing configuration for the node. The three printing modes, 'remote', 'local' and 'no' are listed and the currently selected mode is highlighted. If remote printing is selected, the node name where the remote printer is located also appears. If this node name is flashing, the node is unreachable.

The **dspprtcnf** command displays the current print configuration for the domain where the command is entered. Printing cannot occur across a junction node. Each domain must be configured with a printer for this feature to print whenever needed.

Remote mode indicates that the log for the node prints on the printer at the listed remote node. Local mode indicates that the log for the node prints on the node's printer. No printing mode indicates that the log for the node does not print.

Full Name
Display print configuration

Syntax
dspprtcnf

Related Commands
cnfprt

Attributes

Privilege	1–6
Jobs	No
Log	No
Node	IPX, IGX, BPX
Lock	No

Example 1
dspprtcnf

Description
Display the print configuration. The example does not show the highlighted field.

System Response

```
sw83            TN    SuperUser        IPX 16    8.2        Mar. 22 1996 16:02 PST


Printing Mode

Remote Printing
Local Printing
No Printing







Last Command: dspprtcnf


Next Command:
```

dsppwr

Displays the current status of the power supply monitor, the current power supply configuration (which may consist of from one to four power supplies depending on node requirements), and the current cabinet temperature.

On the right side of the screen is displayed the internal cabinet temperature in degrees Centigrade and Fahrenheit. The temperature is displayed as a thermometer and the exact temperature appears at the top of the thermometer.

Full Name

Display power supply status

Syntax

dsppwr

Related Commands

dspcd, dspcds

Attributes

Privilege	1–6
Jobs	No
Log	No
Node	IPX, IGX, BPX
Lock	No

Example 1

dsppwr

Description

Display power supply status.

System Response

```
sw81            TN   SuperUser     BPX 15   8.2       May  21 1996 13:13 PST

            Power Status                                Cabinet Temperature

ASM Status: Active                                     22         71

Power voltage A/B:      0 / 49 V                    C  60  |  |  140   F
                                                   e      |  |        a
PSU  Ins Type Rev SerNum Failure                   n  50  |--|  122   h
 A    N  N/A  N/A  N/A    N/A                       t      |  |        r
 B    Y  240V 0C 29959   None                      i  40  |  |  104   e
                                                   g      |  |        n
            Fan Status                             r  30  |  |  86    h
                                                   a      |  |        e
     FAN   1    2    3                             d  20  |  |  68    i
          3300 3360 3240 RPM                       e       `--'       t


Last Command: dsppwr


Next Command:
```

dspyred

Displays information for Y-cable pairings. A single slot can be specified, or all pairings are displayed when no slot is specified. Slot numbers appearing in high intensity indicate active card status. Front card, back card, and channel configuration conflicts appear in reverse video. A conflict occurs when the port interfaces are different for corresponding ports in a redundant slot pair. The output display contains the following information:

- First column (Slot) designates the slot of the displayed card.

- Second column (Slot Type) designates its status, Pri (primary) or Sec (secondary).

- Third column (Other Slot) designates the slot number of the associated Y-redundant card.

- Fourth column (Front Card) designates the type of card in the front slot.

- Fifth column (Back Card) designates the type of card in the back slot.

Remaining columns (Channel Configuration) describe the channel configurations when appropriate.

Full Name
Display Y-cable redundancy

Syntax
dspyred [slot]

Related Commands
addyred, delyred, prtyred

Attributes

Privilege	1–4
Jobs	No
Log	No
Node	IPX, IGX, BPX
Lock	No

Example 1
dspyred

Description
Display Y-redundancy for all cards.

System Response

```
beta            TRM   YourID:1        IPX 32    8.2    Mar. 15 1996 14:28 MST

     Slot Other Front  Back   Channel Configuration
Slot Type Slot  Card   Card   1    2    3    4    5    6    7    8
25   Pri  26    SDP    RS232  DCE  DCE  DCE  DCE
26   Sec  25    SDP    RS232  DCE  DCE  DCE  DCE




Last Command: dspyred


Next Command:
```

prtyred

Prints the Y-cable redundancy configuration for an SDP, LDP, CDP, FRP, FTC, NTC or AIT card on an IPX. On an IGX, the cards are the HDM, LDM, CVM, FRM, FTM, NTM and BTM. On a BPX, the applicable cards are the BCC, ASI, and BNI. This command uses the same syntax and prints the same information as the **dspyred** command. See the **dspyred** command for details on the format of the command output.

Full Name

Print the Y-cable redundancy

Syntax

prtyred <start slot>

Related Commands

dspyred, addyred, delyred

Attributes

Privilege	1–6
Jobs	No
Log	No
Node	IPX, IGX, BPX
Lock	Yes

Example 1

prtyred

Description

Print Y-redundancy for all cards (no starting slot entered).

System Response

```
beta            TRM   YourID:1        IPX 32    8.2    Mar. 15 1996 14:28 MST

     Slot Other Front  Back    Channel Configuration
Slot Type Slot  Card   Card    1     2     3     4    5    6    7    8
25   Pri  26    SDP    RS232   DCE   DCE   DCE   DCE
26   Sec  25    SDP    RS232   DCE   DCE   DCE   DCE




Last Command: prtyred


Next Command:
```

upcd

Activates a card you have downed with the **dncd** command. (The If a slot contains a complete card set, both the front and back card are upped. After a card set is upped, it is available as a node resource. When you activate a card, it comes up in either the *standby* or *active* state. The initial state depends on whether the network is ready to use the card immediately.

Full Name

Up card

Syntax

upcd <slot>

Related Commands

dncd, dspcds

Attributes

Privilege	1–
Jobs	Yes
Log	Yes
Node	IPX, IGX, BPX
Lock	Yes

Example 1

upcd 10

Description

Activate the card in slot 10. After you activate the NTC in slot 10, its status is "Standby."

System Response

```
pubsipx1        VT     SuperUser       IPX 16    8.2 Dec. 30 1996 21:15 GMT



    FrontCard  BackCard                        FrontCard  BackCard
    Type  Rev  Type     Rev  Status            Type  Rev  Type      Rev  Status
1   NPC   ABC                 Standby      9  Empty
2   NPC   ABC                 Active      10  NTC   ESC  E1        P06  Standby-F
3   SDP   CBC  V35      AF   Standby      11  Empty
4   Empty                                 12  Empty
5   FRP   DFR  FRI-V35  AA   Active       13  CDP   ABE  T1        P06  Standby-T
6   LDP   CC03 232-4    AC   Standby      14  Empty
7   Empty universal backplane            15  NTC   EC02 Empty          Unavail
8   AIT   BBF  AIT-T3   AD   Active       16  Empty


Last Command: upcd 10


Next Command:
```

Table 4-17   upcd – Parameters

Parameter	Description
slot	Specifies the card slot number of the card

window

Provides an interface to an external device. To establish a session with an external device, first use the **cnftermfunc** command to designate the port to serve as the external device window. To begin the session, enter the **window** command and specify the port. The control terminal screen subsequently clears, after which characters entered at the control terminal go to the external device and vice versa.

Because the IPX/IGX/BPX "bundles" characters together before transmitting them, a slight transfer delay occurs. Transfers are delayed until the transfer buffer is filled or the keyboard is inactive for over 50 milliseconds. To end the session, enter the escape sequence designated with the **cnftermfunc** command. The default for the escape sequence is ^^ (SHIFT 66).

The **window** command can be executed over a virtual terminal connection. This makes it possible to control all external devices from a single point in the network.

Full Name
Window to external device

Syntax
window <a/c>

Related Commands
cnfterm, cnftermfunc

Attributes

Privilege	1–4
Jobs	No
Log	No
Node	IPX, IGX, BPX
Lock	Yes

Example 1
window a

Description
Connect to a local router attached to the auxiliary port. The following dialogue shows the prompts and example responses.

System Response

```
Protocol [ip]:

Target IP address:  192.9.202.1

Repeat count [5]:
Datagram size [100]:

Timeout in seconds [2]:


Extended commands [n]::

Type escape sequence to abort. ^^

Sending 5, 100-byte ICMP Echoes to 192.9.202.1, timeout is 2 seconds:

.......


Success rate is 100 percent

left #
```

Table 4-18   window – Parameters

Parameter	Description
a	Specifies a window into external equipment attached to the node's auxiliary port. This is the default connection.
c	Specifies a window into external equipment attached to the node's control port.