



## Introduction

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This chapter describes the command line interface (CLI) for the MGX 8950, MGX 8850 Release 4, and MGX 8830 switches. For basic descriptions of how to configure a switch and various networking features, refer to the *Cisco MGX 8850 and MGX 8950 Switch Software Configuration Guide*, Release 4.

The chapter describes the following items:

- The role of the CLI on the switch
- The information contained in the CLI prompt
- The command syntax
- Contents of a command description
- Identification of the models of the ATM Switching Service Module (AXSM)
- A logical port in the context of the Public Network-to-Network (PNNI) protocol
- A logical port in the context of AXSM configuration
- Tables that list commands by functional areas, such as node-level parameters, PNNI signaling commands, card-level redundancy commands, and so on



**Note**

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“PXM45” refers to the PXM45/A, PXM45/B, and PXM45/C unless otherwise indicated.

Also, in most descriptions, “PXM” refers to the PXM45 and the PXM1E.

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## The Role of the CLI

During initial switch installation, troubleshooting, or where low-level control is important, the command line interface (CLI) provides the best access to the switch. (During normal operation, the tools for controlling a switch are the CiscoView application for equipment management and the Cisco WAN Manager application for connection management.) Each PXM or service module supports its own CLI. The Service Resource Modules (SRM) and XM60 switch fabric cards are controlled by the PXM and do not have a CLI of their own. The available command set also depends on the following:

- The privilege level of the user, such that a lower level user does not see higher-level commands
- The card state—active, standby, or init.

Each model of PXM and each service module have a set of commands specific to the card-type, yet many commands overlap. This reference describes commands as they run only on the PXM—even if certain commands also run on an AXSM, for example.

Although you can run a command on only the card that supports that command, the *target* of the command can be another card when you are “on” an active PXM. (Being “on” a card means you are using the CLI of that card.) On the PXM, you can use commands that target the following items:

- The entire switch
- The active or standby PXM
- XM60 (in an MGX 8950 switch)
- Service Resource Module (SRM)
- A service module

To move from the CLI of one card to the CLI of another card, use the change card (**cc**) command.

## Command Line Prompt

The format of the CLI prompt is:

```
name.slot number.card type.card state >
```

where:

- *name* is the name of the node (“Unknown” until a you assign name with the **cnfname** command).
- *slot number* is the slot of the front card.
- *card type* identifies the Processor Switching Module 45 (PXM45) or a service module type, such as the AXSM.
- *card state* is “i” for initialized, “a” for active, or “s” for standby. The Attributes section in each command description shows the valid card state or states fore the command.
  - A card in the initialized state (i) is still loading application modules.
  - A card in the active (a) state either is fully configured and ready to carry out its function or is already performing its function with live traffic.
  - Typically, a card goes into the standby (s) state when it first powers up and boots or when you execute a command that puts it in the standby state. For example, the commands for a graceful upgrade of firmware on a pair of PXMs put the active card in the standby state and the standby card in the active state (see **loadrev** description for details).

A card in the init state has additional letters (a, s, or f) that indicate the role of the card, as follows:

- PXM.ia> means the card in the init state has the active card role
- PXM.is> means the card in the init state has the standby card role
- PXM.if> means the card is in the init state and has failed

In the course of PXM initialization, the PXM passes through a series of readiness states, one of which is the init state. In this state, the PXM is not ready and can run only a subset of the full command set. Most commands in the init state are intended to help you determine the condition of the PXM and do not support run state operation.

An example of a CLI prompt is:

```
MGX8850.7.PXM45.a >
```

The preceding prompt shows that the

- Name of the node is “MGX8850.”
- Slot number is 7.

- Card type is PXM45.
- Card state is active.

## Command Syntax

This section contains the following syntax topics:

- Notation
- Position-dependent parameters
- Keyword-driven parameters
- Logical port format
- Command entry

### Notation

The notation for command and argument parameters follows:

- Commands and their parameters are separated by a space.
- Variables appear in *italics*.
- Commands, keywords, and literal strings (such as “yes”) appear in **bold**.
- Required arguments appear within left and right arrowheads (“< >”).
- Optional parameters appear within square brackets (“[ ]”).
- A vertical bar ( | ) represents the logical OR function.

### Position-Dependent and Keyword-Driven Parameters

A command can include parameters that are *keyword-driven* or *position-dependent*.

For position-dependent parameters, you must type parameters in the order they appear in the syntax description or on-line help. To create a logical port, for example, the position-dependent syntax is:

```
addport <ifNum> <bay.line> <guaranteedRate> <maxrate> <sctID> <ifType> [vpi]
```

For a keyword-driven parameter, a keyword precedes the variable. The keyword is preceded by a dash and followed by the parameter (**-timeout** <secs>, for example). The order you enter keyword-driven parameters does not matter—although any preceding or succeeding, position-dependent parameters must appear as they do in the command syntax description.

The function of the command in the following example is to delete more than one connection at a time. The mandatory, position-dependent connection identifier consist of a logical port (*ifNum*) and the VPI and VCI of the first connection to delete. After the connection identifier, the line shows two optional, keyword-driven parameters. These keyword-driven parameters can be in any order as long as they appear after the position-dependent parameters.

```
delcons <ifNum> <vpi> <vci> [-num <num. conns to del>] [-verbose < 1 | 0 >]
```

## Command Entry

When you enter a command, you must type all intended arguments before you press the Return or Enter key in nearly every case. Exceptions to this rule are rare and are indicated in the command description.

If you press the Return key or Enter key with incorrect parameters or no parameters (if the command requires parameters), a message displays the syntax and parameter ranges. The returned message may also suggest what the problem is. For example, the message may warn of too few parameters. No error messages or warnings appear until you complete the command.

## Contents of a Command Description

Each command description contains:

- An introductory paragraph that explains the function of the command. Additional paragraphs elaborate on the functionality as needed.
- A list of cards on the CLI of which you can execute the command.
- The syntax of the command. This manual presents parameters in a column to make them easier to read, particularly when displayed through an electronic medium.
- A syntax description lists all the parameters. Each item in the list includes a brief definition, functional details when appropriate, the range of values for the parameter, and an applicable default value.

Note that, in many instances, the default value is not merely a basic starting value but rather the most desirable or commonly used value.

- Occasionally, the description includes a Usage Guidelines section when the complexity of the command warrants it. The Usage Guidelines section contains important details about using the command. When needed, an additional section with a specialized focus may appear. An example is the Version Numbering description for the firmware upgrade commands (see **loadrev**, for example).
- An Attributes section lists the following details:
  - Whether the switch logs each instance of command execution. Typically, the switch logs each configuration change but no display commands.
  - The state of the card required to execute a command. The state can be active, standby, initialized (infrequently), or any of these states.
- A Related Commands lists other commands in the typical grouping of commands (add, delete, configure, and display) or other commands that could complement the command.
- An Example section shows one or more examples of command usage. The text for this section describes the intention of the command and may also describe an outcome. A representation of screen output usually appears. Occasionally, supplemental commands and screen samples appear in support of the example.

# Identifying Physical and Logical Elements

The Private Network-to-Network Interface (PNNI) control protocol on the PXM, the AXSM card types, and the narrowband service modules (NBSMs) under the control of the PXM1E use different formats to identify the same elements. This section describes the format of these elements in the PXM and service module contexts and how they correspond to each other. For narrowband service module (NBSM) formats, (an AUSM or VISM, for example), see the specific manual for individual cards. When you configure or view items on the CLIs of different cards, you often need to specify it for PNNI on a PXM as well as the service module. For example, when you configure a PNNI port on the CLI of the PXM, you also must configure a port on the CLI of the service module. (In contrast, when you configure a port on a service module, PNNI automatically configures the port on the PNNI side.) Furthermore, you can display a connection on a service module or on a PXM but with a slightly different viewpoint presented by each CLI. For specific examples of these parallel actions, see the applicable description in this manual (**dspon** descriptions, for example), the *Cisco MGX 8850 and MGX 8950 Software Configuration Guide*, Release 4, or the configuration guide for the PXM1E.

**Note**

Apart from the way PNNI and the lower levels of logic identify the same element, the issue of configuration sequence needs explanation. When you configure logical ports—for just one example—you must complete certain tasks on the service module CLI both before and after related PNNI tasks on the PXM. This manual describes prerequisites for certain commands, but you should also refer to the appropriate software configuration guide many examples of command sequences.

## VSI Slave Format

The items you identify for addressing purposes on a service module or PXM1E UNI/NNI are as follows:

- Slot
- Bay
- Line
- Logical port

A logical port on a user or network interface (and its CLI) always uses the label *ifNum*. For a UNI or NNI interface, a one-to-one correspondence exists between a logical port and a physical line. For virtual trunks, you can configure multiple ports for a line.

Note that, the maximum number of logical ports on an AXSM is 60 regardless of the number of AXSM back cards. The range of logical ports (*ifNum*) is 1–60 for the AXSM and 1–32 for the AXSM-E regardless of whether the interface type is UNI, NNI, or VNNI.

## PXM1E Format

This section describes the PNNI *physical* port identifier and its equivalent in the form of the PNNI *logical* port identifier.

### Physical Port Identifier

On the PXM1E, the PNNI physical port identifier has one format for the network interface (UNI/NNI) back card and a slightly different format for the NBSMs. In relation to the UNI/NNI back card, the PXM1E has a dual role. It controls both the master and the slave side of the Virtual Switch Interface

(VSI). On the master side, the port ID has the format described in the forthcoming section, “[PNNI Format](#).” On the slave side, the format identifies items on the UNI/NNI back card only. (For the slave side of the NBSMs, you can address items on the CLI of the NBSM itself.)

The items you identify on the PXM1E network interface card for addressing purposes has the format *slot:subslot.port:subport* and consists of the following:

- Slot number
- Bay number
- Line number
- Logical port number

On an NBSM, the physical port ID as it appears in the PXM1E is *slot.port* and consists of the following:

- Slot number
- Line number

A logical port on a VSI slave—whether an AXSM or UNI/NNI back card—always uses the label *ifNum*. For a UNI and NNI interface, a one-to-one correspondence exists between a logical port and a physical line. For virtual trunks, you can configure multiple ports for a line.

The maximum number of logical ports on the UNI/NNI back card is 31 regardless of the line type or whether the interface type is UNI, NNI, or VNNI.

## PNNI Format

This section describes the physical port identifier and the equivalent logical port identifier.

### PNNI Physical Port Identifier

The PNNI controller identifies a *physical* port in one of two, similar formats. The format depends on whether the service module is broadband or narrowband. For a broadband interface—whether the interface is controlled by a PXM45 or a PXM1E—the format is as follows:

*[shelf.]slot:subslot.port:subport*

For a narrowband interface, the format is as follows:

*[shelf.]slot.port*

The PNNI physical *port identifier* (physical port ID) includes a series of mandatory elements. Note the period or colon associated with each element inside the square brackets. The elements of the physical port ID on a PXM45 or PXM1E (for UNI/NNI back card) are as follows:

- The *shelf* is always 1 for the current product and is usually omitted.
- The *slot* number of the front card.
- *Subslot* is the number of the bay in which the back card resides. This number is 1 or 2.
- *Port* is the physical line.
- *Subport* corresponds to the logical port on an AXSM, PXM1E UNI/NNI back card. For a UNI or NNI, the subport is the same number as the logical port number (on the AXSM for example, the parameter name is *ifNum*). For a virtual network-to-network interface (VNNI), these numbers do not directly correspond to each other.

In addition to variations in the format of port ID, certain values in the PNNI physical port identifier can vary according to the PXM model and the chassis in which it resides, as follows:

- On a PXM45 for a broadband service: *slot:subslot.port:subport*
- On a PXM1E for UNI/NNI back card: *slot:subslot.port:subport*. On the UNI/NNI back card, the subslot is always 2, but the *slot* depends on the chassis, as follows:
  - In an MGX 8850 chassis, *slot* is always the logical slot 7.
  - In an MGX 8830 chassis, *slot* is always the logical slot 1.
- On a PXM1E for a narrowband service module (NBSM): *slot.port*.

## PNNI Logical Port Identifier

For each physical port number, PNNI also generates a *logical* port number that is an equivalent of the physical port number. The logical port number appears as an unformatted numerical string. For example, a physical port ID could be 1:1.2:2, and the logical port number would be 16848898. The applicable descriptions of the PNNI commands indicate when this logical port number is required and how to obtain it. For the correspondence between a PNNI physical port and the port identifier on an AXSM or PXM1E UNI/NNI back card, see [Table 1-1](#).

**Table 1-1 Mapping PNNI Port ID to AXSM Elements**

PNNI port	AXSM or PXM1E UNI/NNI Back Card
Shelf	N/A
Slot	Slot
Subslot	Bay (for upper or lower back card)
Port	Line
Subport	Logical interface ( <i>or port</i> )

As [Table 1-1](#) shows, a “port” from the PNNI side is a “line” on a network interface (VSI slave), and a “subport” from the PNNI side is a logical interface (or logical port) on a network interface. An example of a PNNI physical port identifier is 1:2.1:1. This *portid* corresponds to an AXSM with the following particulars:

Slot 1

Bay 2

Line 1

Logical interface 1 (or logical port 1)

## Command Lists by Functional Group

The sections that follow contain tables of commands that fall into particular functional groups. Some commands appear in more than one table because they can be viewed as multi-functional.

## User Session Commands

The user session commands are a collection of commands that relate to the user accounts and to general tasks within the CLI context itself. This category includes the following types of operations:

- Adding, deleting, or modifying user accounts
- Changing passwords
- Clearing the screen
- Changing the amount of idle time in a user session before the switch terminates the session
- Listing, moving, or deleting files on the hard drive that resides on the PXM
- Specifying a login message to appear when *any* user logs into the switch
- Exiting the user session, displaying all users currently logged into the switch, or all user accounts that exist on the switch
- Requesting help for a command (in actuality, a list of parameters and ranges where appropriate)
- Listing recent commands and the option to repeat a command

**Table 1-2 User Session Commands**

Command	Description
<b>?</b>	(help)
<b>adduser</b>	Add user.
<b>bye</b>	Bye.
<b>cc</b>	Change card.
<b>cd</b>	Change directory.
<b>clidbxlevel</b>	Command line interface level.
<b>clrloginmsg</b>	Clear login message.
<b>clrscrn</b>	Clear screen.
<b>cnfcmdabbr</b>	Configure command abbreviation.
<b>cnfpasswd</b>	Configure password
<b>cnfpasswdreset</b>	Configure password reset.
<b>cnfuser</b>	Configure user.
<b>conntrace</b>	Connection trace.
<b>copy</b>	Copy.
<b>cp</b>	Copy.
<b>delete</b>	Delete file.
<b>delsesn</b>	Delete a user session
<b>deluser</b>	Delete user.
<b>dspcmdabbr</b>	Display command abbreviation setting
<b>dspusers</b>	Display users.
<b>exit</b>	Exit.
<b>help</b>	Help.

**Table 1-2** *User Session Commands (continued)*

<b>Command</b>	<b>Description</b>
<b>history</b>	History.
<b>ll</b>	List long
<b>logout</b>	Logout.
<b>ls</b>	List.
<b>ping</b>	Ping.
<b>pwd</b>	Present working directory.
<b>rename</b>	Rename a file.
<b>sesntimeout</b>	Session timeout.
<b>smclrscrn</b>	Service module clear screen (and enable for NBSMs only)
<b>telnet</b>	Telnet.
<b>timeout</b>	Timeout.
<b>users</b>	Users.
<b>who</b>	Who.
<b>whoami</b>	Whoami.
<b>zip</b>	Zip (utility)

## Node Commands

The node commands apply to the switch as a whole. The functional areas for these commands consist of the following:

- Generic commands for assigning the time, date, and a name to the node
- Firmware usage commands
- IP connectivity
- SCT management (SCT management is node-level, but individual SCT assignment is port level)
- Simple network management protocol (SNMP)
- Simple network timing protocol (SNTP for timestamp synchronization)
- Shelf operations
- Node-level SPVC addressing
- Network synchronization

**Table 1-3 Firmware and Software Image Related Commands**

Command	Description
<a href="#">abortallsaves</a>	Abort all saves
<a href="#">abortrev</a>	Abort revision
<a href="#">clrallcnf</a>	Clear all configurations
<a href="#">clrcnf</a>	Clear configuration
<a href="#">clrsmcnf</a>	Clear service module configuration
<a href="#">clrsrcmf</a>	Clear Service Resource Module (SRM) configuration
<a href="#">commitrev</a>	Commit revision
<a href="#">dsprevs</a>	Display revisions
<a href="#">dspversion</a>	Display version
<a href="#">loadrev</a>	Load revision
<a href="#">runrev</a>	Run revision
<a href="#">saveallcnf</a>	Save all configurations
<a href="#">setrev</a>	Set revision

**Table 1-4 IP Connectivity Commands**

Command	Description
<a href="#">addtrapmgr</a>	Add trap manager
<a href="#">bootChange</a>	Boot address change (specifies the boot IP address and gateway address of a PXM)
<a href="#">cnfndparms</a>	Configure node parameters
<a href="#">cnftrapip</a>	Configure trap IP
<a href="#">delifip</a>	Delete IP interface

**Table 1-4 IP Connectivity Commands (continued)**

Command	Description
<b>deltrapmgr</b>	Delete trap manager
<b>dspifip</b>	Display IP interface
<b>dspipconntask</b>	Display IP connection task
<b>dspipif</b>	Display IP interface
<b>dspipifcache</b>	Display IP interface cache
<b>dsptrapip</b>	Display trap IP
<b>dsptrapmgr</b>	Display trap manager
<b>ipifconfig</b>	Configure IP interface
<b>pvcifconfig</b>	PVC interface configuration

**Table 1-5 Service Class Template Commands**

Command	Description
<b>addport</b>	Add port (runs on PXM1E and has an SCT component)
<b>addset</b>	Add SCT
<b>cnfport</b>	Configure port (runs on PXM1E and has an SCT component)
<b>cnfset</b>	Configure SCT
<b>delset</b>	Delete SCT
<b>dspportset</b>	Display port SCT (PXM1E)
<b>dspset</b>	Display SCT (PXM1E)
<b>dspsetchksums</b>	Display SCT (PXM1E)
<b>dspsects</b>	Display SCT

**Table 1-6 SNMP Commands**

Command	Description
<b>cnfsnmp</b>	Configure SNMP
<b>dbgpnnsnmp</b>	Debug PNNI SNMP
<b>dspsnmp</b>	Display SNMP

**Table 1-7 SNTP Commands**

Command	Description
<b>addsntprrmtsvr</b>	Add simple network time protocol (SNTP) remote server
<b>clrsntpstats</b>	Clear SNTP statistics
<b>cnfsntp</b>	Configure SNTP
<b>cnfsntprrmtsvr</b>	Configure SNTP remote server

**Table 1-7** *SNTP Commands (continued)*

Command	Description
<b>dbgsntp</b>	Debug SNTP
<b>delsntpserver</b>	Delete SNTP remote server
<b>dpsntp</b>	Display SNTP
<b>dpsntpserver</b>	Display SNTP remote server
<b>dpsntpstats</b>	Display SNTP statistics

**Table 1-8** *Shelf Operation Commands Summary*

Command	Description
<b>actaudit</b>	Active audit
<b>addserialif</b>	Add serial interface
<b>bootchange</b>	Specifies the boot IP address and gateway address of a PXM card
<b>clidbxlevel</b>	Command line interface level
<b>clralcnf</b>	Clear all configurations
<b>clrerr</b>	Clear error
<b>clrerrhist</b>	Clear error history
<b>clrlog</b>	Clear log
<b>clrloginmsg</b>	Clear login message
<b>clrqosdefault</b>	Clear quality of service default
<b>cnfcbclk</b>	Configure cellbus clock
<b>cnfcli</b>	Configure CLI
<b>cnfcmdabbr</b>	Configure command abbreviation
<b>cnfdate</b>	Configure date
<b>cnfname</b>	Configure name
<b>cnfndparms</b>	Configure diverse node parameters
<b>cnfnodalfd</b>	Configure nodal frame discard
<b>cnfpasswdreset</b>	Configure password reset
<b>cnfrmsrc</b>	Configure Resource Monitoring
<b>cnfserialif</b>	Configure serial interface
<b>cnfserialif</b>	Configure serial interface
<b>cnfsigdiag</b>	Configure signaling diagnostic
<b>cnfsnmp</b>	Configure SNMP
<b>cnfstatsmgr</b>	Configure statistics manager
<b>cnftime</b>	Configure time
<b>cnftmzn</b>	Configure time zone
<b>cnftmzngmt</b>	Configure time zone management

**Table 1-8 Shelf Operation Commands Summary (continued)**

<b>Command</b>	<b>Description</b>
<b>cnftrapip</b>	Configure trap IP
<b>del</b>	Delete (file)
<b>delserialif</b>	Delete serial interface
<b>delsesn</b>	Delete session
<b>delsigdiag</b>	Delete signaling diagnostic
<b>deltrapmgr</b>	Delete trap manager
<b>dspactaudit</b>	Display active audit
<b>dspainihopcount</b>	Display AINI hop count
<b>dspbckpl</b>	Display backplane
<b>dspcbclk</b>	Display cellbus clock
<b>dspcd</b>	Display card
<b>dspcdalms</b>	Display card alarms
<b>dspcds</b>	Display cards
<b>dspcdstatus</b>	Display card status
<b>dspcli</b>	Display CLI
<b>dspelkinfo</b>	Display clock information
<b>dspcmdabbr</b>	Display command abbreviation
<b>dspcurclk</b>	Display current clock
<b>dspdate</b>	Display date
<b>dspdate</b>	Display date
<b>dspdisk</b>	Display disk
<b>dspenvalms</b>	Display environmental alarms
<b>dsperr</b>	Display error
<b>dsperrs</b>	Display errors
<b>dspipconntask</b>	Display IP connectivity task
<b>dspipif</b>	Display IP interface
<b>dspipifcache</b>	Display IP interface cache translation
<b>dsplmilink</b>	Display LMI links
<b>dsplmiloop</b>	Display LMI loopback
<b>dsplmistats</b>	Display LMI statistics
<b>dsplmitrace</b>	Display LMI trace
<b>dspln</b>	Display line
<b>dsplog</b>	Display log
<b>dsploginmsg</b>	Display login message
<b>dsplogs</b>	Display logs
<b>dspmbstdft</b>	Display maximum burst size (MBS) default

**Table 1-8 Shelf Operation Commands Summary (continued)**

<b>Command</b>	<b>Description</b>
<b>dspndalms</b>	Display node alarms
<b>dspndparms</b>	Display node parameters
<b>dspndstatus</b>	Display node status
<b>dspnodalfd</b>	Display nodal frame discard
<b>dsppingatmaddr</b>	Display ping ATM address
<b>dspnallgrpaddr</b>	Display all group addresses
<b>dsppngrpmbrs</b>	Display group members
<b>dspnpportidmaps</b>	Display PNNI port ID maps
<b>dspnpportncci</b>	Display PNNI port network call correlation identifier
<b>dspnpportsrc</b>	Display PNNI port resource
<b>dspprfhist</b>	Display profiler history
<b>dspswdreset</b>	Display password reset
<b>dspqosdefault</b>	Display quality of service default
<b>dsprevs</b>	Display revisions
<b>dsprmalms</b>	Display resource monitoring alarms
<b>dsprminfo</b>	Display resource monitoring information
<b>dspmrsrc</b>	Display a monitored resource
<b>dspmrsrcs</b>	Display monitored resources
<b>dspsem</b>	Display semaphore
<b>dspsems</b>	Display semaphores
<b>dpserialif</b>	Display serial interface
<b>dspesn</b>	Display session
<b>dspsnmp</b>	Display SNMP
<b>dspstatmgr</b>	Display statistics manager
<b>dspsvcif</b>	Display SVC interface
<b>dspswalms</b>	Display switch alarms
<b>dsptrapip</b>	Display trap IP
<b>dsptrapmgr</b>	Display trap manager
<b>dspversion</b>	Display version
<b>ipifconfig</b>	Configure IP interface
<b>loadrev</b>	Load revision
<b>memShow</b>	Memory map show
<b>resetcd</b>	Reset card
<b>resetsys</b>	Reset system
<b>restoreallcnf</b>	Restore all configurations
<b>routeShow</b>	Route show

**Table 1-8 Shelf Operation Commands Summary (continued)**

Command	Description
<a href="#">routestatShow</a>	Routing statistics show
<a href="#">runrev</a>	Run revision
<a href="#">saveallcnf</a>	Save all configurations
<a href="#">sesntimeout</a>	Session timeout
<a href="#">setrev</a>	Set revision
<a href="#">showsyserr</a>	Show system error
<a href="#">svcifconfig</a>	Switched virtual circuit (SVC) interface configuration
<a href="#">syserr</a>	System error (same command as the <b>showsyserr</b> command)
<a href="#">telnet</a>	Telnet

**Table 1-9 Node-Level SPVC Address Commands**

Command	Description
<a href="#">cnfspvcprfx</a>	Configure SPVC prefix
<a href="#">dspspvcprfx</a>	Display SPVC prefix

**Table 1-10 Network Synchronization Commands**

Command	Description
<a href="#">cnfelkparms</a>	Configure clock parameters
<a href="#">cnfelksrc</a>	Configure clock source
<a href="#">cnfncdpclksrc</a>	Configure NCDP clock source
<a href="#">cnfsrcclksrc</a>	Configure SRC clock source
<a href="#">delk</a>	Display clock (measured by system clock test)
<a href="#">delclksrc</a>	Delete clock source
<a href="#">delncdpclksrc</a>	Delete NCDP clock source
<a href="#">dspelkalms</a>	Display clock alarms
<a href="#">dspelksres</a>	Display clock sources
<a href="#">dspeurelk</a>	Display current clock
<a href="#">dspncdpclksrc</a>	Display NCDP clock source
<a href="#">dspncdpclksrcs</a>	Display NCDP clock sources
<a href="#">dspsrcclksrc</a>	Display SRM clock source

## Equipment and Resource Commands

*Table 1-11 APS Commands*

Command	Description
<code>addapsln</code>	Add APS line
<code>clrbeent</code>	Clear bit-error count (APS-related)
<code>cnfapsln</code>	Configure APS line
<code>delapsln</code>	Delete APS line
<code>dspapsbkplane</code>	Display APS backplane
<code>dspapsln</code>	Display APS line
<code>dspapslns</code>	Display APS lines
<code>dspbeent</code>	Display bit-error count (APS-related)
<code>switchapsln</code>	Switch APS line

*Table 1-12 Card-level Redundancy Commands*

Command	Description
<code>addred</code>	Add redundancy
<code>delred</code>	Delete redundancy
<code>dspreed</code>	Display redundancy
<code>switchcc</code>	Switch core card
<code>switchredcd</code>	Switch redundant card

## PNNI Routing Protocol Commands

PNNI commands consist of the following types:

- Routing protocol-related
- Signaling-related

**Table 1-13 PNNI Routing Protocol Commands**

Command	Description
<b>addpnni-node</b>	Add PNNI node
<b>addpnni-summary-addr</b>	Add PNNI summary address
<b>addpref</b>	Create a preferred route
<b>aesa_ping</b>	ATM end station address ping
<b>cnfpref</b>	Modify a preferred route
<b>cnfpnni-election</b>	Configure PNNI election
<b>cnfpnni-intf</b>	Configure PNNI interface
<b>cnfpnni-link-selection</b>	Configure PNNI link selection
<b>cnfpnni-mtu</b>	Configure PNNI maximum transmission unit (MTU)
<b>cnfpnni-node</b>	Configure PNNI node
<b>cnfpnni-pkttrace</b>	Configure PNNI packet trace
<b>cnfpnni-routing-policy</b>	Configure PNNI routing policy
<b>cnfpnni-scope-map</b>	Configure PNNI scope map
<b>cnfpnni-svcc-rcc-timer</b>	Configure PNNI SVCC-based RCC timer
<b>cnfpnni-timer</b>	Configure PNNI timer
<b>cnfpri-routing</b>	Configure priority routing
<b>dbgpnni</b>	Debug PNNI
<b>delpnni-node</b>	Delete PNNI node
<b>delpnni-summary-addr</b>	Delete PNNI summary address
<b>dsppnni-bn-path</b>	Display PNNI border node path
<b>dsppnni-bypass</b>	Display PNNI bypass
<b>dsppnni-dbg</b>	Display PNNI debug
<b>dsppnni-election</b>	Display PNNI election
<b>dsppnni-idb</b>	Display PNNI information database
<b>dsppnni-inducing-uplink</b>	Display PNNI inducing uplink
<b>dsppnni-intf</b>	Display PNNI interface
<b>dsppnni-link</b>	Display PNNI link
<b>dsppnni-link-selection</b>	Display PNNI link selection
<b>dsppnni-mtu</b>	Display PNNI maximum transmission unit (MTU)
<b>dsppnni-neighbor</b>	Display PNNI neighbor
<b>dsppnni-node</b>	Display PNNI node

**Table 1-13 PNNI Routing Protocol Commands (continued)**

<b>Command</b>	<b>Description</b>
<b>dsppnni-node-list</b>	Display PNNI node list
<b>dsppnni-path</b>	Display PNNI path
<b>dsppnni-pkttrace</b>	Display PNNI packet trace
<b>dsppnni-ptse</b>	Display PNNI topology state element
<b>dsppnni-reachable-addr</b>	Display PNNI reachable address
<b>dsppnni-routing-policy</b>	Display PNNI routing policy
<b>dsppnni-scope-map</b>	Display PNNI scope map
<b>dsppnni-spoke</b>	Display PNNI default spoke
<b>dsppnni-summary-addr</b>	Display PNNI summary address
<b>dsppnni-svcc-rcc</b>	Display PNNI SVCC-based RCC
<b>dsppnni-svcc-rcc-timer</b>	Display PNNI SVCC-based RCC timer
<b>dsppnni-timer</b>	Display PNNI timer
<b>dsppsysaddr</b>	Display PNNI system address
<b>dsppri-routing</b>	Display priority routing

## Route Optimization Commands

**Table 1-14 Route Optimization Commands**

<b>Command</b>	<b>Description</b>
<b>addpref</b>	Create a preferred route
<b>cnfndidrtes</b>	Change node ID for all preferred routes
<b>cnfpref</b>	Modify a preferred route
<b>cnfpri-routing</b>	Prioritize the order of de-routing and re-routing connections
<b>cnfrteopt</b>	Configure route optimization
<b>cnfrteoptthld</b>	Configure route optimization threshold
<b>cnfrtparm</b>	Configure reroute parameters
<b>delpref</b>	Delete preferred route
<b>dsppref</b>	Display preferred route
<b>dspprefs</b>	Display preferred routes
<b>dsprteoptcnf</b>	Display route optimization configuration
<b>dsprteoptstat</b>	Display route optimization status
<b>optrte</b>	Optimize route
<b>rrtcon</b>	Reroute connection

## ILMI Commands

*Table 1-15 Integrated Local Management Interface (ILMI) Commands*

Command	Description
<b>addprfx</b>	Add prefix
<b>clrilmicnt</b>	Clear ILMI counters
<b>cnfaddrreg</b>	Configure address registration
<b>cnfautocnf</b>	Configure auto configuration
<b>cnfilmi</b>	Configure ILMI
<b>cnfilmienable</b>	Configure ILMI enable
<b>cnfilmiproto</b>	Configure ILMI protocol
<b>dbgilmi</b>	Debug ILMI
<b>delprfx</b>	Delete prefix
<b>dnilmi</b>	Down ILMI
<b>dspilmi</b>	Display ILMI
<b>dspilmiaddr</b>	Display ILMI address
<b>dspilmicnt</b>	Display ILMI counters
<b>dspilmis</b>	Display ILMIs
<b>dsppnilmi</b>	Display PNNI ILMI
<b>dspprfx</b>	Display prefix
<b>upilmi</b>	Up ILMI

## Logical Node, PNNI Port, and Signaling Commands

The commands in this section pertain to PNNI ports and PNNI signaling. The port-related commands can be specific to a port or apply to the all PNNI ports on the whole node.

**Table 1-16 PNNI Port Commands**

Command	Description
<b>addaddr</b>	Add an ATM address to a PNNI port
<b>addfltset</b>	Add ATM filter set
<b>addpnport</b>	Add a UNI or NNI port
<b>addprfx</b>	Add ATM address prefix to a PNNI port
<b>aesa_ping</b>	ATM end system address ping
<b>clrpneconstats</b>	Clear PNNI port connection statistics
<b>clrqosdefault</b>	Clear QOS defaults
<b>clrsscopstats</b>	Clear SSCOP statistics
<b>cnfcdvtdft</b>	Configure cell delay variation tolerance (CDVT) default
<b>cnfconsegep</b>	Configure connection segment endpoint
<b>cnfe164_justify</b>	Configure E164 justification
<b>cnfenhiisp</b>	Configure enhanced IISP
<b>cnffltset</b>	Configure filter set
<b>cnfintfvsvd</b>	Configure interface VS/VD
<b>cnfmbsdft</b>	Configure maximum burst size (MBS) default
<b>cnfoamsegep</b>	Configure OAM segment endpoint
<b>cnfpnctlvc</b>	Configure PNNI control VC
<b>cnfpnportacc</b>	Configure PNNI port access
<b>cnfpnportcac</b>	Configure CAC policy parameters for a port
<b>cnfpnportcc</b>	Configure call control parameters for a port
<b>cnfpnportloscallrel</b>	Configure PNNI port LOS call release
<b>cnfpnportncci</b>	Configure port network call correlation identifier
<b>cnfpnportrange</b>	Configure PNNI port range
<b>cnfpnportsig</b>	Configure PNNI port signaling
<b>cnfqosdefault</b>	Configure quality of service default
<b>conntrace</b>	Connection trace
<b>deladdr</b>	Delete address
<b>deladdrs</b>	Delete ATM addresses
<b>delconsegep</b>	Remove a segment endpoint on a connection
<b>delfltset</b>	Delete filter set
<b>delpnport</b>	Delete PNNI port
<b>delpnportacc</b>	Delete PNNI port access

**Table 1-16 PNNI Port Commands (continued)**

<b>Command</b>	<b>Description</b>
<b>dnnpport</b>	Down PNNI port
<b>dspaddr</b>	Display ATM address
<b>dspainihopcount</b>	Display AINI hop count
<b>dspatmaddr</b>	Display ATM address
<b>dspcdvtdft</b>	Display CDVT default
<b>dspconsegep</b>	Display connection segment endpoint
<b>dspfltset</b>	Display filter set
<b>dspprfx</b>	Display ATM address prefix for a PNNI port
<b>dspmbstdft</b>	Display MBS default
<b>dspoamsegep</b>	Display OAM segment endpoint
<b>dspathtracebuffer</b>	Display path trace buffer
<b>dspathtracebuffers</b>	Display path trace buffers
<b>dspathtraceie</b>	Display path trace
<b>dspathtracenode</b>	Display path trace node
<b>dspathtraceport</b>	Display path trace port
<b>dspncon</b>	Display PNNI connection
<b>dspncons</b>	Display PNNI connections
<b>dspnconstats</b>	Display PNNI connection statistics
<b>dspnctlvc</b>	Display PNNI control VC
<b>dspnport</b>	Display PNNI port
<b>dspnportcac</b>	Display PNNI port CAC
<b>dspnportcc</b>	Display PNNI port call control (CC)
<b>dspnportloscallrel</b>	Display PNNI port LOS call release
<b>dspnportrange</b>	Display PNNI port range
<b>dspnports</b>	Display PNNI ports
<b>dspnsysaddr</b>	Display PNNI port resource
<b>dspspvcaddr</b>	Display SPVC address
<b>dspsvcparm</b>	Display SVC nodal parameter
<b>pathtraceie</b>	Path trace information element (IE)
<b>pathtracenode</b>	Path trace node
<b>pathtraceport</b>	Path trace port
<b>tstpndelay</b>	Test PNNI delay
<b>upnpport</b>	Up PNNI port

**Table 1-17 Congestion Commands at Node and Port Levels**

<b>Command</b>	<b>Description</b>
<a href="#">cnfintfcongrh</a>	Configure interface level congestion threshold
<a href="#">cnfnodalcongrh</a>	Configure nodal congestion threshold
<a href="#">dspintfcongrh</a>	Display interface level congestion counter
<a href="#">dspintfcongrh</a>	Display interface congestion manager flags
<a href="#">dspintfcongrh</a>	Display interface congestion threshold
<a href="#">dspnodalcongrh</a>	Display nodal level congestion counter
<a href="#">dspnodalcongrh</a>	Display nodal congestion flags
<a href="#">dspnodalcongrh</a>	Display nodal congestion threshold

**Table 1-18 Signaling Commands**

<b>Command</b>	<b>Description</b>
<a href="#">clrsgstats</a>	Clear signal statistics
<a href="#">clrsscops</a>	Clear SSCOP statistics
<a href="#">cnfenhiisp</a>	Configure enhanced IISP
<a href="#">cnffltset</a>	Configure frame discard on AAL5
<a href="#">cnfpnportnci</a>	Configure port network call correlation identifier
<a href="#">cnfpnportsig</a>	Configure PNNI port signaling
<a href="#">cnfsig</a>	Configure signaling
<a href="#">cnfsscops</a>	Configure SSCOP
<a href="#">delsigdiag</a>	Delete signaling diagnostics
<a href="#">disablsscops</a>	Disable SSCOP
<a href="#">dspenhiisp</a>	Display enhanced IISP
<a href="#">dspnportsig</a>	Display PNNI port signaling
<a href="#">dspsig</a>	Display signaling
<a href="#">dspsigdiag</a>	Display signaling diagnostic parameters and records
<a href="#">dspsigstats</a>	Display signaling statistics
<a href="#">dspsscops</a>	Display SSCOP
<a href="#">dspsscops</a>	Display SSCOP statistics

## SPVC and SVC Commands

This section lists the commands that apply to SPVCs, SPVPs, SVCs, or SVPs. The commands for SPVC and SPVPs let you add, delete, configure, display, and specify statistics for these connections. Some commands apply to all types of connections, and some commands apply to only SVCs and SVPs or SPVCs and SPVPs. Individual command descriptions indicate specific applications.

**Table 1-19 Connection Commands**

Command	Description
<b>addcon</b>	Add connection
<b>clrdiagerr</b>	Clear diagnostic error
<b>clrdiagstat</b>	Clear diagnostic statistics
<b>clrpnccon</b>	Clear PNNI connection
<b>clrpncconstats</b>	Clear PNNI connection statistics
<b>clrspvconpers</b>	Clear SPVC nonpersistent endpoint
<b>cnfabr</b>	Configure available bit rate (ABR VS/VD)
<b>cnfabrtparmdft</b>	Configure default ABR traffic parameters
<b>cnfcdvtdft</b>	Configure cell delay variation tolerance (CDVT) default
<b>cnfcon</b>	Configure connection
<b>cnfdiag</b>	Configure diagnostics
<b>cnfdiagall</b>	Configure diagnostics all
<b>cnfrtparm</b>	Configure reroute parameters
<b>cnfsvcoverride</b>	Configure SVC override
<b>cnftrftolerance</b>	Configure traffic conformance tolerance
<b>delcon</b>	Delete connection
<b>dncon</b>	Down connection
<b>dspabrtparmdft</b>	Display ABR traffic parameter defaults
<b>dspconinfo</b>	Display connection information
<b>dspcons</b>	Display connections
<b>dspdiagcnf</b>	Display diagnostics configuration
<b>dsppri-routing</b>	Display priority routing
<b>dspvcif</b>	Display permanent virtual connection (PVC) interface
<b>dsprrtparm</b>	Display global reroute retry parameters
<b>dsptrftolerance</b>	Display traffic conformance tolerance
<b>pvcifconfig</b>	PVC interface configuration
<b>tstconseg</b>	Test continuity segment
<b>tstdelay</b>	Test delay
<b>upcon</b>	Up connection

## Troubleshooting Commands

*Table 1-20 Troubleshooting Commands*

<b>Command</b>	<b>Description</b>
<b>abortofflinediag</b>	Abort offline diagnostics
<b>clrdiagerr</b>	Clear diagnostic error
<b>clrdiagstat</b>	Clear diagnostic statistics
<b>clrportconstats</b>	Clear nodal connection statistics
<b>clrnodalconstats</b>	Clear port connection statistics
<b>cnfdiag</b>	Configure diagnostics
<b>cnfdiagall</b>	Configure diagnostics all
<b>dspcdalms</b>	Display card alarms
<b>dspcderrs</b>	Display card errors
<b>dspcdhealth</b>	Display card health
<b>dspckalms</b>	Display alarms related to network synchronization
<b>dspcon</b>	Display connection
<b>dspconinfo</b>	Display connection information
<b>dspcons</b>	Display connections
<b>dspdiagenf</b>	Display diagnostics configuration
<b>dspdiagerr</b>	Display diagnostics error
<b>dspdiagstat</b>	Display diagnostics statistics
<b>dspdiagstatus</b>	Display diagnostics status
<b>dspdisk</b>	Display disk partitions
<b>dsperrhist</b>	Display error history
<b>dspportconstats</b>	Display nodal connection statistics
<b>dspnodalconstats</b>	Display port connection statistics
<b>dspprfhist</b>	Display profiler history
<b>dsptech</b>	Display technical details
<b>forcednative</b>	Force card native
<b>stackdump</b>	Stack dump
<b>tstconseg</b>	Test continuity segment
<b>tstdelay</b>	Test delay