

# CLI COMMANDS

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## CLI Commands

### Introduction

The command-line interface (CLI) is constructed with an eye towards automation of CLI-based configuration. The interaction is modeled on that used in many Internet protocols such as Telnet, FTP, and SMTP. After each command is entered and processed, the switch will issue a reply that consists of a numeric status code and a human-readable explanation of the status. See, for example, the SMTP protocol specification in RFC 821 – Simple Mail Transfer Protocol (<http://www.faqs.org/rfcs/rfc821.html>), specifically, “Appendix E – Theory of Reply Codes.” for more details.

The general format of commands is:

**section parameter [value]**

where:

- **section** is used to group parameters.
- **parameter** will specify the parameter within the section. For example, the network section will have parameters for DHCP, IP address, subnet mask, and default gateway.
- **value** is the new value of the parameter. If value is omitted, the current value is displayed.



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**NOTE:** *The new values will not take effect until explicitly committed.*

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Sections and parameter names are case sensitive (e.g., “Network” is not the same as “network”).



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**NOTE:** *Any commands in the CLI commands section of this section, with the exception of the global commands, must be prefaced with the name of the section they are in. For example, to change the IP address of the Switch, you would type:*

*network address <newIP>*

*This is because the address command is in the Network Configuration section of this Appendix.*

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### Accessing the CLI

To access the CLI, establish an Ethernet or serial connection to the switch.

To connect by Ethernet, open a command prompt window and type:

```
telnet <switchIP> (where <switchIP> is the IP address of the switch) eg. telnet 192.168.0.1
```

At the login prompt, type “cli” for the username and “admin” for the password. The switch will respond with “Managed Switch configuration CLI ready”.

Likewise, for serial access, via Tera Term for example, use...

```
login: cli
```

```
password: admin
```

## CLI Commands:

### Global Commands:

The following global commands are available anywhere in the CLI:

Command	Effect
<b>commit</b>	10% of link capacity/Values are inter-validated as needed. If valid, values are committed. Please note that this may take some time depending on changes.
<b>defaults</b>	Restore factory defaults
<b>quit</b>	CLI is exited. Uncommitted changes are discarded without prompting.
<b>reset</b>	Reset the Switch.
<b>help</b>	Print a help message.
<b>prompt</b>	Enable/disable the prompt (usage: "prompt enabled" or "prompt disabled")

When restoring factory defaults, network settings may be maintained by adding a "savenw" option. In other words:

```
defaults
```

restores all values, but

```
defaults savenw
```

restores all defaults except the current settings for DHCP, IP address, etc...

### Access Configuration:

The following administrative access settings are settable via the CLI:

Access Configuration		
Parameter	Default	Allowable Values
<b>snmp</b>	both	none, snmpv2, snmpv3, both
<b>terminal</b>	both	none, telnet, ssh, both
<b>web</b>	both	none, http, https, both
<b>cli</b>	1	0, 1
<b>uitimeout</b>	0	0 - 999
<b>rouser</b>	public	Any valid user name
<b>rwuser</b>	private	Any valid user name
<b>ropass</b>	none	A password, followed by the same password repeated
<b>rwpass</b>	none	A password, followed by the same password repeated
<b>adminpass</b>	admin	A password, followed by the same password repeated
<b>fwload</b>	serial	"serial" for serial firmware loading or "network" to enable Ethernet only

**Alarm Configuration:**

Alarm Configuration		
Parameter	Default	Allowable Values / Description
<b>list</b>	n/a	No value, view all current alarm settings
<b>powerloss</b>	enabled	'enabled', 'disabled' / alarm output will be low if a power input is lost
<b>ringfailure</b>	disabled	'enabled', 'disabled' / alarm output will be low if a power input is lost
<i>These settings require a port number, usage: alarm &lt;parameter&gt; &lt;port #&gt; [&lt;new value&gt;]</i>		
<b>linkloss</b>	disabled	0 - 'enabled', 'disabled' / alarm output is triggered when link is down on the specified port

**Modbus Configuration:**

Modbus Configuration		
Parameter	Default	Allowable Values / Description
<b>enabled</b>	0	0 or 1, 1 meaning enabled
<b>stanum</b>	1	1 to 247, used to get or set modbus station number
<b>transport</b>	tcp+udp	tcp / udp / tcp+udp, used to specify allowed transport layer for modbus
<b>timeout</b>	0	0 to 3600 or none, time is in seconds
<b>maxcon</b>	4	1 to 20, sets maximum number of concurrent connections
<b>port</b>	502	1 to 65535, set port number to listen for Modbus polling requests

**Info Configuration:**

Info Configuration		
Parameter	Default	Allowable Values / Description
<b>fwversion</b>	n/a	View the current firmware version
<b>cfgversion</b>	n/a	View the configuration version number
<b>macaddr</b>	n/a	View the MAC address of the Switch
<b>link</b>	n/a	'all', port# / show specified port (s) link status
<b>support</b>	n/a	displays useful support information (IP, etc.)
<i>These settings require a filter to be specified: info &lt;parameter&gt; &lt;filter&gt; [&lt;value&gt;]</i>		

For the info **mactable** command, the filter parameters are:

**id** = {\*|#} Show all/one specific filtering database by ID

**port** = {\*|#[,#[,...]]} Show all/one/multiple specific port(s)

NOTE: port 33 is the switch CPU.

**mac** = {\*|xx};{\*|xx};{\*|xx};{\*|xx};{\*|xx};{\*|xx} Show only MAC addresses matching the given pattern

**Network Configuration:**

The switch can have DHCP enabled or disabled. When it is enabled, settings for IP address, subnet mask, and default gateway may still be set. The values will be stored and used should DHCP be disabled in the future.

Info Configuration		
Parameter	Default	Allowable Values / Description
<b>fwversion</b>	n/a	View the current firmware version
<b>cfgversion</b>	n/a	View the configuration version number
<b>macaddr</b>	n/a	View the MAC address of the Switch
<b>link</b>	n/a	'all', port# / show specified port (s) link status
<b>support</b>	n/a	displays useful support information (IP, etc.)
These settings require a filter to be specified: info <parameter> <filter> [<value>]		

**Port Security Configuration:**

Port Security Configuration		
Parameter	Default	Allowable Values / Description
<b>list</b>	n/a	List all current port security information
<b>enable</b>	n/a	Enables MAC-based port security
<b>disable</b>	n/a	Disables MAC-based port security
<b>add</b>	n/a	Any valid MAC and port number / allow communication by the specified MAC on the specified port.
<b>remove</b>	n/a	Any valid MAC / remove a MAC address from the security table

**Port Configuration:**

Port Configuration		
Parameter	Default	Allowable Values / Description
<b>list</b>	n/a	No value, lists all settings for all ports
<b>monitor</b>	1	Any port number
These settings require a port number, usage: port <port #> <parameter> [<new value>]		
<b>name</b>	port_#	A string
<b>admin</b>	enabled	enabled, disabled
<b>negotiation</b>	enabled	enabled (auto-negotiation), disabled (fixed negotiation)
<b>ratelimit</b>	enabled	enabled, disabled
<b>direction</b>	none	none, egress, both
<b>giveip</b>	disabled	enabled, disabled
<b>ipaddr</b>	none	An IP address
<b>Sfp</b>	1000	100, 1000
<b>speed</b>	(see below)	(see below)

With auto negotiation, <speed> may be:

10H, 10F, 100H, 100F, 1000F or FC

With fixed negotiation, <speed> may be:

100H or 100F

Valid settings: 'enabled' (will automatically set other speeds to 'disabled')

The syntax for the port speed command is as follows:

```
port <port #> speed ...
(negotiation enabled)
speed 10H enabled
speed 10F disabled
...
```

Which act like check boxes on a web form.

Or, with negotiation disabled, the syntax is:

```
speed 10H enabled
speed 100F enabled
...
```

Which act like radio buttons on a web form.

Speed FC enabled/disabled is available in both modes.

For combo ports, the SFP speed may be set as follows:

```
port <port#> sfp <speed>
```

**Ring Configuration:**

Ring Configuration		
Parameter	Default	Allowable Values / Description
<b>list</b>	n/a	View the list of configured rings
<b>master</b>	auto	auto, 'this' / configure how the Switch determines the ring master
The settings below require a ring number, usage: ring <parameter> <ring #> [<new value>]		
<b>enable</b>	0	'0', '1' / view or change whether the ring is enabled
<b>name</b>	n/a	Any text value / View or change the specified ring name
<b>ports</b>	n/a	(see below) / View or change this ring's primary and backup ports

To set the primary and backup ports for a specified ring, the syntax is:

```
ring ports <ring#> <primary port #> <secondary port #>
```

**RSTP Configuration:**

RSTP Configuration		
Parameter	Default	Allowable Values / Description
<b>protocol</b>	none	none, stp, rstp or mstp / View or change the spanning tree protocol
<b>priority</b>	0	A multiple of 4096 in the range of 0 - 61440 / View or change the priority
<b>mma</b>	6	An integer in the range 6 - 40 / View or change the maximum message age
<b>hellowtime</b>	1	An integer in the range 1 - 10 / View or change the hello time
<b>fwddelay</b>	4	An integer in the range 4 - 30 / View or change the forwarding delay
<b>Txlimit</b>	1	An integer in the range 1 - 10 / View or change the transmission limit
<b>region</b>	n/a	any valid region name
<b>cfgrevision</b>	n/a	any valid revision number
<b>maxhops</b>	20	any number from 6 - 40
The settings below require a port number, usage: rstp <parameter> <port #> [<new value>]		
<b>exclude</b>	0	'2', '1', '0' / View or change whether this port is excluded from STP
<b>pprio</b>	0	An integer in the range of 0 - 240 / View or change this port's priority
<b>pcost</b>	none	'auto' or integer in the range of 0 - 200,000,000 / View or change this port's cost
<b>type</b>	1	'1', '0' / View or change this port's edge type
<b>ptp</b>	Auto	'ForceTrue', 'ForceFalse', 'Auto' / View or change this port's point-to-point setting

**QoS Configuration:**

QoS Configuration		
Parameter	Default	Allowable Values / Description
<b>schedule</b>	strict	'strict', 'fair' / View or change the fairness rule
The settings below require a port number, usage: qos <parameter> <port #> [<new value>]		
<b>usetag</b>	0	'0', '1' / View or change whether tag priorities are used
<b>useip</b>	n/a	'0', '1' / View or change whether IP priorities are used
<b>pref</b>	tag	'tag', 'ip' / View or change which to use if both tags and IP are enabled
<b>priority</b>	1	0 - 3 / Default priority to give to packets received on this port
<b>type</b>	normal	'normal', 'add', 'remove', 'double' / The type of connection to this port
The setting below requires a tag number, usage: qos tag <tag #> [<new value>]		
<b>tag</b>	(depends on the tag)	0 - 3 / View or change the priority of the specified tag

If <new value> is not present, the current setting will be displayed.

VLAN Configuration:

VLAN Configuration		
Parameter	Default	Allowable Values / Description
<b>vlist</b>	none	No value, lists all configured VLANs
<b>plist</b>	none	No value, lists the VLAN settings for each port
<b>mode</b>	disabled	'disabled', 'port', 'standard', 'secure' / View or change VLAN mode
<b>coretype</b>	none	Value in hexadecimal with a 0x prefix / View or set Ethertype for core tags
<b>mgmtvlan</b>	1	1 - 4094 / View or set the management VLAN ID
<b>learning</b>	shared	'shared', 'independent' / Change VLAN learning mode
<b>mgmtports</b>	all	1 - 9 / View or set the management VLAN port
The commands below require a vlan # from vlist		
<b>name</b>	n/a	A string of no more than 33 characters
<b>vtype</b>	n/a	'port', 'tag' / View or change the type of this VLAN
<b>id</b>	n/a	An integer between 1 and 4095 / View or change the ID of this VLAN
<b>ports</b>	n/a	Syntax: vlan ports <vlan#> <add/remove> <port#>
The commands below require a port #		
<b>pvid</b>	1	A VLAN # from vlist valid range of 1 - 4094
<b>force</b>	0	'0', '1'
<b>add</b>	(see below)	(see below)
<b>remove</b>	(see below)	(see below)

The examples below explain the syntax of the “port”, “add” and “remove” commands:

To add a Port Based VLAN:

```
vlan ports <vlan #> add <port #>
vlan ports <vlan #> remove <port #>
vlan add <name> port <port #> <port #> [...]
```

To add a Tag based VLAN:

```
vlan add <name> tag <vlan ID> <port #> <port #> [...]
```

To remove a VLAN:

```
vlan remove <vlan # or all>
```



**IGMP Configuration:**

IGMP Configuration		
Parameter	Default	Allowable Values / Description
<b>rlist</b>	n/a	No value / Lists router settings for all ports
<b>mode</b>	disabled	disabled, snoop, router / view or change IGMP mode
<b>msupp</b>	none	none, ip, all / view or change the multicast suppression method
<b>version</b>	2	1, 2 / IGMP version
<b>robustness</b>	2	1 - 99 / IGMP robustness
<b>ginterval</b>	125	60 - 125 / IGMP query interval
<b>gresponse</b>	10	1 - 30 / IGMP query response interval
The commands below require a port #		
<b>router</b>	0	0, 1 / identify ports which lead to IGMP routers
<b>exclude</b>	0	0, 1 / Exclude a port from the processing of IGMP requests and queries

**Checkpoint Configuration:**

Checkpoint Configuration		
Parameter	Default	Allowable Values / Description
<b>save</b>	n/a	None / saves a check point
<b>restore</b>	n/a	net, nonet / net saves current network settings, nonet discards them
<b>ftpsave</b>	n/a	a file name
<b>ftprestore</b>	n/a	a file name

**Firmware Configuration:**

Firmware Configuration		
Parameter	Default	Allowable Values / Description
<b>default</b>	n/a	1 or 2 / View or change the default firmware
<b>running</b>	n/a	View which firmware image is running
<b>list</b>	n/a	View list of currently available firmware images and corresponding health status
<b>update</b>	n/a	Followed by [showProgress] [md5=<md5>] <url> If the 'showProgress' argument is provided, progress printouts will be displayed. If the 'md5' argument is provided, the MD5 checksum of the received firmware will be tested against the provided MD5 checksum. The URL must be a valid HTTP or HTTPS address to which the Switch has direct access.
<b>ftpload</b>	n/a	Followed by the filename to be uploaded from the TFTP server

**TFTP Configuration:**

TFTP Configuration		
Parameter	Default	Allowable Values / Description
<b>tftp</b>	“ “	A valid fully-qualified domain name

**Timezone Configuration:**

Timezone Configuration		
Parameter	Default	Allowable Values / Description
<b>list</b>	(see below)	(see below)
<b>value</b>	none	A time zone from list



**NOTE:** To view a list of all timezones, use the command "tz list [<prefix>]" with the option to filter by timezones beginning with the characters in <prefix>.

**MSTI Configuration:**

MSTI Configuration		
Parameter	Default	Allowable Values / Description
<b>list</b>	n/a	Lists all MSTIs and their priorities
<b>plist</b>	n/a	Followed by mstid, used to show all ports in the specified MSTI with their costs and priorities
<b>add</b>	n/a	Followed by name mstid [priority]
<b>remove</b>	n/a	any valid MSTI, or all to remove all MSTIs
<b>priority</b>	32768	Followed by mstid [priority]
<b>pprio</b>	varies	Followed by mstid portno [pprio], used for per-MSTI port priorities
<b>pcost</b>	varies	Followed by mstid portno [pcost], used for per-MSTI port costs
<b>name</b>	n/a	Followed by mstid [name]
<b>mstid</b>	n/a	Followed by mstid [newmstid]
<b>inherit</b>	n/a	Any valid MSTI. Used to inherit from the CIST

**General Configuration:**

The following commands are general commands which are not part of another subsection:

General Configuration		
Parameter	Default	Allowable Values / Description
<b>location</b>	<set location of switch>	Any text value / location of the Switch
<b>contact</b>	none	Any text value / contact information of the network or site administrator