



*Plexxi Switch  
Command Line Interface Guide  
Release 2.1.0*

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The Plexxi Switch system is classified as a class 1 telecommunications laser product employing embedded class 1 lasers and complies with the following:

**THIS PRODUCT COMPLIES WITH FDA RULE 21 CFR SUBCHAPTER J IN EFFECT AT DATE OF MANUFACTURE. PRODUCT COMPLIES WITH 21 CFR 1040.10 AND 1040.11**

**PRODUIT CONFORME SELON LE SOUS CHAPITRE J DU DOCUMENT FDA RÈGLE 21 CFR EN VIGUEUR LORS DE LA DATE DE FABRICATION. PRODUIT CONFORME SELON 21CFR 1040.10 ET 1040.11.**

Electrotechnical Commission (IEC) 60825-1, 60825-2

This product is classified as a: **CLASS 1 LASER PRODUCT**

**APPAREIL À LASER DE CLASSE 1**

This unit is intended to be installed in a Restricted Access Location only with access only by trained personnel.



**Warning:** The primary hazards of exposure to invisible laser radiation from an optical fiber communications system are:

- i Damage to the eye by viewing an unterminated optical fiber or fiber optic connector.
- i Damage to the eye from invisible laser radiation from viewing a cut fiber or a broken fiber.

Never attempt to view optical connectors that may be emitting laser energy and always avoid possible exposure to invisible optical laser radiation. Using optical fiber scopes or magnifying lenses may increase the possibility for an eye hazard. It is recommended that you use an optical power meter to determine if there is optical laser radiation present or use a remote video display inspection tool to inspect connectors.

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## Welcome

Plexxi provides a command line interface (CLI) for the Plexxi Switch that you can use for initial switch set-up and for troubleshooting functions. You can use the CLI to access information available from Plexxi Control and to quickly display system status Management.

Although you can access some Plexxi Switch configuration commands, in normal operation you use the Plexxi Control graphical user interface (GUI) for most configuration and management functions.

## CLI Modes

You work with five different modes when you use the Plexxi CLI. Each mode builds on the prior mode by including the same commands and adding on new ones.

- EXEC: basic commands for viewing switch details
- PRIV-EXEC: the basic commands from EXEC plus additional configuration, debug, and cleanup commands
- CONFIG modes: includes the commands from EXEC and PRIV-EXEC modes; however you must prefix those commands with the word do. For example, to issue a PRIV- EXEC command boot toggle, from any CONFIG mode, you must use the syntax do boot toggle.

### EXEC

The EXEC mode (also known as View mode) is the mode available when you first login to the CLI. You use this mode to perform basic commands; you cannot make any changes to the Plexxi Switch.

#### Prompt

```
plexxi>
```

#### Example

The following example shows the EXEC mode command you can use to view the version of software running:

```
plexxi> show version
Plexxi Switch version 0.4.0 r8095 10/03/12 14:18:29
Copyright (c) 2012 Plexxi, Inc. All rights reserved.
plexxi>
```

### PRIV-EXEC

Building on EXEC mode, PRIV-EXEC mode (also known as Enable mode), lets you issue debugging commands, write commands for saving and viewing the configuration, and issue additional show commands. The additional commands available in this mode include the ability to make basic changes such as system time and management of local files

#### Prompt

You enter PRIVILEGED EXEC mode from EXEC mode using the enable command. The prompt changes to indicate the change in mode.

```
plexxi> enable
plexxi#
```

## CONFIG

You enter CONFIG mode to access Plexxi Switch configuration commands. The configuration changes you make in this mode immediately take effect, but are not automatically saved. You need to save the changes in order for them to persist across switch reboots and software upgrades.

### Terminology

The name `running-config` refers to the current configuration and `startup-config` refers to the saved configuration

### Prompt

```
plexxi# configure
plexxi(config)#
```

### Additional CONFIG Modes

CONFIG mode contains additional submodes of configuration:

- CONFIG-IF for managing interfaces
- CONFIG-LINE for managing console and Virtual Terminal (VTY) lines

```
plexxi(config)# interface mgmt
plexxi(config-if)# exit
plexxi(config)# line console 0
plexxi(config-line)# end
plexxi#
```

### Exit Commands

After you are finish entering configuration commands, exit CONFIG mode back to PRIV-EXEC mode by typing any of the following:

- CTRL-Z, CTRL-D, quit or exit to move back to the previous mode. For example, if in CONFIG mode you move back to PRIV-EXEC mode. If in either CONFIG mode, you move back to CONFIG
- end puts you back in PRIV-EXEC mode

For example:

```
plexxi(config)# end
plexxi#
```

### Save Configuration Changes (Persistent Configuration)

You need to save the configuration information you enter using the CLI to have them persist across switch reboots and software upgrades.

When you leave CONFIG mode, if the `running-config` and the saved `startup-config` differ, an indicator is shown in the command prompt as an asterisk:

```
plexxi(config)# banner motd "Hello, World"
*plexxi(config)# end
*plexxi#
```

If you then save the running-config, the indicator disappears. To save your changes, use the following command:

```
*plexxi# copy running-config startup-config
Building configuration...
[OK]
plexxi#
```

The CLI parser accepts the shortest unambiguous substring for each command and parameter name. So the above will also work if all that is typed is copy run start.

## Check Current Configuration

You can check the current state of the system configuration as it is running using the PRIV-EXEC command **show running-config**:

```
plexxi# show running-config
!
service password-encryption
!
ip domain-name plexxi.com
ip name-server 10.10.10.204
ip domain-lookup
!
!
interface lo
 ip address 127.0.0.1/8
 ipv6 address ::1/128
 no shutdown
!
interface mgmt
 ip address 172.17.214.213/16
 ipv6 address fe80::e239:d7ff:fe00:e7f/64
 no shutdown
!
ip route 0.0.0.0/0 172.17.214.1
!
clock timezone US/Eastern
!
!
line con 0
 login
line vty 0 4
 login
!
```



```
end
plexxi#
```

## Online Help

The CLI includes an online help system. You can type a question mark (?) at the prompt to display a list of available commands. For example:

```
plexxi> ?
Exec commands:
clear          Reset functions
debug         Debugging functions (see also 'undebug')
disable       Turn off privileged mode command
enable       Turn on privileged mode command
exit         End current mode and down to previous mode
help         Description of the interactive help system
logout       Exit from the EXEC
no           Negate a command or set its defaults
ping        Send echo messages
quit        Exit current mode and down to previous mode
show        Show command
ssh         Open a SSH connection
telnet      Open a telnet connection
terminal    Set terminal line parameters
traceroute  Trace route to destination
plexxi>
```

You can also get help for a specific command by typing the command name followed by ?. The next expected parameters for that command are displayed. A <cr> indication means you can complete the command by typing Enter. For example:

```
plexxi> show ?
arp          Internet Protocol (IP)
cli         Show CLI tree of current mode
debugging   Debugging information outputs
hardware    System hardware info
history     Display the session command history
. . .
clock       Display system time and date
port        Display port information
lag         Display link aggregation information
vlan        Display virtual LAN information
path        Display path information
tree        Display tree information
```

```
plexxi> show clock ?
  | Output modifiers
  > Output redirection
  <cr>
plexxi> show clock
Wed Oct 3 15:18:23 EDT 2012
plexxi>
```

## Output Modifiers

This guide refers to some of the output modifiers available in the CLI in the code samples. For example:

```
pas579# show clock ?  | Output modifiers  > Output redirection  <cr>
pas579# show clock | ?  begin      Begin with the line that matches  exclude
Exclude lines that match  include  Include lines that match  redirect  Redirect
output  repeat      Repeat command
```

## Repeat a Show Command

You can use the repeat output modifier with any show command and its associated arguments to have this command repeatedly executed with a delay between executions. You specify the delay in seconds or retain the default value of 2 seconds.

The show command continues to be run over and over until interrupted with **CTRL-C**.

For example:

```
plexxi# show interface mgmt | repeat
Repeat every 2s (CTRL-C to stop): show interface mgmt

Interface: mgmt   ifIndex: 4
  Ethernet Hardware Address: e039.d700.0e7f
  Admin: up      Link: up      Oper: up
  Duplex: full   MTU: 1500   Bandwidth: 1g
  Inet: 172.17.202.13/16      Broadcast: 172.17.255.255
  Inet6: fe80::e239:d7ff:fe00:e7f/64

Repeat every 2s (CTRL-C to stop): show interface mgmt

Interface: mgmt   ifIndex: 4
  Ethernet Hardware Address: e039.d700.0e7f
  Admin: up      Link: up      Oper: up
  Duplex: full   MTU: 1500   Bandwidth: 1g
  Inet: 172.17.202.13/16      Broadcast: 172.17.255.255
  Inet6: fe80::e239:d7ff:fe00:e7f/64

Repeat every 2s (CTRL-C to stop): show interface mgmt
```

```
Interface: mgmt    ifIndex: 4
Ethernet Hardware Address: e039.d700.0e7f
Admin: up        Link: up          Oper: up
Duplex: full     MTU: 1500       Bandwidth: 1g
Inet: 172.17.202.13/16          Broadcast: 172.17.255.255
Inet6: fe80::e239:d7ff:fe00:e7f/64
```

Repeat every 2s (CTRL-C to stop): show interface mgmt

```
Interface: mgmt    ifIndex: 4
Ethernet Hardware Address: e039.d700.0e7f
Admin: up        Link: up          Oper: up
Duplex: full     MTU: 1500       Bandwidth: 1g
Inet: 172.17.202.13/16          Broadcast: 172.17.255.255
Inet6: fe80::e239:d7ff:fe00:e7f/64
```

<CTRL-C>

plexxi# show interface mgmt statistics | repeat 5

Repeat every 5s (CTRL-C to stop): show interface mgmt statistics

```
Interface: mgmt    ifIndex: 4
InOctets           1355083    OutOctets           29713
InPkts             9076      OutPkts             248
InDiscards         3366      OutDiscards         0
InErrors           0         OutErrors           0
```

Repeat every 5s (CTRL-C to stop): show interface mgmt statistics

```
Interface: mgmt    ifIndex: 4
InOctets           1355872    OutOctets           29713
InPkts             9084      OutPkts             248
InDiscards         3368      OutDiscards         0
InErrors           0         OutErrors           0
```

Repeat every 5s (CTRL-C to stop): show interface mgmt statistics

```
Interface: mgmt    ifIndex: 4
InOctets           1356395    OutOctets           29713
InPkts             9091      OutPkts             248
InDiscards         3371      OutDiscards         0
```

```
InErrors          0      OutErrors          0
```

```
<CTRL-C>
```

```
plexxi#
```

## Login

You can connect to the Plexxi Switch CLI through a serial console connection, SSH, or Telnet. The serial console runs at 38.4Kbps, 8 data bits, 1 stop bit, and No Parity. Serial access is always enabled and requires physical access to the external serial port of the switch.

By default, SSH access is enabled, but Telnet is not. You can enable or disable both Telnet and SSH as part of the switch configuration.

You are prompted for a username and password when you connect to the switch. The default values are:

- admin for username
- plexxi for password

After the initial switch setup, you should change the password to something other than the default.

### Admin Account

The CLI supports a single admin account. You cannot remove this account or add others. You can change the password for the admin account using the `username config` command.

```
plexxi(config)# username admin password $herl0ck
```

```
*plexxi(config)#
```



## Initial Setup

You need to establish the IP settings for the external MGMT port so that the switch can connect to the Central Controller. By default, the MGMT interface is set up as a DHCP client. You can set it using static IP address or set up static DNS.

### Static IP Address

Static IP settings can be done with a sequence of commands similar to the following:

```
plexxi(config)# interface mgmt
plexxi(config-if)# no ip address dhcp
plexxi(config-if)# ip address 172.17.214.213/16
plexxi(config-if)# no shutdown
plexxi(config-if)# exit
plexxi(config)# ip route 0.0.0.0/0 172.17.214.1
plexxi(config)#
```

### Static DNS Settings

The default DHCP client takes on any DNS settings supplied by the DHCP server. To set up static DNS settings, CONFIG commands similar to the following can be used:

```
plexxi(config)# ip domain-name plexxi.com
plexxi(config)# ip name-server 10.10.10.204
plexxi(config)# ip domain-lookup
plexxi(config)#
```

### Point to Controller

You then need to point the switch to the Central Controller to be centrally managed:

```
plexxi# controller set 10.10.11.129
plexxi#
```

Note that the controller address is shared among all switches on the ring. To avoid conflicts, this setting is not saved in the startup-config.

## File Handling

The CLI presents a local file system containing a single, unnamed directory. You cannot create or navigate nested directories. You can use the `dir` command to list the contents of the local file system:

```
plexxi# dir
User Files:
-----
 243264462   Sep 7 2012 17:27   0.3.0
 380         Sep 12 2012 10:41   config
 434         Oct 3 2012 16:37   test_config
plexxi#
```

- first column shows the file size in bytes
- second column shows the time/date the file was last written
- third column shows the file name

When working with files, note that the special names:

- `running-config` refers to the current configuration
- `startup-config` refers to the saved configuration

Neither of these are housed in the visible local file system space.

### Copy, Move, and Delete Examples

The following example shows the use of the `copy`, `move`, and `delete` commands.

```
plexxi# delete test_config
plexxi# dir
User Files:
-----
 243264462   Sep 7 2012 17:27   0.3.0
 380         Sep 12 2012 10:41   config
plexxi# move config old_config
plexxi# dir
User Files:
-----
 243264462   Sep 7 2012 17:27   0.3.0
 380         Sep 12 2012 10:41   old_config
plexxi# copy running-config current_config
plexxi# dir
User Files:
-----
 243264462   Sep 7 2012 17:27   0.3.0
 434         Oct 3 2012 16:44   current_config
```

```
380          Sep 12 2012 10:41   old_config
```

```
plexxi#
```

With that last example using `copy`, the current system configuration was built and saved to the destination filename.

## File Copy with URLs

The `copy` command can use URLs for either the source or destination (not both). Using URLs with the `copy` command lets you copy files from a remote file server to the local switch file system and vice versa.

URLs follow the general form:

```
scheme://[username[:password]@]host[:port]/path/filename
```

where `username`, `password` and `port` can be optionally included in the URL or not. The following schemes are supported:

- http
- scp
- sftp
- ftp
- tftp.

## SCP and SFTP

You could be prompted for either or both a username and password if they are not embedded in the given URL. You can opt to always leave the password information out of the URL so that it is not shown on the screen in plain text. When prompted for password information, the characters will not be echoed to the screen. For example:

```
plexxi# copy current_config sftp://joe@my_server/configs/my_switch/oct3_config
```

```
Password:
```

```
plexxi#
```

```
plexxi# copy scp://release_server/releases/1.3.0.tar.gz latest_release
```

```
Username: jsmith
```

```
Password:
```

```
plexxi#
```

## HTTP and FTP

A username and password might or might not be needed. You will not be prompted unless a username is embedded in the URL, but no password is included.

## TFTP

Any username or password info embedded in the URL is ignored.

## System Date and Time

You can configure the switch's real time clock using the PRIV-EXEC command `clock set`. The parameters are the time in:

- hours:minutes:seconds
- day of the month
- month number
- 4-digit year

For example:

```
plexxi# clock set 12:05 3 4 2013
Sun Apr 3 12:05:00 EDT 2013
plexxi#
```

### Timezone

The switch defaults to a local timezone of US/Eastern. You can change the timezone using the CONFIG command `clock timezone`.

To see the list of acceptable timezone use the `show timezone list` command. You can use the CLI's output modifier capability to scan for specific timezones. For example:

```
plexxi# show timezone list | include US
US/Alaska
US/Aleutian
US/Arizona
US/Central
US/East-Indiana
US/Eastern
US/Hawaii
US/Indiana-Starke
US/Michigan
US/Mountain
US/Pacific
US/Pacific-New
US/Samoa
plexxi#
plexxi# configure
Enter configuration commands, one per line. End with CNTL/Z.
plexxi(config)# clock timezone US/Hawaii
*plexxi(config)# end
*plexxi# show clock
Sun Apr 3 06:13:41 HST 2011
*plexxi#
```

## Set Time and Date Using an NTP Server

For more precision, you can set the current date/time from an NTP server:

```
*plexxi# clock set ntp pool.ntp.org
 3 Oct 11:20:10 ntpdate[18950]: step time server 64.73.32.134 offset
47451859.499793 sec
*plexxi# show clock
Wed Oct 3 11:20:14 HST 2012
*plexxi#
```

These commands set the system clock against the NTP server at the moment the command is run. It does not use the NTP protocol to keep the system clock in sync.

## Keep Time Synchronized Using NTP

If you'd like the system's time to stay synchronized using NTP, use the NTP protocol CONFIG commands. Here is one example:

```
*plexxi(config)# clock protocol ntp
*plexxi(config)# ntp server pool.ntp.org prefer
Translating IPv4 address: 50.97.210.169 " " ... OK
*plexxi(config)# end
*plexxi# show ntp associations
 address ref clock st when poll reach delay offset disp
~198.110.48.12 128.4.1.1 2 61 64 001 0.0 4294967296.0 7937.5
[ * master (syncd), # master (unsyncd), + selected, - candidate, ~ configured ]
*plexxi#
*plexxi# show ntp status
Clock is synchronized, stratum 3, reference is 198.110.48.12
actual frequency is 4294967295.6510 Hz, precision is 2** -23
reference time is d4172bc6.f247fff3 (21:25:26.946 UTC Wed Oct 3 2012)
clock offset is 4294967295.998 msec, root delay is 73.103 msec
root dispersion is 0.000 msec,
*plexxi#
```

## Update the Software

The Plexxi Switch has a host CPU and an internal solid-state drive. The system runs a specialized Linux OS, with the internal drive partitioned in such a way that there are two installations of software on the drive at any given time.

- One installation runs on the active partition
- One installation sits dormant on the alternate partition

With the two software installations, you can fall back to a previous version as needed.

### View Currently Running Software Version

View what version of software that is currently running using `show version`. For example:

```
plexxi# show version
Plexxi Switch version 0.3.2 r8095 10/03/12 14:18:29
Copyright (c) 2012 Plexxi, Inc. All rights reserved.
plexxi#
```

### Display Versions for Aggregated Components

Display versions for all aggregated components using `show version detail`. For example:

```
pas579# show version detail Plexxi Switch version name-master-master_20131210
12/03/13 15:45:36 Copyright (c) 2013 Plexxi, Inc. All rights
reserved. PlexxiSwitch 2.0.0-a48 PlexxiClient 2.0.0-
a119 PlexxiClientUpgrade 2.0.0-a119 pas579#
PlexxiSwitch -240.0
PlexxiClient -21090
PlexxiClientUpgrade
2.0.0-a119
pas579#
```

### View Installations on Internal Partitions

You can see what is installed on each of the internal partitions by using the `show install` command. The output indicates what software versions are installed on each partition, which partition is currently the running or active partition, and also which partition is the default partition to boot into if the system is reloaded. In the following example, the letter `r` indicates the running partition and the letter `b` indicates the boot partition.)

```
plexxi# show install
Disk partitions [r-running b-boot default]
      A 0.3.0 r7885 Built: Fri Sep 21 19:07:12 EDT 2012 by: releng
r b    B 0.3.2 r8095 Built: Wed Oct 3 14:13:50 EDT 2012 by: releng
plexxi#
```

## Copy Files from Remote Server

Use the `copy` command to copy a switch software release archive to the switch from a remote file server. Once the archive is copied to the switch, you should see it in the output of the `dir` command:

```
plexxi# dir
User Files:
-----
 243264462   Oct 7 2012 17:27   0.4.0_release.tar.gz
 434         Oct 3 2012 16:44   current_config
 380         Sep 12 2012 10:41  old_config
plexxi#
```

## Install an Update

Use the `install` command to install the update. The `install` command:

1. Validates the archive file.
2. Installs its contents to the alternate non-running partition.
3. Toggles the boot default to the other partition if no errors are encountered.

This leaves the system still running on the original version until it is reloaded, at which time the newly installed version gets used. For example:

```
plexxi# install 0.4.0_release.tar.gz
This action will overwrite all data on the alternate storage partition.
perform install? (y/n): y
Validating 0.4.0_release.tar.gz ...
Preparing alternate partition ...
Installing files ...
Version '0.4.0 r8663' successfully installed.
Default boot partition changed to 'A'
plexxi# show install
Disk partitions [r-running b-boot default]
  b  A  0.4.0  r8663  Built: Thu Sep 6 16:46:07 EDT 2012 by: releng
  r  B  0.3.2  r8095  Built: Wed Oct 3 14:13:50 EDT 2012 by: releng
plexxi#
```

You can see version 0.4.0 is successfully installed, but the switch is still running on 0.3.2 for the moment. The indicator for boot default shows that if you reload the switch, it will boot into the new 0.4.0 version. To complete the installation, issue the `reload` command.

## Reload to Complete Installation

```
plexxi# reload
reboot system? (y/n): y

. . . <switch reboots> . . .
```

```

plexxi# show install
Disk partitions [r-running b-boot default]
  r b  A  0.4.0  r8663 Built: Thu Oct 6 16:46:07 EDT 2012 by: releng
      B  0.3.2  r8095 Built: Wed Oct 3 14:13:50 EDT 2012 by: releng
plexxi# show version
Plexxi Switch version 0.4.0  r8663 10/06/12 16:18:29
  Copyright (c) 2012 Plexxi, Inc. All rights reserved.
plexxi#

```

## Configuration Persistence

When the new version of software is booted, the saved configuration from the older version is automatically copied over to the new active partition. Also, system logs and the local file system are kept intact between software updates.

## Revert to Previously Running Version

You can revert to the previously running version if needed. Note that any configuration changes you made with the newer version running are not copied over. Instead the last saved configuration from the older version is used.

1. Change the boot default to the alternate partition using the `boot toggle` command. For example:

```

plexxi# boot toggle
Default boot partition changed to 'B'
plexxi# show install
Disk partitions [r-running b-boot default]
  r    A  0.4.0  r8663 Built: Thu Oct 6 16:46:07 EDT 2012 by: releng
      b  B  0.3.2  r8095 Built: Wed Oct 3 14:13:50 EDT 2012 by: releng
plexxi#

```

2. Boot the previously running version using the `reload` command.

Any configuration changes you saved while running the newer software will not be copied over when reverting to the older software. Instead the configuration as it was saved the last time the older version's partition ran is what will be in place.



## SNMP

You configure SNMP using the CONFIG command `snmp-server`.

### Community Names

A community name is used for basic authentication for SNMP v1 and v2c access. You can configure a community for read-only (ro) access to the entire MIB. For example:

```
plexxi(config)# snmp-server community general ro
```

```
*plexxi(config)# do show snmp community
```

```
SNMP Community Names:
```

Name	Access	Allowed Host/Subnet	MIB View
------	--------	---------------------	----------

```
-----
general      ro      (any)
```

```
*plexxi(config)#
```

### Restrict Community

You can restrict a community by specifying a:

- predefined MIB view that is accessible for the community
- specific host or IP subnet that is allowed access with that community name

This example shows how to make a read-write community accessible only by the 192.168.1.0/24 subnet and only with accessibility to the set of OIDs defined in the MIB view named system.

```
*plexxi(config)# snmp-server community system_only view system rw allow
192.168.1.0/24
```

```
*plexxi(config)# do show snmp community
```

```
SNMP Community Names:
```

Name	Access	Allowed Host/Subnet	MIB View
------	--------	---------------------	----------

```
-----
general      ro      (any)
```

```
system_only  rw      192.168.1.0/24      system
```

```
*plexxi(config)#
```

### MIB Views

You can constrain SNMP clients to a specific subset of the entire MIB using views. You define the view by giving it a name and an OID 'root' that is either included or excluded from the view. You can use either numeric or text-name OIDs.

In this example, the view constrains access to only those OIDs that are part of RFC1213's systemGroup:

```
*plexxi(config)# snmp-server view system-view system included
```

```
*plexxi(config)# do show snmp view
```

View Name	Inclusion	OID
-----------	-----------	-----

```
-----
system-view      included      system
```

```
*plexxi(config)#
```

In this example the entire MIB is included, while the systemGroup and the ifTable are excluded:

```
*plexxi(config)# snmp-server view no-system-view 1.3.6.1 included
```

```
*plexxi(config)# snmp-server view no-system-view system excluded
```

```
*plexxi(config)# do show snmp view
```

View Name	Inclusion	OID
no-system-view	included	1.3.6.1
	excluded	system
system-view	included	system

```
*plexxi(config)#
```

## SNMP v3 User-Based Security Model

Version 3 of SNMP introduced a user-based security model (USM) that includes options for user authentication and encryption of information in requests and responses. Each user can be assigned an authentication password using either MD5 or SHA-1 hashing algorithms. They can also be assigned a privacy (encryption) password using DES or AES encryption standards. Additionally, the user is defined with particular access along with its level of security.

In this example a user with a MD5 authentication password and an AES privacy password is given fully encrypted read-only access to the MIB view named system-view:

```
*plexxi(config)# snmp-server user joe view system-view priv ro auth md5 my-secret
priv aes my-other-secret
```

```
*plexxi(config)# do show snmp user
```

SNMP v3 USM User	Auth	Priv	Access	Level	View
joe	MD5	AES	ro	priv	system-view

```
*plexxi(config)#
```

## Groups

You can give a group of users the same access permissions to the same MIB view by defining a named group and assigning the users to the group. In the example a group is defined that has authenticated, but un-encrypted read-write access to the MIB view named no-system-view.

```
*plexxi(config)# snmp-server group delta auth view no-system-view rw
```

```
*plexxi(config)# do show snmp group
```

Group Name	Access	Security	MIB View
delta	rw	auth	no-system-view

```
*plexxi(config)#
```

In this example, a new user is assigned to the group. Because this user is assigned to a group that is not using full encryption, there is no need to assign a privacy password.

```
*plexxi(config)# snmp-server user jake group delta auth sha ucantguessthis
```

```
*plexxi(config)# do show snmp user
```



```
SNMP v3 USM User      Auth Priv Access Level View
-----
joe                    MD5  AES  ro    priv system-view
SNMP v3 USM User      Auth Priv Group
-----
jake                   SHA   delta
*plexxi(config)#
```

## Troubleshooting

You can do basic troubleshooting of your Plexxi Switch using the commands in this section.

### Switch Log

You can view the primary system log using the `show log` command. The output shows log entries in reverse-chronological order, so that as you page through the entries, you go back further in time.

```
plexxi# show log
Oct 4 14:34:02 plexxi syslogd 1.5.0: restart.
Oct 4 14:30:01 plexxi crond[1242]: crond: USER root pid 20625 cmd /sbin/hwclock --systohc --utc
Oct 4 14:22:00 plexxi snmpd[20538]: Turning on AgentX master support.
Oct 4 14:22:00 plexxi snmpd[20538]: NET-SNMP version 5.7.1 restarted
Oct 4 14:22:00 plexxi snmpd[20538]: Reconfiguring daemon
Oct 4 14:21:59 plexxi snmpd[20538]: NET-SNMP version 5.7.1
Oct 4 14:21:59 plexxi snmpd[20536]: Turning on AgentX master support.
Oct 4 14:21:59 plexxi monit[20533]: 'snmpd' start: /etc/init.d/S59snmpd
Oct 4 14:21:58 plexxi NSM[1539]: NSM: AgentX: read, connection (sock 12) closed: length is zero
Oct 4 14:21:58 plexxi snmpd[20399]: Received TERM or STOP signal... shutting down...
Oct 4 14:21:58 plexxi monit[20524]: 'snmpd' stop: /etc/init.d/S59snmpd
Oct 4 14:21:58 plexxi IMISH[20308]: IMISH: CFG[5] CMD (snmp-server user jake group delta auth sha ucantguessthis )
Oct 4 14:20:11 plexxi snmpd[20399]: Turning on AgentX master support.
Oct 4 14:20:11 plexxi snmpd[20399]: NET-SNMP version 5.7.1 restarted
Oct 4 14:20:11 plexxi snmpd[20399]: Reconfiguring daemon
Oct 4 14:20:11 plexxi IMISH[20308]: IMISH: CFG[5] CMD (snmp-server group delta auth view no-system-view rw )
. . .
```

### Testing Network Connectivity

You can use `ping` and `traceroute` to test network connectivity via the MGMT interface. For example:

```
plexxi# ping xbuild
PING xbuild (172.17.214.8): 56 data bytes
64 bytes from 172.17.214.8: seq=0 ttl=64 time=0.213 ms
64 bytes from 172.17.214.8: seq=1 ttl=64 time=0.259 ms
64 bytes from 172.17.214.8: seq=2 ttl=64 time=0.193 ms
--- xbuild ping statistics ---
3 packets transmitted, 3 packets received, 0% packet loss
round-trip min/avg/max = 0.193/0.221/0.259 ms
plexxi# traceroute xbuild
```

```
tracert to xbuild (172.17.214.8), 30 hops max, 46 byte packets
 1 172.17.214.8 (172.17.214.8) 0.220 ms 0.131 ms 0.189 ms
plexxi#
```

## Assess System Health

You can assess the general health of the system using the `show system resources` command.

```
plexxi# show system resources
top - 14:51:49 up 23:52, 2 users, load average: 0.11, 0.15, 0.14
Tasks: 96 total, 1 running, 95 sleeping, 0 stopped, 0 zombie
Cpu(s): 4.3%us, 0.3%sy, 0.0%ni, 95.4%id, 0.0%wa, 0.0%hi, 0.0%si, 0.0%st
Mem: 3674476k total, 1160188k used, 2514288k free, 41084k buffers
Swap:      0k total,      0k used,      0k free, 998288k cached
us:user sy:system ni:nice id:idle wa:io wait hi:hard irq si:soft irq st:steal time
plexxi#
```

## Display Running Processes

You can display a list of all running processes using the `show process` command.

```
plexxi# show process
PID   TTY   STAT  TIME  COMMAND
 1     ?    Ss    0:05  init
 2     ?    S     0:00  [kthreadd]
 3     ?    S     0:00  [ksoftirqd/0]
 6     ?    S     0:00  [migration/0]
 7     ?    S     0:00  [watchdog/0]
 8     ?    S     0:00  [migration/1]
. . .
```

You can use output modifiers if you want to check on a particular process.

```
plexxi# show process | include snmp
20538 ?    S     0:01  /usr/sbin/snmpd -I-ifTable -ifXTable -Lsd -p
/var/run/snmpd.pid
20706 pts/1 S+    0:00  egrep snmp
plexxi#
```

If you suspect any processes might have crashed, you can inspect for the presence of core dump files using the `show system cores` command.

## Hardware Status

You can view information about the chassis and hardware using the `show hardware` command.

```
plexxi# show hardware
```

```
Product Data:
```

```
-----
Board Type:                SM2
Board Revision:            1.07
Serial Number:             1211200579
Manufacturer Code:         1
Manufacturing Date:        20MAR2012
Base MAC Address:          e039.d700.0e00
Number of MAC Addresses:   128
System Configuration:      All QSFPs as 4x10Gbps
```

```
plexxi#
```

## Power Supply Details

For details about the power supplies use the `show hardware power` command.

```
plexxi# show hardware power
```

```

                                     Power Supply 1      Power Supply 2
-----
Input Voltage:                       123.00 V          (not present)
Input Current:                        1.28 A
Input Power:                          158.00 W
Output Voltage (12V):                  12.00 V
Output Voltage (3.3V):                 3.34 V
Output Current (12V):                  12.12 A
Output Current (3.3V):                 0.00 A
Output Power (12V):                    144.00 W
Output Power (3.3V):                   0.00 W
Inlet Temp:                            29.62 C
Outlet Temp:                           36.25 C
Fanspeed:                              7968 RPM
```

```
plexxi#
```

## Temperature Sensor Readings

You can view temperature sensor readings using the `show hardware temp` command.

```
plexxi# show hardware temp
```

```
Temperature Data:
```

```
-----  
Fan Temp Sensor 0:          31.12 C  
Fan Temp Sensor 1:          50.25 C  
Fan Temp Sensor 2:          32.50 C  
Power Supply 1 Temp Sensor 0: 29.62 C  
Power Supply 1 Temp Sensor 1: 36.25 C  
Power Supply 2 Temp Sensor 0: 0.00 C  
Power Supply 2 Temp Sensor 1: 0.00 C  
CPU Module Temp Sensor 0:   33.50 C  
Switch Fabric Temp Sensor 0: 48.00 C  
Switch Fabric Temp Sensor 1: 51.00 C  
Switch Fabric Temp Sensor 2: 48.00 C  
Switch Fabric Temp Sensor 3: 44.00 C  
Switch Fabric Temp Sensor 4: 50.00 C  
Switch Fabric Temp Sensor 5: 47.00 C  
Switch Fabric Temp Sensor 6: 47.00 C  
Switch Fabric Temp Sensor 7: 50.00 C  
plexxi#
```

## Fan Status

You can view the status of the fan modules using the `show hardware fans` command.

```
plexxi# show hardware fans
```

```
Chassis Fan Speeds:
```

```
-----  
Fan 1: 4054 RPM  
Fan 2: 4014 RPM  
Fan 3: 4093 RPM  
Fan 4: 4006 RPM  
Fan 5: 4107 RPM  
Fan 6: 4014 RPM  
plexxi#
```

## Working with Plexxi Care Support

If you are working with Plexxi Care Support, there are several types of log files they might request to troubleshoot a switch event such as a reboot.

### Combining Output

You can combine together the output from show commands (such as version, the running configuration, system resources, interface information, and other hardware details) using the show tech-support command. This combined output enables Plexxi support to gain perspective on the current state of the system.

You can page through all of the output to view it yourself; but a more practical way of using it is to redirect its output to a local file, and then copy that file off the switch to a file server. For example:

```

plexxi# show tech-support > support_info.txt
plexxi# dir
User Files:
-----
 243264462      Oct 7 2012 17:27      0.4.0
 434           Oct 3 2012 16:44      current_config
 380           Sep 12 2012 10:41     old_config
 28034         Oct 4 2012 15:07     support_info.txt
plexxi# show file support_info.txt
*** show version detail ***
Plexxi Switch version 0.4.0  r8663 10/03/12 14:18:29
  Copyright (c) 2012 Plexxi, Inc. All rights reserved.
PlexxiSwitch
0.4.32
PlexxiClient
0.4.0-a25

*** show running-config ***
!
service password-encryption
!
username admin password 8 bJbSh8jND7i1A
!
ip domain-name plexxi.com
ip name-server 10.10.10.204
ip domain-lookup
!
snmp-server community "general" ro
. . .

```



## Bundling the Log Files

A Plexxi Switch records a number of verbose system messages in an internal system log. Because the messages can be quite lengthy, it is not practical to include them in the show tech support output. However, if Plexxi Care Support requests these logs, you can use the `support log-bundle` command — available in PRIV-EXEC (or ENABLE) mode — to bundle the requested logs together. The system log files are gathered into an archived bundle named `log-bundle.tar.gz`.

To gather these logs into a bundle for Plexxi Care technical support:

1. Display the log files in reverse chronological order by using the `show log` command in EXEC or PRIV-EXEC mode.
2. Bundle the files using one of the following commands:
 

```
support log-bundle [days DAYS | hours HOURS]
support log-bundle HH:MM [DAY [MONTH [YEAR]]]
```

If no time period is specified, the command gathers logs from the past 24 hours. However, you can optionally specify a number of days or hours prior, or specify a date and time from which to gather logs.
3. Copy the `log-bundle.tar.gz` file and send it to Plexxi Care support.
4. If you want, you can delete the `log-bundle.tar.gz` file from your system using the `delete` command. The actual system logs are not affected or modified.

Each time you run the `support log-bundle` command, you overwrite the existing `log-bundle.tar.gz` file.

### Specify Number of Days Example

If you report that an event occurred recently on a Plexxi Switch, Plexxi Care technical support might ask you to supply a log bundle that covers the period when the event occurred. If an event was "about two days ago", you might be asked to gather three days' worth of logs, as shown in the following example.

```
plexxi# support log-bundle days 3
Gathering files newer than Sun Jan 20 15:17:19 2013 Written to log-bundle.tar.gz
plexxi# dir
User Files:
-----
    419          Jan 23 2013 14:02   config.txt
275604          Jan 23 2013 15:17   log-bundle.tar.gz
```

## Specify a Time Example

Another example might be an event that occurred at 2:00 a.m. on Christmas Day. Gathering logs from just prior to the event (say, 1:00 a.m.) might be appropriate:

```
plexxi# support log-bundle 01:00 25 12 2012
Gathering files newer than Tue Dec 25 01:00:00 2012 Written to log-bundle.tar.gz
plexxi# dir
User Files:
-----
      419          Jan 23 2013 14:02   config.txt
4108450          Jan 23 2013 15:21   log-bundle.tar.gz
```

## Copying Plexxi Switch Core Files

In the rare event of software crashes, the switch software creates core files that may provide useful information for Plexxi support. This section describes how to copy the core files for transmittal to Plexxi.

### Check for Core Files

To see if system core files have been generated, use the `show system cores` command. For example:

```
plexxi# show system cores
System Core Files
-----
18358272 Jan 22 2013 13:16   nsm_1358878580_1644.core
```

### Copy to Another Network Host

You can copy the core file from the core file disk space to another network host using the `copy` command and a `core://` style URL to refer to the core filename.

For example:

```
plexxi# copy core://nsm_1358878580_1644.core scp://<username>@<host>/
<path>/nsm.core
Password:
```

### Copy to Local User Disk Space

You can copy the core file to the local user disk space using the `copy` command and a `core://` style URL to refer to the core filename. For example:

```
plexxi# copy core://nsm_1358878580_1644.core keep_this_nsm.core
```

Note that you cannot copy core files into the Plexxi Switch core file area:

```
plexxi# copy keep_this_nsm.core core://nsm.core
% Bad destination
plexxi# show system cores
System Core Files:
-----
```



You can check for the new filename by using the `dir` command. For example:

```
plexxi# dir
User Files:
-----
      484          Jan 23 2013 14:02   config.txt
18358272         Jan 22 2013 15:21   keep_this_nsm.core
264629316        Jan 18 2013 09:52   latest.tar.gz
```

### Verify Core File in Original Location

You can verify the switch core file is still in its original location.

```
plexxi# show system cores System Core Files:
-----
18358272 Jan 22 2013 13:16   nsm_1358878580_1644.core
```

### Delete Core Files

At this point, you may want to delete the original core file and verify its deletion.

```
plexxi# delete core://nsm_1358878580_1644.core
plexxi# show system cores
System Core Files:
-----
```

To delete all core files on the system core file disk space, you can use the `clear cores` command.

## Command Reference

### EXEC mode

#### clear counters IFNAME

Zero the counters for interface IFNAME.

#### no debug all

Disable all debugging.

#### debug nsm

Enable and specify debug options for NSM events, kernel, and receive and send packets. Use the no parameter with these commands to disable NSM debugging.

```
debug nsm [all|nsm|ha|events|kernel|packet]
no debug nsm [all|nsm|ha|events|kernel|packet]
```

#### Syntax:

```
[no] debug all nsm
[no] debug nsm (all|)
[no] debug nsm events
[no] debug nsm ha
[no] debug nsm ha all
[no] debug nsm kernel
[no] debug nsm packet (recv|send|) (detail|)
```

#### disable

Drop to a less privileged exec mode.

#### enable

Enter a more privileged exec mode.

#### (exit|logout|quit)

Leave the CLI session.

#### help

Display general help info.

#### ping

Send an ICMP echo to the host or IP address specified by WORD. With no arguments, the command is interactive.

```
ping [ip] WORD
ping ipv6 WORD [IFNAME]
```

### **show arp**

Display ARP cache.

### **show cli**

Display a tree of CLI commands available in the current mode.

### **show clock**

Display system time and date.

### **show crossbars**

Display crossbar status and info.

### **show debugging nsm**

Display current NSM debug setting.

### **show hardware**

Display general info about the hardware. Optionally, more detailed system hardware info, specific status information for fans, power supplies, and temperature sensors.

```
show hardware [detail|fans|power|temp]
```

### **show history**

Display list of previous commands that have been entered in this session.

### **show hosts**

Display domain and IP hostname lookup settings.

### **show interface**

Display interface information. If IFNAME is not given, all interfaces are listed. With 'statistics', normal counters are shown. With 'statistics errors', error counters are shown.

```
show interface (IFNAME|) [statistics [errors]]
```

### **show interface summary**

Display a tabular summary of interface information.

### **show ip domain-list**

Display list of DNS search domains.

### **show ip domain-name**

Display default domain assigned.

### **show ip igmp snooping**

Display IGMP snooping configuration, group info, and multicast router info. Optional VLAN ID may be specified.

```
show ip igmp snooping [vlan VLAN]
```

```
show ip igmp snooping groups [vlan VLAN]
show ip igmp snooping mrouter [vlan VLAN]
```

Display IGMP snooping configuration, group info, and multicast router info. Optional VLAN ID may be specified.

### show ip interface

Display full, or abbreviated information about one or all IP interfaces.

```
show ip interface [IFNAME] (brief|)
```

### show ip name-server

Display configured DNS server IP addresses.

### show ip route

Display information from the IP routing table for a specific network, subnet, source, or all.

```
show ip route A.B.C.D
show ip route A.B.C.D/M
show ip route (connected|database|kernel|ospf|static|)
show ip route summary
```

### show ipv6 interface

Display abbreviated information about one or all IPv6 interfaces.

```
show ipv6 interface [IFNAME] brief
```

### show ipv6 neighbors

Display list of IPv6 neighbors.

### show ipv6 route

Display information from the IPv6 routing table for a specific network, subnet, source, or all.

```
show ipv6 route (database|)
show ipv6 route summary
show ipv6 route X:X::X:X
show ipv6 route X:X::X:X/M
```

### show lacp

Display LACP status information for access ports (or one specified port).

```
show lacp [IFNAME]
```

### show lacp lag

Display LACP information for all LAGs (or one specified LAG). This command has the same output as `show lag lacp`.

```
show lacp lag [IFNAME]
```

### show lag

```
show lag [IFNAME]
```

Display information on link aggregations. Optionally, indicate one specific lag interface.

### **show lag lacp**

Display LACP information for all LAGs (or one specified LAG) This command has the same output as `show lacp lag`.

```
show lag lacp [IFNAME]
```

### **show list**

Display a list of CLI commands available in the current mode.

### **show locate-led**

Display current state of LOC\_ID LED on switch front panel.

### **show log**

Display system log entries.

### **show ntp associations**

Display NTP associations.

```
show ntp associations [detail]
```

### **show ntp status**

Display status of NTP.

### **show post**

Display information related to Power-On Self Test results.

### **show privilege**

Display current privilege level.

### **show qsfp**

Display current QSFP configuration settings such as redirect and control channel.

### **show ring**

Display Plexxi Ring configuration.

### **show router-id**

Display router identifier.

### **show snmp community**

Display configured SNMP community names.

### **show snmp engineID**

Displays the current value of the local SNMP agent's engineID.

### **show snmp group**

Displays any v3 user access groups that have been configured.

### **show snmp host**

Display configured hosts to receive SNMP traps.

### **show snmp trap**

Displays enable state for various trap types (e.g. link changes, SNMP auth failures).

### **show snmp user**

Displays configured v3 USM users.

### **show snmp view**

Displays configured VACM MIB views.

### **show system resources**

Display resource usage such as CPU, Memory, etc.

### **show system uptime**

Display time the system has been running.

### **show timezone**

Display the current timezone setting. Using the list option gives you a list of all acceptable timezones, which are configured using the `clock timezone` command.

```
show timezone [list]
```

### **show topography**

Display ring status and neighbor information.

### **show transceivers**

Display transceiver status and info.

### **show users**

Display list of user sessions currently connected.

### **show version**

```
show version [detail]
```

Display running version of software. Option 'detail' shows extra version info about software components.

### **show virtual-routers**

Display any virtual routers that exist and their status.

### **show vlan**



Display virtual LAN information for all VLANs or one VLAN in particular.

```
show vlan [VLAN ID]
```

### ssh

Open a SSH connection to username and hostname specified by WORD (Must be in USER@HOST format.)

```
ssh WORD
```

### telnet

Open a TELNET connection to the host specified by WORD. If PORT is not given, the default is 23.

```
telnet WORD
```

```
telnet WORD [PORT]
```

### terminal length

Adjust the number of lines for this session's terminal.

```
terminal length (<0-512>|)
```

```
terminal no length
```

### terminal monitor

Use this session to monitor (display) debug output.

```
terminal monitor
```

```
terminal no monitor
```

### traceroute

Execute a traceroute to the host indicated by WORD. If not arguments are given, this is interactive.

```
traceroute
```

```
traceroute [ip|ipv6] WORD
```

## PRIV-EXEC

The PRIV-EXEC (Privileged Exec or ) includes all the commands available in EXEC mode plus the following commands.

### boot toggle

Toggle the active boot partition so the alternate partition runs on the next reload.

### clear arp-cache

Remove all dynamic ARP entries.

### clear controller

Clear configured address for Plexxi Controller.

```
clear controller all
```

### clear cores

Delete any existing core files on the system.

### clear hold

Disable administrative hold on one specific interface or all interfaces.

```
clear hold <IFNAME|all>
```

### clear ip route kernel

Remove stale IP routes sourced by the kernel.

### clear ipv6 neighbors

Remove all learned IPv6 neighbors.

### clear ipv6 route kernel

Remove stale IPv6 routes sourced by the kernel.

### clear mac hw-table

Clear out the MAC table in hardware. You can specify a single address or a specific VLAN.

```
clear mac hw-table <address MAC> <vlan VLAN>
```

### clock set

Set system clock to hours and minutes.

```
clock set HH:MM[:SS] [ DAY [ MONTH [ YEAR ] ] ]
```

Optionally, you can include

- SS (0 to 59 seconds)
- DAY (1 to 31)
- MONTH (1 to 12)
- YEAR (four digits).

### clock set ntp HOST

Perform a one-time sync now with the NTP server HOST. Not usable when full NTP is configured.

### configure (terminal|)

Enter CONFIG mode.

### controller set HOST

Set address for Plexxi Controller.

### copy FILE

Save local file to the persistent storage to be loaded on reboot, or to a different local file, or to a remote URL.

```
copy FILE <FILE> <startup-config> <URL>
```

### copy running-config

Save all running settings to the persistent storage to be loaded on reboot, or to a local file, or to a remote URL.

```
copy running-config <startup-config> <FILE> <URL>
```

### copy startup-config

Save persistent storage to a local file, or to a remote URL.

```
copy startup-config <FILE> <URL>
```

### copy URL

Save remote URL to local file or to persistent storage to be loaded on reboot.

```
copy URL <FILE> <startup-config>
```

### delete FILE

Remove a local file.

### delete startup-config

Deletes persistent configuration; rebooting without saving would bring the system back to a default state.

### dir

List local files.

### (exit|logout|quit)

Leave the current CLI session.

### hold IFNAME

Enable administrative hold on an interface.

### install <FILE>

Install a package file (tarball) that was previously copied locally, to the alternate boot partition. A confirmation is requested of the user before proceeding.

### locate-led

Illuminate or extinguish LOC\_ID LED on the Plexxi Switch faceplate. When you set the LED on you can either specify number of minutes or retain the default value of 1440 minutes.

```
locate-led <on [MINS]> o<f>
```

### move FILE

Rename a local file.

```
move FILE <FILE>
```

### qsfp config

For Plexxi Switch 1 hardware only. (You can use Plexxi Control GUI to configure QSFP+ ports on Plexxi Switch 1x and 2 platforms.) Configure the QSFP mode of operation (1x40 vs. 4x10). User confirmation required. An immediate system reload is imposed if a change is made.

### reload (rescue |)

Reboot the entire device. You can use the rescue option to reboot the Plexxi Switch into ONIE rescue mode. A subsequent reboot brings the Plexxi Switch back to the previous boot default.

### ring control (in-band | out-of-band) [force]

Configure whether the control plane traffic channel is in- or out-of-band. The optional [force] argument is only needed special cases where a Plexxi Switch is moved or Plexxi Rings with opposing settings are merged.

### ring redirect (west-east | west-flexx | east-flexx | west-flexx-east)

Configure the Plexxi Ring pathway using Flexx ports.

### show arp

Display ARP cache.

### show boot

Show information about what is installed in each disk partition, which partition is currently running, and which is alternate.

### show controller

Display current configured hostname/IP for the controller.

### show debugging snmp

Display current SNMP settings.

### show file

List contents of a local file.

```
show file <FILE>
```

### show fsat

Display Fully Specified Affinity Topologies

### show history

Display previously entered commands for this session.

### show hosts

Display domain and IP hostname lookup settings.

### show install

Show information about what is installed in each disk partition, which partition is currently running, and which is alternate.

### show interface

Display interface information. If you do not specify an interface name (IFNAME), then all interfaces are

listed.

```
show interface <IFNAME|>
```

### **show mac hw-table**

Display MAC table from forwarding hardware.

### **show mac sw-table**

Display MAC table in software. Optionally you can specify verbose display, a summary or a detailed summary.

```
show mac sw-table [verbose | summary [detail]]
```

### **show nsm client**

Display list of clients of NSM daemon.

### **show peers**

Display peer information.

### **show process**

Display list of running processes.

### **show psat**

Display Partially Specified Affinity Topologies.

### **show running-config**

Display currently operating settings.

### **show startup-config**

Display settings saved in persistent storage.

### **show system cores**

List any existing core files on the system.

### **show tech-support**

Display a large amount of system information for troubleshooting purposes.

```
show tech-support (page|)
```

### **show users**

Display configured user accounts.

### **start-shell**

Enter a basic OS shell.

### **support log-bundle**

Gather system log files into an archived bundle (`log-bundle.tar.gz`) for analysis by Plexxi technical

support. By default, gathers logs from past 24 hours. Can optionally specify a number of days or hours prior, or a specific date/time from which to gather.

```
support log-bundle [days DAYS | hours HOURS]
```

```
support log-bundle HH:MM [DAY [MONTH [YEAR]]]
```

## verify

Calculate a checksum of a local file using either MD5 or SHA1 hash algorithms. Optionally pass in an expected value for the computed hash to be compared against.

```
verify (md5|sha) FILE (WORD|)
```

## CONFIG

### arp

Set or remove static ARP entry. Optionally, you can indicate a specific interface for this ARP entry.

```
arp A.B.C.D MAC (IFNAME|)
```

```
no arp A.B.C.D (IFNAME|)
```

### banner motd

Specify a message of the day banner displayed when users connect.

```
banner motd default
```

```
banner motd LINE
```

```
no banner motd
```

### clock protocol

Specify system clock sync protocol as using full NTP or no sync at all.

```
clock protocol (ntp|none)
```

### clock timezone

Specify the system timezone setting. Use the command `show timezone list` to view accepted timezone names.

```
clock timezone WORD
```

```
no clock timezone
```

### debug

Disable all debugging.

```
no debug all
```

### debug nsm

Specify debug options for NSM events, kernel, and receive and send packets. Use the `no` parameter with these commands to disable NSM debugging.

```
debug nsm [all|nsm|ha|events|kernel|packet]
```

```
no debug nsm [all|nsm|ha|events|kernel|packet]
```

#### Syntax:

```
[no] debug all nsm
```

```
[no] debug nsm (all|)
```

```
[no] debug nsm events
```

```
[no] debug nsm ha
```

```
[no] debug nsm ha all
[no] debug nsm kernel
[no] debug nsm packet (recv|send|) (detail|)
```

## do LINE

Run a command **LINE** from PRIV-EXEC mode. This will cause you to leave any sub-mode of CONFIG mode (e.g. CONFIG-IF or CONFIG-LINE). If the command being run is interrupted (e.g. CTRL-C with 'ping') this may cause you to leave CONFIG mode entirely.

## enable password

Specify a password for the `enable` command.

```
enable password (8|) LINE
no enable password
no enable password LINE
```

## (end|exit|quit|CTRL-D)

Leave the current mode back to PRIV-EXEC mode.

## fib retain

Set the retain time for stale routes in the Forwarding Information Base (FIB) during NSM restart to either forever or to a specific time in seconds. Use the `no` parameter to revert to the default, which is do not retain NSM routes in the FIB when NSM is killed. NSM still retains the stale routes for 60 seconds when it restarts.

```
fib retain (forever|time <1-65535>|)
no fib retain (forever|time <1-65535>|)
```

## help

Display general help text.

## hostname

Specify a hostname. The configured hostname also becomes the command prompt text.

```
hostname (WORD|)
[no] hostname (WORD|)
```

## interface

Enter CONFIG-IF mode for interface **IFNAME**.

```
interface IFNAME
no interface IFNAME
```

## ip domain-list

Add a domain to DNS search list.

```
ip domain-list WORD
no ip domain-list WORD
```



### **ip domain-lookup**

Enable/Disable DNS lookups.

```
ip domain-lookup
no ip domain-lookup
```

### **ip domain-name**

Set/Remove primary domain.

```
ip domain-name WORD
no ip domain-name WORD
```

### **ip forwarding**

Enable/Disable IP forwarding.

```
ip forwarding
[no] ip forwarding
```

### **ip name-server**

Add or remove IP address of a DNS server.

```
ip name-server A.B.C.D
no ip name-server A.B.C.D
```

### **ip route**

Add or remove a static IP route.

```
ip route A.B.C.D A.B.C.D (A.B.C.D|INTERFACE)
no ip route A.B.C.D A.B.C.D (A.B.C.D|INTERFACE)
ip route A.B.C.D A.B.C.D (A.B.C.D|INTERFACE){<1-255>|tag <1-4294967295>|description WORD}
no ip route A.B.C.D A.B.C.D (A.B.C.D|INTERFACE){<1-255>|tag <1-4294967295>|description WORD}
ip route A.B.C.D/M (A.B.C.D|INTERFACE)
no ip route A.B.C.D/M (A.B.C.D|INTERFACE)
ip route A.B.C.D/M (A.B.C.D|INTERFACE){<1-255>|tag <1-4294967295>|description WORD}
no ip route A.B.C.D/M (A.B.C.D|INTERFACE){<1-255>|tag <1-4294967295>|description WORD}
```

### **ipv6 forwarding**

Enable/Disable IPv6 forwarding.

```
ipv6 forwarding
no ipv6 forwarding
```

### **ipv6 neighbor**

Add or remove an IPv6 neighbor.

```
ipv6 neighbor X:X::X:X IFNAME MAC
```

```
no ipv6 neighbor X:X::X:X IFNAME
```

### ipv6 route

Add or remove a static IPv6 route.

```
ipv6 route X:X::X:X/M (X:X::X:X|INTERFACE)
no ipv6 route X:X::X:X/M (X:X::X:X|INTERFACE)
```

```
ipv6 route X:X::X:X/M X:X::X:X INTERFACE
no ipv6 route X:X::X:X/M X:X::X:X INTERFACE
```

```
ipv6 route X:X::X:X/M (X:X::X:X|INTERFACE) <1-255>
no ipv6 route X:X::X:X/M (X:X::X:X|INTERFACE) <1-255>
```

```
ipv6 route X:X::X:X/M X:X::X:X INTERFACE <1-255>
line console <0-0>
no ipv6 route X:X::X:X/M X:X::X:X INTERFACE <1-255>
```

### line console

Enter CONFIG-LINE mode for console.

```
line console <0-0>
```

### line vty

Enter CONFIG-LINE mode for vty (telnet and ssh) sessions.

```
line vty <0-871> (<0-871>|)
[no] line vty <0-871> (<0-871>|)
```

### log file

Specify settings for system logging.

```
log file FILENAME
[no] log file (|FILENAME)
[no] log record-priority
[no] log stdout
[no] log syslog log trap
(emergencies|alerts|critical|errors|warnings|notifications|informational|debugging)
```

```
no log trap
```

### max-fib-routes

Set or clear maximum FIB routes.

```
max-fib-routes <1-4294967294>
no max-fib-routes
```

**maximum-paths**

Set or clear maximum paths.

```
maximum-paths <1-64>  
no maximum-paths
```

**max-static-routes**

Set or clear maximum static routes.

```
max-static-routes <1-4294967294>  
no max-static-routes
```

**ntp authenticate**

Enable/Disable NTP authentication.

```
ntp authenticate  
no ntp authenticate
```

**ntp authentication-key**

Set or clear NTP authentication key.

```
ntp authentication-key <1-4294967295> md5 WORD  
no ntp authentication-key <1-4294967295> md5 WORD
```

**ntp broadcastdelay**

Set or clear NTP broadcast delay.

```
ntp broadcastdelay <1-9999999>  
no ntp broadcastdelay
```

**ntp master**

Set or clear NTP master.

```
ntp master (<1-15>|)  
no ntp master
```

**ntp peer WORD**

Add or remove NTP peer entry and settings.

```
ntp peer WORD  
ntp peer WORD {prefer|version <1-4>|key <1-4294967295>}  
no ntp peer WORD
```

**ntp server WORD**

Add or remove NTP server entry and settings.

```
ntp server WORD  
ntp server WORD {prefer|version <1-4>|key <1-4294967295>}  
no ntp server WORD
```

### ntp trusted-key

Set or clear NTP trusted key.

```
ntp trusted-key <1-4294967295>
no ntp trusted-key <1-4294967295>
```

### router-id

Set or clear router ID.

```
router-id A.B.C.D
no router-id A.B.C.D
```

### service advanced-vty

Enable and disable advanced VTY setting.

```
service advanced-vty
no service advanced-vty
```

### service password-encryption

Enable and disable password encryption for saved and displayed configuration.

```
service password-encryption
no service password-encryption
```

### service terminal-length

Set up the number of lines all future sessions default to.

```
service terminal-length (<0-512>|)
no service terminal-length
```

### show cli

Display a tree of CLI commands available in the current mode.

### show list

Display a list of CLI commands available in the current mode.

### show running-config

Display the currently running settings.

### snmp-server community

Configure and remove a community name of up to 32 characters to indicate read-only (ro) access. You can apply an optional defined MIB view to the community. If you want to scope allowed access, you can apply an optional hostname, IP address, or IP subnet designation.

```
snmp-server community NAME [view NAME] ro [allow STRING]
no snmp-server community NAME
```

### snmp-server contact

Specify a value for sysContact OID. Use no to set to default value info@plexxi.com.

```
snmp-server contact STRING
no snmp-server contact
```

### snmp-server enable traps

Configure the enable state for sending of various trap types. The default is enabled, use the no version of the command to set it to the disabled state.

```
snmp-server enable traps (link|snmp-authentication)
no snmp-server enable traps
```

### snmp-server engineID local

Specify a value for the local SNMP agent's engineID rather than letting the agent generate one for itself.

```
snmp-server engineID local WORD
no snmp-server engineID
```

### snmp-server group

Define a v3 user access group with null authentication, authentication with no privacy, or fully encrypted privacy. You also can optionally apply a specified View Access Control Model (VACM) MIB view to this group.

```
snmp-server group NAME (noauth|auth|priv) [view NAME] ro
no snmp-server group NAME
```

### snmp-server host

Specify a hostname or IP address to receive SNMP traps. You must supply the SNMP version and community name; the UDP port is optional.

```
snmp-server host HOST version (1|2c) NAME [udp-port PORT]
no snmp-server host HOST
```

### snmp-server location

Specify value for sysLocation OID. Use the no version of the command to set the location to the default value Unknown.

```
snmp-server location STRING
no snmp-server location
```

### snmp-server user NAME

Define a SNMP v3 User-Based Security Model (USM) user. You can give the user read-only-access with an optionally applied VACM MIB view, or assigned to a group. Authentication and privacy passwords can be optionally configured (though access may be denied without them if the assigned access requires them).

```
snmp-server user NAME [view NAME (noauth|auth|priv)] ro [(encrypted|) auth
(md5|sha) WORD [priv (des|aes) WORD]]

snmp-server user NAME group NAME [(encrypted|) auth (md5|sha) WORD [priv (des|aes)
WORD]]

no snmp-server user NAME
```

### snmp-server view

Define a named MIB view based on VACM. Issue multiple commands for the same view name to include or exclude more than one OID root. OID can be numeric (dotted-decimal) or well-known text names (such as system or ifTable). The `no` version of the command removes the entire view.

```
snmp-server view NAME OID (included|excluded)
no snmp-server view NAME
```

### ssh server enable

Enable or disable SSH remote access. The default is enabled.

```
ssh server enable
no ssh server enable
```

### telnet server enable

Enable or disable Telnet remote access. The default is enabled.

```
telnet server enable
[no] telnet server enable
```

### username

Set up or modify user WORD.

```
username WORD [privilege <0-15>] [password (8|) LINE]
no username WORD
```

## CONFIG-IF mode

### alias

Specify an alias for this interface.

```
alias WORD
no alias
```

### arp-ageing-timeout

Specify ARP aging time in seconds.

```
arp-ageing-timeout <1-3000>
no arp-ageing-timeout
```

### description

```
description LINE
no description
```

Specify a textual description for this interface.

### (end|exit|quit|CTRL-D)

Leave the current mode. Note that 'end' will exit all the way back to PRIV-EXEC mode.

### help

Display general help text.

### ip address

Specify one or more static IP addresses for this interface.

```
ip address A.B.C.D/M (label) LINE
no ip address A.B.C.D/M (label) LINE
ip address A.B.C.D/M (secondary|)
no ip address A.B.C.D/M (secondary|)
ip address A.B.C.D/M (secondary) (label) LINE
no ip address A.B.C.D/M (secondary) (label) LINE
```

### ip address dhcp

Specify this interface as a DHCP client.

```
ip address dhcp
no ip address dhcp

ip address dhcp client-id IFNAME
no ip address dhcp client-id IFNAME

ip address dhcp client-id IFNAME hostname WORD
no ip address dhcp client-id IFNAME hostname WORD

ip address dhcp hostname WORD
no ip address dhcp hostname WORD
```

### ipv6 address

Specify static IPv6 address for this interface.

```
ipv6 address X:X::X:X/M ipv6 address X:X::X:X/M anycast
no ipv6 address X:X::X:X/M ipv6 address X:X::X:X/M anycast
```

### mtu

```
mtu <68-9216>
no mtu
```

Set or clear MTU on this interface.

### multicast

Enable/Disable multicast for this interface.

```
multicast
[no] multicast
```

### show cli

Display a tree of CLI commands available in the current mode.

### show list

Display a list of CLI commands available in the current mode.

### show running-config

Display the currently running settings.

### shutdown

Disable or enable this interface.

```
shutdown
no shutdown
```

### vlan

Add and remove 802.1Q vlan tagged interfaces based from this interface. Accepts single IDs (1-4094) or a comma-separated list. The 'no' form clears all of them from this interface.

```
vlan (add|remove) LIST
no vlan
```

## CONFIG-LINE mode

### exec-timeout

Specify idle timeout on this line in minutes and/or seconds.

```
exec-timeout (<0-35791>|) (<0-2147483>|)
no exec-timeout
```

### (end|exit|quit|CTRL-D)

Leave this mode. Note that 'end' will exit all the way back to PRIV-EXEC mode.

```
(end|exit|quit|CTRL-D)
```

### help

Display general help text.

```
help
```

### history max

Specify a maximum size for the command history.

```
history max <0-2147483647>
no history max
```

### login

Enable or disable local password checking for this line.

```
login [local]
no login [local]
```

### privilege level





Change privilege level for this line.

```
privilege level (<1-15>|)
```

```
no privilege level
```

**show cli**

Display a tree of commands available in this mode.

**show list**

Display a list of commands available in this mode.

**show running-config**

Display the currently running settings.