CHAPTER 13

P

padding

To set the padding on a specific output character, use the **padding** line configuration command. The **no** form of this command removes padding for the specified output character.

padding *ascii-number count*
no padding *ascii-number*

Syntax Description

ascii-number	ASCII decimal representation of the character.
count	Number of NULL bytes sent after that character, up to 255 padding characters in length.

Default

Padding is not configured.

Command Mode

Line configuration.

Usage Guidelines

Use this command if the device attached is an old terminal that requires padding after certain characters (such as ones that scrolled or moved the carriage).

Example

The following example pads a Return (ASCII decimal 13) with 25 NULL bytes.

```
Switch(config)# line console
Switch(config-line)# padding 13 25
```

Related Command

terminal padding

parity

To define the generation of a parity bit, use the **parity** line configuration command.

parity {**none** | **even** | **odd** | **space** | **mark**}
no parity

Syntax Description

none No parity.

even Even parity.

odd Odd parity.

space Space parity.

mark Mark parity.

Default

none.

Command Mode

Line configuration.

Usage Guidelines

This command pertains to the auxiliary port only.

Example

The following example changes the default of no parity to even parity.

```
Switch(config)# line aux 0
Switch(config-line)# parity even
```

Related Command

terminal parity

password

To specify a password on a line, use the **password** line configuration command. Use the **no** form of this command to remove the password.

password *password*
no password

Syntax Description

password	Case-sensitive character string that specifies the line password.

Default

No password is specified.

Command Mode

Line configuration.

Usage Guidelines

The first character cannot be a number. The string can contain any alphanumeric characters, including spaces, up to 80 characters. You cannot specify the *password* in the format *number-space-anything*. The space after the number causes problems. For example, *hello 21* is a legal password, but *21 hello* is not. The password checking is case sensitive. For example, the password *Secret* is different from the password *secret*.

When an EXEC is started on a line with password protection, the EXEC prompts for the password. If the user enters the correct password, the EXEC prints its normal privileged prompt. The user can try three times to enter a password before the EXEC exits and returns the terminal to the idle state.

Example

The following example removes the password from virtual terminal lines 1 to 4.

```
Switch(config)# line vty 1 4
Switch(config-line)# no password
```

Related Commands

enable password
login

ping atm interface atm

Use the **ping atm interface atm** privileged EXEC command to check connectivity of the switch.

ping atm interface atm *card/subcard/port* **vpi [vci]**
{[ip-address *ip-address***] | [seg-loopback] | [atm-prefix** *prefix***] | [end-loopback]**

Syntax Description

card/subcard/port	Card number, subcard number, and port number of the specified ATM interface.
vpi	Virtual path identifier.
vci	Virtual channel identifier.
ip-address	IP address of the destination node.
seg-loopback	Send OAM segment loopback.
atm-prefix	Address prefix of the ATM.
end-loopback	Send OAM ping to end loopback.

Command Mode

Privileged EXEC.

Usage Guidelines

To check reachability and network connectivity, use **ping privilege** or **user level** command. You can use either an IP-address or an ATM-address prefix as a ping destination. You can also ping a neighbor switch by selecting the segment loopback option. Note that **ip-address**, **atm-prefix**, and **seg-loopback** options are mutually exclusive. In privilege extended command mode, you can select various other parameters such as repeat count, timeout value, and so on.

Example

The following example shows using the **ping** command in normal mode.

```
Switch# ping atm interface atm 1/2/3 100 200 atm-prefix 0000a34545454545464646
```

The following example shows using the **ping** command in extended command mode.

```
Switch# ping
Protocol [ip]: atm
Interface [card/sub-card/port]: 1/1/3
VPI [0]: 200
VCI [0]: 100
Send OAM-Segment-Loopback ? [no]:
Target IP address:
Target NSAP Prefix:
Repeat count [5]:
Timeout in seconds [5]:
```

Note If both Destination IP-address and ATM-prefix fields are not entered, the extended ping considers its neighbor switch as the destination and uses a segment loopback OAM cell. When the IP-address or ATM-address prefix is entered, ping always uses an end-to-end OAM loopback cell.

Related Command

show atm interface

ping (privileged)

Use the **ping** privileged EXEC command to diagnose basic network connectivity on IP networks.

ping [*protocol*] {*host* | *address*}

Syntax Description

protocol	(Optional) Protocol keyword is **ip**.
host	Host name of system to ping.
address	Address of system to ping.

Command Mode

Privileged EXEC.

Usage Guidelines

The ping program sends an echo request packet to an address, then awaits a reply. Ping output can help you evaluate path-to-host reliability, delays over the path, and whether the host can be reached or is functioning.

To abnormally terminate a ping session, enter the escape sequence—by default, **Ctrl-^ X**. You enter the default by simultaneously pressing and releasing the **Ctrl**, **Shift**, and **6** keys, and then pressing the **X** key.

Table 13-1 describes the test characters that the ping facility sends.

Table 13-1 Ping Test Characters

Char	Meaning
!	Each exclamation point indicates receipt of a reply.
.	Each period indicates the network server timed out while waiting for a reply.
U	A destination unreachable error PDU was received.
C	A congestion experienced packet was received.
I	User interrupted test.
?	Unknown packet type.
&	Packet lifetime exceeded.

Note Not all protocols require hosts to support pings. For some protocols, the pings are defined by Cisco and are only answered by another Cisco switch.

Example

After you enter the **ping** command in privileged mode, the system prompts for the **ip** keyword**.**

If you enter a host name or address on the same line as the **ping** command, the default action is taken as appropriate for the protocol type of that name or address.

While the precise dialog varies somewhat from protocol to protocol, all are similar to the ping session using default values shown in the following display.

```
Switch# ping
Protocol [ip]:
Target IP address: 192.31.7.27
Repeat count [5]:
Datagram size [100]:
Timeout in seconds [2]:
Extended commands [n]:
Sweep range of sizes [n]:
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.31.7.27, timeout is 2 seconds:
!!!!!
Success rate is 100 percent, round-trip min/avg/max = 1/2/4 ms
```

Table 13-2 describes the default **ping** fields shown in the display.

Table 13-2 Ping Field Descriptions

Field	Description
Protocol [ip]:	Prompts for a supported protocol. Enter **appletalk**, **clns**, **ip**, **novell**, **apollo**, **vines**, **decnet**, or **xns**. Default: **ip**.
Target IP address:	Prompts for the IP address or host name of the destination node you plan to ping. If you have specified a supported protocol other than IP, enter an appropriate address for that protocol here. Default: none.
Repeat count [5]:	Number of ping packets that are sent to the destination address. Default: 5.
Datagram size [100]:	Size of the ping packet (in bytes). Default: 100 bytes.
Timeout in seconds [2]:	Timeout interval. Default: 2 (seconds).
Extended commands [n]:	Specifies whether or not a series of additional commands is displayed.
Sweep range of sizes [n]:	Allows you to vary the sizes of the echo packets being sent. This capability is useful for determining the minimum sizes of the MTUs configured on the nodes along the path to the destination address. Packet fragmentation contributing to performance problems can then be reduced.
!!!!!	Each exclamation point (!) indicates receipt of a reply. A period (.) indicates the network server timed out while waiting for a reply. Other characters might be displayed in the ping output, depending on the protocol type.
Success rate is 100 percent	Percentage of packets successfully echoed back to the switch. Anything less than 80 percent is usually considered problematic.
round-trip min/avg/max = 1/2/4 ms	Round-trip travel time intervals for the protocol echo packets, including minimum/average/maximum (in milliseconds).

Related Command

ping (user)

ping (user)

Use the **ping** (packet internet groper) user EXEC command to diagnose basic network connectivity on IP networks.

ping [*protocol*] {*host* | *address*}

Syntax Description

protocol (Optional) Protocol keyword is **ip**.

host Host name of system to ping.

address Address of system to ping.

Command Mode

EXEC.

Usage Guidelines

The user-level ping feature provides a basic ping facility for users who do not have system privileges. This feature allows the switch to perform the simple default ping functionality for a number of protocols. Only the nonverbose form of the **ping** command is supported for user-level pings.

If the system cannot map an address for a host name, it returns an "%Unrecognized host or address" error message.

To abnormally terminate a ping session, type the escape sequence—by default, **Ctrl-^ X**. You type the default by simultaneously pressing and releasing the **Ctrl**, **Shift**, and **6** keys and then pressing the **X** key.

Table 13-3 describes the test characters that the ping facility sends.

Table 13-3 Ping Test Characters

Char	Meaning
!	Each exclamation point indicates receipt of a reply.
.	Each period indicates the network server timed out while waiting for a reply.
U	A destination unreachable error PDU was received.
C	A congestion experienced packet was received.
I	User interrupted test.
?	Unknown packet type.
&	Packet lifetime exceeded.

Example

The following display shows sample ping output when you ping the IP host named *james*.

```
Switch# ping james
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.31.7.27, timeout is 2 seconds:
!!!!!
Success rate is 100 percent, round-trip min/avg/max = 1/3/4 ms
```

Related Command

ping (privileged)

ppp authentication

To enable Challenge Handshake Authentication Protocol (CHAP) or Password Authentication Protocol (PAP) and to enable an AAA authentication method on an interface, use the **ppp authentication** interface configuration command. Use the **no** form of this command to disable this authentication.

ppp authentication {**chap** | **pap**} [**if-needed**] [*list-name*]
no ppp authentication

Caution If you use a *list-name* value that was not configured with the **aaa authentication ppp** command, you disable PPP on this interface.

Syntax Description

chap	Enables CHAP on a serial interface.
pap	Enables PAP on a serial interface.
if-needed	(Optional) Used with TACACS and extended TACACS. Does not perform CHAP or PAP authentication if the user has already provided authentication. This option is available only on asynchronous interfaces.
list-name	(Optional) Used with AAA/TACACS+. Specifies the name of a list of AAA methods of authentication to use. If no listname is specified, the system uses the default. Lists and default are created with the **aaa authentication ppp** command.

Default

PPP authentication is not enabled.

Command Mode

Interface configuration.

Usage Guidelines

Once you have enabled CHAP or PAP, the local switch requires a password from remote devices. If the remote device does not support CHAP or PAP, no traffic is passed to that device.

If you are using **autoselect** on a TTY line, you probably want to use the **ppp authentication** command to turn on PPP authentication for the corresponding interface.

If you specify the **if-needed** option, PPP authentication is not required when the user has already provided authentication. This option is useful if you are using the **autoselect** command, but it cannot be used with AAA/TACACS+.

The *list-nam*e argument can be used only when AAA/TACACS+ is initialized and cannot be used with the **if-needed** argument.

Example

The following example enables CHAP on interface 3/1/0 and uses the authentication list MIS-access.

```
Switch(config)# interface 3/1/0
Switch(config-if)# encapsulation ppp
Switch(config-if)# ppp authentication chap MIS-access
```

Related Commands

aaa authentication ppp
aaa new-model
autoselect
ppp use-tacacs
username

ppp use-tacacs

To enable TACACS for PPP authentication, use the **ppp use-tacacs** interface configuration command. Use the **no** form of this command to disable TACACS for PPP authentication.

ppp use-tacacs [**single-line**]
no ppp use-tacacs

Note This command is not used in AAA/TACACS+ and has been replaced with the **aaa authentication ppp** command.

Syntax Description

single-line (Optional) Accept the username and password in the username field. This option applies only when using CHAP authentication.

Default

TACACS is not used for PPP authentication.

Command Mode

Interface configuration.

Usage Guidelines

This is a per-interface command. Use this command only when you have set up an extended TACACS server. This command requires the new extended TACACS server.

When CHAP authentication is being used, the **ppp use-tacacs** command with the **single-line** option specifies that if a username and password are specified in the username separated by an asterisk (*), a standard tacacs login query is performed using that username and password. If the username does not contain an asterisk, normal CHAP authentication is performed using TACACS.

This feature is useful when integrating TACACS with other authentication systems that require a clear-text version of the user's password. Such systems include one-time password systems, token card systems, kerberos, and others.

Caution Normal CHAP authentications prevent the clear-text password from being transmitted over the interface. When you use the single-line option, passwords cross the interface in the clear.

If the username and password are contained in the CHAP password, the CHAP secret is not used by the Cisco system. Because most PPP clients require that a secret be specified, you can use any arbitrary string; the Cisco system ignores it.

Examples

In the following example, asynchronous serial interface 1 is configured to use TACACS for CHAP authentication.

```
Switch(config)# interface serial 1
Switch(config-if)# ppp authentication chap
Switch(config-if# ppp use-tacacs
```

In the following example, asynchronous serial interface 1 is configured to use TACACS for PAP authentication.

```
Switch(config)# interface async 1
Switch(config-if)# ppp authentication pap
Switch(config-if)# ppp use-tacacs
```

Related Commands

ppp authentication
tacacs-server extended
tacacs-server host

precedence

To configure the precedence of different types of reachable addresses, use the **precedence** ATM router PNNI configuration command. To return to the default precedence value for a particular reachable address type, use the **no** form of this command.

precedence [pnni-remote-exterior | pnni-remote-exterior-metrics | pnni-remote-internal | pnni-remote-internal-metrics | static-local-exterior | static-local-exterior-metrics | static-local-internal-metrics] *value_2-4*
no precedence [pnni-remote-exterior | pnni-remote-exterior-metrics | pnni-remote-internal | pnni-remote-internal-metrics | static-local-exterior | static-local-exterior-metrics | static-local-internal-metrics]

Syntax Description

pnni-remote-exterior	Sets the priority for the remote exterior prefixes without metrics. The default is 4.
pnni-remote-exterior-metrics	Sets the priority for the exterior prefix with metrics. The default is 2.
pnni-remote-internal	Sets the priority for the remote internal prefixes without metrics. The default is 2.
pnni-remote-internal-metrics	Sets the priority for the remote internal prefixes with metrics. The default is 2.
static-local-exterior	Sets the priority for the static exterior prefixes without metrics. The default is 3.
static-local-exterior-metrics	Sets the priority for the static exterior prefixes with metrics. The default is 2.
static-local-internal-metrics	Sets the priority for the static internal prefixes with metrics. The default is 2.
value_2-4	Specifies the precedence of a reachable address type. Smaller values take precedence over larger values. The range of values is 2, 3, or 4.

Default

See individual commands.

Command Mode

ATM router PNNI configuration.

Usage Guidelines

The LightStream 1010 switch route selection algorithm chooses routes to particular destinations using the longest match reachable address prefix known to the switch. When there are multiple reachable address types associated with the longest match reachable address prefix, the route selection algorithm first attempts to find routes to reachable address types of greatest precedence. Among multiple routes to the same longest match reachable address prefix with the same reachable address type, routes with the least total administrative weight are preferred.

Use the **precedence** command to change the default values for the different types of reachable addresses.

Local internal reachable addresses, whether learned through ILMI or as static routes, are given the highest priority (level 1).

Related Command

show atm pnni precedence

priority-group

Note This command or some of its parameters might not function as expected in the LightStream 1010 ATM switch environment.

To assign the specified priority list to an interface, use the **priority-group** interface configuration command. Use the **no** form of this command to remove the specified priority group assignment.

priority-group *list*
no priority-group

Syntax Description

list Priority list number assigned to the interface.

Default

None.

Command Mode

Interface configuration.

Usage Guidelines

Only one list can be assigned per interface. Priority output queueing provides a mechanism to prioritize packets transmitted on an interface.

Example

The following example causes packets on interface auxiliary 0 to be classified by priority list 1.

```
Switch(config)# interface aux 0
Switch(config-if)# priority-group 1
```

Related Commands

priority-list interface
priority-list queue-limit
privilege level (global)

priority-list default

Note This command or some of its parameters might not function as expected in the LightStream 1010 ATM switch environment.

To assign a priority queue for those packets that do not match any other rule in the priority list, use the **priority-list default** global configuration command. Use the **no** form of this command to return to the default or assign **normal** as the default.

priority-list *list-number* **default** {**high | medium | normal | low**}
no priority-list *list-number* **default** {**high | medium | normal | low**}

Syntax Description

list-number	Arbitrary integer between 1 and 10 that identifies the priority list selected by the user.
high | **medium** | **normal** | **low**	Priority queue level.

Default

The **normal** queue is assumed if you use the **no** form of the command.

Command Mode

Global configuration.

Example

The following example sets the priority queue for those packets that do not match any other rule in the priority list to a low priority.

```
Switch# priority-list 1 default low
```

Related Commands

precedence
show queueing

priority-list interface

Note This command or some of its parameters might not function as expected in the LightStream 1010 ATM switch environment.

To establish queuing priorities on packets entering from a given interface, use the **priority-list interface** global configuration command. Use the **no** form of this command with the appropriate arguments to remove an entry from the list.

priority-list *list-number* **interface** *interface-type interface-number* {**high | medium | normal | low}**
no priority-list *list-number* **interface** *interface-type interface-number* {**high | medium | normal | low**}

Syntax Description

list-number	Arbitrary integer between 1 and 10 that identifies the priority list selected by the user.
interface-type	Specifies the name of the interface.
interface-number	Number of the specified interface.
high | **medium** | **normal** | **low**	Priority queue level.

Default

No queuing priorities are established.

Command Mode

Global configuration.

Example

The following example sets any packet type entering on Ethernet interface 2/0/0 to a medium priority.

```
Switch# priority-list 3 interface ethernet 2/0/0 medium
```

Related Commands

precedence
show queueing

priority-list protocol

Note This command or some of its parameters might not function as expected in the LightStream 1010 ATM switch environment.

To establish queuing priorities based on the protocol type, use the **priority-list protocol** global configuration command. Use the **no** form of this command with the appropriate list number to remove an entry from the list.

priority-list *list -number* **protocol** *protocol-name* {**high | medium | normal | low**} *queue-keyword keyword-value*
no priority-list *list -number* **protocol**

Syntax Description

list-number	Arbitrary integer between 1 and 10 that identifies the priority list selected by the user.
protocol-name	Specifies the protocol type: **aarp**, **arp**, **apollo**, **appletalk**, **bridge** (transparent), **clns**, **clns_es**, **clns_is**, **compressedtcp**, **cmns**, **decnet**, **decnet_node**, **decnet_router-l1**, **decnet_router-l2, ip**, **ipx**, **pad**, **rsrb**, **stun**, **vines**, **xns**, and **x25**.
high | **medium** | **normal** | **low**	Priority queue level.
queue-keyword keyword-value	Possible keywords are **fragments**, **gt**, **lt**, **list**, **tcp**, and **udp**. See Table 13-4.

Default

No queuing priorities are established.

Command Mode

Global configuration.

Usage Guidelines

When using multiple rules for a single protocol, remember that the system reads the priority settings in order of appearance. When classifying a packet, the system searches the list of rules specified by **priority-list** commands for a matching protocol type. When a match is found, the packet is assigned to the appropriate queue. The list is searched in the order it is specified, and the first matching rule terminates the search.

The **decnet_router-l1** keyword refers to the multicast address for all level-1 switches, which are inter-area switches, and the **decnet_router-l2** keyword refers to all level 2 switches, which are inter-area switches.

Use Table 13-4, Table 13-5, and Table 13-6 to configure the queuing priorities for your system.

Table 13-4 Protocol Priority Queue Keywords and Values

Option	Description
fragments	Assigns the priority level defined to fragmented IP packets (for use with IP protocol only). More specifically, IP packets whose fragment offset field is nonzero are matched by this command. The initial fragment of a fragmented IP packet has a fragment offset of zero, so such packets are not matched by this command. Note: Packets with a nonzero fragment offset do not contain TCP or UDP headers, so other instances of this command that use the **tcp** or **udp** keyword always fail to match such packets.
gt *byte-count*	Specifies a greater-than count. The priority level assigned goes into effect when a packet exceeds the value entered for the argument *byte-count*. The size of the packet must also include additional bytes due to MAC encapsulation on the outgoing interface.
lt *byte-count*	Specifies a less-than count. The priority level assigned goes into effect when a packet size is less than the value entered for *byte-count*. The size of the packet must also include additional bytes due to MAC encapsulation on the outgoing interface.
list *list-number*	Assigns traffic priorities according to a specified list when used with Appletalk, bridging, IP, IPX, VINES, or XNS. The *list-number* argument is the access list number as specified by the **access-list** global configuration command for the specified *protocol-name*. For example, if the protocol is AppleTalk, *list-number* should be a valid AppleTalk access list number.
tcp *port*	Assigns the priority level defined to TCP segments originating from or destined to a specified port (for use with the IP protocol only). Table 13-5 lists common TCP services and their port numbers.
udp *port*	Assigns the priority level defined to UDP packets originating from or destined to the specified port (for use with the IP protocol only). Table 13-6 lists common UDP services and their port numbers.

Table 13-5 Common TCP Services and Their Port Numbers

Service	Port
Telnet	23
SMTP	25

Table 13-6 Common UDP Services and Their Port Numbers

Service	Port
TFTP	69
NFS	2049
SNMP	161
RPC	111
DNS	53

Note The TCP and UDP ports listed in Table 13-5 and Table 13-6 include some of the more common port numbers. However, you can specify any port number to be prioritized; you are not limited to those listed.

Use the **no priority-list** global configuration command followed by the appropriate *list-number* argument and the **protocol** keyword to remove a priority list entry assigned by protocol type.

Examples

The following example assigns a high-priority level to traffic that matches IP access list 10.

```
Switch# priority-list 1 protocol ip high list 10
```

The following example assigns a medium-priority level to Telnet packets.

```
Switch# priority-list 4 protocol ip medium tcp 23
```

The following example assigns a medium-priority level to UDP Domain Name Service packets.

```
Switch# priority-list 4 protocol ip medium udp 53
```

The following example assigns a high-priority level to traffic that matches Ethernet type code access list 201.

```
Switch# priority-list 1 protocol bridge high list 201
```

Related Commands

precedence
show queueing

priority-list queue-limit

Note This command or some of its parameters might not function as expected in the LightStream 1010 ATM switch environment.

To specify the maximum number of packets that can be waiting in each of the priority queues, use the **priority-list queue-limit** global configuration command.The **no** form of this command selects the normal queue.

priority-list *list-number* **queue-limit** *high-limit medium-limit normal-limit low-limit*
no priority-list *list-number* **queue-limit**

Syntax Description

list-number	Arbitrary integer between 1 and 16 that identifies the priority list selected by the user.
high-limit medium-limit normal-limit low-limit	Priority queue maximum length. A value of 0 for any of the four arguments means that the queue can be of unlimited size for that particular queue.

Default

The default queue limit arguments are listed in Table 13-7.

Table 13-7 Priority Queue Packet Limits

Priority Queue Argument	Packet Limits
high-limit	20
medium-limit	40
normal-limit	60
low-limit	80

Command Mode

Global configuration.

Usage Guidelines

If a priority queue overflows, excess packets are discarded and quench messages can be sent, if appropriate, for the protocol.

Example

The following example sets the maximum packets in the priority queue to 10.

```
Switch# priority-list 2 queue-limit 10 40 60 80
```

Related Commands

precedence
show queueing

privilege level (global)

To set the privilege level for a command, use the **privilege level** global configuration command. Use the **no** form of this command to revert to default privileges for a given command.

privilege *mode* **level** *level command*
no privilege *mode* **level** *level command*

Syntax Description

mode	Configuration mode. See Table 1-7 in the description of the **alias** command for a list of acceptable options.
level	Privilege level to be associated with the specified command. You can specify up to 16 privilege levels, using numbers 0 through 15.
command	Command to which privilege level is associated.

Defaults

Level 15 is the level of access permitted by the **enable** password.

Level 1 is normal EXEC-mode user privileges.

Command Mode

Global configuration.

Usage Guidelines

Table 1-7 in the description of the **alias** command shows the acceptable options for the *mode* argument in the **privilege level** global configuration command.

The password for the privilege level defined using the **privilege level** global configuration mode is configured using the **enable password** command.

Level 0 can be used to specify a more-limited subset of commands for specific users or lines. For example, you can allow user “guest” to only use the **show users** and **exit** commands.

If you set a command to a privilege level, all commands that have a syntax that is a subset of the syntax of that command are also set to that level. For example, when you set the command **show ip route** to level 15, if you do not set **show** commands and **show ip** commands to a different level, they are also set to the privilege level 15.

Example

In the following example, the **configure** command in global configuration mode is assigned a privilege level of 14. Only users who know the level 14 password are able to use the **configure** command.

```
Switch# privilege exec level 14 configure
Switch# enable password level 14 pswd14
```

Related Commands

enable password
privilege level

privilege level

To set the default privilege level for a line, use the **privilege level** line configuration command. Use the **no** form of this command to restore the default user privilege level to the line.

privilege level *level*
no privilege level

Syntax Description

level Privilege level to be associated with the specified line.

Defaults

Level 15 is the level of access permitted by the enable password.

Level 1 is normal EXEC-mode user privileges.

Command Mode

Line configuration.

Usage Guidelines

The privilege level that is set using this command can be overridden by a user logging in to the line and enabling a different privilege level. The user can lower the privilege level by using the **disable** command. If they know the password to a higher privilege level, they can use that password to enable the higher privilege level.

Level 0 can be used to specify a more limited subset of commands for specific users or lines. For example, you can allow user "guest" to only use the **show users** and **exit** commands.

You might specify a high level of privilege for your console line if you are able to restrict who uses that line.

Example

In the following example, the auxiliary line is configured for privilege level 5. Anyone using the auxiliary line has privilege level 5 by default.

```
Switch(config)# line aux 0
Switch(config-line)# privilege level 5
```

Related Command

enable password

product

To configure a PNNI node's type, use the **product** node-level subcommand.

product *number*

Syntax Description

number Using the number 1 sets the type to a LightStream 1010 ATM switch.

Command Mode

ATM router PNNI configuration.

Usage Guidelines

For more information, refer to the *LightStream 1010 ATM Switch Software Configuration Guide*.

Example

The following script shows how to access the **product** node-level subcommand.

```
Switch# configure terminal
Switch(config)# atm router pnni
Switch(config-atm-router)# node 1
Switch(config-pnni-node)# product 1
```

ptse

To set PTSE origination and request parameters (including significant change determination parameters), use the **ptse** node-level subcommand. To revert to the default values, use the **no** form of this command.

ptse [lifetime-factor *percent***] [min-ptse-interval** *tenths_of_seconds***]**
[refresh-interval *seconds***] [request** *number***] [significant-change acr-mt** *percent***]**
[significant-change acr-pm *percent***] [significant-change cdv-pm** *percent***]**
[significant-change ctd-pm *percent***]**
no ptse [lifetime-factor] [min-ptse-interval] [refresh-interval] [request]
[significant-change acr-mt] [significant-change acr-pm] [significant-change cdv-pm]
[significant-change ctd-pm]

Syntax Description

min-ptse-interval	Specifies the minimum PTSE interval. The default is 10 *tenths_of_seconds*.
tenths_of_seconds	Specifies the time of the interval in tenths of seconds. Ten *tenths_of_seconds* equals one second.
lifetime-factor	Specifies an initial lifetime of self-originated PTSEs as a percentage of the **refresh-interval**. The default is 200 percent.
percent	Specifies the significant change in a percent.
min-ptse-interval	Specifies the minimum interval between updates of any given PTSE. This means new instances of a PTSE are not issued more often than every **min-ptse-interval** seconds. Its default value is 1 second. Its minimum value is 0.1 seconds.
refresh-interval	Specifies the period the system updates self-originated PTSEs. The default is 1800.
request	Specifies the maximum number of PTSE requested in one request packet. The default is 32 PTSEs.
number	Specifies the PTSE requests using an integer.
acr-mt	Specifies the minimum change of available cell rate threshold considered significant as a percentage of the maximum cell rate. The default is 3 percent.
acr-pm	Specifies the available cell rate proportional multiplier percentage of change from the current cell delay variation considered significant. The default is 50 percent.
cdv-pm	Specifies the cell transfer delay variation proportional multiplier percentage of change from the current cell delay variation considered significant. The default is 25 percent.
ctd-pm	Specifies the maximum cell transfer delay percentage multiplier percentage of change from the current cell delay variation considered significant. The default is 50 percent.

Default

See individual commands.

Command Mode

ATM router PNNI node-level configuration.

Usage Guidelines

Lowering **refresh-interval** time causes PNNI to reoriginate PTSEs more frequently, allowing insignificant changes to be advertised sooner at the cost of more PNNI traffic. Note that significant changes are advertised immediately.

Decreasing the **lifetime-factor** lowers the initial lifetime of PTSE, which means PTSEs of a PNNI node that has stopped functioning are removed from the database sooner. Lowering **min-ptse-interval** allows PNNI to update PTSEs quickly when changes happen rapidly in the network. This should be adjusted carefully so that you do not overload switch processors. In a normal situation, these parameters are not changed from their default values.

Significant change defines the level of changes in metrics that triggers PNNI to update and send its PTSE. It applies to all PTSE types that include metric: for example, horizontal link, up link, external reachable address, and nodal state parameters. Any change in administrative weight or cell loss ratio is considered significant.

For more information, refer to the *LightStream 1010 ATM Switch Software Configuration Guide*.

Example

The following script shows how to access the **ptse** node-level subcommand.

```
Switch# configure terminal
Switch(config)# atm router pnni
Switch(config-atm-router)# node 1
Switch(config-pnni-node)# ptse refresh-interval 1900
```

Related Commands

show atm pnni node
show atm pnni rm-info

pwd

To show the current setting of the **cd** command, use the **pwd** EXEC command.

pwd

Syntax Description

This command has no arguments or keywords.

Default

This command has no default.

Command Mode

EXEC.

Usage Guidelines

Use the **pwd** command to show what device is specified as the system's default device by the **cd** command. For all EXEC commands that have an optional *device***:** argument, the system uses the device specified by the **cd** command when you omit the optional *device***:** argument.

For example, the **dir** command contains an optional *device***:** argument and displays a list of files on a Flash memory device. When you omit this *device***:** argument, the system shows a list of the files on the Flash device specified by the **cd** command.

Examples

The following example shows that the present working device specified by the **cd** command is slot 0 of the ASP card.

```
Switch# Gouda#pwd
Switch# slot0
Switch# Gouda#
```

The following example uses the **cd** command to change the present working device to slot 1 of the ASP card and then uses the **pwd** command to display that present working device.

```
Switch# Gouda#cd slot1:
Switch# Gouda#pwd
Switch# slot1
Switch# Gouda#
```

Similarly, the following example uses the **cd** command to change the present working device to bootflash and then uses the **pwd** command to display that present working device.

```
Switch# Gouda#cd bootflash:
Switch# Gouda#pwd
Switch# bootflash
Switch# Gouda#
```

Related Command

cd