CLI COMMANDS

APPENDIX
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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.

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

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

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.

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
commit	10% of link capacityValues are inter-validated as needed. If valid, values are committed. Please note that this may take some time depending on changes.
defaults	Restore factory defaults
quit	CLI is exited. Uncomitted changes are discarded without prompting.
reset	Reset the Switch.
help	Print a help message.
prompt	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
snmp	both	none, snmpv2, snmpv3, both
terminal	both	none, telnet, ssh, both
web	both	none, http, https, both
cli	1	0, 1
uitimeout	0	0 - 999
rouser	public	Any valid user name
rwuser	private	Any valid user name
ropass	none	A password, followed by the same password repeated
rwpass	none	A password, followed by the same password repeated
adminpass	admin	A password, followed by the same password repeated
fwload	serial	"serial" for serial firmware loading or "network" to enable Ethernet only

Alarm Configuration:

Alarm Configuration		
Parameter	*Default*	*Allowable Values / Description*
list	n/a	No value, view all current alarm settings
powerloss	enabled	'enabled', 'disabled' / alarm output will be low if a power input is lost
ringfailure	disabled	'enabled', 'disabled' / alarm output will be low if a power input is lost
		These settings require a port number, usage: *alarm <parameter> <port #> [<new value>]*
linkloss	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*
enabled	0	0 or 1, 1 meaning enabled
stanum	1	1 to 247, used to get or set modbus station number
transport	tcp+udp	tcp / udp / tcp+udp, used to specify allowed transport layer for modbus
timeout	0	0 to 3600 or none, time is in seconds
maxcon	4	1 to 20, sets maximum number of concurrent connections
port	502	1 to 65535, set port number to listen for Modbus polling requests

Info Configuration:

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

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

Portsecurity Configuration:

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

Port Configuration:

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

Ring Configuration:

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

QoS Configuration:

QoS Configuration		
Parameter	*Default*	*Allowable Values / Description*
schedule	strict	'strict', 'fair' / View or change the fairness rule
The settings below require a port number, usage: qos <parameter> <port #> [<new value>]		
usetag	0	'0', '1' / View or change whether tag priorities are used
useip	n/a	'0', '1' / View or change whether IP priorities are used
pref	tag	'tag', 'ip' / View or change which to use if both tags and IP are enabled
priority	1	0 - 3 / Defaul priority to give to packets received on this port
type	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>]		
tag	(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*
vlist	none	No value, lists all configured VLANs
plist	none	No value, lists the VLAN settings for each port
mode	disabled	'disabled', 'port', 'standard', 'secure' / View or change VLAN mode
coretype	none	Value in hexadecimal with a 0x prefix / View or set Ethertype for core tags
mgmtvlan	1	1 - 4094 / View or set the management VLAN ID
learning	shared	'shared', 'independent' / Change VLAN learning mode
mgmtports	all	1 - 9 / View or set the management VLAN port
The commands below require a vlan # from vlist		
name	n/a	A string of no more than 33 characters
vtype	n/a	'port', 'tag' / View or change the type of this VLAN
id	n/a	An integer between 1 and 4095 / View or change the ID of this VLAN
ports	n/a	Syntax: vlan ports <vlan#> <add/remove> <port#>
The commands below require a port #		
pvid	1	A VLAN # from vlist valid range of 1 - 4094
force	0	'0', '1'
add	(see below)	(see below)
remove	(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*
rlist	n/a	No value / Lists router settings for all ports
mode	disabled	disabled, snoop, router / view or change IGMP mode
msupp	none	none, ip, all / view or change the multicast suppression method
version	2	1, 2 / IGMP version
robustness	2	1 - 99 / IGMP robustness
ginterval	125	60 - 125 / IGMP query interval
gresponse	10	1 - 30 / IGMP query response interval
The commands below require a port #		
router	0	0, 1 / identify ports which lead to IGMP routers
exclude	0	0, 1 / Exclude a port from the processing of IGMP requests and queries

Checkpoint Configuration:

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

Firmware Configuration:

Firmware Configuration		
Parameter	*Default*	*Allowable Values / Description*
default	n/a	1 or 2 / View or change the default firmware
running	n/a	View which firmware image is running
list	n/a	View list of currently available firmware images and corresponding health status
update	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.
ftpload	n/a	Followed by the filename to be uploaded from the TFTP server

TFTP Configuration:

TFTP Configuration		
Parameter	*Default*	*Allowable Values / Description*
tftp	" "	A valid fully-qualified domain name

Timezone Configuration:

Timezone Configuration		
Parameter	*Default*	*Allowable Values / Description*
list	(see below)	(see below)
value	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*
list	n/a	Lists all MSTIs and their priorities
plist	n/a	Followed by mstid, used to show all ports in the specified MSTI with their costs and priorities
add	n/a	Followed by name mstid [priority]
remove	n/a	any valid MSTI, or all to remove all MSTIs
priority	32768	Followed by mstid [priority]
pprio	varies	Followed by mstid portno [pprio], used for per-MSTI port priorities
pcost	varies	Followed by mstid portno [pcost], used for per-MSTI port costs
name	n/a	Followed by mstid [name]
mstid	n/a	Followed by mstid [newmstid]
inherit	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*
location	<set location of switch>	Any text value / location of the Switch
contact	none	Any text value / contact information of the network or site administrator