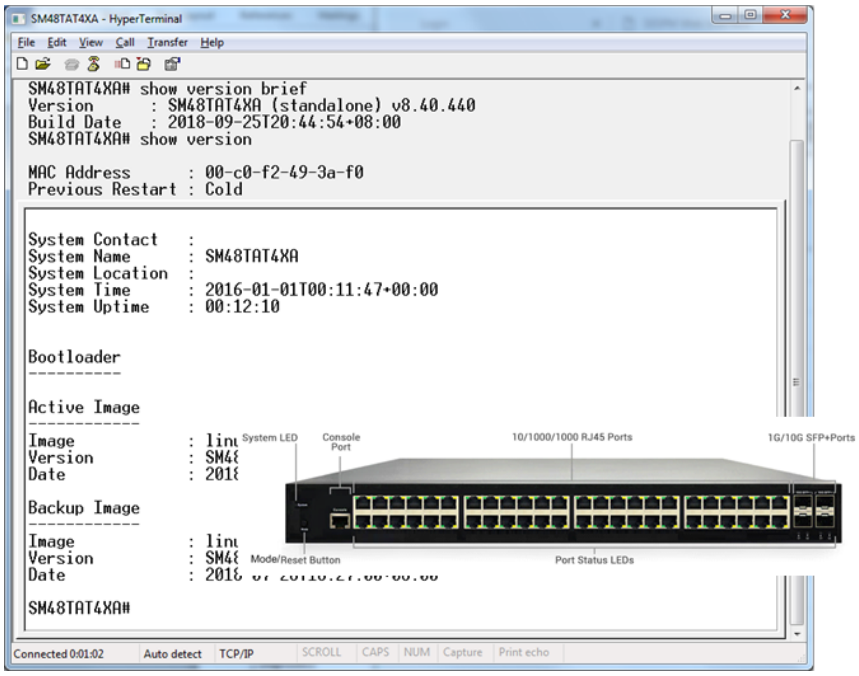


SMxxTAT4Xx Family

SM48TAT4XA-RP

Managed Gigabit Ethernet PoE+ Switch
(48) 10/100/1000Base-T Ports + (4) 1G/10GBase-X SFP+ Ports

SM24TAT4XB

Managed Gigabit Ethernet PoE+ Switch
(24) 10/100/1000Base-T Ports + (4) 1G/10GBase-X SFP+ Ports

CLI Reference

Part Number 33787
Revision F February 2023

Intellectual Property

Warranty

For details on the Lantronix warranty policy, go to http://www.lantronix.com/support/warranty.

Contacts

Lantronix Corporate Headquarters
48 Discovery, Suite 250
Irvine, CA 92618, USA
Toll Free: 800-526-8766
Phone: 949-453-3990
Fax: 949-453-3995

Technical Support

https://www.lantronix.com/technical-support/

Sales Offices

For a current list of our domestic and international sales offices, go to www.lantronix.com/about/contact.

Disclaimer

All information contained herein is provided “AS IS.” Lantronix undertakes no obligation to update the information in this publication. Lantronix does not make, and specifically disclaims, all warranties of any kind (express, implied or otherwise) regarding title, non-infringement, fitness, quality, accuracy, completeness, usefulness, suitability or performance of the information provided herein. Lantronix shall have no liability whatsoever to any user for any damages, losses and causes of action (whether in contract or in tort or otherwise) in connection with the user’s access or usage of any of the information or content contained herein. The information and specifications contained in this document are subject to change without notice.

Revision History

Rev	Date	Comments
D	6/22/21	SM48TAT4XA-RP FW v8.50.0030: Modify "Always On PoE" behavior (enabled and shown on web UI after upgrading FW to this version or above). Include one-step FW update FW. Add Device List table to API. Change " Non-Stop PoE" to "Always-On PoE” and add "Always-On PoE" in mib. Fix LLDP issue when the switch receives a packet with LLDP-MED it sends an IEEE802.3 MAC/ PHY packet with two config/status TLVs. Add PoE Force mode. Add 13 API commands; fix access management and SNMP trap destination issues.
E	11/22/22	Initial Lantronix rebrand. Firmware v8.50.0070: add DHCP per VLAN function to select a particular interface. Change default SNMP mode to Disabled, add First Time Wizard, and change Auth Method default. Fix "ip link-local interface 2" command.
F	2/21/23	FW 8.50.0096 (both models): add support for ConsoleFlow and implement API support HTTPS, CLI, and LPM. SM24TAT4XB only: add DHCP per port function to select a particular IP interface. Add First Time Wizard. Change SNMP Mode default to Disabled and change Auth Method defaults. Note when upgrading: 1) Reload factory defaults. 2) Copy running-config startup-config.

Contents

Product Description

The Lantronix SM48TAT4XA-RP is a 48-port Gigabit Managed PoE+ Switch with Redundant Power Supplies (820 Watts PoE budget with single Power supply, 1620Watts PoE budget with dual Power Supplies).
The SM24TAT4XB is a 24-port Gigabit Managed PoE+ Switch with (4) 1G/10G SFP+ ports and 370 Watt PoE budget.

The embedded Device Managed System (DMS) is easy to use, configure, install, and troubleshoot in video surveillance, wireless access, and other SMB and Enterprise applications. The SMxxTAT4Xx is ideal to deliver management simplicity, better user experience, and lowest total cost of ownership.

Ordering Information

Model	Description
SM48TAT4XA-RP	48-port Gigabit PoE+ with (4) 1G/10G SFP+ slots, 820 Watts PoE budget. Supports redundant power with secondary power supply installed.
SM24TAT4XB	24-port Gigabit PoE+ with (4) 1G/10G SFP+ slots, 370 Watts PoE budget.
PS-AC-920	Secondary Power Supply for redundant power support (920 Watts). Optional; sold separately (5 year warranty).
SFPs and SFP+ Modules	See Lantronix full line of SFP transceivers on our SFP webpage (option; order separately)
BRSM24-01	Wall Mount Bracket for SM24TAT4XB (option; order separately)
ConsoleFlow	Centralized cloud-based or on-premise Management Software for Lantronix PoE Switches, Remote Environment Management (REM) and IoT Gateway products. For ConsoleFlow cloud-based software-as-a-service, select an annual subscription model.
CF-NWSCLOUDSAAS-xYR	ConsoleFlow Cloud Subscription x-Years (where x = 1, 3, or 5 year subscription)
CF-NWS-ONPREMISE-xYR	ConsoleFlow On- premise Subscription x-Years (where x = 1, 3, or 5 year subscription)

About This Manual

This manual describes how to install, initially configure, and troubleshoot the switch, including how to:

- Use the CLI to initially configure the switch,
- enter commands in the various command modes, and
- troubleshoot the switch.

Note that this manual provides links to third party web sites for which Lantronix is not responsible.

Related Information

A printed Quick Start Guide is shipped with each switch.

For Lantronix Drivers, Firmware, Manuals, Product Notifications, Warranty Policy & Procedures, etc. go to the Lantronix Technical Resource Center.

For SFP manuals see Lantronix SFP webpage**.**

Other related manuals are listed below.

- SMxxTAT4Xx Quick Start Guide, 33784
- SMxxTAT4Xx Install Guide, 33785
- SMxxTAT4Xx Web User Guide, 33786
- API User Guide for SM24TAT4XB and SM48TAT4XA-RP, 33843
- Release Notes (version specific)

Initial Switch Configuration via CLI

1. Use an RJ-45 cable to connect a terminal or PC/terminal emulator to the switch port to access the CLI.
2. Attach the RJ-45 serial port on the switch front panel to the cable for Telnet/CLI configuration.
3. Attach the other end of the DB-9 cable to a PC running Telnet or a terminal emulation program such as HyperTerminal or TeraTerm.
4. After powering up the switch for the first time, you can perform the initial switch configuration using the CLI (Command Line Interface). For managing other switch features.

CLI Control Keys

-- more –

next page:	Space
continue:	g
quit:	^C

Exec Mode Commands

Available from the `SM24TAT4XB#` prompt:

CableDiag	Cable Diagnostic keyword
clear	Clear
configure	Enter configuration mode
copy	Copy from source to destination
debug	Debugging functions
delete	Delete one file in flash: file system
dir	Directory of all files in flash: file system
disable	Turn off privileged commands
do	To run exec commands in the configuration mode
dot1x	IEEE Standard for port-based Network Access Control
enable	Turn on privileged commands
erps	Ethernet Ring Protection Switching
exit	Exit from EXEC mode
firmware	Firmware upgrade/swap
help	Description of the interactive help system
ip	IPv4 commands
iperf	network bandwidth measurement tool
iperf3	network bandwidth measurement tool
ipv6	IPv6 configuration commands
link-oam	Link OAM configuration
logout	Exit from EXEC mode
more	Display file
no	Delete trace hunt string
ping	Send ICMP echo messages
platform	Platform configuration
ptp	Misc non persistent 1588 settings.
reload	Reload system.
send	Send a message to other tty lines
show	Display statistics counters.
terminal	Set terminal line parameters
traceroute	Send IP Traceroute messages

Command: **CableDiag**

Description: Cable Diagnostic keyword.

Mode: Exec mode.

Syntax: **CableDiag** interface <port_type> <port_type_id>

Parameters:	interface	Interface keyword
	GigabitEthernet	1 Gigabit Ethernet Port
	<port_type_id>	Port ID in 1/1-24

Example:

```
SM24TAT4XB# CableDiag interface GigabitEthernet 1/9
Starting Cable Diagnostic - Please wait
Interface              Link Status    Test Result    Length
---------------------  -------------  -------------  -------------
GigabitEthernet 1/9    Link Down      detect error or check cable length is between 7-120
meters
SM48TAT4XA-RP# CableDiag interface GigabitEthernet 1/2
Starting Cable Diagnostic - Please wait
Interface              Link Status    Test Result    Length
---------------------  -------------  -------------  -------------
GigabitEthernet 1/2    Link Down      detect error or check cable length is between 7-120
meters
SM48TAT4XA-RP# CableDiag interface GigabitEthernet 1/49
% No such interface: GigabitEthernet 1/49

SM48TAT4XA-RP#
```

Command: **clear**

Description: Clear

Mode: Exec mode.

Syntax:

clear access management statistics

clear access-list ace statistics

clear dot1x statistics [interface (<port_type> [<v_port_type_list>])]

clear eps <inst> wtr

clear erps [<groups>] statistics

clear ip acd

clear ip arp

clear ip dhcp detailed statistics { server | client | snooping | relay | helper| all } [interface (<port_type> [<in_port_list>])]

clear ip dhcp relay statistics

clear ip dhcp server binding <ip>

clear ip dhcp server binding type { automatic | manual | expired }

clear ip dhcp server statistics

clear ip dhcp snooping statistics [interface (<port_type> [<in_port_list>])]

clear ip igmp snooping [vlan <v_vlan_list>] statistics

clear ip statistics

clear ipv6 mld snooping [vlan <v_vlan_list>] statistics

clear ipv6 neighbors

clear ipv6 statistics

clear lacp statistics

clear link-oam statistics [interface (<port_type> [<plist>])]

clear lldp statistics { [interface (<port_type> [<plist>])] | global }

clear logging [info] [warning] [error] [emerg] [alert] [crit] [notice] [debug] [switch <switch_list>]

clear mac address-table

clear mep <inst> { lm [both | tx | rx] | dm | lb | tst | bfd }

clear mvr [vlan <v_vlan_list> | name <mvr_name>] statistics

clear port-security dynamic [{ address <mac> [vlan <vlan_on_mac>] } | { interface (<port_type> [<plist>]) [vlan <vlan_on_interface>] } | vlan <vlan>]

clear port-security sticky { All | interface (<port_type> [<plist>]) }

clear ptp <clockinst> servo

clear sflow statistics { receiver [<receiver_index_list>] | samplers [interface [<samplers_list>] (<port_type> [<v_port_type_list>])] }

clear spanning-tree { { statistics [interface (<port_type> [<v_port_type_list>])] } | { detected-protocols [interface (<port_type> [<v_port_type_list_1>])] } }

clear statistics [interface] (<port_type> [<v_port_type_list>])

clear system led status [switch <switch_list>] { fatal | software | post | ztp | stack-firmware | all }

Parameters:

access	access-list	dot1x	eps	erps
ip	ipv6	lacp	link-oam	lldp
logging	mac	mep	mvr	port-security
ptp	sflow	spanning-tree	statistics	system

Example:

```
SM24TAT4XB# clear ip statistics
SM24TAT4XB# clear port-security sticky interface GigabitEthernet 1/9
SM24TAT4XB# clear system led status software
SM24TAT4XB#
```

Command: **configure**

Description: Enter configuration mode. See Config Mode Commands on page 23.

Mode: Exec mode.

Syntax: **configure** terminal <cr>

Parameters: None.

Example:

```
SM24TAT4XB# configure terminal
SM24TAT4XB(config)#
```

Command: **copy**

Description: Copy from source to destination.

Mode: Exec mode.

Syntax: **copy** { startup-config | running-config | <source_path> } { startup-config | running-config | <destination_path> } [syntax-check] [save-host-key] [ftp-active] [{ merge | replace }]

Parameters: <url_file> File in FLASH or on remote server. Syntax:
<flash:filename> |<protocol>://[<username>[:<password>]@]<host>[:<port>][/<path>]>.
A valid file name is a text string drawn from alphabet (A-Za-z), digits (0-9), dot (.), hyphen (-), under score (_). The maximum length is 255 and hyphen must not be first character. The file name content that only contains .' is not allowed.

startup-config Startup configuration

running-config Currently running configuration

protocol Select the copy protocol to use (

source_path The copy from path.

destination_path The copy to path.

save-host-key Select to save the host key after copying.

ftp-active Select FTP active.

| Output modifiers

merge merge source file with running-config

replace replace running-config with source file, default action

syntax-check Perform syntax check on source configuration

<cr>

Example:

```
SM24TAT4XB# copy startup-config running-config merge syntax-check
SM24TAT4XB# copy running-config startup-config replace syntax-check
Building configuration...
```

Messages: *E basics 15:24:20 250/thread_os_prio_get#641: Error: getpriority(234): No such process select error: Interrupted system call*

Command: **delete**

Description: Delete one file in flash: file system.

Mode: Exec mode.

Syntax: **delete** <path>

Parameters: <url_file> File in FLASH. Syntax: <flash:filename>.
A valid file name is a text string drawn from alphabet (A-Za-z), digits (0-9), dot (.), hyphen (-), under score (_). The maximum length is 63 and hyphen must not be first character. The file name content that only contains '.' is not allowed.

Example:

```
SM24TAT4XB# delete flash:bob
% bob: Delete failed: Cannot access file.
SM24TAT4XB#
```

Command: **dir**

Description: Directory of all files in flash: file system.

Mode: Exec mode.

Syntax: | Output modifiers

<cr>

Parameters: None.

Example:

```
SM24TAT4XB# dir
Directory of flash:
    r- 2018-12-21 12:00:26     650 default-config
    rw 2016-01-01 00:02:02     207 icon_list
    rw 2016-01-04 22:15:38    7385 startup-config
    rw 2016-01-01 00:33:08    8419 web_01
    rw 2016-01-01 00:33:08    8419 web_02
    rw 2016-01-01 00:33:08    2898 web_03
    rw 2016-01-01 00:33:08    8419 web_04
    rw 2016-01-01 00:33:08     102 webiconlist
8 files, 36499 bytes total.

Flash size: 3284992 bytes (3.1 MiB)
Flash free: 3166208 bytes (3.0 MiB)
SM24TAT4XB#
```

Command: **disable**

Description: Turn off privileged commands.

Mode: Exec mode.

Syntax: disable [<new_priv>]

Parameters: <0-15>

<cr>

Example:

```
SM24TAT4XB# disable 0
SM24TAT4XB>
```

Command: **do**

Description: Run Exec mode commands in Configuration mode.

Mode: Exec mode.

Syntax: do <command>

Parameters: <line> Exec Command

Example:

```
SM24TAT4XB> do show ip int brief
Interface  Address             Method   Status
---------- ------------------- -------- ------
VLAN 1     192.168.1.77/24      Manual   UP
SM24TAT4XB>
```

Command: **dot1x**

Description: IEEE Standard for port-based Network Access Control.

Mode: Exec mode.

Syntax: **dot1x** initialize [interface (<port_type> [<plist>])]

Parameters:

initialize	Force re-authentication immediately
interface	Interface
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
10GigabitEthernet	10 Gigabit Ethernet Port
<port_type_list>	Port list in 1/1-24
<port_type_list>	Port list in 1/1-4
<cr>	

Example:

```
SM24TAT4XB# dot1x initialize interface 10GigabitEthernet 1/3
SM24TAT4XB#
```

Command: **enable**

Description: Turn on privileged commands.

Mode: Exec mode.

Syntax: **enable** [<new_priv>]

Parameters:

<0-15>	Choose privileged level
<cr>	

Example:

```
SM24TAT4XB# enable 0
SM24TAT4XB>
```

Command: **erps**

Description: Ethernet Ring Protection Switching commands.

Mode: Exec mode.

Syntax: **erps** <group> command { force | manual | clear } { port0 | port1 }

Parameters:

1-64	ERPS group number
command	Administrative Command
clear	Clear command
force	Force command
manual	Manual command
port0	ERPS Port 0 interface
port1	ERPS Port 1 interface
<cr>	

Example:

```
SM24TAT4XB# erps 1 command clear port0
% ERPS group 1: Generic error occurred
SM24TAT4XB#
```

Command: **exit**

Description: Exit from EXEC mode. You must hit Enter and log back in again.

Mode: Exec mode.

Syntax: **exit** <cr>

Parameters: None.

Example:

```
SM24TAT4XB# exit
```

Command: **firmware**

Description: Firmware upgrade/swap.

Mode: Exec mode.

Syntax: **firmware** swap

firmware upgrade <url_file> [save-host-key] [ftp-active]

Parameters: <url_file> Uniform Resource Locator. It is a specific character string that constitutes a reference to a resource. Syntax: <protocol>://[<username>[:<password>]@]<host>[:<port>][/<path>]/<file_name>

If the following special characters: space !"#$%&'()*+,/:;<=>?@[\]^`{|}~ need to be contained in the input URL string, they should be percent-encoded. A valid file name is a text string drawn from alphabet (A-Za-z), digits (0-9), dot (.), hyphen (-), under score (_). The maximum length is 63 and hyphen must not be first character.

The file name content that only contains '.' is not allowed.

Example:

```
SM24TAT4XB# firmware swap
Alternate image activated, now rebooting.
SM24TAT4XB#
```

Command: **help**

Description: Description of the interactive help system.

Mode: Exec mode.

Syntax: **help** <cr>

Parameters: None.

Example:

```
SM24TAT4XB# help
Help may be requested at any point in a command by entering
a question mark '?'.  If nothing matches, the help list will
be empty and you must backup until entering a '?' shows the
available options.
Two styles of help are provided:
1. Full help is available when you are ready to enter a
   command argument (e.g. 'show ?') and describes each possible
   argument.
2. Partial help is provided when an abbreviated argument is entered
   and you want to know what arguments match the input
   (e.g. 'show pr?'.)

SM24TAT4XB#
```

Command: **ip**

Description: IPv4 command.

Mode: Exec mode.

Syntax: **ip** dhcp retry interface vlan <vlan_id>

Parameters:

dhcp	DHCP commands
retry	Restart the DHCP query process
interface	Interface
vlan	VLAN interface
<vlan_id>	VLAN ID

Example:

```
SM24TAT4XB# ip dhcp retry interface vlan 100
% Failed to restart DHCP client on VLAN = 100.
SM24TAT4XB#
```

Command: **iperf**

Description: Network bandwidth measurement tool.

Mode: Exec mode.

Syntax: **iperf** host <v_host> [port <v_port>] [time <v_time>] [interval <v_interval>] [ttl <v_ttl>]

Parameters:

host	host address
<word1-255>	host address
port	port number
time	measurement time
interval	measurement time interval
ttl	time to live

Example:

```
SM24TAT4XB# iperf host 192.168.1.200
SM24TAT4XB#
```

Command: **iperf3**

Description: Network bandwidth measurement tool.

Mode: Exec mode.

Syntax: **iperf3** host <v_host> [port <v_port>] [time <v_time>] [interval <v_interval>]

Parameters:

host	host address
<word1-255>	host address
port	port number
time	measurement time
interval	measurement time interval

Example:

```
SM24TAT4XB# iperf3 host 192.177.1.200
iperf3: error - unable to connect to server: No route to host
SM24TAT4XB#
```

Command: **ipv6**

Description: IPv6 configuration commands.

Mode: Exec mode.

Syntax: **ipv6** dhcp-client restart [interface vlan <v_vlan_list>]

Parameters:

dhcp-client	Manage DHCPv6 client service
restart	Restart DHCPv6 client service
interface	Select an interface to configure
vlan	VLAN of IPv6 interface
<vlan_list>	IPv6 interface VLAN list

Example:

```
SM24TAT4XB# ipv6 dhcp-client restart interface vlan 100
% Invalid DHCPv6 client interface Vlan100

SM24TAT4XB#
```

Command: **link-oam**

Description: Link OAM configuration commands.

Mode: Exec mode.

Syntax: link-oam remote-loopback { start | stop } interface (<port_type> [<v_port_type_list>])

Parameters:

start	Start remote loopback test on interface
stop	Stop remote loopback test on interface
interface	Start/Stop remote loopback test on a specific interface or interfaces.
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
10GigabitEthernet	10 Gigabit Ethernet Port
<port_type_list>	Port list in 1/1-24
<port_type_list>	Port list in 1/1-4

Example:

```
SM24TAT4XB# link-oam remote-loopback start interface GigabitEthernet 1/4
% Requested configuration is not supported with the current OAM mode for Gigabit
Ethernet 1/4
SM24TAT4XB#
```

Command: **logout**

Description: Exit from EXEC mode. You must log back in again.

Mode: Exec mode.

Syntax: **logout** <cr>

Parameters: None.

Example:

```
SM24TAT4XB# logout
Username:
Password:
```

Command: **more**

Description: Display file.

Mode: Exec mode.

Syntax: **more** <path>

Parameters: <url_file>

Example:

```
SM24TAT4XB# more ?
    <url_file>   File in FLASH or on TFTP server. Syntax: <flash:filename |
                 tftp://server/path-and-filename>. A valid file name is a text
                 string drawn from alphabet (A-Za-z), digits (0-9), dot (.),
                 hyphen (-), under score (_). The maximum length is 63 and
                 hyphen must not be first character. The file name content
                 that only contains '.' is not allowed.
SM24TAT4XB#
```

Command: **no**

Description: Delete trace hunt string.

Mode: Exec mode.

Syntax: **no** debug gdbserver

no debug interrupt monitor [source <intr_name>]

no debug ipv6 nd

no debug ptp ms-pdv log-level

no debug trace hunt

no port-security shutdown [interface (<port_type> [<v_port_type_list>])]

no ptp <clockinst> wireless mode interface (<port_type> [<v_port_type_list>])

no terminal editing

no terminal exec-timeout

no terminal history size

no terminal length

no terminal width

Parameters:

debug	Debugging functions
port-security	Port Security
ptp	Misc non persistent 1588 settings.
terminal	Set terminal line parameters
gdbserver	remote debug tool
interrupt	Application-handled interrupt source
ipv6	IPv6 configuration commands
ptp	Precision Timing Protocol parameters
trace	line trace parameters
shutdown	Reopen one or more ports whose limit is exceeded and shut down.
Interface	port selection
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
10GigabitEthernet	10 Gigabit Ethernet Port
<0-3>	Clock instance [0-3]
wireless	Enable wireless mode for one or more interfaces.
mode	Enable wireless mode for an interface.
interface	Interface
hunt	
<cr>	

Example:

```
SM24TAT4XB# no debug gdbserver
SM24TAT4XB#
```

Command: **ping**

Description: Send ICMP echo messages.

Mode: Exec mode.

Syntax:

ping ip { <domain_name> | <ip_addr> } [ttl <ttl_value>] [repeat <count>] [{ saddr <src_addr> | sif { <port_type> <src_if> | vlan <vlan_id> } }] [size <size>] [data <data_value>] [{ verbose | quiet }]

ping ipv6 { <domain_name> | <ip_addr> } [repeat <count>] [saddr <src_addr>] [sif { <port_type> <src_if> | vlan <vlan_id> }] [size <size>] [data <data_value>] [{ verbose | quiet }]

Parameters:		
	ip	ICMPv4 Echo Request
	ipv6	ICMPv6 Echo Request
	<domain_name>	Destination hostname or FQDN
	<ipv4_addr>	Destination IPv4 address
	<domain_name>	Destination hostname or FQDN
	<ipv6_addr>	Destination IPv6 address
	data	Specify payload data byte value
	quiet	Set quiet output
	repeat	Specify repeat count
	saddr	Send from interface with source address
	sif	Send from specified interface
	size	Specify datagram size
	ttl	Set IPv4 Time-To-Live (TTL)
	verbose	Set verbose output
	<cr>	

Example:

```
SM24TAT4XB# ping ip 192.168.1.77 data 3
PING 192.168.1.77 (192.168.1.77): 56 data bytes
64 bytes from 192.168.1.77: seq=0 ttl=64 time=2.290 ms
64 bytes from 192.168.1.77: seq=1 ttl=64 time=0.848 ms
64 bytes from 192.168.1.77: seq=2 ttl=64 time=0.851 ms
64 bytes from 192.168.1.77: seq=3 ttl=64 time=0.849 ms
64 bytes from 192.168.1.77: seq=4 ttl=64 time=0.879 ms

--- 192.168.1.77 ping statistics ---
5 packets transmitted, 5 packets received, 0% packet loss
round-trip min/avg/max = 0.848/1.143/2.290 ms
SM24TAT4XB#
SM24TAT4XB# ping ipv6 Bob
ping6: bad address 'Bob'
SM24TAT4XB#
```

Command: **platform**

Description: Platform debug commands. **WARNING**: The use of 'debug' commands may negatively impact system behavior. Do not enable unless instructed to. Use 'platform debug deny' to disable debug commands. **Note**: 'debug' command syntax, semantics and behavior are subject to change without notice.

Mode: Exec mode.

Syntax: **platform** debug { allow | deny }

Parameters:

debug	Debug command setting
allow	Allow debug commands
deny	Deny debug commands

Example:

```
SM24TAT4XB# platform debug allow

WARNING: The use of 'debug' commands may negatively impact system behavior.
Do not enable unless instructed to. (Use 'platform debug deny' to disable
debug commands.)

NOTE: 'debug' command syntax, semantics and behavior are subject to change
without notice.

SM24TAT4XB#
```

Command: **ptp**

Description: Misc non persistent 1588 settings commands.

Mode: Exec mode.

Syntax:

ptp <clockinst> local-clock { update | ratio <ratio> }

ptp <clockinst> wireless delay <base_delay> [<incr_delay>] interface (<port_type> [<v_port_type_list>])

ptp <clockinst> wireless mode interface (<port_type> [<v_port_type_list>])

ptp <clockinst> wireless pre-notification interface (<port_type> [<v_port_type_list>])

ptp cal 1pps <cable_latency>

ptp cal p2p <port_type> <ref_port> <port_type> <other_port> <cable_latency>

ptp cal port <port_type> <v_port_type_id> [mode { 10m-cu | 100m-cu | 1g-cu | 1g | 2g5 | 5g | 10g | all }] reset

ptp cal port <port_type> <v_port_type_id> offset <pps_offset> cable-latency <cable_latency>

ptp cal port <port_type> <v_port_type_id> start [synce]

ptp cal t-plane <port_type> <v_port_type_id> { ext | int }

Parameters:

ptp	Misc non persistent 1588 settings.
<0-3>	PTP Clock instance [0-3]
cal	
local-clock	Update local clock current time, or set clock ratio
wireless	Enable wireless mode for one or more interfaces.
ratio	Set the local master clock frequency ratio.
update	The local clock is synchronized to the OS system clock

1pps
p2p
port
t-plane
<-100000-100000> Latency of the cable used for calibration
delay
mode Enable wireless mode for an interface.
pre-notification Issue a pre notification that the wireless modem is going to change.
<0-1000000000> Base wireless transmission delay (in picoseconds)
interface Interface
* All switches or All ports
GigabitEthernet 1 Gigabit Ethernet Port
10GigabitEthernet 10 Gigabit Ethernet Port
<-10000000-10000000> Ratio in units of 0,1 PPB, (ratio > 0 => faster clock, ratio < 0 => slower clock).
ext Specifies that external loopback is to be used
int Specifies that internal loopback is to be used

Example:

```
SM24TAT4XB# ptp cal 1pps 50000
Calibration of 1PPS input (cable_latency = 50000)
W ptp 01:01:44 27.998,711 248/vtss_ext_clock_rs422_conf_set#7264: Warning: RS422
 not supported on board type: 15
SM24TAT4XB# ptp 0 wireless mode interface GigabitEthernet 1/4
Wireless mode not available for ptp instance 0, port 4
Wireless mode requires a two-step or Oam based BC
SM24TAT4XB# ptp 0 local-clock ratio 5000
SM24TAT4XB# ptp 0 local-clock update
SM24TAT4XB#
```

Command: **reload**

Description: Reload system.

Mode: Exec mode.

Syntax: **reload** { { { warm } [sid <usid>] } | { defaults [keep-ip] } }

Parameters:
- defaults — Reload defaults without rebooting.
- warm — Reload warm (CPU restart only).
- keep-ip — Attempt to keep VLAN1 IP setup.
- <cr>

Example:

```
SM24TAT4XB# reload defaults keep-ip
% Reloading defaults, attempting to keep IP address. Please stand by.

Username:
Password:
```

Command: **send**

Description: Send a message to other TTY lines.

Mode: Exec mode.

Syntax: send { * | <session_list> | console 0 | vty <vty_list> } <message>

Parameters:

*	All tty lines
<0~16>	Send a message to multiple lines
console	Primary terminal line
vty	Virtual terminal

Example:

```
SM24TAT4XB# send 1 what time is the meeting
Enter TEXT message.  End with the character 'w'.
What time is the meeting? w
SM24TAT4XB#
```

Command: **show**

Description: Display statistics counters. See the Show Commands on page 142.

Mode: Exec mode.

Syntax: See the Show Commands on page 142.

Parameters:

aaa	access	access-list	aggregation
always-on-poe	clock	dot1x	eps
erps	event	green-ethernet	history
interface	ip	ipmc	ipv6
lacp	licenses	line	link-oam
lldp	logging	loop-protect	mac
map-api-key	mep	monitor	mrp
mvr	ntp	platform	poe
port-security	privilege	process	ptp
pvlan	qos	radius-server	rmon
running-config	sflow	smtp	snmp
spanning-tree	svl	switchport	system
tacacs-server	terminal	udld	upnp
user-privilege	users	version	vlan
voice	watchdog	web	

Example: See the Show Commands starting on page 142.

Command:	**terminal**	
Description:	Set terminal line parameters.	
Mode:	Exec mode.	
Syntax:	**terminal** editing	
	terminal exec-timeout <min> [<sec>]	
	terminal help	
	terminal history size <history_size>	
	terminal length <lines>	
	terminal width <width>	
Parameters:	editing	Enable command line editing
	exec-timeout	Set the EXEC timeout
	help	Description of the interactive help system
	history	Control the command history function
	length	Set number of lines on a screen
	width	Set width of the display terminal
	<0-1440>	Timeout in minutes
	size	Set history buffer size
	<0-32>	Number of history commands, 0 means disable
	<0-1440>	Timeout in minutes

Example:

```
SM24TAT4XB# terminal exec 1440
SM24TAT4XB# terminal history size 6
SM24TAT4XB# terminal help
Help may be requested at any point in a command by entering
a question mark '?'.  If nothing matches, the help list will
be empty and you must backup until entering a '?' shows the
available options.
Two styles of help are provided:
1. Full help is available when you are ready to enter a
   command argument (e.g. 'show ?') and describes each possible
   argument.
2. Partial help is provided when an abbreviated argument is entered
   and you want to know what arguments match the input
   (e.g. 'show pr?'.)
SM24TAT4XB#
```

Command: **traceroute**

Description: Send IP Traceroute messages.

Mode: Exec mode.

Syntax:

traceroute ip { <domain_name> | <ip_addr> } [dscp <dscp>] [timeout <timeout>] [{ saddr <src_addr> | sif { <port_type> <src_if> | vlan <vlan_id> } }] [probes <probes>] [firstttl <firstttl>] [maxttl <maxttl>] [icmp] [numeric]

traceroute ipv6 { <domain_name> | <ip_addr> } [dscp <dscp>] [timeout <timeout>] [saddr <src_addr>] [sif { <port_type> <src_if> | vlan <vlan_id> }] [probes <probes>] [maxttl <maxttl>] [numeric]

Parameters:		
	ip	Traceroute (IPv4)
	ipv6	Traceroute (IPv6)
	<domain_name>	Destination hostname or FQDN
	<ipv4_addr>	Destination IPv4 address
	<domain_name>	Destination hostname or FQDN
	<ipv6_addr>	Destination IPv6 address
	dscp	Specify DSCP value (default 0)
	firstttl	Specify first number of hops (starting TTL) (default 1)
	icmp	Use ICMP instead of UDP
	maxttl	Specify max number of hops (max TTL) (default 30)
	numeric	Print numeric addresses
	probes	Specify number of probes per hop (default 3)
	saddr	Send from interface with source address
	sif	Send from specified interface
	timeout	Specify time to wait for a response in seconds (default 3)
	<cr>	

Example:

```
SM24TAT4XB# traceroute ip 192.168.1.77
traceroute to 192.168.1.77 (192.168.1.77), 30 hops max, 38 byte packets
 1  192.168.1.77 (192.168.1.77)  0.188 ms  0.136 ms  0.094 ms
SM24TAT4XB#
```

Config Mode Commands

Available from the `SM24TAT4XB(config)#` prompt:

Power	Power
aaa	Authentication, Authorization and Accounting
access	Access management
access-list	Access list
aggregation	Aggregation mode
always-on-poe	Enable Always On PoE
banner	Define a banner
clock	Configure time-of-day clock
consoleflow	Consoleflow configuration
debug	Debugging functions
default	Set a command to its defaults
dms	Enable DMS Maste
do	To run exec commands in the configuration mode
dot1x	IEEE Standard for port-based Network Access Control
enable	Modify enable password parameters
end	Go back to EXEC mode
eps	Ethernet Protection Switching.
erps	Ethernet Ring Protection Switching
event	Trap event severity level
exec-timeout	Set Auto-logout Timeout period
exit	Exit from current mode
green-ethernet	Green Ethernet (Power reduction)
gvrp	Enable GVRP feature
help	Description of the interactive help system
hostname	Set system's network name
interface	Select an interface to configure
ip	Interface Internet Protocol configuration commands
ipmc	IPv4/IPv6 multicast configuration
ipv6	IPv6 configuration commands
json	JavaScript Object Notation RPC
lacp	LACP settings
line	Configure a terminal line
lldp	Link Layer Discover Protocol.
logging	System logging message
loop-protect	Loop protection configuration
mac	MAC table entries/configuration
map-api-key	Set Google map key string
mep	Maintenance Entity Point
monitor	Monitoring different system events
mvr	Multicast VLAN Registration configuration
mvrp	Enable MVRP feature globally
no	Negate a command or set its defaults
non-stop-poe	Enable Non-Stop PoE (deprecated)

ntp	Configure NTP
poe	Power Over Ethernet.
port-security	This command is obsolete.
privilege	Command privilege parameters
prompt	Set prompt
ptp	Precision time Protocol (1588)
qos	Quality of Service
radius-server	Configure RADIUS
rmon	Remote Monitoring
router	Routing process
sflow	Statistics flow.
smtp	Set email information
snmp-server	Set SNMP server's configurations
spanning-tree	Spanning Tree protocol
svl	Shared VLAN Learning
switchport	Set VLAN switching mode characteristics
system	Set the SNMP server's configurations
tacacs-server	Configure TACACS+
udld	Enable UDLD in the aggressive or normal mode and to set the configurable message timer on all fiber-optic ports.
upnp	Set UPnP configuration
username	Establish User Name Authentication
vlan	VLAN commands
voice	Voice appliance attributes
web	Web

Command: **Power**

Description: Configure the operating mode of the power supply unit.

Mode: Config mode.

Syntax: **Power** { Redundant | Boost }

Parameters: **Redundant mode**: Only provide Primary Power Supply up to 820W when two power supply modules are installed. If one power supply fails, it can still provide enough power for system operation and also PD's operation. This is the default.

Boost mode: Provide Primary Power Supply up to 1640W when two power supply modules are installed. When the application total PDs' power use is over 820W, if one power supply fails, the system will be automatically rebooted due to power loading influence. After the switch finishes rebooting, it will only provide 820W to the PDs.

Example:

```
SM48TAT4XA-RP(config)# power Redundant
SM48TAT4XA-RP(config)# power Boost
SM48TAT4XA-RP(config)#
```

Command: **aaa**

Description: Authentication, Authorization, and Accounting configuration commands.

Mode: Config mode.

Syntax:

aaa accounting { console | telnet | ssh | http | https } tacacs { [commands <priv_lvl>] [exec] }*1

aaa authentication login { console | telnet | ssh | https } { { local | radius | tacacs } [{ local | radius | tacacs } [{ local | radius | tacacs }]] }

aaa authentication login { http } { { redirect | local | radius | tacacs } [{ redirect | local | radius | tacacs } [{ redirect | local | radius | tacacs } [{ redirect | local | radius | tacacs }]]] }

aaa authorization { console | telnet | ssh } tacacs commands <priv_lvl> [config-commands]

Parameters:

accounting	Accounting
authentication	Authentication
authorization	Authorization
console	Configure Console command accounting
http	Configure HTTP command accounting
https	Configure HTTPS command accounting
ssh	Configure SSH command accounting
telnet	Configure Telnet command accounting
tacacs	Use TACACS+ for accounting
commands	Enable command accounting
exec	Enable EXEC accounting
<0-15>	Command privilege level. Commands equal and above this level are accounted
login	Login
local	Use local database for authentication
radius	Use RADIUS for authentication
tacacs	Use TACACS+ for authentication
<0-15>	Command privilege level. Commands equal and above this level are authorized
config-commands	Include configuration commands
console	Configure Console authentication
http	Configure HTTP authentication
https	Configure HTTPS authentication
ssh	Configure SSH authentication
telnet	Configure Telnet authentication
console	Configure Console command authorization
ssh	Configure SSH command authorization
telnet	Configure Telnet command authorization
tacacs	Use TACACS+ for authorization
commands	Enable command authorization

Example:

```
SM24TAT4XB(config)# aaa authorization telnet tacacs commands 15 config-commands
SM24TAT4XB(config)# aaa accounting console tacacs commands 15 exec
SM24TAT4XB(config)# aaa authentication login console local radius tacacs
SM24TAT4XB(config)# aaa authorization console tacacs commands 13 config-command
SM24TAT4XB(config)#
```

Command: **access**

Description: Access management configuration commands.

Mode: Config mode.

Syntax:

access management

access management <access_id> <access_vid> <start_addr> [to <end_addr>] { [web] [snmp] [telnet] | all }

Parameters:		
	<1-16>	ID of access management entry
	<1-4095>	The VLAN ID for the access management entry
	<ipv4_ucast>	Start IPv4 unicast address
	<ipv6_ucast>	Start IPv6 unicast address
	all	All services
	snmp	SNMP service
	telnet	TELNET/SSH service
	to	End address of the range
	web	Web service
	<cr>	

Example:

```
M24TAT4XB(config)# access management 1 100 192.168.1.77 all
SM24TAT4XB(config)# access management 1 100 192.168.1.77 web
SM24TAT4XB(config)#
```

Command: **access-list ace**

Description: Access list ACE configuration commands.

Mode: Config mode.

Syntax:

access-list ace [update] <ace_id> [next { <ace_id_next> | last }] [ingress{ switch <ingress_switch_id> | switchport { <ingress_switch_port_id> | <ingress_switch_port_list> } | interface { <port_type> <ingress_port_id> | (<port_type>[<ingress_port_list>]) } | any }] [policy <policy> [policy-bitmask <policy_bitmask>]] [tag { tagged | untagged | any }] [vid { <vid> | any }] [tag-priority { <tag_priority> | 0-1 | 2-3 | 4-5 | 6-7 | 0-3 | 4-7 | any }] [dmac-type { unicast | multicast | broadcast | any }] [frame-type { any | etype [etype-value { <etype_value> | any }] [smac { <etype_smac> | any }] [dmac { <etype_dmac> | any }] | arp [sip { <arp_sip> | any }] [dip { <arp_dip> | any }] [smac { <arp_smac> | any }] [arp-opcode { arp | rarp | other | any }] [arp-flag [arp-request { <arp_flag_request> | any }] [arp-smac { <arp_flag_smac>| any }] [arp-tmac { <arp_flag_tmac> | any }] [arp-len { <arp_flag_len> | any }] [arp-ip { <arp_flag_ip> | any }] [arp-ether { <arp_flag_ether> | any }]] | ipv4 [sip { <sipv4> | any }] [dip { <dipv4> | any }] [ip-protocol { <ipv4_protocol> | any }] [ip-flag [ip-ttl { <ip_flag_ttl> | any }] [ip-options { <ip_flag_options> | any }] [ip-fragment { <ip_flag_fragment> | any }]]| ipv4-icmp [sip { <sipv4_icmp> | any }] [dip { <dipv4_icmp> | any }] [icmp-type { <icmpv4_type> | any }] [icmp-code { <icmpv4_code> | any }] [ip-flag [ip-ttl { <ip_flag_icmp_ttl> | any }] [ip-options { <ip_flag_icmp_options> |any }] [ip-fragment { <ip_flag_icmp_fragment> | any }]] | ipv4-udp [sip { <sipv4_udp> | any }] [dip { <dipv4_udp> | any }] [sport { <sportv4_udp_start> [to <sportv4_udp_end>] | any }] [dport { <dportv4_udp_start> [to <dportv4_udp_end>] | any }] [ip-flag [ip-ttl { <ip_flag_udp_ttl> | any }] [ip-options { <ip_flag_udp_options> | any }] [ip-fragment { <ip_flag_udp_fragment> | any }]] | ipv4-tcp [sip { <sipv4_tcp> | any }] [dip { <dipv4_tcp> | any }] [sport { <sportv4_tcp_start> [to <sportv4_tcp_end>] | any }] [dport { <dportv4_tcp_start> [to <dportv4_tcp_end>] | any }] [ip-flag [ip-ttl { <ip_flag_tcp_ttl> | any }] [ip-options { <ip_flag_tcp_options> | any }] [ip-fragment { <ip_flag_tcp_fragment> | any }]] [tcp-flag [tcp-fin { <tcpv4_flag_fin> | any }] [tcp-syn { <tcpv4_flag_syn> | any }] [tcp-rst { <tcpv4_flag_rst> | any}] [tcp-psh { <tcpv4_flag_psh> | any }] [tcp-ack { <tcpv4_flag_ack> | any }] [tcp-urg { <tcpv4_flag_urg> | any }]] | ipv6 [next-header { <next_header>| any }] [sip { <sipv6> [sip-bitmask <sipv6_bitmask>] | any }] [hop-limit{ <hop_limit> | any }] | ipv6-icmp [sip { <sipv6_icmp> [sip-bitmask <sipv6_bitmask_icmp>] | any }] [icmp-type { <icmpv6_type> | any }] [icmp-code { <icmpv6_code> | any }] [hop-limit { <hop_limit_icmp> | any }] | ipv6-udp [sip {<sipv6_udp> [sip-bitmask <sipv6_bitmask_udp>] | any }] [sport { <sportv6_udp_start> [to <sportv6_udp_end>] | any }] [dport { <dportv6_udp_start> [to <dportv6_udp_end>] | any }] [hop-limit { <hop_limit_udp> | any }] | ipv6-tcp [sip { <sipv6_tcp> [sip-bitmask <sipv6_bitmask_tcp>] | any }] [sport { <sportv6_tcp_start> [to <sportv6_tcp_end>] | any }] [dport { <dportv6_tcp_start> [to <dportv6_tcp_end>] | any }] [hop-limit { <hop_limit_tcp> | any }] [tcp-flag [tcp-fin { <tcpv6_flag_fin> | any }] [tcp-syn { <tcpv6_flag_syn> | any}] [tcp-rst { <tcpv6_flag_rst> | any }] [tcp-psh { <tcpv6_flag_psh> | any }] [tcp-ack { <tcpv6_flag_ack> | any }] [tcp-urg { <tcpv6_flag_urg> | any }]] }] [action { permit | deny | filter { switchport <filter_switch_port_list> | interface (<port_type> [<fliter_port_list>]) } }] [rate-limiter { <rate_limiter_id> | disable }] [evc-policer { <evc_policer_id> | disable }] [mirror [disable]] [logging [disable]] [shutdown [disable]] [lookup-second[disable]] [redirect { switchport { <redirect_switch_port_id> | <redirect_switch_port_list> } | interface { <port_type> <redirect_port_id> | (<port_type> [<redirect_port_list>]) } | disable }]

Parameters:

ace	Access list entry
rate-limiter	Rate limiter
action	Access list action
dmac-type	The type of destination MAC address
frame-type	Frame type
ingress	Ingress

logging	Logging frame information. Note: The logging feature only works when the packet length is less than 1518 (without VLAN tags) and the System Log memory size and logging rate is limited.
mirror	Mirror frame to destination mirror port
next	insert the current ACE before the next ACE ID
policy	Policy
rate-limiter	Rate limiter
redirect	Redirect frame to specific port
shutdown	Shutdown incoming port. The shutdown feature only works when the packet length is less than 1518 (without VLAN tags).
tag	Tag
tag-priority	Tag priority
vid	VID field
deny	Deny
filter	Filter
permit	Permit
interface	Select an interface to configure
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
10GigabitEthernet	10 Gigabit Ethernet Port
<port_type_list>	Port list in 1/1-24
any	Don't-care the ingress interface
interface	Select an interface to configure
any	Don't-care the type of destination MAC address
broadcast	Broadcast destination MAC address
multicast	Multicast destination MAC address
unicast	Unicast destination MAC address
any	Don't-care the frame type
arp	Frame type of ARP
etype	Frame type of EtherType
ipv4	Frame type of IPv4
ipv4-icmp	Frame type of IPv4 ICMP
ipv4-tcp	Frame type of IPv4 TCP
ipv4-udp	Frame type of IPv4 TCP
ipv6	Frame type of IPv6
ipv6-icmp	Frame type of IPv6 ICMP
ipv6-tcp	Frame type of IPv6 TCP
ipv6-udp	Frame type of IPv6 UDP
arp-flag	ARP flag
arp-opcode	ARP/RARP opcode field
dip	Destination IP address field
etype-value	EtherType value
ip-flag	IP flag
ip-protocol	IPv4 protocol field
icmp-code	ICMP code field
icmp-type	ICMP type field
sip	Source IP address field

sport	TCP source port field
tag	Tag
tag-priority	Tag priority
tcp-flag	TCP flag
vid	VID field
hop-limit	IPv6 hop limiter field
<0-1>	The value of IPv6 hop limiter field
any	Don't-care the value of IPv6 hop limiter field
tcp-flag	TCP flag
dport	TCP destination port field
sport	TCP source port field
tag-priority	Tag priority
tcp-ack	TCP ACK field
tcp-fin	TCP FIN field
tcp-psh	TCP PSH field
tcp-rst	TCP RST field
tcp-syn	TCP SYN field
tcp-urg	TCP URG field
dport	UDP destination port field
port	UDP source port field
any	Don't-care the ingress interface
interface	Select an interface to configure
<1-512>	The next ID
last	Place the current ACE to the end of access list
<0-127>	Policy ID
<0-127>	The value of policy bitmask
<1-16>	Rate limiter ID
disable	Disable rate-limiter
disable	Disable
interface	Select an interface to configure
any	Don't-care tagged or untagged
tagged	Tagged
untagged	Untagged
0-1	The range of tag priority
0-3	The range of tag priority
2-3	The range of tag priority
4-5	The range of tag priority
4-7	The range of tag priority
6-7	The range of tag priority
<0-7>	The value of tag priority
any	Don't-care the value of tag priority field
<1-4095>	The value of VID field
any	Don't-care the value of VID field

Example:

```
SM24TAT4XB(config)# access-list ace 1 policy 0 policy-bitmask 9 rate-limiter 8
SM24TAT4XB(config)# access-list ace 1 tag-priority 4
SM24TAT4XB(config)# access-list ace 1
SM24TAT4XB(config)#
```

Command: **access-list rate-limiter**

Description: Access list rate limiter configuration commands.

Mode: Config mode.

Syntax:
access-list rate-limiter [<rate_limiter_list>] { pps <pps_rate> | 10pps <pps10_rate> | 100pps <pps100_rate> | 25kbps <kpbs25_rate> | 100kbps <kpbs100_rate> }

Parameters:		
	10pps	10 packets per second
	25kbps	25k bits per second
	<1~16>	Rate limiter ID
	10pps	10 packets per second
	25kbps	25k bits per second
	<0-500000>	Rate value
	<0-400000>	Rate value
	<cr>	

Example:

```
SM24TAT4XB(config)# access-list rate 25 3000
SM24TAT4XB(config)# access-list rate 1 10pps 65000
SM24TAT4XB(config)# access-list rate-limiter 1 10 90000
SM24TAT4XB(config)#
```

Command: **aggregation**

Description: Aggregation mode configuration commands.

Mode: Config mode.

Syntax: **aggregation** mode { [smac] [dmac] [ip] [port] }*1

Parameters:		
	mode	Traffic distribution mode
	dmac	Destination MAC affects the distribution
	ip	IP address affects the distribution
	port	IP port affects the distribution
	smac	Source MAC affects the distribution

Example:

```
SM24TAT4XB(config)# aggregation mode dmac ip port smac
SM24TAT4XB(config)#
```

Command: **always-on-poe**

Description: Enable Always On PoE

Mode: Config mode.

Syntax: **always-on-poe** <cr>

Parameters:		
	|	Output modifiers
	<cr>	

Example:

```
SM24TAT4XB(config)# always-on-poe
Always On PoE Status : Enable
SM24TAT4XB(config)#
```

Command: **banner**

Description: Define a banner.

Mode: Config mode.

Syntax: **banner** [motd | login | exec] <banner>

Parameters: see below.

Example:

```
SM24TAT4XB(config)# banner ?
   <line>    c banner-text c, where 'c' is a delimiting character
   exec      Set EXEC process creation banner
   login     Set login banner
   motd      Set Message of the Day banner
SM24TAT4XB(config)#
```

Command: **clock**

Description: Configure time-of-day clock.

Mode: Config mode.

Syntax:

clock set <icliDateWord> { <icliTimeWord24> | <icliTimeWord12> { AM | PM } }

clock summer-time <word16> date [<start_month_var> <start_date_var> <start_year_var> <start_hour_var> <end_month_var> <end_date_var> <end_year_var> <end_hour_var> [<offset_var>]]

clock summer-time <word16> recurring [<start_week_var> <start_day_var> <start_month_var> <start_hour_var> <end_week_var> <end_day_var> <end_month_var> <end_hour_var> [<offset_var>]]

clock timezone <word_var> <hour_var> [<minute_var> [<subtype_var>]]

Parameters:

set	set clock
summer-time	Configure summer (daylight savings) time
timezone	Configure time zone
<word10>	yyyy/mm/dd
<word8>	hh:mm:ss
<word16>	name of time zone in summer (the string '' is a special syntax that is reserved for null input)
date	Configure absolute summer time
recurring	Configure recurring summer time
<1-12>	Month to start
<1-31>	Date to start
<2000-2097>	Year to start
<hhmm>	Time to start (hh:mm)
<hhmm>	Time to start (hh:mm)
<1-12>	Month to end
<1-31>	Date to end
<2000-2097>	Year to end
<hhmm>	Time to end (hh:mm)
<1-1439>	Offset to add in minutes
<word16>	name of time zone (the string '' is a special syntax that is reserved for null input)

<-23-23>	Hours offset from UTC
<0-59>	Minutes offset from UTC
<0-9>	Sub type of time zone
<cr>	

Example:

```
SM24TAT4XB(config)# clock set 2019/02/21 01:33:20
2019-02-21T01:33:21+00:00
SM24TAT4XB(config)# clock summer-time cdt-dst date 6 31 2020 12:59 1 1 2021 01:01
SM24TAT4XB(config)# clock timezone GMT-05 -1 0 4
Daylight saving time zone subtype error
SM24TAT4XB(config)#
```

Command: **consoleflow**

Description: Consoleflow configuration; enter ConsoleFlow Config mode and set ConsoleFlow parameters.

Mode: Config mode.

Syntax:
active connection connection <number>
apply configuration updates disable
apply configuration updates enable
apply firmware updates disable
apply firmware updates enable
connection <con> connect to cloud
connection <con> connect to on premise
connection <con> host <host_name>
connection <con> port <number>
connection <con> secure port disable
connection <con> secure port enable
connection <con> validate certificates disable
connection <con> validate certificates enable
content check interval <hours>
device description <device_desp>
device id <device_id>
device key <device_key>
device name <device_name>
do <command>
end
exit
help
no device description
no device id
no device key
no device name
show
show connection <con>
show statistics
state disable
state enable
status update interval <minutes>

Parameters:	active	Sets active connection to Connection <number>
	apply	Sets the mode on firmware updates
	connection	Sets the connection 1 or connection 2
	content	Sets the firmware and configuration check interval
	device	Sets the Device ID
	do	To run exec commands in config mode
	end	Go back to EXEC mode
	exit	Exit from current mode
	help	Description of the interactive help system
	no	Removes parameters
	show	Displays the current configuration
	state	Consoleflow state
	status	Sets the status update interval
	firmware	Sets the mode on firmware updates
	updates	Sets the action on configuration updates
	disable	Sets the action on configuration updates to disable
	enable	Sets the action on configuration updates to enable
	<1-2>	Sets the connection 1 or connection 2
	connect	Sets the mode to connect
	host	Sets the Hostname or IP address of ConsoleFlow
	port	Sets the Port of ConsoleFlow
	secure	Sets the mode on HTTPS
	validate	Sets the mode on certificate validation
	<word256>	Sets the Hostname or IP address of ConsoleFlow
	<1-65535>	Sets the Port of ConsoleFlow
	port	Sets the mode on HTTPS
	disable	Disables HTTPS for ConsoleFlow client
	enable	Enables HTTPS for ConsoleFlow client
	certificates	Sets the mode on certificate validation
	disable	Disables certificate validation for ConsoleFlow client
	enable	Enables certificate validation for ConsoleFlow client
	check	Sets the firmware and configuration check interval
	interval	Sets the firmware and configuration check interval
	<1-56160>	Sets the firmware and configuration check interval
	description	Sets the Device Description
	id	Sets the Device ID
	key	Sets the Device Key
	name	Sets the Device Name
	<word256>	Sets the Device Description
	<word32>	Sets the Device ID
	<word32>	Sets the Device Key
	<word256>	Sets the Device Name
	<line>	Exec Command
	device	Removes parameters
	description	Removes the Device Description
	id	Removes the Device ID
	key	Removes the Device Key
	name	Removes the Device Name

connection	Shows the connection 1 or connection 2
statistics	Displays the ConsoleFlow statistics
<1-2>	Shows the connection 1 or connection 2
disable	Disables the ConsoleFlow client
enable	Enables the ConsoleFlow client
update	Sets the status update interval
interval	Sets the status update interval
<1-1440>	Sets the status update interval
to	Sets the mode to connect
cloud	Sets the cloud mode to connect
on	Sets the on premise mode to connect
premise	Sets the on premise mode to connect

Mode: Config Mode

Example:

```
SM48TAT4XA-RP(config)# consoleflow
SM48TAT4XA-RP(config-consoleflow)# active connection connection 1
SM48TAT4XA-RP(config-consoleflow)# apply configuration updates enable
SM48TAT4XA-RP(config-consoleflow)# connection 1 host BobB
SM48TAT4XA-RP(config-consoleflow)# connection 1 secure port enable
SM48TAT4XA-RP(config-consoleflow)# connection 1 validate certificates enable
SM48TAT4XA-RP(config-consoleflow)# content check interval 22000
SM48TAT4XA-RP(config-consoleflow)# device description CfDev1
SM48TAT4XA-RP(config-consoleflow)# device id !!!!!!!!!!!!!!
SM48TAT4XA-RP(config-consoleflow)# device key 12345678912345678912345678 9
SM48TAT4XA-RP(config-consoleflow)# device name sm48tat4xa-rpSAAS
SM48TAT4XA-RP(config-consoleflow)# show connection 1
ConsoleFlow Connection 1 Configuration:
Connect To : Cloud
Host : BobB
Port : 443
Secure Port : Enabled
Validate Certificates: Enabled

SM48TAT4XA-RP(config-consoleflow)# show statistics
Client Status : Running
Not registered -
Last Status Update : Not available
Last Content Check : Not available
Available Firmware Updates: Not available
Available Configuration Updates: Not available
SM48TAT4XA-RP(config-consoleflow)# show <cr>
ConsoleFlow Configuration:
State : Enabled
Device ID :
Device Key : (Configured)
Device Name : sm48tat4xa-rpSAAS
Device Description : CfDev1
Status Update Interval : 1 minutes
Content Check Interval : 22000 minutes
Apply Firmware Updates : Enabled
Apply Configuration Updates : Enabled
Active Connection : Connection 1
Connection 1 Connect To : Cloud
Connection 1 Host : BobB
```

```
Connection 1 Port : 443
Connection 1 Secure Port : Enabled
Connection 1 Validate Certificates: Enabled

Connection 2 Connect To : Cloud
Connection 2 Host : consoleflow.com
Connection 2 Port : 443
Connection 2 Secure Port : Enabled
Connection 2 Validate Certificates: Enabled

SM48TAT4XA-RP(config-consoleflow)# connection 1 connect to on premise
SM48TAT4XA-RP(config-consoleflow)# connection 1 connect to cloud
SM48TAT4XA-RP(config-consoleflow)# show connection 1
ConsoleFlow Connection 1 Configuration:
Connect To : Cloud
Host : BobB
Port : 443
Secure Port : Enabled
Validate Certificates: Enabled

SM48TAT4XA-RP(config-consoleflow)# state enable
SM48TAT4XA-RP(config-consoleflow)# status update interval 300
SM48TAT4XA-RP(config-consoleflow)# exit
SM48TAT4XA-RP(config)# consoleflow
SM48TAT4XA-RP(config-consoleflow)#
```

Command: **debug**

Description: Debugging functions. **Warning**: The use of 'debug' commands may negatively impact system behavior. Do not enable unless instructed to. Use 'platform debug deny' to disable debug commands. **Note**: 'debug' command syntax, semantics and behavior are subject to change without notice. Debug commands are for use only by, or at the direction of, LantronixTechnical Support.

Mode: Config mode.

Command: **default**

Description: Set a command to its defaults.

Mode: Config mode.

Syntax: **default** access-list rate-limiter [<rate_limiter_list>]

Parameters:

access-list	Access list
rate-limiter	Rate limiter
<1~16>	Rate limiter ID

Example:

```
SM24TAT4XB(config)# default access-list rate-limiter 1
SM24TAT4XB(config)#
```

Command: **dms**

Description: Configure DMS Service mode.

Mode: Config mode.

Syntax: **dms service-mode** { disabled | enabled [priority { high | mid | low | non }] }

Parameters:

service-mode	DMS mode
disabled	DMS mode is disabled
enabled	DMS mode is enabled
priority	DMS priority; choose the priority level of the switch.
high	DMS priority is high; this switch will become the DMS Controller (Master) switch.
low	DMS priority is low
mid	DMS priority is mid-level
non	DMS priority is non; this switch will never become the DMS Controller (Master) switch.

Example:

```
SM24TAT4XB(config)# dms service-mode disabled
SM24TAT4XB(config)# dms service-mode enabled priority non
SM24TAT4XB(config)# dms service-mode enabled priority mid
SM24TAT4XB(config)# dms service-mode enabled priority low
SM24TAT4XB(config)# dms service-mode enabled priority high
SM24TAT4XB(config)#
```

Command: **do**

Description: Run exec commands in Config mode.

Mode: Config mode.

Syntax: **do** <command>

Parameters:

	<line>	Exec Command
	<line>	<cr>

Example:

```
SM48TAT4XA-RP(config)# do show version brief
Version      : SM48TAT4XA-RP (standalone) v8.50.0070
Build Date   : 2022-08-08T19:00:56+08:00
SM48TAT4XA-RP(config)#

SM24TAT4XB(config)# do show ip interface
Interface  Address            Method   Status
---------- ------------------ -------- ------
VLAN 1     192.168.1.77/24     Manual   UP
SM24TAT4XB(config)#
```

Command: **dot1x**

Description: IEEE Standard for port-based Network Access Control.

Mode: Config mode.

Syntax: **dot1x** authentication timer inactivity <v_10_to_100000>

dot1x authentication timer re-authenticate <v_1_to_3600>

dot1x feature { [guest-vlan] [radius-qos] [radius-vlan] }*1

dot1x guest-vlan <value>

dot1x guest-vlan supplicant

dot1x max-reauth-req <value>

dot1x re-authentication

dot1x system-auth-control

dot1x timeout quiet-period <v_10_to_1000000>

dot1x timeout tx-period <v_1_to_65535>

Parameters:

authentication	Authentication
feature	Globally enables/disables a dot1x feature functionality
guest-vlan	Guest VLAN
max-reauth-req	The number of times a Request Identity EAPOL frame is sent without response before considering entering the Guest VLAN
re-authentication	Set Re-authentication state
system-auth-control	Set the global NAS state
timeout	timeout

Example:

```
SM24TAT4XB(config)# dot1x authentication timer inactivity 5000
SM24TAT4XB(config)# dot1x feature guest-vlan
SM24TAT4XB(config)# dot1x re-authentication
SM24TAT4XB(config)# dot1x timeout tx-period 7000
SM24TAT4XB(config)#
```

Command: **enable**

Description: Modify enable password parameters.

Mode: Config mode.

Syntax: **enable** password [level <priv>] <password>

enable secret { 0 | 5 } [level <priv>] <password>

Parameters:		
	password	Assign the privileged level clear password
	secret	Assign the privileged level secret
	<word32>	The UNENCRYPTED (clear-text) password
	level	Set exec level password
	0	Specifies an UNENCRYPTED password will follow
	5	Specifies an ENCRYPTED secret will follow
	<word32>	Password
	level	Set exec level password
	<cr>	
	<1-15>	Level number
	<1-15>	Level number

Example:

```
SM24TAT4XB(config)# enable password level 15 admin
SM24TAT4XB(config)# enable secret 0 admin
SM24TAT4XB(config)# enable secret 0 level 15
SM24TAT4XB(config)# enable secret 0 level 15 admin
SM24TAT4XB(config)# enable secret 5 transition
SM24TAT4XB(config)#
```

Command: **end**

Description: Go back to EXEC mode.

Mode: Config mode.

Syntax: **end** <cr>

Parameters: None.

Example:

```
SM24TAT4XB(config)# end
SM24TAT4XB#
```

Command: **eps**

Description: Ethernet Protection Switching config commands.

Mode: Config mode.

Syntax:

eps <inst> 1plus1 { bidirectional | { unidirectional [aps] } }

eps <inst> command { lockout | forced | manualp | manualw | exercise | freeze | lockoutlocal }

eps <inst> domain { port | tunnel-tp | pw } architecture { 1plus1 | 1for1 } work-flow { <flow_w> | <port_type> <port_w> } protect-flow { <flow_p> | <port_type> <port_p> }

eps <inst> holdoff <hold>

eps <inst> mep-work <mep_w> mep-protect <mep_p> mep-aps <mep_aps>

eps <inst> revertive { 10s | 30s | 5m | 6m | 7m | 8m | 9m | 10m | 11m | 12m | {wtr-value <wtr_value> } }

Parameters:

<1-100>	The EPS instance number.
1plus1	EPS 1+1 architecture.
command	EPS command.
domain	The domain of the EPS.
holdoff	Hold off timer.
mep-work	Working MEP instance.
revertive	Revertive EPS.
bidirectional	EPS 1+1 bidirectional protection type.
unidirectional	EPS 1+1 unidirectional protection type.
exercise	Exercise of the protocol - not traffic effecting. This is only allowed in 'Bidirectional' protection type
forced	Force switch normal traffic to protection.
freeze	Local Freeze of EPS.
lockout	Lockout of protection.
lockoutlocal	Local lockout of EPS.
manualp	Manual switch normal traffic to protection.
manualw	Manual switch normal traffic to working. This is only allowed in 'non-revertive' mode.
port	This EPS is protecting in the Port domain.
pw	This EPS is protecting in the MPLS-TP Pseudo-Wire domain.
tunnel-tp	This EPS is protecting in the MPLS-TP tunnel domain.
architecture	The EPS architecture.
1for1	The architecture is 1 for 1.
1plus1	The architecture is 1 plus 1.
work-flow	The working flow instance that the EPS is related to.
GigabitEthernet	1 Gigabit Ethernet Port
10GigabitEthernet	10 Gigabit Ethernet Port
<uint>	The working flow instance number when not in the port domain.
<uint>	Working MEP instance number.
mep-protect	Protecting MEP instance.
<uint>	Protecting MEP instance number.
mep-aps	APS MEP instance.
<uint>	APS MEP instance number.

10m	WTR is 10 min.
10s	WTR is 10 sec.
11m	WTR is 11 min.
12m	WTR is 12 min.
30s	WTR is 30 sec.
5m	WTR is 5 min.
6m	WTR is 6 min.
7m	WTR is 7 min.
8m	WTR is 8 min.
9m	WTR is 9 min.
wtr-value	WTR as value.
<uint>	The WTR value in seconds. Range is 1 to 720 seconds.

Example:

```
SM24TAT4XB(config)# eps 1 1plus1 bidirectional
SM24TAT4XB(config)# eps 1 command forced
SM24TAT4XB(config)# eps 1 domain port architecture 1for1 work-flow GigabitEthernet 1/9
protect-flow GigabitEthernet 1/10
SM24TAT4XB(config)# eps 1 holdoff 5
SM24TAT4XB(config)# eps 1 mep-work 1 mep-protect 2 mep-aps 3
SM24TAT4XB(config)# eps 1 revertive 5m
SM24TAT4XB(config)# eps 1 revertive wtr-value 60
SM24TAT4XB(config)# eps 1 command lockout
Error: Invalid parameter
SM24TAT4XB(config)#
```

Messages:

In Port domain, work-flow and protect-flow must be <port_type_id>

Command: **erps**

Description: Ethernet Ring Protection Switching config commands.

Mode: Config mode.

Syntax:

erps <group> guard <guard_time_ms>

erps <group> holdoff <holdoff_time_ms>

erps <group> major port0 interface <port_type> <port0> port1 interface <port_type> <port1> [interconnect]

erps <group> mep port0 sf <p0_sf> aps <p0_aps> port1 sf <p1_sf> aps <p1_aps>

erps <group> revertive <wtr_time_minutes>

erps <group> rpl { owner | neighbor } { port0 | port1 }

erps <group> sub port0 interface <port_type> <port0> { { port1 interface <port_type> <port1> } | { interconnect <major_ring_id> } } [virtual-channel]

erps <group> topology-change propagate

erps <group> version { 1 | 2 }

erps <group> vlan { none | [add | remove] <vlans> }

Parameters:		
	guard	Guard
	holdoff	Hold-off time
	major	Major ring
	mep	MEP
	revertive	Revertive
	rpl	Ring Protection Link
	sub	Sub-ring
	topology-change	Topology Change
	version	Version
	vlan	VLAN
	10-2000	Guard time in ms
	port0	ERPS Port 0 interface
	interface	Ethernet interface
	GigabitEthernet	1 Gigabit Ethernet Port
	10GigabitEthernet	10 Gigabit Ethernet Port
	port1	ERPS Port 1 interface
	interface	Ethernet interface
	interconnect	Major ring is interconnected
	port0	ERPS Port 0 interface
	sf	Signal Fail
	<1-3124>	Index of Port 0 SignalFail MEP
	aps	Automatic Protection Switching
	<1-3124>	Index of Port 0 APS MEP
	port1	ERPS Port 1 interface
	sf	Signal Fail
	<1-3124>	Index of Port 1 SignalFail MEP
	aps	Automatic Protection Switching
	<1-3124>	Index of Port 1 APS MEP

1-12	Wait-to-restore time in minutes
neighbor	Neighbor role
owner	Owner role
port0	ERPS Port 0 interface
port1	ERPS Port 1 interface
port0	ERPS Port 0 interface
interface	Ethernet interface
interconnect	Sub-ring is interconnected
port1	ERPS Port 1 interface
1-64	Major ring group number
virtual-channel	Enable virtual channel for sub-ring
propagate	Propagate
1	ERPS version 1
2	ERPS version 2
<vlan_list>	List of VLANs
add	Add to set of included VLANs
none	Do not include any VLANs
remove	Remove from set of included VLANs
<vlan_list>	List of VLANs
add	Add to set of included VLANs
none	Do not include any VLANs
remove	Remove from set of included VLANs

Example:

```
SM24TAT4XB(config)# erps 1 guard 700
SM24TAT4XB(config)# erps 1 holdoff 5000
SM24TAT4XB(config)# erps 1 major port0 interface GigabitEthernet 1/9 port1 interface
GigabitEthernet 1/10 interconnect
SM24TAT4XB(config)# erps 1 mep port0 sf 25 aps 1 port1 sf 50 aps 33
SM24TAT4XB(config)# erps 1 revertive 1
SM24TAT4XB(config)# erps 1 rpl neighbor port0
SM24TAT4XB(config)# erps 1 sub port0 interface GigabitEthernet 1/11 interconnect 1 virtual-
channel
SM24TAT4XB(config)# erps 1 topology-change propagate
SM24TAT4XB(config)# erps 1 version 1
SM24TAT4XB(config)# erps 1 version 2
SM24TAT4XB(config)# erps 1 vlan add 200
SM24TAT4XB(config)# erps 1 vlan none
SM24TAT4XB(config)# erps 1 vlan remove 55
SM24TAT4XB(config)#
```

Messages:

% ERPS group 1: Given protection group does not exist

% ERPS group 1: Given protection group already created

Command: **event**

Description: Trap event severity level config commands.

Mode: Config mode.

Syntax:

event group { AC-Power | ACL | ACL-Log | Access-Mgmt | Auth-Failed | AUTO-SAVING | Cold-Start | Config-Info | Digital-Out | Firmware-Upgrade | Import-Export | LACP | Login | Logout | Mgmt-IP-Change | Module-Change | NAS | Password-Change |Port-Security | Spanning-Tree | Warm-Start | Battery-Power | BCS-Protection | DMS | Dying-Gasp | PoE-Auto-Check | Poe-Auto-Power-Reset | FAN | ZTU-FAIL | Surveillance | NTP-Sync | SCP-Success | SCP-Fail } { level <lvl> | syslog { enable | disable } | trap { enable | disable } | smtp { enable | disable } | ipush { enable | disable } }

event group { DI-1-Abnormal | DI-1-Normal | Link-Status | Loop-Protect | Temperature | Voltage | Rapid-Ring-Break | Rapid-Ring-Error } { level <lvl> | syslog {enable | disable } | trap { enable | disable } | smtp { enable | disable } | ipush { enable | disable } | digital-out { enable | disable } }

Parameters:

ACL	Group ID ACL
ACL-Log	Group ID ACL Log
Access-Mgmt	Group ID Access Management
Auth-Failed	Group ID Auth Fail
Cold-Start	Group ID Cold Start
Config-Info	Group ID Config Info
DMS	Group ID DMS
FAN	Group ID FAN
Firmware-Upgrade	Group ID Firmware Upgrade
Import-Export	Group ID Import Export
LACP	Group ID LACP
Link-Status	Group ID Link Status
Login	Group ID Login
Logout	Group ID Logout
Loop-Protect	Group ID Loop Protect
MRP-Event	Group ID MRP
Mgmt-IP-Change	Group ID Management IP Change
Module-Change	Group ID Module Change
NAS	Group ID NAS
NTP-Sync	Group ID NTP Sync
Over-Max-PoE-Power-Limitation	Group ID Over Max PoE Power Limitation
Password-Change	Group ID Password Change
PoE-PD-Off	Group ID PoE PD Off
PoE-PD-On	Group ID PoE PD On
PoE-PD-Over-Current	Group ID PoE PD Over Current
Poe-Auto-Power-Reset	Group ID PoE Auto Power Reset
Port-Security	Group ID Port Security
SCP-Fail	Group ID SCP Fail
SCP-Success	Group ID SCP Success
Spanning-Tree	Group ID Spanning Tree
Temperature	Group ID Temperature

Voltage	Group ID Voltage
Warm-Start	Group ID Warm Start
level	Severity level
smtp	smtp mode
syslog	syslog mode
trap	trap mode
<0-7>	<0> Emergency, <1> Alert, <2> Critical, <3> Error, <4> Warning, <5> Notice, <6> Informational, <7> Debug
disable	smtp mode disable
enable	smtp mode enable

Example:

```
SM24TAT4XB(config)# event group Auth-Failed level 1
SM24TAT4XB(config)# event group FAN level 2
SM24TAT4XB(config)# event group FAN smtp enable
SM24TAT4XB(config)# event group Poe-Auto-Power-Reset level 3
SM24TAT4XB(config)# event group Poe-Auto-Power-Reset smtp enable
SM24TAT4XB(config)# event group Poe-Auto-Power-Reset syslog enable
SM24TAT4XB(config)# event group Poe-Auto-Power-Reset trap enable
SM24TAT4XB(config)# event group poe-pd-off level 5
SM24TAT4XB(config)#
```

Command: **exec-timeout**

Description: Set Auto-logout Timeout period. After you change the Auto-Logout timeout and then log out and log back in, the Auto-Logout timeout setting will be the setting saved to the start-up config file. When the Auto-Logout timeout setting is changed, it directly writes to running-config. To save the timeout change to start-up config, you must execute a save to startup-config. To examine the running-config, you can run the CLI command "showing running-config" or in the Web UI just log out and log back in again. To save the timeout change into startup-config, you must do a save to startup-config and then reboot the switch. In summary:

- When you power on the switch, it will get the settings from startup-config.
- When you logout and login (without switch reboot), the switch will get the timeout settings from startup-config.
- When you reload defaults, the switch will get the timeout settings default-config.

For the "Save to start-up config" behavior, if you don't save the config, when you change the timeout setting but logout, at the next login the timeout setting remains unchanged as the setting in start-up config.

If you save timeout setting to start-up config:	**If you don't save timeout setting to start-up config:**
When you change the timeout setting and save to startup-config (click the disc icon), the changed timeout setting will be applied to running-config and start-up config immediately.	When the you change the timeout setting (without save to startup-config), the timeout change will be applied to running-config immediately.
After Logout and login, the timeout setting will be the setting saved in start-up config.	After Logout and login, the timeout setting will be the setting saved in start-up configure.
After a switch reboot, the timeout setting will be the setting saved in start-up config.	After you reboot the switch, the timeout setting will be the setting saved in start-up config.

Mode: Config mode.

Syntax: **exec-timeout** autologout { 0 | 1 | 2 | 3 | 4 | 5 | 10 | 20 | 30 | 40 | 50 | 60 }

Parameters: autologout

0	Off – No Auto-Logout timeout
1	1 minute
10	10 minutes
2	2 minutes
20	20 minutes
3	3 minutes
30	30 minutes
4	4 minutes
40	40 minutes
5	5 minutes
50	50 minutes
60	60 minutes

Example:

```
SISPM1040-3248-L(config)# exec-timeout autologout 60
SISPM1040-3248-L(config)# exec-timeout autologout 0
SISPM1040-3248-L(config)#
```

Command: **exit**

Description: Exit from current mode.

Mode: Config mode.

Syntax: **exit** <cr>

Parameters: None.

Example:

```
SM24TAT4XB(config)# exit
SM24TAT4XB#
```

Command: **green-ethernet**

Description: Green Ethernet (Power reduction) config commands. Power down of PHYs if no traffic.

Mode: Config mode.

Syntax: **green-ethernet** eee optimize-for-power <cr>

Parameters:

eee	Powering down of PHYs when there is no traffic.
optimize-for-power	Set EEE optimized for least power consumption (else optimized for least traffic latency).

Example:

```
SM24TAT4XB(config)# green-ethernet eee optimize-for-power
SM24TAT4XB(config)#
```

Command: **gvrp**

Description: Enable GVRP feature.

Mode: Config mode.

Syntax:

gvrp

gvrp max-vlans <maxvlans>

gvrp time { [join-time <join_time>] [leave-time <leave_time>] [leave-all-time <leave_all_time>] }*1

Parameters:

max-vlans	Number of simultaneously VLANs that GVRP can control
time	Configure GARP protocol timer parameters per IEEE 802.1D-2004, clause 12.11.
<1-4094>	VLAN ID for max VLANs
join-time	Set GARP protocol parameter JoinTime.
leave-all-time	Set GARP protocol parameter LeaveAllTime.
leave-time	Set GARP protocol parameter LeaveTime.
join-time	Set GARP protocol parameter JoinTime.
leave-time	Set GARP protocol parameter LeaveTime.
<1-20>	join-time in units of centiseconds. Range is 1-20. Default is 20.
<1000-5000>	leave-all-time in units of centiseconds Range is 1000-5000. Default is 1000.
<60-300>	leave-time in units of centiseconds. Range is 60-300. Default is 60.
<cr>	

Example:

```
SM24TAT4XB(config)# gvrp max-vlans 300
SM24TAT4XB(config)# gvrp time join-time 10
```

```
SM24TAT4XB(config)# gvrp time leave-all-time 2500
SM24TAT4XB(config)# gvrp time leave-time 90
SM24TAT4XB(config)#
```

Messages:
%% Failed to configure the number of VLANs managed by GVRP.
% (The GARP application is currently enabled - disable it in order to configure its parameters.)

Command: **help**

Description: Description of the interactive help system.

Mode: Config mode.

Syntax: **help** <cr>

Parameters: None.

Example:

```
SM24TAT4XB(config)# help ?
Help may be requested at any point in a command by entering
a question mark '?'.  If nothing matches, the help list will
be empty and you must backup until entering a '?' shows the
available options.
Two styles of help are provided:
1. Full help is available when you are ready to enter a
   command argument (e.g. 'show ?') and describes each possible
   argument.
2. Partial help is provided when an abbreviated argument is entered
   and you want to know what arguments match the input
   (e.g. 'show pr?'.)
SM24TAT4XB(config)#
```

Command: **hostname**

Description: Set system's network name.

Mode: Config mode.

Syntax: **hostname** <hostname>

Parameters: <line128> This system's network name.

Example:

```
SM24TAT4XB(config)# hostname engLab
engLab(config)# no hostname
SM24TAT4XB(config)#
```

Command: **interface**

Description: Select an interface to configure. See Interface Config Mode Commands on page 106.

Mode: Config mode.

Syntax: **interface** (<port_type> [<plist>])
interface llag <llag_id>
interface vlan <vlist>

Parameters:		
	*	All switches or All ports
	GigabitEthernet	1 Gigabit Ethernet Port
	10GigabitEthernet	10 Gigabit Ethernet Port
	llag	Local link aggregation interface configuration
	vlan	VLAN interface configurations
	<port_type_list>	Port list for all port types
	<port_type_list>	Port list in 1/1-24
	<port_type_list>	Port list in 1/1-4
	<vlan_list>	ISL VLAN IDs
	ethertype	EtherType for Custom S-ports
	protocol	Protocol-based VLAN commands
	1-14	ID of LLAG interface
	<cr>	

Example 1: Select a port interface to configure, see what commands are available, and then exit back to Config mode.

```
SM24TAT4XB(config)# interface * 1/6
SM24TAT4XB(config-if)# ?
    access-list            Access list
    aggregation            Create an aggregation
    description            Configures port description
    do                     To run exec commands in the configuration mode
    dot1x                  IEEE Standard for port-based Network Access Control
    duplex                 Interface duplex
    end                    Go back to EXEC mode
    excessive-restart       Restart backoff algorithm after 16 collisions (No
                           excessive-restart means discard frame after 16
                           collisions)
    exit                   Exit from current mode
    flowcontrol            Traffic flow control.
    frame-length-check      Drop frames with mismatch between EtherType/Length
                           field and actually payload size.
    green-ethernet          Green Ethernet (Power reduction)
    gvrp                   Enable GVRP on interface or interfaces
    help                   Description of the interactive help system
    ip                     Interface Internet Protocol configuration commands
    ipv6                   IPv6 configuration commands
    lacp                   LACP port configuration
    link-oam               Enable or Disable (when the no keyword is entered)
                           Link OAM on the interface
-- more --, next page: Space, continue: g, quit: ^C
SM24TAT4XB(config-if)# exit
SM24TAT4XB(config)#
```

Example 2: Select a VLAN interface to configure, see what commands are available, and then exit back to Config mode.

```
SM24TAT4XB(config)# vlan 100-200
SM24TAT4XB(config-vlan)# ?
    do      To run exec commands in the configuration mode
    end     Go back to EXEC mode
    exit    Exit from current mode
    help    Description of the interactive help system
    name    ASCII name of the VLAN
    no
SM24TAT4XB(config-vlan)# exit
SM24TAT4XB(config)#
```

Example 3: Select an llag interface to configure, see what commands are available, and then exit back to Config mode.

```
SM24TAT4XB(config)# interface llag 1
SM24TAT4XB(config-llag)# ?
    do      To run exec commands in the configuration mode
    end     Go back to EXEC mode
    exit    Exit from current mode
    help    Description of the interactive help system
    lacp
    no
SM24TAT4XB(config-llag)# exit
SM24TAT4XB(config)#
```

Command: **ip**

Description: Interface Internet Protocol configuration commands.

Mode: Config mode.

Syntax:

ip arp inspection
ip arp inspection entry interface <port_type> <in_port_type_id> <vlan_var> <mac_var> <ipv4_var>
ip arp inspection translate [interface <port_type> <in_port_type_id> <vlan_var> <mac_var> <ipv4_var>]
ip arp inspection vlan <in_vlan_list>
ip arp inspection vlan <in_vlan_list> logging { deny | permit | all }
ip dhcp relay
ip dhcp relay information option
ip dhcp relay information policy { drop | keep | replace }
ip dhcp server per-port
ip dhcp snooping
ip dhcp vlan <vid>
ip dhcp vlan <vid> <start_ip> <end_ip> <lease> <mask> <gateway> <dns>
ip dns proxy
ip domain name { <v_domain_name> | dhcp [ipv4 | ipv6] [interface vlan <v_vlan_id_dhcp>] }
ip helper-address <v_ipv4_ucast>
ip http port <port>
ip http secure-certificate { upload <url_file> [pass-phrase <pass_phrase>] | generate }
ip http secure-server port <port>
ip igmp host-proxy [leave-proxy]
ip igmp snooping
ip igmp snooping vlan <v_vlan_list>
ip igmp ssm-range <v_ipv4_mcast> <ipv4_prefix_length>
ip igmp unknown-flooding
ip link-local interface <ifc>
ip name-server [<order>] { <v_ipv4_ucast> | { <v_ipv6_ucast> [interface vlan <v_vlan_id_static>] } | dhcp [ipv4 | ipv6] [interface vlan <v_vlan_id_dhcp>] }
ip route <v_ipv4_addr> <v_ipv4_netmask> <v_ipv4_gw> [<v_distance>]
ip routing
ip scp server { enable | disable }
ip source binding interface <port_type> <in_port_type_id> <vlan_var> <ipv4_var> <mac_var>
ip ssh keyregen
ip telnet port <port>
ip verify source
ip verify source translate

Parameters:

arp	Address Resolution Protocol
dhcp	Dynamic Host Configuration Protocol
dns	Domain Name System
domain	IP DNS Resolver
helper-address	DHCP relay server
http	HTTP server
igmp	Internet Group Management Protocol
link-local	Link-Local address binding interface
name-server	Domain Name System

route	Add IP route
routing	Enable routing for IPv4 and IPv6
scp	Secure copy function
source	source command
ssh	Secure Shell
telnet	Telnet
verify	verify command
server	support scp server
disable	Set mode to scp Disable
enable	Set mode to scp Enable
inspection	ARP inspection
entry	ARP inspection entry
translate	ARP inspection translate all entries
vlan	ARP inspection VLAN setting
GigabitEthernet	1 Gigabit Ethernet Port
10GigabitEthernet	10 Gigabit Ethernet Port
<port_type_id>	Port ID in 1/1-24
<vlan_id>	Select a VLAN id to configure
<mac_ucast>	Select a MAC address to configure
information	DHCP information option (Option 82)
option	DHCP option
policy	Policy for handling the receiving DHCP packet already include the information option
drop	Drop the package when receive a DHCP message that already contains relay information
keep	Keep the original relay information when receive a DHCP message that already contains it
replace	Replace the original relay information when receive a DHCP message that already contains it
proxy	DNS proxy service
name	Define the default domain name
<domain_name>	Default domain name
dhcp	Dynamic Host Configuration Protocol
interface	Select an interface to configure
ipv4	DNS setting is derived from DHCPv4
ipv6	DNS setting is derived from DHCPv6; Default selection
<vlan_id>	VLAN identifier (VID)
<ipv4_ucast>	IP address of the DHCP relay server
port	Service port number
secure-certificate	HTTPS certificate
secure-server	secure web server
<1-65534>	Port number
generate	Generate a new self-signed RSA certificate
upload	Upload a certificate PEM file
<url_file>	Uniform Resource Locator. It is a specific character string that constitutes a reference to a resource. Syntax: <protocol>://[<username>[:<password>]@]<host>[:<port>][/<path>]/<file_name> If the following special characters: space !"#$%&'()*+,/:;<=>?@[\]^`{|}~ need to be contained in the input URL string, they should be percent-encoded. A valid file name is a text string drawn from alphabet (A-Za-z), digits (0-9), dot (.), hyphen (-), under score (_). The maximum length is 63 and hyphen must not be first character. The file name content that only contains '.' is not allowed.

port	Service port number
<1-65534>	Port number
host-proxy	IGMP proxy configuration
snooping	Snooping IGMP
ssm-range	IPv4 address range of Source Specific Multicast
unknown-flooding	Flooding unregistered IPv4 multicast traffic
leave-proxy	IGMP proxy for leave configuration
vlan	IGMP VLAN
<vlan_list>	VLAN identifier (VID)
<ipv4_mcast>	Valid IPv4 multicast address
<1-4>	Preference of DNS server. Default selection is 1
<ipv4_ucast>	A valid IPv4 unicast address
<ipv6_ucast>	A valid IPv6 unicast address
dhcp	Dynamic Host Configuration Protocol
server	support scp server
disable	Set mode to scp Disable
enable	Set mode to scp Enable
binding	IP source binding
interface	IP source binding entry interface configuration
keyregen	Regenerate ssh key
port	Service port number
<1-65534>	Port number
source	verify source
translate	IP verify source translate all entries
per-port	Enable DHCP server per port
vlan	DHCP server per port VLAN

Example:

```
SM24TAT4XB(config)# ip routing
SM24TAT4XB(config)# ip scp server enable
SM24TAT4XB(config)# ip verify source
SM24TAT4XB(config)# ip dns proxy
SM24TAT4XB(config)# ip domain name dhcp interface vlan 100
SM24TAT4XB(config)# ip http secure-certificate generate
SM24TAT4XB(config)# ip http secure-server port 455
SM24TAT4XB(config)# ip igmp host-proxy leave-proxy
SM24TAT4XB(config)# ip igmp snooping vlan 200
SM24TAT4XB(config)# ip igmp unknown-flooding
SM24TAT4XB(config)# ip link-local interface 200
SM24TAT4XB(config)# ip routing
SM24TAT4XB(config)# ip ssh keyregen
W ssh 02:44:05 135/process-daemon.cxx#235: Warning: ssh_showkey-263 STDOUT>
Public key portion is:
 521 ecdsa-sha2-nistp521 AAAAE2VjZHNhLXNoYTItbmlzdHA1MjEAAAAIbmlzdHA1MjEAAACFBAG
nw5mBh/2JTl48NevEq6OP0viPsqSHyUUoxROaBVOTQJbocDUnYpRuhbzy6o4Mn7YYR6cTCKAhAvazCdm
InGQfNgDVvijEbKPTFuL+4XjUKnUp0eL9BWUbV21sqQoQDukgzqnkjCE2FgiaD4VarcXUSgpY6yvxwB9
HHkbJ/wqLl/zhbw==
Fingerprint: md5 cf:02:b4:d6:6c:0e:9e:3a:e0:bc:ce:11:23:36:90:5f
SM24TAT4XB(config)#
SM48TAT4XA-RP(config)# ip igmp snooping vlan 200
SM48TAT4XA-RP(config)#
```

Command: **ipmc**

Description: IPv4/IPv6 multicast configuration commands.

Mode: Config mode and config-ipmc-profile mode.

Syntax:

ipmc profile
ipmc profile <profile_name>
ipmc range <entry_name> { <v_ipv4_mcast> [<v_ipv4_mcast_1>] | <v_ipv6_mcast> [<v_ipv6_mcast_1>] }
debug mode
default range <entry_name>
description <profile_desc>
do <command>
end
exit
help
no description
no range <entry_name>
range <entry_name> { permit | deny } [log] [next <next_entry>]

Parameters:

profile	IPMC profile configuration
range	A range of IPv4/IPv6 multicast addresses for the profile
<word16>	Profile name in 16 characters
<word16>	Range entry name in 16 characters
<ipv4_mcast>	Valid IPv4 multicast address
<ipv6_mcast>	Valid IPv6 multicast address
debug	Debugging functions
default	Set a command to its defaults
description	Additional description about the profile in 64 characters
do	To run exec commands in the configuration mode
end	Go back to EXEC mode
exit	Exit from current mode
help	Description of the interactive help system
no	Negate a command or set its defaults
range	A range of IPv4/IPv6 multicast addresses for the profile
deny	Deny matching addresses
permit	Permit matching addresses
log	Log when matching
next	Specify next entry used in profile. Default: Add entry last
<line64>	Description for the designated IPMC filtering profile

Example:

```
SM24TAT4XB(config)# ipmc profile IpmcProf1
SM24TAT4XB(config-ipmc-profile)# range 2-4 deny log next Range1
SM24TAT4XB(config-ipmc-profile)# description IpmcFiltProf
SM24TAT4XB(config-ipmc-profile)# debug mode
Current profile name is Prof1
SM24TAT4XB(config-ipmc-profile)# exit
SM24TAT4XB(config)#
```

Command: **ipv6**

Description: IPv6 configuration commands.

Mode: Config mode.

Syntax: **ipv6** mld host-proxy [leave-proxy]

ipv6 mld snooping

ipv6 mld snooping vlan <v_vlan_list>

ipv6 mld ssm-range <v_ipv6_mcast> <ipv6_prefix_length>

ipv6 mld unknown-flooding

ipv6 route <v_ipv6_subnet> { <v_ipv6_ucast> | interface vlan <v_vlan_id> <v_ipv6 _addr> }

Parameters:

mld	Multicast Listener Discovery
route	Configure static routes
host-proxy	MLD proxy configuration
snooping	Snooping MLD
ssm-range	IPv6 address range of Source Specific Multicast
unknown-flooding	Flooding unregistered IPv6 multicast traffic
leave-proxy	MLD proxy for leave configuration
<ipv6_mcast>	Valid IPv6 multicast address
<ipv6_subnet>	IPv6 prefix x:x::y/z
<ipv6_ucast>	IPv6 unicast address (except link-local address) of next-hop
interface	Select an interface to configure
vlan	VLAN Interface
<vlan_id>	VLAN identifier (VID)
<ipv6_linklocal>	IPv6 link-local address of next-hop

Example:

```
SM24TAT4XB(config)# ipv6 mld host-proxy leave-proxy
SM24TAT4XB(config)# ipv6 mld snooping vlan 200
% 'ipv6 mld snooping vlan <xx>' is obsolete.
SM24TAT4XB(config)# ipv6 mld unknown-flooding
SM24TAT4XB(config)#
```

Command: **json**

Description: JavaScript Object Notation RPC config commands.

Mode: Config mode.

Syntax: **json** notification host <hname>

json notification listen <notification> <host>

Parameters:

notification	Notification request object
host	Notification host
listen	JSON-RPC notification event subscription
<word32>	Name of Notification host
<cword>	Valid words are: 'acl.status.ace.crossedThreshold.update' 'aggregation.status.notification.update' 'arpInspection.status.crossedThreshold.update' 'ethernetLinkOam.statistics.interface.criticalLinkEvent.update' 'ip.status.acd.ipv4.update' 'ip.status.interface.dhcpClient.update' 'ip.status.interface.ipv4.update' 'ip.status.interface.ipv6.update' 'ip.status.interface.link.update' 'ip.status.route.ipv4.update' 'ip.status.route.ipv6.update' 'mep.status.instance.update' 'mep.status.instancePeer.update' 'mep.status.lmHli.update' 'mep.status.lmNotif.update' 'port.status.update' 'portSecurity.status.global.notification.update' 'portSecurity.status.interface.notification.update' 'qos.status.global.update'
username	Username
<word32>	Username
password	Password
<word32>	Password
<word256>	URL of notification destination
<word32>	Name of JSON-RPC notification destination to receive updates
basic	Basic authentication

Example:

```
SM24TAT4XB(config)# json notification host 192.168.1.30
SM24TAT4XB(config-json-noti-host)# ?
    authentication    Authentication configuration
    debug             Debugging functions
    do                To run exec commands in the configuration mode
    end               Go back to EXEC mode
    exit              Exit from current mode
    help              Description of the interactive help system
    no
    url               URL of notification destination
SM24TAT4XB(config-json-noti-host)# exit
SM24TAT4XB(config)# json notification listen qos.status.global.update ?
    <word32>    Name of JSON-RPC notification destination to receive updates
SM24TAT4XB(config)# json notification listen qos.status.global.update?
    <cword>    Valid words are 'qos.status.global.update'
```

```
SM24TAT4XB(config)# json notification listen qos.status.global.update?
json notification listen <notification> <host>
SM24TAT4XB(config)# json notification listen qos.status.global.update
qos.status.global.update
% (MESA_RC_ERROR)
SM24TAT4XB(config)#
SM24TAT4XB(config)# json notification host 192.168.1.30
SM24TAT4XB(config-json-noti-host)# url 192.168.1.30
% (URL_INVALID)
SM24TAT4XB(config-json-noti-host)#
SM24TAT4XB(config-json-noti-host)# auth basic username BobB password admin123
SM24TAT4XB(config-json-noti-host)#
SM24TAT4XB(config)# json notification listen acl.status.ace.crossedThreshold.update Bob
% (DESTINATION_DOES_NOT_EXISTS)
SM24TAT4XB(config)#
```

Command: **lacp**

Description: Link Aggregation Control Protocol config commands.

Mode: Config mode.

Syntax: **lacp** system-priority <v_1_to_65535>

Parameters:

lacp	LACP settings
system-priority	System priority
<1-65535>	Priority value, lower means higher priority
<cr>	

Example:

```
SM24TAT4XB(config)# lacp system-priority 5
SM24TAT4XB(config)#
```

v ***Command***: **line**

Description: Configure a terminal line.

Mode: Config mode.

Syntax: **line** { <0~16> | console 0 | vty <0~15> }

Parameters:

<0~16>	List of line numbers
console	Console terminal line
vty	Virtual terminal
debug	Debugging functions
do	To run exec commands in the configuration mode
editing	Enable command line editing
end	Go back to EXEC mode
exec-banner	Enable the display of the EXEC banner
exec-timeout	Set the EXEC timeout
exit	Exit from current mode
help	Description of the interactive help system
history	Control the command history function
length	Set number of lines on a screen
location	Enter terminal location description

motd-banner	Enable the display of the MOTD banner
no	Negate a command or set its defaults
privilege	Change privilege level for line
width	Set width of the display terminal
level	Assign default privilege level for line
<0-15>	Default privilege level for line

Example:

```
SM24TAT4XB(config)# line 1
SM24TAT4XB(config-line)# ?
SM24TAT4XB(config-line)# debug mode
Current line is Line 0
SM24TAT4XB(config-line)# privilege level 15
SM24TAT4XB(config-line)# exit
SM24TAT4XB(config)#
```

Command: **lldp**

Description: Link Layer Discover Protocol config commands.

Mode: Config mode. Note that LLDP is also configurable in Interface Config mode.

Syntax:

lldp holdtime <val>

lldp med datum { wgs84 | nad83-navd88 | nad83-mllw }

lldp med fast <v_1_to_10>

lldp med location-tlv altitude { meters | floors } <v_word11>

lldp med location-tlv civic-addr { { country <country> } | { state | county | city | district | block | street | leading-street-direction | trailing-street-suffix | street-suffix | house-no | house-no-suffix | landmark | additional-info | name | zip-code | building | apartment | floor | room-number | place-type | postal-community-name | p-o-box | additional-code } <v_line> }

lldp med location-tlv elin-addr <v_word25>

lldp med location-tlv latitude { north | south } <v_word8>

lldp med location-tlv longitude { west | east } <v_word9>

lldp med media-vlan-policy <policy_index> { voice | voice-signaling | guest-voice-signaling | guest-voice | softphone-voice | video-conferencing | streaming-video | video-signaling } { untagged | tagged <v_vlan_id> [l2-priority <v_0_to_7>] } [dscp <v_0_to_63>]

lldp reinit <val>

lldp timer <val>

lldp transmission-delay <val>

Parameters:

holdtime	Sets LLDP hold time (The neighbor switch will discarded the LLDP information after 'hold time' multiplied with 'timer' seconds).
med	Media Endpoint Discovery.
reinit	LLDP tx reinitialization delay in seconds.
timer	Sets LLDP TX interval (The time between each LLDP frame transmitted in seconds).
transmission-delay	Sets LLDP transmission-delay (the amount of time that the transmission of LLDP frames will delayed after LLDP configuration has changed) in seconds.)

<2-10>	2-10 seconds.
<1-10>	1-10 seconds.
<5-32768>	5-32768 seconds.
datum	Datum (geodetic system) type.
fast	Number of times to repeat LLDP frame transmission at fast start.
location-tlv	LLDP-MED Location Type Length Value parameter.
media-vlan-policy	Create a policy, which can be assigned to an interface.
nad83-mllw	Mean lower low water datum 1983
nad83-navd88	North American vertical datum 1983
wgs84	World Geodetic System 1984
<1-10>	
altitude	Altitude parameter.
civic-addr	Civic address information and postal information. The total number of characters for the combined civic address information must not exceed 250 characters. **Note**: 1) A non-empty civic address location will use 2 extra characters in addition to the civic address location text. 2) The 2 letter country code is not part of the 250 characters limitation.
elin-addr	Emergency Call Service ELIN identifier data format is defined to carry the ELIN identifier as used during emergency call setup to a traditional CAMA or ISDN trunk-based PSAP. This format consists of a numerical digit string, corresponding to the ELIN to be used for emergency calling. Emergency Location Identification Number (e.g., E911 and others) such as defined by TIA or NENA.
latitude	Latitude parameter.
longitude	Longitude parameter.
<0-31>	Policy id for the policy which is created.
guest-voice	Create a guest voice policy.
guest-voice-signaling	Create a guest voice signaling policy.
softphone-voice	Create a softphone voice policy.
streaming-video	Create a streaming video policy.
video-conferencing	Create a video conferencing policy.
video-signaling	Create a video signaling policy.
voice	Create a voice policy.
voice-signaling	Create a voice signaling policy.
tagged	The policy uses tagged frames.
untagged	The policy uses un-tagged frames.
dscp	Differentiated Services Code Point. If not given then DSCP value is set to 0.
l2-priority	Layer 2 priority. If not given then L2 priority value is set to 0.
<0-63>	DSCP value 0-63.
<0-7>	L2 Priority 0-7.
<5-32768>	5-32768 seconds.
|	Output modifiers
interface	Interface to display.
<cr>	
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
10GigabitEthernet	10 Gigabit Ethernet Port

Example:

```
SM24TAT4XB(config)# lldp reinit 8
SM24TAT4XB(config)# lldp timer 4000
```

```
SM24TAT4XB(config)# lldp holdtime 4
SM24TAT4XB(config)# lldp transmission-delay 600
SM24TAT4XB(config)# lldp med datum wgs84
SM24TAT4XB(config)# lldp med fast 8
SM24TAT4XB(config)# lldp med media-vlan-policy 0 streaming tagged 100 l2-priority 6
SM24TAT4XB(config)#
```

Command: **logging**

Description: Set System logging parameters.

Mode: Config mode.

Syntax: **logging** host { <ipv4_addr> | <domain_name> }

logging notification listen <name> level { informational | notice | warning | error } <node>

logging on

logging port <port_no>

Parameters:

host	host
notification	notification
on	Enable Switch logging host mode
port	Service port number
<1-65535>	Port number
listen	listen
<kword127>	A name identifying the listen command
level	Severity level
error	Severity 3: Error conditions
informational	Severity 6: Informational messages
notice	Severity 5: Normal but significant condition
warning	Severity 4: Warning conditions
<line255>	Identification of the notification source
<line255>	Identification of the notification source
<domain_name>	A valid name consist of a sequence of domain labels separated by '.', each domain label starting and ending with an alphanumeric character and possibly also containing '-' characters. The length of a domain label must be 63 characters or less.
<ipv4_ucast>	The IPv4 address of the log server

Example:

```
SM24TAT4XB(config)# logging on
SM24TAT4XB(config)# logging port 467
SM24TAT4XB(config)# logging notification listen warning level warning xxxx
Cannot create notification listen warning xxxx, xxxx not found
SM24TAT4XB(config)#
```

Command: **loop-protect**

Description: Loop protection configuration.

Mode: Config mode.

Syntax: **loop-protect**
loop-protect shutdown-time <t>
loop-protect transmit-time <t>

Parameters:		
	shutdown-time	Loop protection shutdown time interval
	transmit-time	Loop protection transmit time interval
	<0-604800>	Shutdown time in seconds
	<1-10>	Transmit time in seconds

Example:

```
SM24TAT4XB(config)# loop-protect transmit-time 3
SM24TAT4XB(config)# loop-protect shutdown-time 4000
SM24TAT4XB(config)#
```

Command: **mac**

Description: MAC table entries/configuration.

Mode: Config mode.

Syntax:

mac address-table aging-time <v_0_10_to_1000000>

mac address-table learning vlan <vlan_list>

mac address-table static <v_mac_addr> vlan <v_vlan_id> { [interface (<port_type> [<v_port_type_list>])] [sr <v_uint>] [psfp <v_uint_1>] }

Parameters:		
	address-table	MAC table entries/configuration
	aging-time	Mac address aging time
	learning	Mac Learning
	static	Static MAC address
	<0,10-1000000>	Aging time in seconds, 0 disables aging
	vlan	VLAN
	<vlan_list>	
	<mac_addr>	48 bit MAC address: xx:xx:xx:xx:xx:xx
	interface	Select an interface to configure
	*	All switches or All ports
	GigabitEthernet	1 Gigabit Ethernet Port
	10GigabitEthernet	10 Gigabit Ethernet Port
	<port_type_list>	Port list in 1/1-24
	<port_type_list>	Port list in 1/1-4
	<port_type_list>	Port list for all port types

Example:

```
SM24TAT4XB(config)# mac address-table learning vlan 100
SM24TAT4XB(config)# mac address-table static 11:22:33:44:55:66 VLAN 100
SM24TAT4XB(config)# mac address-table static 11:22:33:44:55:66 VLAN 100 interface
GigabitEthernet 1/6
SM24TAT4XB(config)#
```

Command: **map-api-key**

Description: Set Google Map key string. Set up the Google Map API Key from https://console.developers.google.com/ to use DMS Map View for enterprise applications.

Mode: Config mode.

Syntax: **map-api-key** <key_str>

Parameters: <word127>

Example:

```
SM24TAT4XB(config)# map-api-key ab12#$<M(*
SM24TAT4XB(config)#
```

Command: **mep**

Description: Maintenance Entity Point.

Mode: Config mode.

Syntax:

mep <inst> [mip] { up | down } domain { port | evc | vlan | tp-link | tunnel-tp | pw | lsp } [vid <vid>] [flow <flow>] level <level> [interface <port_type> <port>]

mep <inst> ais [fr1s | fr1m] [protect]

mep <inst> aps <prio> [multi | uni] { laps | { raps [octet <octet>] } }

mep <inst> cc <prio> [fr300s | fr100s | fr10s | fr1s | fr6m | fr1m | fr6h] [rx-only]

mep <inst> ccm-tlv

mep <inst> client domain { evc | vlan | lsp } flow <cflow> [level <level>] [ais-prio [<aisprio> | ais-highest]] [lck-prio [<lckprio> | lck-highest]]

mep <inst> dm <prio> [multi | { uni mep-id <mepid> }] [single | dual] [rdtrp | flow] interval <interval> last-n <lastn>

mep <inst> dm bin fd <num_fd_var>

mep <inst> dm bin ifdv <num_ifdv_var>

mep <inst> dm bin threshold <threshold_var>

mep <inst> dm ns

mep <inst> dm overflow-reset

mep <inst> dm proprietary

mep <inst> dm synchronized

mep <inst> lb <prio> [dei] [multi | { uni { { mep-id <mepid> } | { mac <mac> } } } | { mpls ttl <mpls_ttl> }] count <count> size <size> interval <interval>

mep <inst> lck [fr1s | fr1m]

mep <inst> level <level>

mep <inst> link-state-tracking

mep <inst> lm <prio> [synthetic] [multi | { uni [mep-id <mepid>] }] [single | dual] [fr100s | fr10s | fr1s | fr6m] [size <size>] [flr <flr>] [meas <meas>] [threshold <loss_th>] [slm-testid <slm_testid>]

mep <inst> lm flow-counting

mep <inst> lm oam-counting { [y1731 | all] }

mep <inst> lm rx synthetic [prio <prio>] [flr <flr>] [meas <meas>] [threshold <loss_th>]

mep <inst> lm-avail interval <interval> flr-threshold <flr_th>

mep <inst> lm-avail maintenance

mep <inst> lm-hli flr-threshold <flr_th> interval <interval>

mep <inst> lm-notif los-int-cnt-holddown <los_int_cnt_holddown> los-th-cnt-holddown <los_th_cnt_holddown> hli-cnt-holddown <hli_cnt_holddown>

mep <inst> lm-sdeg tx-min <tx_min> flr-threshold <flr_th> bad-threshold <bad_th> good-threshold <good_th>

mep <inst> lt <prio> { { mep-id <mepid> } | { mac <mac> } } ttl <ttl>

mep <inst> meg-id <megid> { itu | itu-cc | { ieee [name <name>] } }

mep <inst> mep-id <mepid>

mep <inst> peer-mep-id <mepid> [mac <mac>]

mep <inst> performance-monitoring

mep <inst> syslog

mep <inst> tst <prio> [dei] mep-id <mepid> [sequence] [all-zero | all-one | one-zero] rate <rate> size <size>

mep <inst> tst rx

mep <inst> tst tx

mep <inst> vid <vid>

mep os-tlv oui <oui> sub-type <subtype> value <value>

Parameters:

<1-3124>	The MEP instance number.
os-tlv	Organization-Specific TLV
ais	Alarm Indication Signal
aps	Automatic Protection Switching protocol.
cc	Continuity Check.
ccm-tlv	The CCM TLV enable/disable
client	
dm	Delay Measurement.
down	This MEP is a Down-MEP.
lb	Loop Back.
lck	Locked Signal.
level	The MEG level of the MEP.
link-state-tracking	Link State Tracking. When LST is enabled in an instance, Local SF or received 'isDown' in CCM Interface Status TLV, will bring down the residence port. Only valid in Up-MEP. The CCM rate must be 1 f/s or faster.
lm	Loss Measurement. Either Service frame or Synthetic Frame LM.
lm-avail	Availability for Loss Measurement
lm-hli	High Loss Interval for Loss Measurement
lm-notif	Loss Measurement JSON notifications
lm-sdeg	Signal Degrade for Loss Measurement
lt	Link Trace.

meg-id	The ITU/IEEE MEG-ID.
mep-id	The MEP ID.
mip	This MEP instance is a half-MIP.
peer-mep-id	The peer MEP ID.
performance-monitoring	Performance monitoring Data Set collection (MEF35).
syslog	Enable syslog.
tst	Test Signal
up	This MEP is a Up-MEP.
vid	The MEP VID.
sub-type	Sub-Type
<0-0xFF>	Sub-Type value - one octet.
value	Value
<0-0xFF>	Value value - one octet
fr1m	Frame rate is 1 f/min.
fr1s	Frame rate is 1 f/s.
protect	The AIS can be used for protection. At the point of state change three AIS PDUs are transmitted as fast as possible.
<0-7>	Priority in case of tagged OAM. In the MPLS and EVC domain this is the COS-ID.
domain	Client flow domain.
evc	EVC client flow.
vlan	VLAN client flow.
flow	Client flow instance.
<uint>	Client flow instance number value.
ais-prio	AIS injection priority.
lck-prio	LCK injection priority.
level	The MEG level on the client layer.
<0-7>	The MEG level value.
<0-7>	Priority in case of tagged OAM. In the MPLS and EVC domain this is the COS-ID.
bin	Delay Measurement Binning.
ns	Nanoseconds
overflow-reset	Reset all Delay Measurement results on total delay counter overflow.
proprietary	Proprietary Delay Measurement.
synchronized	Near-end and far-end is real time synchronized.
dual	Delay Measurement based on 1DM PDU transmission.
flow	The two way delay is calculated as round trip symmetrical flow delay. The far end residence time is subtracted.
interval	Interval between PDU transmission in 10ms. Min value is 10.
multi	OAM PDU is transmitted with multicast MAC.
rdtrp	The two way delay is calculated as round trip delay. The far end residence time is not subtracted.
single	Delay Measurement based on DMM/DMR PDU.

uni	OAM PDU is transmitted with unicast MAC. The MAC is taken from peer MEP MAC database.
mep-id	Peer MEP ID for unicast DM. The MAC is taken from peer MEP MAC database.
fd	the number of FD Measurement Bins.
ifdv	the number of IFDV Measurement Bins.
threshold	the threshold for each Delay Measurement Binning.
domain	The domain of the MEP.
evc	This MEP is a EVC domain MEP.
port	This MEP is a Port domain MEP.
vlan	This MEP is a VLAN domain MEP.
flow	In case the MEP is a VLAN, EVC, MPLS-TP link, tunnel, LSP or Pseudo-Wire domain MEP, the flow instance that the MEP is related to must be given.
level	The MEG level of the MEP.
vid	In case the MEP is a Port domain Up-MEP or a EVC domain customer MIP (on the UNI), the VID must be given.
<0-7>	Priority in case of tagged OAM. In the MPLS and EVC domain this is the COS-ID.
count	The number of LBM PDUs to send in one loop test. The value 0 indicate infinite transmission (test behavior). This is hardware based LBM/LBR and Requires VOE.
dei	Drop Eligible Indicator in case of tagged OAM.
multi	OAM PDU is transmitted with multicast MAC. Not used for MPLS-TP.
uni	OAM PDU is transmitted with unicast MAC. The MAC is taken from peer MEP MAC database. Not used for MPLS-TP.
size	The LBM frame size. This is entered as the wanted size (in bytes) of an un-tagged frame containing LBM OAM PDU - including CRC (four bytes). Example when 'Size' = 64 => Un-tagged frame size = DMAC(6) + SMAC(6) + TYPE(2) + LBM PDU LENGTH(46) + CRC(4) = 64 bytes. The transmitted frame will be four bytes longer for each tag added; 8 bytes longer in case of a tunnel EVC. There are two frame MAX sizes to consider: **Switch RX frame MAX size**: The MAX frame size (all inclusive) accepted on the switch port of 10240 Bytes. **CPU RX frame MAX size**: The MAX frame size (all inclusive) possible to copy to CPU of 10240 Bytes. Consider that the Peer MEP must be able to handle the selected frame size. Consider that In case of SW based MEP, the received LBR PDU must be copied to CPU. A Warning displays if selected frame size exceeds the CPU RX frame MAX size. Frame MIN Size is 64 Bytes.

Example:

```
SM24TAT4XB(config)# mep os-tlv oui 0 sub-type 0 value 0
SM24TAT4XB(config)# mep 1 ccm-tlv
SM24TAT4XB(config)# mep 1 client domain evc flow 11 ais-prio lck-prio level 2
SM24TAT4XB(config)# mep 1 dm 1 dual flow uni mep-id 1 interval 15 last-n 22
SM24TAT4XB(config)# mep 1 lb 0  count 1 size 9 interval 3
Error: The framesize for LB function is invalid
SM24TAT4XB(config)#
```

Messages:

E mep 20:54:18 146/apply_line_aps_config#1991: Error: Could not delete EPS VLAN 0

E mep 20:54:18 146/vtss_mep_run_line_aps_config#2001: Error: Could not set aps config for instance 0

Error: MAX number of Down-MEPs is exceeded in this flow

Error: Invalid number of peer's for this configuration

Command: **monitor**

Description: Monitoring different system events.

Mode: Config mode.

Syntax:

monitor session <session_number> [destination { interface (<port_type> [<di_list>]) } | source { interface (<port_type> [<si_list>]) [both | rx | tx] }]

Parameters:		
	session	Configure a MIRROR session
	<1-5>	MIRROR session number
	destination	MIRROR destination interface or VLAN
	source	MIRROR source interface, VLAN
	interface	MIRROR destination interface
	*	All switches or All ports
	GigabitEthernet	1 Gigabit Ethernet Port
	10GigabitEthernet	10 Gigabit Ethernet Port
	<port_type_list>	Port list for all port types
	<port_type_list>	Port list in 1/1-24
	<port_type_list>	Port list in 1/1-4
	both	MIRROR source receive both
	rx	MIRROR source receive Rx
	tx	MIRROR source receive Tx

Example:

```
SM24TAT4XB(config)# monitor session 1 destination interface * 1/5
SM24TAT4XB(config)# monitor session 2 source interface GigabitEthernet 1/19 both
SM24TAT4XB(config)#
```

Command: **mvr**

Description: Multicast VLAN Registration configuration commands.

Mode: Config mode.

Syntax: **mvr**

mvr name <mvr_name> channel <profile_name>

mvr name <mvr_name> frame priority <cos_priority>

mvr name <mvr_name> frame tagged

mvr name <mvr_name> last-member-query-interval <ipmc_lmqi>

mvr name <mvr_name> mode { dynamic | compatible }

mvr name <mvr_name> { election | igmp-address <v_ipv4_ucast> }

mvr vlan <v_vlan_list> [name <mvr_name>]

mvr vlan <v_vlan_list> channel <profile_name>

mvr vlan <v_vlan_list> frame priority <cos_priority>

mvr vlan <v_vlan_list> frame tagged

mvr vlan <v_vlan_list> last-member-query-interval <ipmc_lmqi>

mvr vlan <v_vlan_list> mode { dynamic | compatible }

mvr vlan <v_vlan_list> { election | igmp-address <v_ipv4_ucast> }

Parameters:

name	MVR multicast name
vlan	MVR multicast VLAN
<word16>	MVR multicast VLAN name
channel	MVR channel configuration
election	Act as an IGMP Querier to join Querier-Election
frame	MVR control frame in TX
igmp-address	MVR address configuration used in IGMP
last-member-query-interval	Last Member Query Interval in tenths of a second
mode	MVR mode of operation
priority	Interface CoS priority
tagged	Tagged IGMP/MLD frames will be sent
<ipv4_ucast>	A valid IPv4 unicast address
<0-31744>	0 - 31744 tenths of seconds
<vlan_list>	MVR multicast VLAN list
compatible	Compatible MVR operation mode
dynamic	Dynamic MVR operation mode
<cr>	

Example:

```
SM24TAT4XB(config)# mvr vlan 100 last-member-query-interval 555
SM24TAT4XB(config)# mvr vlan 1 mode compatible
SM24TAT4XB(config)# mvr name Mtmgt11 channel 123456
SM24TAT4XB(config)#
```

Command: **mvrp**

Description: Configure Multiple VLAN Registration Protocol feature.

Mode: Config mode.

Syntax: **mvrp**

mvrp managed vlan { all | none | [add | remove | except] <vlist> }

Parameters:		
	managed	Set list of MVRP-managed VLANs
	vlan	Set managed VLANs of MVRP
	<vlan_list>	VLAN IDs of the managed VLANs of MVRP
	add	Add VLANs to the current list
	all	All VLANs
	except	All VLANs except the following
	none	No VLANs
	remove	Remove VLANs from the current list
	<vlan_list>	VLAN IDs of the managed VLANs of MVRP
	<vlan_list>	VLAN IDs of the managed VLANs of MVRP
	<vlan_list>	VLAN IDs of the managed VLANs of MVRP

Example:

```
SM24TAT4XB(config)# mvrp managed vlan add 10
SM24TAT4XB(config)# mvrp managed vlan all
SM24TAT4XB(config)# mvrp managed vlan except 11
SM24TAT4XB(config)# mvrp managed vlan none
SM24TAT4XB(config)# mvrp managed vlan remove 11
SM24TAT4XB(config)#
```

Command: **no**

Description: Negate a command or set its defaults

Mode: Config mode.

Syntax: **no** <command>

Parameters:

aaa	access	access-list	aggregation
always-on-poe	banner	clock	debug
dot1x	enable	eps	erps
exec-timeout	green-ethernet	gvrp	hostname
interface	ip	ipmc	ipv6
json	lacp	lldp	logging
loop-protect	mac	map-api-key	mep
monitor	mvr	mvrp	ntp
poe	port-security	privilege	prompt
ptp	qos	radius-server	rmon
sflow	snmp-server	spanning-tree	svl
switchport	system	tacacs-server	udld
upnp	username	vlan	voice
web			

Example:

```
SM24TAT4XB(config)# no banner motd
SM24TAT4XB(config)#
SM24TAT4XB(config)# no json notification host XelMv
% (DESTINATION_DOES_NOT_EXISTS)
SM24TAT4XB(config)#
```

Command: **non-stop-poe**

Description: Enable Non-Stop PoE. FW v8.50.0016 changed " non-stop poe" to "always-on-poe”.

Syntax: **non-stop-poe** <cr>

Parameters: | Output modifiers

<cr>

Example:

```
SM24TAT4XB(config)# non-stop-poe
Non-Stop-PoE Status : Enable
SM24TAT4XB(config)# do show non-stop-poe
Non-Stop-PoE Status : Enable
SM24TAT4XB(config)#
```

Command: **ntp**

Description: Configure NTP

Mode: Config mode.

Syntax: **ntp**
ntp interval <interval>
ntp server <index_var> ip-address { <ipv4_var> | <ipv6_var> | <name_var> }

Parameters:		
	interval	Configure NTP Time-Sync Interval
	server	Configure NTP server
	<5,10,15,30,60,120>	interval
	<1-5>	index number
	ip-address	IP address
	<domain_name>	Domain name
	<ipv4_ucast>	IPv4 address
	<ipv6_ucast>	IPv6 address
	<cr>	

Example:

```
SM24TAT4XB(config)# ntp interval 30
SM24TAT4XB(config)# ntp server 1 ip-address 192.168.1.33
SM24TAT4XB(config)# ntp
SM24TAT4XB(config)#
```

Command: **poe**

Description: Power Over Ethernet commands.

Mode: Config mode.

Syntax:

poe capacitor-detection

poe management mode { class-consumption | class-reserved-power | allocation-consumption | allocation-reserved-power | lldp-consumption | lldp-reserved-power }

poe ping-check { enable | disable }

poe profile id <id> name <entry_name>

poe profile id <id> { [Sun <hour_v00_0_to_23> <min_v00_0_to_55> <hour_v01_0_to_23> <min_v01_0_to_55>] [Mon <hour_v10_0_to_23> <min_v10_0_to_55> <hour_v11_0_to_23> <min_v11_0_to_55>] [Tue <hour_v20_0_to_23> <min_v20_0_to_55> <hour_v21_0_to_23> <min_v21_0_to_55>] [Wed <hour_v30_0_to_23> <min_v30_0_to_55> <hour_v31_0_to_23> <min_v31_0_to_55>] [Thr <hour_v40_0_to_23> <min_v40_0_to_55> <hour_v41_0_to_23> <min_v41_0_to_55>] [Fri <hour_v50_0_to_23> <min_v50_0_to_55> <hour_v51_0_to_23> <min_v51_0_to_55>] [Sat <hour_v60_0_to_23> <min_v60_0_to_55> <hour_v61_0_to_23> <min_v61_0_to_55>] }

poe reboot-chip mode { enable | disable }

poe reboot-chip { [Sun <hour_v00_0_to_23> <min_v00_0_to_55>] [Mon <hour_v10_0_to_23> <min_v10_0_to_55>] [Tue <hour_v20_0_to_23> <min_v20_0_to_55>] [Wed <hour_v30_0_to_23> <min_v30_0_to_55>] [Thr <hour_v40_0_to_23> <min_v40_0_to_55>] [Fri <hour_v50_0_to_23> <min_v50_0_to_55>] [Sat <hour_v60_0_to_23> <min_v60_0_to_55>] }

Parameters:

capacitor-detection	PoE legacy mode on
management	Use management mode to configure PoE power management method.
ping-check	Enable/Disable POE Ping Check.
profile	poe scheduling profile
reboot-chip	poe schedules to reboot PoE chip
mode	PoE Power Management Mode
allocation-consumption	Max. port power determined by allocated, and power is managed according to power consumption.
allocation-reserved-power	Max. port power determined by allocated, and power is managed according to reserved power.
class-consumption	Max. port power determined by class, and power is managed according to power consumption.
class-reserved-power	Max. port power determined by class, and power is managed according to reserved power.
lldp-consumption	Max. port power determined by LLDP Media protocol, and power is managed according to power consumption.
lldp-reserved-power	Max. port power determined by LLDP Media protocol, and power is managed according to reserved power.
disable	Disable POE Ping Check.
enable	Enable POE Ping Check.
id	poe scheduling profile id
<1-16>	poe scheduling profile id, from 1 to 16
Fri	Configure PoE Power scheduling on Friday

Mon	Configure PoE Power scheduling on Monday
Sat	Configure PoE Power scheduling on Saturday
Sun	Configure PoE Power scheduling on Sunday
Thr	Configure PoE Power scheduling on Thursday
Tue	Configure PoE Power scheduling on Tuesday
Wed	Configure PoE Power scheduling on Wednesday
name	poe scheduling profile name, the name length is 32
<0-23>	start hour
<0-55>	start miniute, value must be multiples of 5
<0-23>	end hour
<0-55>	end miniute, value must be multiples of 5
<cr>	

Example:

```
SM24TAT4XB(config)# poe capacitor-detection
SM24TAT4XB(config)# poe management mode allocation-consumption
SM24TAT4XB(config)# poe management mode allocation-reserved-power
SM24TAT4XB(config)# poe management mode class-consumption
SM24TAT4XB(config)# poe profile id 1 Sat 1 0 2 30 Sun 1 0 4 0
SM24TAT4XB(config)# poe reboot-chip
SM24TAT4XB(config)#
```

Command: **port-security**

Description: This command has changed. See below for new information.

Mode: Config mode.

Syntax: **port-security**
port-security aging
port-security aging time <aging_time>
port-security hold time <hold_time>

Parameters:

aging Enable/disable port security aging.

hold Configure hold options

time Time in seconds between check for activity on learned MAC addresses.

<10-10000000> Hold time in seconds

time Violating MAC addresses are held non-forwarding for this amount of seconds

<cr>

Example:

```
SM48TAT4XA-RP(config)# port-security aging time 5000
SM48TAT4XA-RP(config)# port-security hold time 65000
SM48TAT4XA-RP(config)# do show port-security
Users:
  P = Port Security (Admin)
  8 = 802.1X
  V = Voice VLAN

Interface  Users Limit Current Violating Violation Mode State
---------- ----- ----- ------- --------- -------------- -------------
Gi 1/2     P--       4       0         0 Protect        Ready
Gi 1/3     P--       5       1         0 Restrict       Ready
Gi 1/4     P--       4       1         0 Shutdown       Ready

Aging time: 5000 seconds
Hold time: 65000 seconds

SM48TAT4XA-RP(config)#
```

WARNING: PORT-SECURITY COMMANDS HAVE CHANGED IN A NON-BACKWARD-COMPATIBLE WAY STARTING WITH THE 4.1.0 RELEASE!

- Changes to global configuration commands:
  - "(no) port-security" which used to globally disable/enable the feature is obsolete and prints this message instead: *Enabling is handled per-interface*.
  - "(no) port-security hold time" is a new command that allows specifying a number of seconds that violating MAC addresses are kept in the forwarding database.
- Changes to interface configuration commands:
  - "port-security violation" used to take four different actions. Of these, "trap" and "trap-shutdown" are no longer valid. Instead, there is a new mode, "restrict", that is similar to "protect" except that it keeps recording MAC addresses even after the limit is reached. Such violating MAC addresses are kept blocking in the forwarding database until the hold time expires. Traps can still be sent, and are enabled through the central SNMP trap system.
  - "port-security maximum-violation" is a new command that can limit the number of violating MAC addresses. Only used when violation mode is "restrict".

- Changes to show commands:
  - "show port-security switch [interface <port-interface>]" is obsolete. Use "show port-security [interface <port-interface>]" instead.
  - "show port-security port [interface <port-interface>]" is obsolete. Use "show port-security address [interface <port-interface>]" instead. The output of the two show commands has also changed.
- New clear command:
  - "clear port-security dynamic <a-lot-of-options>]" is a new command that allows the user to clear a specific Port Security-controlled MAC address, all on a port, or all on a given VLAN.

Command: **Power**

Description: Set Power management mode (SM24TAT4XA-RP only).

Mode: Config mode.

Syntax: **Power** { Redundant | Boost }

Parameters:

Redundant: Only provide Primary Power Supply up to 820W when two power supply modules are installed. If one power supply crashes, it can still provide enough power for system operation and also PD's operation. This is the default.

Boost: Provide Primary Power Supply up to 1640W when two power supply modules are installed. When the application total PDs' power use is over 820W, if one power supply crashes, system will be automatically rebooted due to power loading influence. After the switch finishes rebooting, it will only provide 820W to PDs.

Example:

```
SM48TAT4XA-RP(config)# do show power management
Power Management
========================
Power                  : A       B
Detected PSU           : SPSU-920 None
Power Good             : Good    Fail
FAN Speed (RPM)        : 8867    0
Temperature (Degree C) : 29      0
Operating Mode         : Boost
SM48TAT4XA-RP(config)# Power Redundant
SM48TAT4XA-RP(config)# do show power management
Power Management
========================
Power                  : A         B
Detected PSU           : SPSU-920 None
Power Good             : Good     Fail
FAN Speed (RPM)        : 8867     0
Temperature (Degree C) : 29      0
Operating Mode         : Redundant
SM48TAT4XA-RP(config)#

SM24TAT4XB# show power management
              ^
% Invalid word detected at '^' marker.

SM24TAT4XB#
```

Command: **privilege**

Description: Command privilege parameters.

Mode: Config mode.

Syntax: **privilege** <mode_name> level <privilege> <cmd>

Parameters:

level	Set privilege level of command			
<0-15>	Privilege level			
<line128>	Initial valid words and literals of the command to modify, in 128 characters			
<cword>	Valid words are:			
	config-vlan	configure	consoleflow	dhcp-pool
	diag	exec	if-vlan	interface
	ipmc-profile	json-noti-host	line	llag
	qos-map-egress	qos-map-ingress	router-if	snmps-host
	stp-aggr			

Example:

```
SM24TAT4XB(config)# privilege json-noti-host level 15 json
SM24TAT4XB(config)# privilege json-noti-host level 15 json J S O N
% Fail to set privilege as command "json J S O N " is invalid.
SM24TAT4XB(config)#
```

Command: **prompt**

Description: Set prompt.

Mode: Config mode.

Syntax: **prompt** <prompt>

Parameters:

<word32>	Up to 32 chars of prompt. Precede prompt variables with a percent sign (%). Prompt variables: %h = hostname, %% = percent sign, %s = space, %t = tab, %D = date, %T = time, %Z = date and time (like '%DT%T' but ensures atomicity in case of %T rollover)

Example:

```
SM24TAT4XB(config)# prompt sm24tat4xb
sm24tat4xb(config)# prompt SM24TAT4XB
SM24TAT4XB(config)#
```

Command: **ptp**

Description: Precision time Protocol (1588) config commands.

Mode: Config mode.

Syntax:

ptp <clockinst> afi-announce

ptp <clockinst> afi-sync

ptp <clockinst> clk sync <threshold> ap <ap>

ptp <clockinst> domain <domain>

ptp <clockinst> filter-type { aci-default | aci-freq-xo | aci-phase-xo | aci-freq-tcxo | aci-phase-tcxo | aci-freq-ocxo-s3e | aci-phase-ocxo-s3e | aci-bc-partial-on-path-freq | aci-bc-partial-on-path-phase | aci-bc-partial-on-path-phase-synce | aci-bc-full-on-path-freq | aci-bc-full-on-path-phase | aci-bc-full-on-path-phase-synce | aci-freq-accuracy-fdd | aci-freq-accuracy-xdsl | aci-elec-freq | aci-elec-phase | aci-phase-tcxo-q | aci-bc-full-on-path-phase-q | aci-phase-relaxed-c60w | aci-phase-relaxed-c150 | aci-phase-relaxed-c180 | aci-phase-relaxed-c240 | aci-bc-full-on-path-phase-beta | aci-phase-ocxo-s3e-r4-6-1 | aci-basic-phase | aci-basic-phase-synce | aci-basic-phase-low | aci-basic-phase-low-synce }

ptp <clockinst> localpriority <localpriority>

ptp <clockinst> log <debug_mode> [log-to-file] [control] [max-time <max_time>]

ptp <clockinst> log delete

ptp <clockinst> mode { boundary | e2etransparent | p2ptransparent | master | slave | bcfrontend } [onestep | twostep] [ethernet | ethernet-mixed | ip4multi | ip4mixed | ip4unicast | oam | onepps] [oneway | twoway] [id <v_clock_id>] [vid <vid> [<prio>]] [mep <mep_id>] [profile { ieee1588 | g8265.1 | g8275.1 | 802.1as }] [clock-domain <clock_domain>] [dscp <dscp_id>]

ptp <clockinst> path-trace-enable

ptp <clockinst> priority1 <priority1>

ptp <clockinst> priority2 <priority2>

ptp <clockinst> servo displaystates

ptp <clockinst> slave-cfg [stable-offset <stable_offset>] [offset-ok <offset_ok>] [offset-fail <offset_fail>]

ptp <clockinst> time-property [utc-offset <utc_offset>] [valid] [leap-59 | leap-61] [time-traceable] [freq-traceable] [ptptimescale] [time-source <time_source>] [leap-pending <date_string> { leap-59 | leap-61 }]

ptp <clockinst> uni <idx> [duration <duration>] <ip>

ptp <clockinst> virtual-port accuracy <ptp_accuracy>

ptp <clockinst> virtual-port class <ptp_class>

ptp <clockinst> virtual-port io-pin <ptp_io_pin>

ptp <clockinst> virtual-port local-priority <local_priority>

ptp <clockinst> virtual-port priority1 <priority1>

ptp <clockinst> virtual-port priority2 <priority2>

ptp <clockinst> virtual-port variance <ptp_variance>

ptp ext [output | input | out-in] [ext <clockfreq>] [ltc | single | independent | common | auto]

ptp ho-spec [cat1 <cat1>] [cat2 <cat2>] [cat3 <cat3>]

ptp io-pin <io_pin> [pps-output | waveform-output | load | save] [domain <domain>] [freq <freq>] [{ interface <port_type> <v_port_type_id> }]

ptp ref-clock { mhz125 | mhz156p25 | mhz250 }

ptp rs422 baudrate <baudrate> [parity { none | even | odd }] [wordlength <wordlength>] [stopbits <stopbits>] [flowctrl { none | rtscts }]

ptp rs422 { main-auto | main-man | sub | calib } [pps-delay <pps_delay>] { ser [proto { polyt | zda | rmc }] | { pim interface <port_type> <v_port_type_id>} }

ptp system-time { get | set }

ptp tc-internal [mode <mode>]

Parameters:

<0-3>	Clock instance [0-3]
ext	Update the 1PPS and External clock output config and VCXO frequency rate adjustment option
ho-spec	Set the Holdover specification for G8275 PTP clocks
io-pin	Set or show input/output configuration
rs422	Set the RS422 clock configuration
system-time	Enable synchronization between PTP time and system time
tc-internal	0 = MODE_30BIT, 1 = MODE_32BIT, 2 = MODE_44BIT, 3 = MODE_48BIT
afi-announce	Enable PTP Announce automatic frame injection
afi-sync	Enable PTP Sync automatic frame injection
clk	Set PTP slave clock options
domain	Clock domain for PTP
filter-type	Set the filter-type used by PTP
localpriority	Local priority for G8275.1 BMC algorithm (1 is highest priority)
log	Set the PTP debug mode
mode	Enable a PTP instance
path-trace-enable	Enable path trace option (i.e. Add Path Trace to Announce messages)
priority1	Clock priority 1 for PTP BMC algorithm (0 is highest priority)
priority2	Clock priority 2 for PTP BMC algorithm (0 is highest priority)
servo	Set Servo parameters
slave-cfg	Set PTP clock Slave Configuration
time-property	Set time properties
uni	Set a Unicast Slave configuration entry
virtual-port	
sync	Set PTP slave clock options to 'clock is SyncE locked'
<1-1000>	[1..1000] Threshold in ns for offset from master defines when the offset increment/decrement mode is entered
ap	Set the adjustment factor
<1-40>	The offset increment/decrement adjustment factor
aci-basic-phase	Filter type
aci-basic-phase-low	Filter type
aci-basic-phase-low-synce	Filter type
aci-basic-phase-synce	Filter type
aci-bc-full-on-path-freq	Filter type
|	Output modifiers

1-4>	1-4 Debug log mode, 1 => log offset from master, 2 => log sync packets, 3 => log Delay_req, 4 => log both
delete	
control	Keep on controlling the clock while logging packet contents.
log-to-file	Direct log output to a file instead of console (Use http://<IP address of *target>/logs/ptp_log_<0-3>.tpk* to fetch the log afterwards).
max-time	Set the max time that the log is running, default is 10.000 sec.
<0-10000>	Max log time, unit is seconds.
bcfrontend	Boundary Clock front end
boundary	Ordinary / Boundary clock
e2etransparent	End to end transparent clock
master	Master only clock
p2ptransparent	Peer to peer transparent clock
slave	Slave only clock
clock-domain	Define clock domain used by this instance. Instances with different clock domains can have different times.
dscp	Define DSCP field used in IPv4 encapsulation
ethernet	Ethernet protocol encapsulation
ethernet-mixed	Ethernet protocol encapsulation using mix of unicast and multicast
id	define PTP clock instance identifier
ip4mixed	IPv4 mixed multicast/unicast protocol encapsulation
ip4multi	IPv4 multicast protocol encapsulation
ip4unicast	IPv4 unicast protocol encapsulation
mep	Define MEP id used in OAM based PTP
oam	OAM encapsulation (only used in Serval based Distributed TC)
onepps	1PPS master slave synchronization (only used with Gen2 1588 PHYs)
onestep	One-step mode
oneway	One-way slave mode (no Delay Request)
profile	Indication that clock has an associated profile
twostep	Two-step mode
twoway	Two-way slave mode
vid	define VLAN ID
<0-255>	PTP clock priority1: range = 0-255
auto	AUTO Select clock control, based on PTP profile and available hardware resources
ext	Enable external clock frequency output
input	Enable 1PPS input
ltc	Select Local Time Counter (LTC) frequency control
out-in	Enable 1PPS output and input (Jaguar1 only)
output	Enable 1PPS output
cat1	Define cat1 time
cat2	Define cat2 time

cat3	Define cat3 time
domain	Set domain assigned to this pin.
freq	Set clock frequency in the waveform case
interface	Set PTP slave interface
load	Set input/output configuration to load. Done on next 1pps input.
pps-output	Set input/output configuration to 1-pps output
save	Set input/output pin configuration to save. Done on next 1pps input.
waveform-output	Set input/output configuration to waveform (clock) output
baudrate	<9600,19200,38400,115200>
calib	RS422 clock in calibration mode
main-auto	RS422 clock in main-auto mode (1PPS out, save time at L/S input)
main-man	RS422 clock in main-man mode (1PPS out, send configured PPS delay to sub module)
sub	RS422 clock in sub mode (save time and load new time at L/S input)
pim	Use PIM protocol to transfer 1PPS information over a switch port
pps-delay	Set the 1PPS latency (used in main-man mode)
ser	Use Serial interface to transfer 1PPS information
get	Get (update) the PTP time from the system time
set	Set (update) the system time from the PTP time
mode	Set mode
<0-3>	0 = MODE_30BIT, 1 = MODE_32BIT, 2 = MODE_44BIT, 3 = MODE_48BIT
<cr>	

Example 1:

```
SM24TAT4XB(config)# ptp 0 afi-announce
SM24TAT4XB(config)# ptp 0 afi-sync
SM24TAT4XB(config)# ptp 0 localpriority 9
SM24TAT4XB(config)# ptp 0 log 1 log-to-file max-time 5000 control
SM24TAT4XB(config)# ptp 0 mode master onestep
SM24TAT4XB(config)# ptp 0 path-trace-enable
SM24TAT4XB(config)# ptp 0 priority1 50
SM24TAT4XB(config)# ptp ext auto output
SM24TAT4XB(config)# ptp ho-spec cat1 50000
SM24TAT4XB(config)# ptp io-pin 1 domain 0 freq 250000 interface GigabitEthernet 1/9 load
Could not set io pin configuration
SM24TAT4XB(config)# ptp system-time get
System clock synch mode (Get PTP time from System time)
SM24TAT4XB(config)# ptp system-time set
Error setting system clock synch mode (cannot set system time if ntp is enabled
SM24TAT4XB(config)# ptp tc-internal mode 1

Successfully set the TC internal mode...
Internal TC mode Configuration has been set, you need to reboot to activate the changed
conf.
SM24TAT4XB(config)# ptp
SM24TAT4XB(config)#
```

Example 2:

```
M48TAT4XA-RP(config)# ptp 1 mode boundary onestep ethernet twoway id 00:40:00:f
f:fe:64:00:17 vid 1 0 mep 1 clock-domain 0
SM48TAT4XA-RP(config)# ptp 1 filter-type aci-basic-phase-low
SM48TAT4XA-RP(config)# !
SM48TAT4XA-RP(config)# ! ?
SM48TAT4XA-RP(config)# !?
SM48TAT4XA-RP(config)# interface GigabitEthernet 1/1
SM48TAT4XA-RP(config-if)# ptp 1
SM48TAT4XA-RP(config-if)# ptp 1 announce interval 1 timeout 3
SM48TAT4XA-RP(config-if)# ptp 1 sync-interval 0
SM48TAT4XA-RP(config-if)# ptp 1 delay-mechanism e2e
SM48TAT4XA-RP(config-if)# ptp 1 delay-req interval 0
SM48TAT4XA-RP(config-if)# ptp 1 delay-asymmetry 0
SM48TAT4XA-RP(config-if)# ptp 1 ingress-latency 0
SM48TAT4XA-RP(config-if)# ptp 1 egress-latency 0
SM48TAT4XA-RP(config-if)#
```

Command: **qos**

Description: Quality of Service config commands.

Mode: Config mode.

Syntax:

qos map cos-dscp <cos> dpl <dpl> dscp { <dscp_num> | { be | af11 | af12 | af13 | af21 | af22 | af23 | af31 | af32 | af33 | af41 | af42 | af43 | cs1 | cs2 | cs3| cs4 | cs5 | cs6 | cs7 | ef | va } }

qos map dscp-classify { <dscp_num> | { be | af11 | af12 | af13 | af21 | af22 | af23 | af31 | af32 | af33 | af41 | af42 | af43 | cs1 | cs2 | cs3 | cs4 | cs5 | cs6 | cs7 | ef | va } }

qos map dscp-cos { <dscp_num> | { be | af11 | af12 | af13 | af21 | af22 | af23 | af31 | af32 | af33 | af41 | af42 | af43 | cs1 | cs2 | cs3 | cs4 | cs5 | cs6 | cs7 | ef | va } } cos <cos> dpl <dpl>

qos map dscp-egress-translation { <dscp_num> | { be | af11 | af12 | af13 | af21| af22 | af23 | af31 | af32 | af33 | af41 | af42 | af43 | cs1 | cs2 | cs3 | cs4| cs5 | cs6 | cs7 | ef | va } } <dpl> to { <dscp_num_tr> | { be | af11 | af12 |af13 | af21 | af22 | af23 | af31 | af32 | af33 | af41 | af42 | af43 | cs1 | cs2| cs3 | cs4 | cs5 | cs6 | cs7 | ef | va } }

qos map dscp-ingress-translation { <dscp_num> | { be | af11 | af12 | af13 | af21 | af22 | af23 | af31 | af32 | af33 | af41 | af42 | af43 | cs1 | cs2 | cs3 | cs4 | cs5 | cs6 | cs7 | ef | va } } to { <dscp_num_tr> | { be | af11 | af12 | af13| af21 | af22 | af23 | af31 | af32 | af33 | af41 | af42 | af43 | cs1 | cs2 | cs3 | cs4 | cs5 | cs6 | cs7 | ef | va } }

qos map egress <map_id>

qos map ingress <map_id>

qos qce refresh

qos qce { [update] } <qce_id> [{ next <qce_id_next> } | last] [interface (<port_type> [<port_list>])] [smac { <smac> | <smac_24> | any }] [dmac { <dmac> | unicast | multicast | broadcast | any }] [tag { [type { untagged | tagged | c-tagged | s-tagged | any }] [vid { <ot_vid> | any }] [pcp { <ot_pcp> | any }] [dei { <ot_dei> | any }] }*1] [inner-tag { [type { untagged | tagged | c-tagged | s-tagged | any }] [vid { <it_vid> | any }] [pcp { <it_pcp> | any }] [dei { <it_dei> | any }] }*1] [frame-type { any | { etype [{ <etype_type> | any }] } | { llc [dsap { <llc_dsap> | any }] [ssap { <llc_ssap>| any }] [control { <llc_control> | any }] } | { snap [{ <snap_data> | any }] } | { ipv4 [proto { <pr4> | tcp | udp | any }] [sip { <sip4> | any }] [dip { <dip4> | any }] [dscp { <dscp4> | { be | af11 | af12 | af13 | af21 | af22 | af23 | af31 | af32 | af33 | af41 | af42 | af43 | cs1 | cs2 | cs3 | cs4 | cs5 | cs6 | cs7 | ef | va } | any }] [fragment { yes | no | any }] [sport { <sp4> | any }] [dport { <dp4> | any }] } | { ipv6 [proto { <pr6> | tcp | udp | any }] [sip { <sip6> | any }] [dip { <dip6> | any }] [dscp { <dscp6> | { be | af11 | af12 | af13 | af21 | af22 | af23 | af31 | af32 | af33 | af41 | af42 |af43 | cs1 | cs2 | cs3 | cs4 | cs5 | cs6 | cs7 | ef | va } | any }] [sport { <sp6> | any }] [dport { <dp6> | any }] } }] [action { [cos { <action_cos> | default }] [dpl { <action_dpl> | default }] [pcp-dei { <action_pcp> <action_dei> | default }] [dscp { <action_dscp_dscp> | { be | af11 | af12 | af13 | af21 | af22 | af23 | af31 | af32 | af33 | af41 | af42 | af43 | cs1 | cs2 | cs3 | cs4 | cs5 | cs6 | cs7 | ef | va } | default }] [policy { <action_policy> | default }] [ingress-map { <action_ingress_map> | default }] }*1]

qos storm { unicast | multicast | broadcast } <rate> [fps | kfps | kbps | mbps]

qos wred group <group> queue <queue> dpl <dpl> min-fl <min_fl> max <max> [fill-level]

Parameters:

map	Global QoS Map/Table
qce	QoS Control Entry
storm	Storm policer
wred	Weighted Random Early Discard
cos-dscp	Map for COS to DSCP

dscp-classify	Map for DSCP classify enable
dscp-cos	Map for DSCP to COS
dscp-egress-translation	Map for DSCP egress translation
dscp-ingress-translation	Map for DSCP ingress translation
egress	Map for egress configuration
ingress	Map for ingress configuration
<0~63>	Specific DSCP or range
af11	Assured Forwarding PHB AF11(DSCP 10)
af12	Assured Forwarding PHB AF12(DSCP 12)
af13	Assured Forwarding PHB AF13(DSCP 14)
af21	Assured Forwarding PHB AF21(DSCP 18)
af22	Assured Forwarding PHB AF22(DSCP 20)
af23	Assured Forwarding PHB AF23(DSCP 22)
af31	Assured Forwarding PHB AF31(DSCP 26)
af32	Assured Forwarding PHB AF32(DSCP 28)
af33	Assured Forwarding PHB AF33(DSCP 30)
af41	Assured Forwarding PHB AF41(DSCP 34)
af42	Assured Forwarding PHB AF42(DSCP 36)
af43	Assured Forwarding PHB AF43(DSCP 38)
be	Default PHB(DSCP 0) for best effort traffic
cs1	Class Selector PHB CS1 precedence 1(DSCP 8)
cs2	Class Selector PHB CS2 precedence 2(DSCP 16)
cs3	Class Selector PHB CS3 precedence 3(DSCP 24)
cs4	Class Selector PHB CS4 precedence 4(DSCP 32)
cs5	Class Selector PHB CS5 precedence 5(DSCP 40)
cs6	Class Selector PHB CS6 precedence 6(DSCP 48)
cs7	Class Selector PHB CS7 precedence 7(DSCP 56)
ef	Expedited Forwarding PHB(DSCP 46)
va	Voice Admit PHB(DSCP 44)
<0-511>	Map ID
<1-256>	QCE ID
refresh	Refresh QCE tables in hardware
update	Update an existing QCE
action	Setup action
dmac	Setup matched DMAC
frame-type	Setup matched frame type
inner-tag	Setup inner tag options
interface	Interfaces
last	Place QCE at the end
next	Place QCE before the next QCE ID
smac	Setup matched SMAC
tag	Setup tag options
cos	Setup class of service action
dpl	Setup drop precedence level action
dscp	Setup DSCP action
ingress-map	Setup ingress map action
pcp-dei	Setup PCP and DEI action
policy	Setup ACL policy action
<mac_addr>	Matched DMAC (XX-XX-XX-XX-XX-XX)
any	Match any DMAC

broadcast	Match broadcast DMAC
multicast	Match multicast DMAC
unicast	Match unicast DMAC
any	Match any frame type
etype	Match EtherType frames
ipv4	Match IPv4 frames
ipv6	Match IPv6 frames
llc	Match LLC frames
snap	Match SNAP frames
dei	Setup matched DEI
pcp	Setup matched PCP
type	Setup matched tag type
vid	Setup matched VLAN ID
<1-256>	The next QCE ID
<mac_addr>	Matched SMAC (XX-XX-XX-XX-XX-XX)
any	Match any SMAC
<0x600-0x7ff,0x801-0x86dc,0x86de-0xffff>	Matched EtherType
any	Match any EtherType
inner-tag	Setup inner tag options
interface	Interfaces
last	Place QCE at the end
next	Place QCE before the next QCE
smac	Setup matched SMAC
tag	Setup tag options
broadcast	Police broadcast frames
multicast	Police multicast frames
unicast	Police unicast frames
<1-13128147>	Policer rate (default fps). Internally rounded up to the nearest value supported by the storm policer. Supported rates are divisible by 10 fps or 25 kbps.
fps	Unit is frames per second (default)
kbps	Unit is kilobits per second
kfps	Unit is kiloframes per second
mbps	Unit is Megabits per second
group	Specify group
<1~3>	Specific group or range
queue	Specify queue
<0~7>	Specific queue or range
dpl	Specify DPL
<1~3>	Specific DPL or range
min-fl	Specify minimum fill level
<0-100>	Specific minimum fill level in percent
max	Specify maximum drop probability or fill level
<1-100>	Specific maximum drop probability or fill level in percent (default is drop probability)
fill-level	Specify fill level
<cr>	

Example 1:

```
SM24TAT4XB(config)# qos qce 1 action cos 7 dmac unicast frame-type etype tag dei 0
SM24TAT4XB(config)# qos qce refresh
SM24TAT4XB(config)# qos storm broadcast 40000 kfps
% QOS: max rate is 13128 when using kfps
SM24TAT4XB(config)# qos storm broadcast 13128 kfps
SM24TAT4XB(config)#
```

Example 2:

```
SM24TAT4XB(config)# qos map egress 5
SM24TAT4XB(config-qos-map-egress)# ?
    action    Enable rewriting actions
    do        To run exec commands in the configuration mode
    end       Go back to EXEC mode
    exit      Exit from current mode
    help      Description of the interactive help system
    key       Key configuration
    map       Configure the mapping between keys and values
    no        Negate a command or set its defaults
    preset    Preset the map to a specific number of traffic classes
SM24TAT4XB(config-qos-map-egress)#
```

Example 3:

```
SM24TAT4XB(config)# qos wred group 1 queue 0 dpl 1 min-fl 40 max 50 fill-level
SM24TAT4XB(config)#
```

Command: **radius-server**

Description: Configure RADIUS commands.

Mode: Config mode.

Syntax:

radius-server attribute 32 <id>
radius-server attribute 4 <ipv4>
radius-server attribute 95 <ipv6>
radius-server deadtime <minutes>
radius-server host <host_name> [auth-port <auth_port>] [acct-port <acct_port>] [timeout <seconds>] [retransmit <retries>] [key { [unencrypted] <unencrypted_key> | encrypted <encrypted_key> }]
radius-server key { [unencrypted] <unencrypted_key> | encrypted <encrypted_key> }
radius-server retransmit <retries>
radius-server timeout <seconds>

Parameters:		
	attribute	NAS attributes
	deadtime	Time to stop using a RADIUS server that doesn't respond
	host	Specify a RADIUS server
	key	Set RADIUS encryption key
	retransmit	Specify the number of retries to active server
	timeout	Time to wait for a RADIUS server to reply
	32	attribute number 32 = NAS-Identifier
	4	attribute number 4 = NAS-IP-Address
	95	attribute number 95 = NAS-IPv6-Address
	<1-1440>	Time in minutes
	<word1-255>	Hostname or IPv4/IPv6 address
	<word1-63>	The UNENCRYPTED (Plain Text) secret key. Notice that you have no chance to get the Plain Text secret key after this command. The system will always display the ENCRYPTED password.
	encrypted	Specifies an ENCRYPTED secret key will follow
	unencrypted	Specifies an UNENCRYPTED secret key will follow
	<1-1000>	Wait time in seconds
	acct-port	UDP port for RADIUS accounting server
	auth-port	UDP port for RADIUS authentication server
	key	Server specific key (overrides default)
	retransmit	Specify the number of retries to active server (overrides default)
	timeout	Time to wait for this RADIUS server to reply (overrides default)
	<0-65535>	UDP port number or 0 to disable accounting
	<0-65535>	UDP port number or 0 to disable authentication
	<ipv4_ucast>	NAS-IP-Address
	<ipv6_ucast>	<NAS-IPv6-Address>
	<0-65535>	UDP port number or 0 to disable accounting
	<0-65535>	UDP port number or 0 to disable authentication
	<word96-224>	The ENCRYPTED (hidden) secret key. Notice the ENCRYPTED secret key will be decoded by system internally. You cannot directly use it as same as the Plain Text and it is not human-readable text normally.
	<1-1000>	Number of retries for a transaction

Example:

```
SM24TAT4XB(config)# radius-server deadtime 1
SM24TAT4XB(config)# radius-server retransmit 100
SM24TAT4XB(config)# radius-server timeout 500
SM24TAT4XB(config)# radius-server attribute 32 xxxxxxxxxxxxxxxxxx
SM24TAT4XB(config)# radius-server attribute 4 1.2.3.4
SM24TAT4XB(config)# radius-server host 192.168.1.30 acct-port 888 auth-port 999
key unencrypted cvdavdafvad retransmit 600 timeout 500
SM24TAT4XB(config)# do show radius
Global RADIUS Server Timeout      : 450 seconds
Global RADIUS Server Retransmit   : 675 times
Global RADIUS Server Deadtime     : 0 minutes
Global RADIUS Server Key          :
Global RADIUS Server Attribute 4  : 1.2.3.4
Global RADIUS Server Attribute 95 :
Global RADIUS Server Attribute 32 : xxxxxxxxxxxxxxxxxx
RADIUS Server #1:
  Host name  : 192.168.1.30
  Auth port  : 999
  Acct port  : 888
  Timeout    : 500 seconds
  Retransmit : 600 times
  Key        : b5e088999a4c3bfd07cf512db4c988fb5bfb4b5dd9d7ccf6b6b16b32e9a63d173
a08fd52b1d3d078a8b2d37aa76f0f6167637edd83f01800ec2685246a0906c9
SM24TAT4XB(config)#
```

Command: **rmon**

Description: Remote Monitoring config commands.

Mode: Config mode.

Syntax:

rmon alarm <id> { ifInOctets | ifInUcastPkts | ifInNUcastPkts | ifInDiscards | ifInErrors | ifInUnknownProtos | ifOutOctets | ifOutUcastPkts | ifOutNUcastPkts | ifOutDiscards | ifOutErrors } <ifIndex> <interval> { absolute | delta } rising-threshold <rising_threshold> [<rising_event_id>] falling-threshold <falling_threshold> [<falling_event_id>] { [rising | falling | both] }

rmon event <id> [log] [trap [<community>]] { [description <description>] }

Parameters:

alarm	Configure an RMON alarm
event	Configure an RMON event
<1-65535>	Alarm entry ID
ifInDiscards	The number of inbound packets that are discarded even the packets are normal
ifInErrors	The number of inbound packets that contained errors preventing them from being deliverable to a higher-layer protocol
ifInNUcastPkts	The number of broadcast and multicast packets delivered to a higher-layer protocol
ifInOctets	The total number of octets received on the interface, including framing characters
ifInUcastPkts	The number of unicast packets delivered to a higher-layer protocol
ifInUnknownProtos	The number of the inbound packets that were discarded because of the unknown or unsupported protocol
ifOutDiscards	The number of outbound packets that are discarded event the packets is normal
ifOutErrors	The number of outbound packets that could not be transmitted because of errors
ifOutNUcastPkts	The number of broadcast and multicast packets that request to transmit
ifOutOctets	The number of octets transmitted out of the interface, including framing characters
ifOutUcastPkts	The number of unicast packets that request to transmit
<uint>	Interface index
<1-2147483647>	Sample interval
absolute	Test each sample directly
delta	Test delta between samples
rising-threshold	Configure the rising threshold
<-2147483648-2147483647>	rising threshold value
<0-65535>	Event to fire on rising threshold crossing
falling-threshold	Configure the falling threshold
<-2147483648-2147483647>	falling threshold value
<0-65535>	Event to fire on falling threshold crossing
both	Trigger alarm when the first value is larger than the rising threshold or less than the falling threshold (default)
falling	Trigger alarm when the first value is less than the falling threshold
rising	Trigger alarm when the first value is larger than the rising threshold
description	Specify a description of the event
log	Generate RMON log when the event fires
trap	Generate SNMP trap when the event fires
<line127>	Event description
<1-2147483647>	Sample interval

<cr>

Example:

```
SM24TAT4XB(config)# rmon alarm 1 ifOutErrors 1 50000 absolute rising-threshold 99
9999 falling-threshold 10000
SM24TAT4XB(config)# rmon event 1 description nnnnn mmmmmmmm
SM24TAT4XB(config)# rmon event 1 log trap description ccccccc
SM24TAT4XB(config)# do show rmon event 1

Event ID :     1
----------------
     Description     : ccccccc
     Type           : logandtrap
     LastSent       :   0d 00:00:00

SM24TAT4XB(config)#
```

Message: *% Invalid: rising threshold must be larger than falling threshold*

Command: **router**

Description: Routing process config commands; Open Shortest Path First (OSPF).

Mode: Config mode.

Syntax: **router** ospf <cr>

Parameters: None.

Example:

```
SM24TAT4XB(config)# router ospf
SM24TAT4XB(config-router)# ?
   do      To run exec commands in the configuration mode
   end     Go back to EXEC mode
   exit    Exit from current mode
   help    Description of the interactive help system
SM24TAT4XB(config-router)# exit
SM24TAT4XB(config)#
```

Command: **sflow**

Description: Statistics flow config commands.

Mode: Config mode.

Syntax: **sflow** agent-ip { ipv4 <v_ipv4_addr> | ipv6 <v_ipv6_addr> }
sflow collector-address [receiver <rcvr_idx_list>] [<ipv4_var> | <ipv6_var> | <domain_name>]
sflow collector-port [receiver <rcvr_idx_list>] <collector_port>
sflow max-datagram-size [receiver <rcvr_idx_list>] <datagram_size>
sflow mode [receiver <rcvr_idx_list>] { enable | disable }
sflow timeout [receiver <rcvr_idx_list>] <timeout>

Parameters:

agent-ip	Agent IP address used as agent-address in UDP datagrams. Default: IPv4 loopback address.
collector-address	Collector address
collector-port	Collector UDP port
disable	disable sFlow
enable	enable sFlow
max-datagram-size	Maximum datagram size.
timeout	Receiver timeout measured in seconds. The switch decrements the timeout once per second, and as long as it is non-zero, the receiver receives samples. Once the timeout reaches 0, the receiver and all its configuration is reset to defaults.
ipv4	<ipv4_addr>
ipv6	<ipv6_addr>
<domain_name>	Domain name identifying the collector receiver
<ipv4_addr>	IPv4 address identifying the collector receiver
<ipv6_ucast>	IPv6 address identifying the collector receiver
<1-65535>	Port number
<200-1468>	bytes
<0-2147483647>	Number of seconds.

Example:

```
SM24TAT4XB(config)# sflow enable
SM24TAT4XB(config)# sflow agent-ip ipv4 192.168.1.30
SM24TAT4XB(config)# sflow collector-address 192.168.1.40
SM24TAT4XB(config)# sflow collector-port 6343
SM24TAT4XB(config)# sflow max-datagram-size 700
SM24TAT4XB(config)# sflow timeout 65000
SM24TAT4XB(config)# do show sflow

Agent Configuration:
====================

Agent Address: 192.168.1.30

Receiver Configuration:
=======================

Owner       : <Configured through local management>
Receiver    : 192.168.1.40
UDP Port    : 6343
Max. Datagram: 700 bytes
```

```
Time left    : 64967 seconds


Flow Sampler Configuration:
===========================

No active flow samplers.

Counter Poller Configuration:
=============================

No active counter pollers.
SM24TAT4XB(config)#
```

Command: **smtp**

Description: Set email parameters.

Mode: Config mode.

Syntax: **smtp** delete { server | username | sender | returnpath | mailaddress <index> }

smtp mailaddress <index> <mail_addr_name>

smtp returnpath <return_path>

smtp sender <sender_name>

smtp server <hostname>

smtp username <username> <password>

Parameters:

delete	Delete command
mailaddress	Configure email address
returnpath	Configure email returnpath
sender	Configure email sender
server	Configure email server
username	Configure email user name
<word47>	Up to 47 characters describing mail address
<word47>	Up to 47 characters describing returnpath
<word47>	Up to 47 characters describing sender
<word47>	Up to 47 characters describing email server
<word31>	Up to 47 characters describing user name
<1-6>	Email address index
<cr>	

Example:

```
SM24TAT4XB(config)# smtp username jasonB amin01
SM24TAT4XB(config)# smtp mailaddress 1 jasons@bmail.com
SM24TAT4XB(config)# smtp sender Engineering
SM24TAT4XB(config)# smtp server GoMail
SM24TAT4XB(config)# smtp delete mailaddress 1
SM24TAT4XB(config)#
```

Command: **snmp-server**

Description: Set SNMP server configuration commands.

Mode: Config mode.

Syntax:

snmp-server

snmp-server access <group_name> model { v1 | v2c | v3 | any } level { auth | noauth | priv } [read <view_name>] [write <write_name>]

snmp-server community <v3_comm> [{ ip-range <v_ipv4_addr> <v_ipv4_netmask> | ipv6-range <v_ipv6_subnet> }] { <v3_sec> | encrypted <v3_sec_enc> }

snmp-server community readcommunity { enable | disable }

snmp-server community writecommunity { enable | disable }

snmp-server contact <v_line255>

snmp-server engine-id local <engineID>

snmp-server host <conf_name>

snmp-server location <v_line255>

snmp-server security-to-group model { v1 | v2c | v3 } name <security_name> group <group_name>

snmp-server user <username> engine-id <engineID> [{ md5 { <md5_passwd> | { encrypted <md5_passwd_encrypt> } } | sha { <sha_passwd> | { encrypted <sha_passwd_encrypt> } } } [priv { des | aes } { <priv_passwd> | { encrypted <priv_passwd_encrypt> } }]]

snmp-server view <view_name> <oid_subtree> { include | exclude }

Parameters:

access	access configuration
community	SNMP server community
contact	Set the SNMP server's contact string
engine-id	Set SNMP engine ID
host	Set SNMP host's configurations
location	Set the SNMP server's location string
security-to-group	security-to-group configuration
user	Set the SNMPv3 user's configurations
view	MIB view configuration
<word32>	group name
<word32>	Security name
readcommunity	SNMP server ReadCommunity
writecommunity	SNMP server WriteCommunity
<line255>	contact string
local	Set SNMP local engine ID
<word32>	Name of the host configuration
model	security model
any	any security model
level	security level
auth	authNoPriv Security Level
noauth	noAuthNoPriv Security Level
priv	authPriv Security Level
read	specify a read view for the group
write	specify a write view for the group
write	specify a write view for the group
<word32>	write view name

disable	Disable SNMP server WriteCommunity
enable	Enable SNMP server WriteCommunity
v1	v1 security model
v2c	v2c security model
v3	v3 security model
<word32>	Username
engine-id	engine ID
<word10-64>	Engine ID octet string
<word10-64>	local engine ID. The format of 'Engine ID' may not be all zeros or all 'ff'H and is restricted to 5 - 32 octet string
<word32>	MIB view name
debug	Debugging functions
do	To run exec commands in the configuration mode
end	Go back to EXEC mode
exit	Exit from current mode
help	Description of the interactive help system
host	host configuration
informs	Send Inform messages to this host
no	Negate a command or set its defaults
shutdown	Disable the trap configuration
trapmode	Configure trap mode
version	Set SNMP trap version
<domain_name>	hostname of SNMP trap host
<ipv4_ucast>	IP address of SNMP trap host
<ipv6_ucast>	IP address of SNMP trap host
<1-65535>	TCP/UDP port of the trap messages
retries	retires inform messages
<0-255>	retires times
timeout	timeout parameter
<0-2147>	timeout interval
tcp	Set TCP Trap mode
udp	Set UDP Trap mode
v1	SNMP trap version 1
v2	SNMP trap version 2
v3	SNMP trap version 3
engineID	Configure trap server's engine ID
<word63>	SNMP trap community
encrypted	Use encrypted community secret
<word96-224>	Encrypted community secret
<word10-64>	trap server's engine ID
<word255>	MIB view OID
exclude	Excluded type from the view
include	Included type from the view

Example 1: Configure SNMP server parameters:

```
SM24TAT4XB(config)# snmp-server access Grp1 model v3 level auth write snmpWrt read snmpRd
SM24TAT4XB(config)# snmp-server location Engineering RedCircleDr
SM24TAT4XB(config)#
```

Example 2: Configure SNMPS Host (config-snmps-host):

```
SM24TAT4XB(config)# snmp-server host Bob
```

```
SM24TAT4XB(config-snmps-host)# ?
    debug       Debugging functions
    do          To run exec commands in the configuration mode
    end         Go back to EXEC mode
    exit        Exit from current mode
    help        Description of the interactive help system
    host        host configuration
    informs     Send Inform messages to this host
    no          Negate a command or set its defaults
    shutdown    Disable the trap configuration
    trapmode    Configure trap mode
    version     Set SNMP trap version
SM24TAT4XB(config-snmps-host)# host ?
    <domain_name>    hostname of SNMP trap host
    <ipv4_ucast>     IP address of SNMP trap host
    <ipv6_ucast>     IP address of SNMP trap host
SM24TAT4XB(config-snmps-host)# host <tab>
<domain_name>  <ipv4_ucast>   <ipv6_ucast>
SM24TAT4XB(config-snmps-host)# host??
host <v_ipv6_ucast> [ <udp_port> ] [ traps | informs ]
host { <v_ipv4_ucast> | <v_word> } [ <tcp_udp_port> ] [ traps | informs ]
SM24TAT4XB(config-snmps-host)# version v3 engineID aaaaaaaaaa bbbbbbbb
SM24TAT4XB(config-snmps-host)# informs retries 33 timeout 500
SM24TAT4XB(config-snmps-host)# trapmode tcp
SM24TAT4XB(config-snmps-host)# trapmode udp
SM24TAT4XB(config-snmps-host)# version v2
SM24TAT4XB(config-snmps-host)#

SM48TAT4XA-RP(config)# snmp-server location ItDeptByBob
SM48TAT4XA-RP(config)#
```

Example 3: Configure SNMP server community:

```
SM24TAT4XB(config)# snmp-server community readcommunity enable
SM24TAT4XB(config)# snmp-server community writecommunity enable

SM24TAT4XB(config)#
```

Messages:

The group name 'Grp1' does not exist

The format of 'Engine ID' may not be all zeros or all 'ff'H and is restricted to 5 - 32 octet string

The user name 'MBH' does not exist on current engineID

first character must be '.'

Command: **spanning-tree**

Description: Spanning Tree protocol configuration commands.

Mode: Config mode and config-stp-aggr mode.

Syntax: **spanning-tree** aggregation

spanning-tree edge bpdu-filter

spanning-tree edge bpdu-guard

spanning-tree mode { stp | rstp | mstp }

spanning-tree mst <instance> priority <prio>

spanning-tree mst <instance> vlan <v_vlan_list>

spanning-tree mst forward-time <fwdtime>

spanning-tree mst hello-time <hellotime>

spanning-tree mst max-age <maxage> [forward-time <fwdtime>]

spanning-tree mst max-hops <maxhops>

spanning-tree mst name <name> revision <v_0_to_65535>

spanning-tree recovery interval <interval>

spanning-tree transmit hold-count <holdcount>

do <command>

end

exit

help

no spanning-tree

no spanning-tree auto-edge

no spanning-tree bpdu-guard

no spanning-tree edge

no spanning-tree link-type

no spanning-tree mst <instance> cost

no spanning-tree mst <instance> port-priority

no spanning-tree restricted-role

no spanning-tree restricted-tcn

no spanning-tree root-guard

spanning-tree

spanning-tree auto-edge

spanning-tree bpdu-guard

spanning-tree edge

spanning-tree link-type { point-to-point | shared | auto }

spanning-tree mst <instance> cost { <cost> | auto }

spanning-tree mst <instance> port-priority <prio>

spanning-tree restricted-role

spanning-tree restricted-tcn

spanning-tree root-guard

Parameters:		
	aggregation	Aggregation mode
	edge	Edge ports
	mode	STP protocol mode
	mst	STP bridge instance
	recovery	The error recovery timeout
	transmit	BPDUs to transmit
	auto-edge	Auto detect edge status
	bpdu-guard	Enable/disable BPDU guard
	edge	Edge port
	link-type	Port link-type
	mst	STP bridge instance
	restricted-role	Port role is restricted (never root port)
	restricted-tcn	Restrict topology change notifications
	root-guard	Enable/disable root guard
	auto	Auto detect
	point-to-point	Forced to point-to-point
	shared	Forced to Shared
	<0-7>	instance (CIST=0, MSTI1=1...)
	cost	STP Cost of this port
	port-priority	STP priority of this port
	<1-200000000>	Cost range
	auto	Use auto cost
	debug	Debugging functions
	do	To run exec commands in the configuration mode
	end	Go back to EXEC mode
	exit	Exit from current mode
	help	Description of the interactive help system
	no	Negate a command or set its defaults
	spanning-tree	Spanning Tree protocol
	bpdu-filter	Enable BPDU filter (stop BPDU tx/rx)
	bpdu-guard	Enable BPDU guard
	mstp	Multiple Spanning Tree (802.1s)
	rstp	Rapid Spanning Tree (802.1w)
	stp	802.1D Spanning Tree
	<0-7>	instance (CIST=0, MSTI1=1...)
	forward-time	Delay between port states
	hello-time	MSTP bridge hello time
	max-age	Max bridge age before timeout
	max-hops	MSTP bridge max hop count
	name	Name keyword
	priority	Priority of the instance
	vlan	VLAN keyword
	<0-61440>	Represents the STP bridge priority. Supported values are 0/4096/8192/12288/16384/20480/24576/28672/32768/36864/40960/45056/49152/53248/57344/61440 i.e divisible by 4096. Default value is 32768.

interval	The interval
<30-86400>	Range in seconds
hold-count	Max number of transmit BPDUs per sec
<1-10>	1-10 per sec, 6 is default
<cr>	

Example:

```
SM24TAT4XB(config-stp-aggr)# spanning-tree auto-edge
SM24TAT4XB(config-stp-aggr)# spanning-tree bpdu-guard
SM24TAT4XB(config-stp-aggr)# spanning-tree edge
SM24TAT4XB(config-stp-aggr)# spanning-tree link-type auto
SM24TAT4XB(config-stp-aggr)# spanning-tree mst 0 cost auto
SM24TAT4XB(config-stp-aggr)# spanning-tree restricted-role
SM24TAT4XB(config-stp-aggr)# spanning-tree restricted-tcn
SM24TAT4XB(config-stp-aggr)# spanning-tree root-guard
SM24TAT4XB(config-stp-aggr)# exit
SM24TAT4XB(config)# spanning-tree edge bpdu-filter
SM24TAT4XB(config)# spanning-tree edge bpdu-guard
SM24TAT4XB(config)# spanning-tree mode rstp
SM24TAT4XB(config)# spanning-tree mst 0 priority 8192
SM24TAT4XB(config)# spanning-tree recovery interval 600
SM24TAT4XB(config)# spanning-tree transmit hold-count 4
SM24TAT4XB(config)# do show span
CIST Bridge STP Status
Bridge ID    : 8192.00-C0-F2-49-3E-0A
Root ID      : 8192.00-C0-F2-49-3E-0A
Root Port    : -
Root PathCost: 0
Regional Root: 8192.00-C0-F2-49-3E-0A
Int. PathCost: 0
Max Hops     : 20
TC Flag      : Steady
TC Count     : 0
TC Last      : -
Port       Port Role       State       Pri  PathCost  Edge  P2P         Uptime
---------  --------------  ----------  ---  --------  ----  ---  -------------
Gi 1/1     DesignatedPort  Forwarding  128     20000  Yes   Yes    0d 00:07:38
Gi 1/2     DesignatedPort  Forwarding  128    200000  Yes   Yes    0d 00:07:38
Gi 1/3     DesignatedPort  Forwarding  128     20000  Yes   Yes    0d 00:07:38
Gi 1/5     DesignatedPort  Forwarding  128    200000  Yes   Yes    0d 00:07:38
Gi 1/6     DesignatedPort  Forwarding  128     20000  Yes   Yes    0d 00:07:39
Gi 1/7     DesignatedPort  Forwarding  128    200000  Yes   Yes    0d 00:07:39
SM24TAT4XB(config)#
```

Command: **svl**

Description: Shared VLAN Learning config commands.

Mode: Config mode.

Syntax: **svl** fid <fid> vlan <vlan_list>

Parameters:

fid	Filter ID keyword
<1-4095>	Filter ID
vlan	VLAN keyword
<vlan_list>	VLAN List
<cr>	

Example:

```
SM24TAT4XB(config)# svl fid 1 vlan 100
SM24TAT4XB(config)#
```

Command: **switchport**

Description: Set VLAN switching mode characteristics.

Mode: Config mode. Note that there are also switchport commands in Interface Config mode.

Syntax: **switchport** vlan mapping <gid> <vlan_list> <tvid>

switchport vlan mapping <gid> { both | ingress | egress } <vid> <tvid>

Parameters:

vlan	VLAN
mapping	VLAN translation entry configuration.
<1-28>	Group id
<vlan_list>	VLAN ID List (deprecated)
both	Bi-directional Translation
egress	Egress-only Translation
ingress	Ingress-only Translation
<vlan_id>	VLAN ID
<vlan_id>	Translated VLAN ID
<cr>	

Example:

```
SM24TAT4XB(config)# switchport vlan mapping 1 both 100 220
SM24TAT4XB(config)#
```

Command: **system**

Description: Set the SNMP server parameters.

Mode: Config mode.

Syntax:

system contact <v_line128>
system description <sys_desc>
system location <v_line128>
system name <v_line128>
system reboot mode { enable | disable }
system reboot { [Sun <hour_v00_0_to_23> <min_v00_0_to_55>] [Mon <hour_v10_0_to_23> <min_v10_0_to_55>] [Tue <hour_v20_0_to_23> <min_v20_0_to_55>] [Wed <hour_v30_0_to_23> <min_v30_0_to_55>] [Thr <hour_v40_0_to_23> <min_v40_0_to_55>] [Fri <hour_v50_0_to_23> <min_v50_0_to_55>] [Sat <hour_v60_0_to_23> <min_v60_0_to_55>] }

Parameters:		
	contact	Set the SNMP server's contact string
	description	Configure System Description
	location	Set the SNMP server's location string
	name	Set the SNMP server's system model name string
	reboot	Set the Switch Reboot configurations
	<line128>	contact string
	<line128>	System Description string
	<line128>	location string
	<line128>	name string
	Fri	Configure Switch Reboot scheduling on Friday
	Mon	Configure Switch Reboot scheduling on Monday
	Sat	Configure Switch Reboot scheduling on Saturday
	Sun	Configure Switch Reboot scheduling on Sunday
	Thr	Configure Switch Reboot scheduling on Thursday
	Tue	Configure Switch Reboot scheduling on Tuesday
	Wed	Configure Switch Reboot scheduling on Wednesday
	mode	Switch reboot mode
	disable	Disable Switch Reboot
	enable	Enable Switch Reboot
	<0-23>	start hour
	<0-55>	start miniute, value must be multiples of 5

Example:

```
SM24TAT4XB(config)# system contact jos@tech-support 1-800-654-3210
SM24TAT4XB(config)# system reboot Sat 1 0
SM24TAT4XB(config)#
```

Command: **tacacs-server**

Description: Configure TACACS+ parameters.

Mode: Config mode.

Syntax:

tacacs-server deadtime <minutes>

tacacs-server host <host_name> [port <port>] [timeout <seconds>] [key { [unencrypted] <unencrypted_key> | encrypted <encrypted_key> }]

tacacs-server key { [unencrypted] <unencrypted_key> | encrypted <encrypted_key> }

tacacs-server timeout <seconds>

Parameters:

deadtime	Time to stop using a TACACS+ server that doesn't respond
host	Specify a TACACS+ server
key	Set TACACS+ encryption key
timeout	Time to wait for a TACACS+ server to reply
<1-1440>	Time in minutes
<word1-255>	Hostname or IPv4/IPv6 address
<word1-63>	The UNENCRYPTED (Plain Text) secret key. Notice that you have no chance to get the Plain Text secret key after this command. The system will always display the ENCRYPTED password.
encrypted	Specifies an ENCRYPTED secret key will follow
<word96-224>	The ENCRYPTED (hidden) secret key. Notice the ENCRYPTED secret key will be decoded by system internally. You cannot directly use it as same as the Plain Text and it is not human-readable text normally.
unencrypted	Specifies an UNENCRYPTED secret key will follow
<1-1000>	Wait time in seconds
key	Server specific key (overrides default)
port	TCP port for TACACS+ server
timeout	Time to wait for this TACACS+ server to reply (overrides default)
<0-65535>	TCP port number

Example:

```
SM24TAT4XB(config)# tacacs-server deadtime 300
SM24TAT4XB(config)# tacacs-server timeout 400
SM24TAT4XB(config)# tacacs-server key unencrypted sysadmin11@eng
tacacs-server key encrypted zzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzz
                            ^
zzzzzzzzzzzzzzzzzzzz

% Incomplete word detected at '^' marker.
SM24TAT4XB(config)# do show tacacs
Global TACACS+ Server Timeout      : 400 seconds
Global TACACS+ Server Deadtime     : 300 minutes
Global TACACS+ Server Key          : a2ba6f4262ef5e22c4c03191862e0b4e76dd05d936b
8d583bcda34ee1f35d5d82e451e0f960986d31f5d161982ff5bf2c834994d2fbe95dce06eca7a34c
55372
No servers configured!
SM24TAT4XB(config)# tacacs-server host 192.168.1.40 port 990 timeout 6
SM24TAT4XB(config)# do show tacacs
Global TACACS+ Server Timeout      : 400 seconds
```

```
Global TACACS+ Server Deadtime     : 300 minutes
Global TACACS+ Server Key          : a2ba6f4262ef5e22c4c03191862e0b4e76dd05d936b
8d583bcda34ee1f35d5d82e451e0f960986d31f5d161982ff5bf2c834994d2fbe95dce06eca7a34c
55372
TACACS+ Server #1:
  Host name  : 192.168.1.40
  Port       : 990
  Timeout    : 6 seconds
  Key        :
SM24TAT4XB(config)#
```

Command: **udld**

Description: Enable UDLD (Uni Directional Link Detection) in the aggressive or normal mode and set the configurable message timer on all fiber-optic ports.

Mode: Config mode.

Syntax: **udld** { aggressive | enable | message time-interval <v_interval> }

Parameters:

aggressive — Enables UDLD in aggressive mode on all fiber-optic ports.

enable — Enables UDLD in normal mode on all fiber-optic ports.

message — Configures the period of time between UDLD probe messages on ports that are in the advertisement phase and are determined to be bidirectional. The range is 7 - 90 seconds. (Currently the only the default message time interval of 7 seconds is supported.)

time-interval — Configures the period of time between UDLD probe messages on ports that are in the advertisement phase and are determined to be bidirectional. The range is 7 - 90 seconds (Currently only the default message time interval of 7 seconds is supported).

<7-90> — Configures the period of time between UDLD probe messages on ports that are in the advertisement phase and are determined to be bidirectional. The range is 7 - 90 seconds (Currently only the default message time interval of 7 seconds is supported).

Example:

```
SM24TAT4XB(config)# udld aggressive
% Only fiber ports are allowed, port_no: 1-24
SM24TAT4XB(config)# udld message time-interval 7
% Only fiber ports are allowed, port_no: 1-22
SM24TAT4XB(config)#
```

Command: **upnp**

Description: Set UPnP configuration.

Mode: Config mode.

Syntax: **upnp**

upnp advertising-duration <v_66_to_86400>

upnp ip-addressing-mode { dynamic | static }

upnp static interface vlan <v_vlan_id>

Parameters:		
	advertising-duration	Set advertising duration
	ip-addressing-mode	Set IP addressing mode
	static	Set static VLAN interface ID
	dynamic	Dynamic IP addressing mode
	static	Static IP addressing mode
	interface	Select an interface to configure
	vlan	VLAN Interface
	<vlan_id>	VLAN identifier (VID)

Example:

```
SM24TAT4XB(config)# upnp advertising-duration 6000
SM24TAT4XB(config)# upnp ip-addressing-mode static
SM24TAT4XB(config)# upnp
SM24TAT4XB(config)# upnp static interface vlan 100
SM24TAT4XB(config)# do show upnp
UPnP Mode                   : disabled
UPnP TTL                    : 4
UPnP Advertising Duration    : 100
UPnP IP Addressing Mode      : dynamic
UPnP Static IP Interface ID   : 100
SM24TAT4XB(config)#
SM24TAT4XB(config)#
```

Command: **username**

Description: Establish User Name Authentication.

Mode: Config mode.

Syntax: **username** { default-administrator | <input_username> } privilege <priv> password { unencrypted <unencry_password> | encrypted <encry_password> | none }

Parameters:

<word31>	User name allows letters, numbers and underscores
privilege	Set user privilege level
<0-15>	User privilege level
password	Specify the password for the user
encrypted	Specifies an ENCRYPTED password will follow
none	NULL password
unencrypted	Specifies an UNENCRYPTED password will follow <word128>. The ENCRYPTED (hidden) user password. Notice the ENCRYPTED password will be decoded by system internally. **Note** that you cannot directly use it as same as the Plain Text and it is not human-readable text normally.
<line31>	The UNENCRYPTED (Plain Text) user password. Any printable characters including space is accepted. **Note** that you have no chance to get the Plain Text password after this command. The system will always display the ENCRYPTED password.
<word128>	The ENCRYPTED (hidden) user password. Notice the ENCRYPTED password will be decoded by system internally. You cannot directly use it as same as the Plain Text and it is not human-readable text normally.

Example:

```
SM24TAT4XB(config)# username jeffs privilege 10 password none
SM24TAT4XB(config)# username BobB privilege 14 password unencrypted adminstrator
SM24TAT4XB# show user-privilege
username BobB privilege 14 password encrypted 6d745023ab31f2a2a68cf622fd49b1eb58
e8a25c0039006d66b5262f3938a9236547c34ef16f15ace475c852f28226594f193caa5a13bdc80c
38a083e4d5dbcd
username admin privilege 15 password encrypted 563082d07cf7bb19acffc6c4b4533b514
f20cc8dcff9c1ea6140553c73f0399d58f506fb78fa78ccb010c9610f2c449296c2036cfab7aa776
e6b04309c81a046
SM24TAT4XB(config)#
```

Command: **vlan**

Description: VLAN config commands.

Mode: Config mode.

Syntax:

vlan <vlist>

vlan ethertype s-custom-port <etype>

vlan protocol { { eth2 { <etype> | arp | ip | ipx | at } } | { snap { <oui> | rfc-1042 | snap-8021h } <pid> } | { llc <dsap> <ssap> } } group <grp_id>

Parameters:		
	<vlan_list>	ISL VLAN IDs
	ethertype	EtherType for Custom S-ports
	protocol	Protocol-based VLAN commands
	<word31>	The ASCII name for the VLAN
	s-custom-port	Custom S-ports configuration
	<0x0600-0xffff>	EtherType (Range: 0x0600-0xffff)
	eth2	Ethernet-based VLAN commands
	llc	LLC-based VLAN group
	snap	SNAP-based VLAN group
	<0x600-0xffff>	Ether Type (Range: 0x600 - 0xFFFF)
	arp	Ether Type is ARP
	at	Ether Type is AppleTalk
	ip	Ether Type is IP
	ipx	Ether Type is IPX
	group	Protocol-based VLAN group commands
	<word16>	Group Name (Range: 1 - 16 characters)
	<0x0-0xffffff>	SNAP OUI (Range 0x000000 - 0XFFFFFF)
	rfc-1042	SNAP OUI is rfc-1042
	snap-8021h	SNAP OUI is 8021h
	<0x0-0xffff>	PID (Range: 0x0 - 0xFFFF)
	<0x0-0xff>	DSAP (Range: 0x00 - 0xFF)
	0x0-0xff>	SSAP (Range: 0x00 - 0xFF)
	group	Protocol-based VLAN group commands
	<word16>	Group Name (Range: 1 - 16 characters)

Example:

```
SM24TAT4XB(config)# vlan 100
SM24TAT4XB(config-vlan)# ?
    debug   Debugging functions
    do      To run exec commands in the configuration mode
    end     Go back to EXEC mode
    exit    Exit from current mode
    help    Description of the interactive help system
    name    ASCII name of the VLAN
    no
SM24TAT4XB(config-vlan)# name VID100
SM24TAT4XB(config-vlan)# exit
SM24TAT4XB(config)# vlan protocol eth2 arp group Bob
SM24TAT4XB(config)# vlan protocol llc 0x00 0xde group Tim
SM24TAT4XB(config)# vlan 1-100
SM24TAT4XB(config-vlan)# debug mode
```

```
Current VLAN List is 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 5
0 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76
77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100
SM24TAT4XB(config-vlan)#
```

Messages: *Warning: Dropping frame due to VLAN tag mismatch (iport = 0, frame etype = 0x0800)*

% (VCL Error - Invalid PID. IF OUI is zero, PID is in the range of Etype(0x600-0xFFFF))

Command:	**voice**	
Description:	Voice appliance attributes.	
Mode:	Config mode.	
Syntax:	**voice** vlan	
	voice vlan aging-time <aging_time>	
	voice vlan class { <traffic_class> | low | normal | medium | high }	
	voice vlan oui <oui> [description <description>]	
	voice vlan vid <vid>	
Parameters:	vlan	VLAN for voice traffic
	aging-time	Set secure learning aging time
	class	Set traffic class
	oui	OUI configuration
	vid	Set VLAN ID
	<10-10000000>	Aging time, 10-10000000 seconds
	<0-7>	Traffic class value
	<oui>	OUI value
	description	Set description for the OUI
	<line32>	Description line
	<line32>	Description line
	<cr>	

Example:

```
SM24TAT4XB(config)# voice vlan
SM24TAT4XB(config)# voice vlan aging-time 50000
SM24TAT4XB(config)# voice vlan class 3
SM24TAT4XB(config)# voice vlan oui 11-22-33 description OuiVendor
SM24TAT4XB(config)# do show voice vlan
Switch voice vlan is enabled
Switch voice vlan ID is 1000
Switch voice vlan aging-time is 50000 seconds
Switch voice vlan traffic class is 3
Telephony OUI  Description
-------------  -----------
11-22-33       OuiVendor
Voice VLAN switchport is configured on following:
GigabitEthernet 1/1 :
---------------------
GigabitEthernet 1/1 switchport voice vlan mode is disabled
GigabitEthernet 1/1 switchport voice security is disabled
```

```
GigabitEthernet 1/1 switchport voice discovery protocol is oui
-- more --, next page: Space, continue: g, quit: ^C
SM24TAT4XB(config)#
```

Note: A telephony OUI address is a globally unique identifier assigned to a vendor by the IEEE. It must be 6 characters long and the input format is "xx-xx-xx" (x is a hexadecimal digit).

The description of OUI address normally describes which vendor telephony device it belongs to. The allowed string length is 0 to 32.

Command: **web**

Description: Web config commands.

Mode: Config mode.

Syntax: **web** privilege group <group_name> level { [cro <configRoPriv>] [crw <configRwPriv>] }*1

Parameters:

privilege	Web privilege	
group	Web privilege group	
<cword>	Valid words are:	
Aggregation	DHCP	DHCPv6_Client
DMS_Trouble_Shooting	DMS_Vbatch	DMS_client
DMS_server	Debug	Diagnostics
EPS	ERPS	ETH_LINK_OAM
FRR	Firmware	Green_Ethernet
IP	IPMC_Snooping	Install_Wizard
LACP	LLDP	Loop_Protect
MAC_Table	MEP	MRP
MVR	Miscellaneous	NTP
POE	PTP	Ports
Private_VLANs	QoS	RMirror
SMTP	Security(access)	Security(network)
Spanning_Tree	System	Trap_Event
UDLD	UPnP	VCL
VLAN_Translation	VLANs	Voice_VLAN
Watchdog	XXRP	consoleflow
sFlow	uFDMA_AIL	uFDMA_CIL
cro	Configuration Read-only level	
crw	Configuration Read-write level	
<0-15>	privilege group level	

Example:

```
SM24TAT4XB(config)# web privilege group Watchdog level crw 15
SM24TAT4XB(config)#
SM48TAT4XA-RP(config)# web privilege group FRR level cro 14 crw 15
SM48TAT4XA-RP(config)#
```

Message: *The privilege level of 'Configuration Read-only' should be less than or equal to 'Configuration Read-write'*

Interface Config Mode Commands

Available from the `SM24TAT4XB(config-if)#` prompt from these configurable interfaces:

llag: Local link aggregation interface configuration commands:

do	To run exec commands in the configuration mode
end	Go back to EXEC mode
exit	Exit from current mode
help	Description of the interactive help system
lacp	Link Aggregation Protocol
no	No LACP

vlan: VLAN interface configuration commands

do	To run exec commands in the configuration mode
end	Go back to EXEC mode
exit	Exit from current mode
help	Description of the interactive help system
ip	IPv4 configuration
ipv6	IPv6 configuration commands
name	ASCII name of the VLAN
no	no <ASCII VLAN name>

***, GigabitEthernet, and 10GigabitEthernet**:

access-list	Access list
aggregation	Create an aggregation
description	Configures port description
do	To run exec commands in the configuration mode
dot1x	IEEE Standard for port-based Network Access Control
duplex	Interface duplex
end	Go back to EXEC mode
excessive-restart	Restart backoff algorithm after 16 collisions (No excessive-restart means discard frame after 16 collisions)
exit	Exit from current mode
flowcontrol	Traffic flow control.
frame-length-check	Drop frames with mismatch between EtherType/Length field and actually payload size.
green-ethernet	Green Ethernet (Power reduction)
gvrp	Enable GVRP on interface or interfaces
help	Description of the interactive help system
ip	Interface Internet Protocol configuration commands
ipv6	IPv6 configuration commands
lacp	LACP port configuration
link-oam	Enable or Disable (when the no keyword is entered) Link OAM on the interface
lldp	Link Layer Discover Protocol.

loop-protect	Loop protection configuration on port
mac	MAC keyword
mrp	Media Redundancy Protocol
mtu	Maximum transmission unit
mvr	Multicast VLAN Registration configuration
mvrp	Enable MVRP on the interface
no	To clear port description
poe	Power Over Ethernet.
port-security	Enable/disable port security per interface.
priority-flowcontrol	Priority Flow Control (802.1Qbb)
ptp	Precision time Protocol (1588)
pvlan	Private VLAN
qos	Quality of Service
rmon	Configure Remote Monitoring on an interface
sflow	Statistics flow.
shutdown	Shutdown of the interface.
spanning-tree	Spanning Tree protocol
speed	Configures interface speed. If you use 10, 100, or 1000 keywords with the auto keyword the port will only advertise the specified speeds.
switchport	Set VLAN switching mode characteristics
udld	UDLD configurations.

Command: **lacp**

Description: Interface Config mode LACP commands.

Mode: LLAG Interface Config mode.

Syntax: **lacp** failover { revertive | non-revertive }

lacp max-bundle <v_uint>

Parameters:

failover	LACP failover mode.
max-bundle	LACP max bundle (1-16).
non-revertive	Non-revertive LACP Failover mode.
revertive	Revertive LACP Failover mode.
|	Output modifiers
<cr>	

Example:

```
SM24TAT4XB(config-llag)# lacp failover revertive
SM24TAT4XB(config-llag)# lacp failover non-revertive
SM24TAT4XB(config-llag)# lacp max-bundle 1
SM24TAT4XB(config-llag)# lacp max-bundle 9
SM24TAT4XB(config-llag)#
```

Command: **ip**

Description: Configure IP and IPMG for a VLAN interface.

Mode: IP Interface Config mode commands.

Syntax:

ip address { { <address> <netmask> } | { dhcp [fallback <fallback_address> <fallback_netmask> [timeout <fallback_timeout>]] [client-id { <port_type> <client_id_interface> | ascii <ascii_str> | hex <hex_str> }] [hostname <hostname>]} }

igmp Internet Group Management Protocol

ip igmp snooping

ip igmp snooping compatibility { auto | v1 | v2 | v3 }

ip igmp snooping last-member-query-interval <ipmc_lmqi>

ip igmp snooping priority <cos_priority>

ip igmp snooping querier { election | address <v_ipv4_ucast> }

ip igmp snooping query-interval <ipmc_qi>

ip igmp snooping query-max-response-time <ipmc_qri>

ip igmp snooping robustness-variable <ipmc_rv>

ip igmp snooping unsolicited-report-interval <ipmc_uri>

Parameters:

address	Address configuration
igmp	Internet Group Management Protocol
<ipv4_addr>	IP address
dhcp	Enable DHCP
client-id	DHCP client identifier
fallback	DHCP fallback settings
hostname	DHCP host name
<ipv4_netmask>	IP netmask
address	Configure the IPv6 address of an interface
mld	Multicast Listener Discovery
<ipv6_subnet>	IPv6 prefix x:x::y/z
dhcp	Enable DHCPv6 client function
rapid-commit	Enable DHCPv6 client Rapid-Commit option
<cr>	

Example:

```
SM24TAT4XB(config-if-vlan)# ip address 192.168.1.200 255.255.255.0
% Failed to add IPv4 address to VLAN = 10 (Address conflict).
SM24TAT4XB(config-if-vlan)# ipv6 address dhcp rapid-commit
SM24TAT4XB(config-if-vlan)#
```

Command: **access-list**

Description: Configure Access list for All switches or All ports, 1 Gigabit Ethernet Port(s), or 10 Gigabit Ethernet Port(s).

Mode: Interface Port Config mode.

Syntax: **access-list** action { permit | deny }

access-list logging

access-list mirror

access-list policy <policy_id>

access-list port-state

access-list rate-limiter <rate_limiter_id>

access-list shutdown

access-list { redirect } interface { <port_type> <port_type_id> | (<port_type> [<port_type_list>]) }

Parameters:

action	Access list action
logging	Logging frame information. Note: The logging feature only works when the packet length is less than 1518 (without VLAN tags) and the System Log memory size and logging rate is limited.
mirror	Mirror frame to destination mirror port
policy	Policy
port-state	Re-enable shutdown port that was shutdown by access-list module
rate-limiter	Rate limiter
redirect	Redirect frame to specific port
shutdown	Shutdown incoming port. The shutdown feature only works when the packet length is less than 1518 (without VLAN tags).
deny	Deny
permit	Permit
<0-127>	Policy ID
<1-16>	Rate limiter ID
interface	Select an interface to configure
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
10GigabitEthernet	10 Gigabit Ethernet Port
<port_type_list>	Port list in 1/1-24 (1Gb)
<port_type_list>	Port list in 1/1-4 (10Gb)

Example:

```
SM24TAT4XB(config-if)# access-list action deny
SM24TAT4XB(config-if)# access-list action permit
SM24TAT4XB(config-if)# access-list logging
SM24TAT4XB(config-if)# access-list mirror
SM24TAT4XB(config-if)# access-list policy 0
SM24TAT4XB(config-if)# access-list port-state
SM24TAT4XB(config-if)# access-list rate-limiter 1
SM24TAT4XB(config-if)# access-list redirect interface *
SM24TAT4XB(config-if)#
```

Messages: % Port redirect cannot be configured while permitted action on GigabitEthernet 1/4.

Command: **aggregation**

Description: Create an aggregation

Mode: Interface Config mode.

Syntax: **aggregation** group <v_uint> mode { active | on | passive }

Parameters:

group	Create an aggregation group
1-14	The aggregation group id
mode	The mode of the aggregation
active	Active LACP
on	Static aggregation
passive	Passive LACP

Example:

```
SM24TAT4XB(config-if)# aggregation group 1 mode on
SM24TAT4XB(config-if)# aggregation group 1 mode active
SM24TAT4XB(config-if)# aggregation group 1 mode passive
SM24TAT4XB(config-if)#
```

Command: **description**

Description: Configures port description

Mode: Interface Config mode.

Syntax: **description** <description>

Parameters:

description	Configures port description
line16>	Up to 16 characters describing this interface
<cr>	

Example:

```
SM24TAT4XB(config-if)# description PortsIntx
SM24TAT4XB(config-if)#
```

Command: **do**

Description: To run exec commands in the configuration mode

Mode: Interface Config mode.

Syntax: **do** <command>

Parameters: <line> Exec Command

Example:

```
SM24TAT4XB(config-if)# do show version brief
Version      : SM48TAT4XA-RP (standalone) v8.50.0070
Build Date   : 2022-08-08T19:00:56+08:00
SM24TAT4XB(config-if)#
```

Command: **dot1x**

Description: IEEE Standard for port-based Network Access Control.

Mode: Interface Config mode.

Syntax:

dot1x guest-vlan

dot1x port-control { force-authorized | force-unauthorized | auto | single | multi | mac-based }

dot1x radius-qos

dot1x radius-vlan

dot1x re-authenticate

Parameters:		
	guest-vlan	Enables/disables guest VLAN
	port-control	Sets the port security state.
	radius-qos	Enables/disables per-port state of RADIUS-assigned QoS.
	radius-vlan	Enables/disables per-port state of RADIUS-assigned VLAN.
	re-authenticate	Refresh (restart) 802.1X authentication process.
	auto	Port-based 802.1X Authentication
	force-authorized	Port access is allowed
	force-unauthorized	Port access is not allowed
	mac-based	Switch authenticates on behalf of the client
	multi	Multiple Host 802.1X Authentication
	single	Single Host 802.1X Authentication
	<cr>	

Example:

```
SM24TAT4XB(config-if)# dot1x guest-vlan
SM24TAT4XB(config-if)# dot1x radius-qos
SM24TAT4XB(config-if)# dot1x radius-vlan
SM24TAT4XB(config-if)# dot1x re-authenticate
SM24TAT4XB(config-if)# dot1x port-control auto
SM24TAT4XB(config-if)# dot1x port-control force-authorized
SM24TAT4XB(config-if)# dot1x port-control mac-based
SM24TAT4XB(config-if)# dot1x port-control single
SM24TAT4XB(config-if)# dot1x port-control multi
SM24TAT4XB(config-if)#
```

Messages:

% (The 802.1X Admin State must be set to Authorized for ports that are enabled for LACP)

% (The 802.1X Admin State must be set to Authorized for ports that are enabled for Spanning Tree)

Command: **duplex**

Description: Interface duplex

Mode: Interface Config mode.

Syntax: **duplex** { half | full | auto [half | full] }

Parameters:

auto	Auto negotiation of duplex mode.
full	Forced full duplex.
half	Forced half duplex.
<cr>	

Example:

```
SM24TAT4XB(config-if)# duplex auto
SM24TAT4XB(config-if)# duplex full
SM24TAT4XB(config-if)# duplex half
SM24TAT4XB(config-if)#
```

Message: *10GigabitEthernet 1/4 does only support half duplex in 10 and 100 Mbit mode, duplex changed to full duplex*

Command: **end**

Description: Go back to EXEC mode.

Mode: Interface Config mode.

Syntax: **end** <cr>

Parameters: None.

Example:

```
SM24TAT4XB(config-if)# end
SM24TAT4XB#
```

Command: **excessive-restart**

Description: Restart backoff algorithm after 16 collisions (No excessive-restart means discard frame after 16 collisions).

Mode: Interface Config mode.

Syntax: **excessive-restart** <cr>

Parameters: None.

Example:

```
SM24TAT4XB(config-if)# excessive-restart
10GigabitEthernet 1/1 does not support this mode/speed
10GigabitEthernet 1/2 does not support this mode/speed
10GigabitEthernet 1/3 does not support this mode/speed
10GigabitEthernet 1/4 does not support this mode/speed
SM24TAT4XB(config-if)#
```

Command: **exit**

Description: Exit from current mode

Mode: Interface Config mode.

Syntax: **exit** <cr>

Parameters: None.

Example:

```
SM24TAT4XB(config-if)# exit
SM24TAT4XB(config)#
```

Command: **flowcontrol**

Description: Traffic flow control.

Mode: Interface Config mode.

Syntax: **flowcontrol** { on | off }

Parameters: off Disable flow control.
on Enable flow control.

Example:

```
SM24TAT4XB(config-if)# flowcontrol off
SM24TAT4XB(config-if)# flowcontrol on
SM24TAT4XB(config-if)#
```

Command: **frame-length-check**

Description: Drop frames with mismatch between EtherType/Length field and actually payload size.

Mode: Interface Config mode.

Syntax: **frame-length-check** <cr>

Parameters: None.

Example:

```
SM24TAT4XB(config-if)# frame-length-check
SM24TAT4XB(config-if)#
```

Command: **green-ethernet**

Description: Green Ethernet (Power reduction).

Mode: Interface Config mode.

Syntax: **green-ethernet** eee

green-ethernet eee urgent-queues [<urgent_queue_range_list>]

green-ethernet energy-detect

green-ethernet short-reach

Parameters:

eee	Powering down of PHYs when there is no traffic.
energy-detect	Enable power saving for ports with no link partner.
short-reach	Enable power saving for ports which is connect to link partner with short cable.
urgent-queues	Enables EEE urgent queue. An *urgent* queue means that latency is kept to a minimum for traffic going to that queue. Note: EEE power savings will be reduced.
<range_list>	EEE Interface.
<cr>	

Example:

```
SM24TAT4XB(config-if)# green-ethernet eee urgent-queues 2-6
SM24TAT4XB(config-if)# green-ethernet energy-detect
SM24TAT4XB(config-if)# green-ethernet short-reach
10GigabitEthernet 1/1 is not short reach capable. Skipping
10GigabitEthernet 1/2 is not short reach capable. Skipping
10GigabitEthernet 1/3 is not short reach capable. Skipping
10GigabitEthernet 1/4 is not short reach capable. Skipping
SM24TAT4XB(config-if)#
```

Messages:

% Ignoring invalid queue:10. Valid range is 1-8

10GigabitEthernet 1/1 is not energy detect capable. Skipping
10GigabitEthernet 1/2 is not energy detect capable. Skipping
10GigabitEthernet 1/3 is not energy detect capable. Skipping
10GigabitEthernet 1/4 is not energy detect capable. Skipping

Command: **gvrp**

Description: Enable GARP VLAN Registration Protocol on one or more interfaces.

Mode: Interface Config mode.

Syntax: **gvrp** <cr>

Parameters: None.

Example:

```
SM24TAT4XB(config-if)# gvrp
SM24TAT4XB(config-if)#
```

Command: **help**

Description: Description of the interactive help system

Mode: Interface Config mode.

Syntax: **help** <cr>

Parameters: None.

Example:

```
SM24TAT4XB(config-if)# help
Help may be requested at any point in a command by entering
a question mark '?'.  If nothing matches, the help list will
be empty and you must backup until entering a '?' shows the
available options.
Two styles of help are provided:
1. Full help is available when you are ready to enter a
   command argument (e.g. 'show ?') and describes each possible
   argument.
2. Partial help is provided when an abbreviated argument is entered
   and you want to know what arguments match the input
   (e.g. 'show pr?'.)

SM24TAT4XB(config-if)#
```

Command: **ip**

Description: Interface Internet Protocol v4 configuration commands.

Mode: Interface Config mode.

Syntax: **ip** arp inspection check-vlan
ip arp inspection logging { deny | permit | all }
ip arp inspection trust
ip dhcp snooping trust
ip igmp snooping filter <profile_name>
ip igmp snooping immediate-leave
ip igmp snooping max-groups <throttling>
ip igmp snooping mrouter
ip verify source
ip verify source limit <cnt_var>

Parameters:

arp	Address Resolution Protocol
dhcp	Dynamic Host Configuration Protocol
igmp	Internet Group Management Protocol
verify	verify command
inspection	ARP inspection
check-vlan	ARP inspection VLAN mode configuration
logging	ARP inspection logging mode configuration
trust	ARP inspection trust configuration
all	log all entries
deny	log denied entries
permit	log permitted entries
snooping	DHCP snooping
trust	DHCP Snooping trust configuration
snooping	Snooping IGMP
filter	Access control on IGMP multicast group registration
immediate-leave	Immediate leave configuration
max-groups	IGMP group throttling configuration
mrouter	Multicast router port configuration
<word16>	Profile name in 16 characters
<1-10>	Maximum number of IGMP group registration
source	verify source
limit	limit command
<0-2>	the number of limit

Example:

```
SM24TAT4XB(config-if)# ip arp inspection check-vlan
SM24TAT4XB(config-if)# ip arp inspection logging all
SM24TAT4XB(config-if)# ip arp inspection logging deny
SM24TAT4XB(config-if)# ip arp inspection logging permit
SM24TAT4XB(config-if)# ip dhcp snooping trust
SM24TAT4XB(config-if)# ip igmp snooping immediate-leave
SM24TAT4XB(config-if)# ip igmp snooping max-groups 4
SM24TAT4XB(config-if)# ip igmp snooping mrouter
SM24TAT4XB(config-if)# ip verify source limit 1
```

```
SM24TAT4XB(config-if)#
```

Messages:

% Please specify correct filter profile name.
% Failed to set filtering profile Prof1.

Command: **ipv6**

Description: IPv6 configuration commands.

Mode: Interface Config mode.

Syntax: **ipv6** mld snooping filter <profile_name>

ipv6 mld snooping immediate-leave

ipv6 mld snooping max-groups <throttling>

ipv6 mld snooping mrouter

Parameters:

mld	Multicast Listener Discovery
snooping	Snooping MLD
filter	Access control on MLD multicast group registration
immediate-leave	Immediate leave configuration
max-groups	MLD group throttling configuration
mrouter	Multicast router port configuration
word16>	Profile name in 16 characters
<1-10>	Maximum number of MLD group registration
<cr>	

Example:

```
SM24TAT4XB(config-if)# ipv6 mld snooping filter Pofi1
SM24TAT4XB(config-if)# ipv6 mld snooping immediate-leave
SM24TAT4XB(config-if)# ipv6 mld snooping max-groups 7
SM24TAT4XB(config-if)# ipv6 mld snooping mrouter
SM24TAT4XB(config-if)#
```

Messages:

% Please specify correct filter profile name.
% Failed to set filtering profile Pofi1

Command: **lacp**

Description: LACP port configuration command.

Mode: Interface Config mode.

Syntax: **lacp** port-priority <v_1_to_65535>
lacp timeout { fast | slow }

Parameters:

port-priority	LACP priority of the port
timeout	The period between BPDU transmissions
<1-65535>	Priority value, lower means higher priority
fast	Transmit BPDU each second (fast timeout)
slow	Transmit BPDU each 30th second (slow timeout)
<cr>	

Example:

```
SM24TAT4XB(config-if)# lacp port-priority 5000
SM24TAT4XB(config-if)# lacp timeout fast
SM24TAT4XB(config-if)# lacp timeout slow
SM24TAT4XB(config-if)#
```

Command: **link-oam**

Description: Enable or Disable (when the no keyword is entered) Link OAM on the interface.

Mode: Interface Config mode.

Syntax:

link-oam

link-oam link-monitor frame { [window <error_window>] [threshold <error_threshold>] }*1

link-oam link-monitor frame-seconds { [window <error_window>] [threshold <error_threshold>] }*1

link-oam link-monitor supported

link-oam link-monitor symbol-period { [window <error_window>] [threshold <error_threshold>] }*1

link-oam mib-retrieval supported

link-oam mode { active | passive }

link-oam remote-loopback supported

link-oam variable-retrieve { local-info | remote-info }

Parameters:

link-monitor	Configure link monitoring
mib-retrieval	Set MIB retrieval support
mode	Set Link OAM mode Active or Passive on this interface
remote-loopback	Link OAM remote loopback support
variable-retrieve	Set MIB variable retrieve local info or remote info
frame	Configure frame error event thresholds and window for error frames that trigger an error-frame link event
frame-seconds	Configure frame seconds summary
supported	Enable or Disable (when the no keyword is entered) link monitor on the interface
symbol-period	Configure window and thresholds for an error-symbol period that triggers an error-symbol period link event
threshold	Set a threshold in number of frames
window	Set the a window of time during which error frames are counted
<0-4294967295>	Number of permissible errors frames in the period defined by the error window
window	Set the a window of time during which error frames are counted
<1-60>	Duration of the monitoring period in terms of seconds
<0-65535>	Number of permissible Error Frame Seconds in the period defined by the error window
window	Configure window value
<10-900>	Duration of the monitoring period in terms of seconds
supported	Enable or Disable (when the no keyword is entered) MIB retrieval support on the interface
active	Enable Link OAM Active mode on this interface
passive	Enable Link OAM Passive mode on this interface
supported	Enable or Disable (when the no keyword is entered) remote loopback on the interface
local-info	Set MIB retrieve local info (`not supported yet`)
remote-info	Set MIB retrieve remote info (`not supported yet`)
<cr>	

Example:

```
SM24TAT4XB(config-if)# link-oam link-monitor frame threshold 600000 window 40
SM24TAT4XB(config-if)# link-oam link-monitor frame-seconds threshold 30000 window 125
SM24TAT4XB(config-if)# link-oam link-monitor supported
```

```
SM24TAT4XB(config-if)# link-oam link-monitor symbol-period threshold 99 window 2 2
SM24TAT4XB(config-if)# link-oam mib-retrieval supported
SM24TAT4XB(config-if)# link-oam mode active
SM24TAT4XB(config-if)# link-oam mode passive
SM24TAT4XB(config-if)# link-oam remote-loopback supported
SM24TAT4XB(config-if)# link-oam variable-retrieve local-info
% This feature is not supported yet.
SM24TAT4XB(config-if)# link-oam variable-retrieve remote-info
% This feature is not supported yet.
SM24TAT4XB(config-if)# link-oam
SM24TAT4XB(config-if)#
```

Command: **lldp**

Description: Link Layer Discover Protocol commands.

Mode: Interface Config mode.

Syntax: **lldp** cdp-aware

lldp med media-vlan policy-list <v_range_list>

lldp med transmit-tlv [capabilities] [location] [network-policy] [poe]

lldp med type { connectivity | end-point }

lldp receive

lldp tlv-select { management-address | port-description | system-capabilities |system-description | system-name }

lldp transmit

lldp trap

Parameters:

cdp-aware	Configures if the interface will be CDP aware (CDP discovery info is added to the LLDP neighbor table)
med	Media Endpoint Discovery.
receive	Enable/Disable decoding of received LLDP frames.
tlv-select	Which optional TLVs to transmit.
transmit	Enable/Disabled transmission of LLDP frames.
trap	Configures if an SNMP trap shall be emitted when the LLDP neighbor table changes for the interface
policy-list	Assignment of policies.
<range_list>	Policies to assign to the interface.
capabilities	Enable transmission of the optional capabilities TLV.
location	Enable transmission of the optional location TLV.
network-policy	Enable transmission of the optional network-policy TLV.
poe	Enable/Disable transmission of the optional PoE TLV.
management-address	Enable/Disable transmission of management address.
port-description	Enable/Disable transmission of port description.
system-capabilities	Enable/Disable transmission of system capabilities.
system-description	Enable/Disable transmission of system description.
system-name	Enable/Disable transmission of system name.
media-vlan	Media VLAN assignment.
transmit-tlv	LLDP-MED Location Type Length Value parameter.
type	Select if the interface is working as 'Network Connectivity Device' or an 'Endpoint Device'. The difference between working as 'Network Connectivity Device' and an 'Endpoint Device' is a question of who is initializing the LLDP-MED TLVs transmission. A 'Network Connectivity Device' is not starting LLDP-MED TLVs transmission until it has detected an 'Endpoint Device' as link partner. An 'Endpoint Device' will start LLDP-MED TLVs transmission at once.

Example:

```
SM24TAT4XB(config-if)# lldp cdp-aware
SM24TAT4XB(config-if)# lldp med media-vlan policy-list 1
SM24TAT4XB(config-if)# lldp med transmit-tlv capabilities location network-policy poe
SM24TAT4XB(config-if)# lldp tlv-select management-address
SM24TAT4XB(config-if)# lldp tlv-select port-description
```

```
SM24TAT4XB(config-if)# lldp tlv-select system-description
SM24TAT4XB(config-if)# lldp tlv-select system-name
SM24TAT4XB(config-if)# lldp transmit
SM24TAT4XB(config-if)# lldp trap
SM24TAT4XB(config-if)# lldp tlv-select system-name
SM24TAT4XB(config-if)#
```

Messages: *Ignoring policy 1 for GigabitEthernet 1/22, because no such policy is defined*

Added at FW v8.40.1384:

a. When “Router” mode is set on the switch, send both “Bridge” and “Router” information in the LLDP System Capabilities as below.

```
System Capabilities : Bridge(+), Router(+)
```

b. When “Host” mode is set on the switch, only send “Bridge” System Capabilities in the LLDP packet.

```
System Capabilities : Bridge(+)
```

Command:	**loop-protect**	
Description:	Loop protection configuration on port.	
Mode:	Interface Config mode.	
Syntax:	**loop-protect**	
	loop-protect action { [shutdown] [log] }*1	
	loop-protect tx-mode	
Parameters:	action	Action if loop detected
	tx-mode	Actively generate PDUs
	log	Generate log
	shutdown	Shutdown port
	<cr>	

Example:

```
SM24TAT4XB(config-if)# loop-protect action log shutdown
SM24TAT4XB(config-if)# loop-protect tx-mode
SM24TAT4XB(config-if)#
```

Command: **mac**

Description: MAC keyword.

Mode: Interface Config mode.

Syntax: **mac** address-table learning [secure]

Parameters:		
	mac	MAC keyword
	address-table	MAC table configuration
	learning	Port learning mode
	secure	Port Secure mode
	<cr>	

Example:

```
SM24TAT4XB(config-if)# mac address-table learning secure
SM24TAT4XB(config-if)# mac address-table learning
SM24TAT4XB(config-if)#
```

Command: **mrp**

Description: Media Redundancy Protocol commands.

Mode: Interface Config mode.

Syntax:

mrp periodic

mrp timers default

mrp timers { [join-time <jointime>] [leave-time <leavetime>] [leave-all-time <leavealltime>] }*1

Parameters:		
	periodic	Enable MRP periodic transmission on the interface
	timers	Configure MRP protocol timer parameters. IEEE 802.1Q-2014, clause 10.7.
	default	Set all MRP timers to their default values
	join-time	Set MRP protocol parameter JoinTime.
	leave-all-time	Set MRP protocol parameter LeaveAllTime.
	leave-time	Set MRP protocol parameter LeaveTime.
	<1-20>	join-time in units of centiseconds. Range is 1-20. Default is 20.
	<1000-5000>	leave-all-time in units of centiseconds Range is 1000-5000. Default is 1000.
	60-300>	leave-time in units of centiseconds. Range is 60-300. Default is 60.

Example:

```
SM24TAT4XB(config-if)# mrp periodic
SM24TAT4XB(config-if)# mrp timers default
SM24TAT4XB(config-if)# mrp timers join-time 7 leave-all-time 2500 leave-time 10
SM24TAT4XB(config-if)#
```

Command: **mtu**

Description: Maximum transmission unit configuration.

Mode: Interface Config mode.

Syntax: **mtu** <max_length>

Parameters: <1518-10240> Maximum frame size in bytes.

Example:

```
SM24TAT4XB(config-if)# mtu 5000
SM24TAT4XB(config-if)# mtu 10240
SM24TAT4XB(config-if)#
```

Command: **mvr**

Description: Multicast VLAN Registration configuration

Mode: Interface Config mode.

Syntax: **mvr** immediate-leave

mvr name <mvr_name> type { source | receiver }

mvr vlan <v_vlan_list> type { source | receiver }

Parameters:		
	immediate-leave	Immediate leave configuration
	name	MVR multicast name
	vlan	MVR multicast VLAN
	<word16>	MVR multicast VLAN name
	type	MVR port role configuration
	receiver	MVR receiver port
	source	MVR source port
	<vlan_list>	MVR multicast VLAN list

Example:

```
SM24TAT4XB(config-if)# mvr immediate-leave
SM24TAT4XB(config-if)# mvr name MvrMC1 type source
SM24TAT4XB(config-if)# mvr vlan 1 type receiver
SM24TAT4XB(config-if)#
```

Messages:

% Failed to set MVR port role.

% Invalid MVR VLAN ID 100.

% Invalid MVR VLAN MvrMC1.

Command: **mvrp**

Description: Enable MVRP (Multi VLAN Registration Protocol) on the interface.

Mode: Interface Config mode.

Syntax: **mvrp** <cr>

Parameters: None.

Example:

```
SM24TAT4XB(config-if)# mvrp
SM24TAT4XB(config-if)#
```

Command: **no**

Description: To clear port description

Mode: Interface Config mode.

Syntax: **no** <command>

Parameters:

access-list	aggregation	debug
description	dot1x	duplex
excessive-restart	flowcontrol	frame-length-check
green-ethernet	gvrp	ip
ipv6	lacp	link-oam
lldp	loop-protect	mac
media-type	mrp	mtu
mvr	mvrp	poe
port-security	priority-flowcontrol	ptp
pvlan	qos	rmon
sflow	shutdown	spanning-tree
speed	switchport	udld

Example:

```
SM24TAT4XB(config-if)# no shutdown
SM24TAT4XB(config-if)# no media-type
SM24TAT4XB(config-if)#
```

Command: **poe**

Description: Set Power Over Ethernet parameters.

Mode: Interface Config mode.

Syntax: **poe** delay-mode

poe delay-time <v_0_to_300>

poe failure-action { nothing | reboot-Remote-PD }

poe hour <v_hour>

poe interval-time <interval>

poe max-reboot-times <reboot>

poe mode { enable | disable } (before FW v8.50.0030 only)

poe mode { enable | disable | force } (FW v8.50.0030 and after)

poe ping-ip-addr <address>

poe ping-retry-time <retry>

poe port-profile name <entry_name>

poe power limit { <v_word9> }

poe priority { low | high | critical }

poe reboot-time <reboot>

poe schedule-all

poe schedule-mode

poe startup-time <startuptime>

poe weekday { Sun | Mon | Tue | Wed | Thr | Fri | Sat } hour [<hour_v_0_to_23>]

Parameters:

delay-mode	Configure PoE Power delay mode
delay-time	Setting power delay time from 0 to 300(sec).
failure-action	Configure PoE Auto Power Reset Failure Action.
hour	Configure PoE Power scheduling per hour.
interval-time	Configure PoE Auto Power Reset Interval Time.
max-reboot-times	Configure PoE Auto Power Reset Max Reboot Times.
mode	PoE mode.
ping-ip-addr	Configure PoE Ping IP Address.
ping-retry-time	Configure PoE Auto Power Reset Retry Time.
port-profile	poe scheduling profile
power	Setting maximum power for port in allocation mode.
priority	Interface priority.
reboot-time	Configure PoE Auto Power Reset Reboot Time.
schedule-all	Configure PoE Schedule all of hours.
schedule-mode	Configure PoE Schedule mode.
startup-time	Configure PoE Auto Power Reset Start up Time.
weekday	Configure PoE Power scheduling on week day.
nothing	Failure Action : Nothing.
reboot-Remote-PD	Failure Action : Reboot Remote PD.
<0-23>	Enter hour.
<10-120>	Interval Time : 10 ~ 120(sec).
disable	Set mode to PoE Disable

enable	Set mode to PoE Enable (Maximum power 30.0 W)
force	Set mode to PoE Force (Maximum power 30.0 W) (after FW v8.50.0030)
<ipv4_addr>	Set PoE Ping IP Address.
<1-5>	Retry Time : 1 ~ 5.
name	poe scheduling profile name
<line32>	profile name, the name length is 32
limit	The maximum power.
<fword2.1>	Maximum power for the interface (Class 4 PDs limited to 30W).
critical	Set priority to critical.
high	Set priority to high.
low	Set priority to low.
<3-120>	Reboot Time : 3 ~ 120(sec).
<30-600>	Start up Time : 30 ~ 600(sec).
Fri	Configure PoE Power scheduling on Friday.
Mon	Configure PoE Power scheduling on Monday.
Sat	Configure PoE Power scheduling on Saturday.
Sun	Configure PoE Power scheduling on Sunday.
Thr	Configure PoE Power scheduling on Thursday.
Tue	Configure PoE Power scheduling on Tuesday.
Wed	Configure PoE Power scheduling on Wednesday.
hour	Configure PoE Power scheduling per Hour.
<0~23>	Enter Hour such as 0,1,5-8.
<0-10>	Max. Reboot Times : 0 ~ 10

Example 1:

```
SM24TAT4XB(config-if)# poe delay-mode
SM24TAT4XB(config-if)# poe delay-time 60
SM24TAT4XB(config-if)# poe failure-action reboot-Remote-PD
SM24TAT4XB(config-if)# poe hour 12
SM24TAT4XB(config-if)# poe interval-time 35
SM24TAT4XB(config-if)# poe mode enable
SM24TAT4XB(config-if)# poe ping-ip-addr 192.168.1.77
SM24TAT4XB(config-if)# poe ping-retry-time 2
SM24TAT4XB(config-if)# poe port-profile name PppN
SM24TAT4XB(config-if)# poe power limit 20
SM24TAT4XB(config-if)# poe priority critical
SM24TAT4XB(config-if)# poe reboot-time 22
SM24TAT4XB(config-if)# poe schedule-all
SM24TAT4XB(config-if)# poe schedule-mode
SM24TAT4XB(config-if)# poe startup-time 45
SM24TAT4XB(config-if)# poe weekday Sat hour 1
SM24TAT4XB(config-if)#
```

Example 2:

```
SM48TAT4XA-RP(config-if)# poe mode force
10GigabitEthernet 1/1 does not have PoE support
10GigabitEthernet 1/2 does not have PoE support
10GigabitEthernet 1/3 does not have PoE support
10GigabitEthernet 1/4 does not have PoE support
SM48TAT4XA-RP(config-if)# do show poe config
Primary Power Supply [W]     : 820

Port  Mode      Schedule                         Priority  Max. Power [W]
----  --------  -------------------------------   --------  --------------
1     Forced    Disable                          Critical  30.0
2     Forced    Disable                          High      30.0
3     Forced    Disable                          High      30.0
4     Forced    Profile 1                        Low       30.0
5     Forced    Profile 1                        Low       30.0
6     Forced    Profile 1                        Low       30.0
7     Forced    Profile 2                        Low       30.0
8     Forced    Profile 2                        Low       30.0
9     Forced    Disable                          Low       30.0
10    Forced    Disable                          Low       30.0
11    Forced    Disable                          Low       30.0
12    Forced    Disable                          Low       30.0
13    Forced    Disable                          Low       30.0
14    Forced    Disable                          Low       30.0
15    Forced    Disable                          Low       30.0
16    Forced    Disable                          Low       30.0
17    Forced    Disable                          Low       30.0
18    Forced    Disable                          Low       30.0
-- more --, next page: Space, continue: g, quit: ^C
```

Messages:

GigabitEthernet 1/14 does not have PoE support

10GigabitEthernet 1/4 does not have PoE support

% profile name does not exist.

Command: **port-security**

Description: Enable/disable port security per interface.

Mode: Interface Config mode.

Syntax: **port-security**

port-security maximum <limit>

port-security maximum-violation <violate_limit>

port-security sticky

port-security sticky <v_mac_addr> vlan <v_vlan_id>

port-security violation { protect | restrict | shutdown }

Parameters:

maximum	Maximum number of MAC addresses that can be learned on this set of interfaces.
maximum-violation	Maximum number of violating MAC addresses (used when violation is restrict)
sticky	Enable/disable port security sticky function per interface.
violation	The action taken if limit is exceeded.
<0-1024>	Number of addresses
<1-1024>	Maximum number of violation MAC addresses
<mac_addr>	48 bit MAC address: xx:xx:xx:xx:xx:xx
protect	Don't do anything
restrict	Keep recording violating MAC addresses
shutdown	Shutdown the port
<cr>	

Example:

```
SM24TAT4XB(config-if)# port-security
SM24TAT4XB(config-if)# port-security maximum 300
SM24TAT4XB(config-if)# port-security sticky
SM24TAT4XB(config-if)# port-security violation protect
SM24TAT4XB(config-if)# port-security violation restrict
SM24TAT4XB(config-if)# port-security violation shutdown
SM24TAT4XB(config-if)#
```

Command: **priority-flowcontrol**

Description: Priority Flow Control (802.1Qbb).

Mode: Interface Config mode.

Syntax: **priority-flowcontrol** prio <prio>

Parameters:

prio	Traffic priority Flow Control.
<0~7>	Specify range of priorities
<cr>	

Example:

```
SM24TAT4XB(config-if)# priority-flowcontrol prio 3
SM24TAT4XB(config-if)#
```

Command: **ptp**

Description: Set Precision time Protocol (1588) parameters.

Mode: Interface Config mode.

Syntax:

ptp <clockinst> [internal]

ptp <clockinst> announce { [interval { <interval> | stop | default }] [timeout <timeout>] }*1

ptp <clockinst> delay-asymmetry <delay_asymmetry>

ptp <clockinst> delay-mechanism { e2e | p2p }

ptp <clockinst> delay-req interval { <interval> | stop | default }

ptp <clockinst> egress-latency <egress_latency>

ptp <clockinst> ingress-latency <ingress_latency>

ptp <clockinst> localpriority <localpriority>

ptp <clockinst> mcast-dest { default | link-local }

ptp <clockinst> not-slave

ptp <clockinst> sync-interval { <interval> | stop | default }

ptp <clockinst> two-step [true]

ptp <clockinst> two-step false

ptp pps-delay { { auto master-port interface <port_type> <v_port_type_id> } | {man cable-delay <cable_delay> } }

ptp pps-sync { main-auto | main-man | sub } [pps-phase <pps_phase>] [cable-asy <cable_asy>] [ser-man | ser-auto]

Parameters:

<0-3>	[0-3] Clock instance
announce	Set announce interval and timeout
delay-asymmetry	Set path delay asymmetry
delay-mechanism	Set delay mechanism
delay-req	Set pdelay req interval
egress-latency	Set port egress latency
ingress-latency	Set port ingress latency
internal	enable as an internal interface
localpriority	Local priority pr port for G8275.1 BMC algorithm (1 is highest priority)
mcast-dest	Set multicast destination address type for the port
not-slave	set 'not-slave' attribute for G8275.1 BMC algorithm
sync-interval	Set sync interval
two-step	Set the two-step override value for the port to true
interval	Set announce interval
timeout	Set Announce timeout
<-3-4>	LogAnnounceInterval
<1-10>	Announce timeout (* announce interval)
<-100000-100000>	Delay asymmetry in ns.
e2e	End to End Delay mechanism
p2p	Peer to Peer Delay mechanism
interval	Define pdelay req interval
<-7-5>	logMinPdelayReqInterval

<-100000-100000>	Egress latency in ns
<-100000-100000>	Ingress latency in ns
<1-255>	PTP clock priority1: range = 1-255
default	Default destination address
link-local	Link-local destination address
not-slave	set 'not-slave' attribute for G8275.1 BMC algorithm
<-7-4>	logSyncInterval
false	two-step off
true	two-step on
<cr>	

Example:

```
SM24TAT4XB(config-if)# ptp 0 announce interval 1 timeout 3
SM24TAT4XB(config-if)# ptp 0 delay-asymmetry -2000
SM24TAT4XB(config-if)# ptp 0 egress-latency 23456
SM24TAT4XB(config-if)# ptp 0 mcast-dest default
SM24TAT4XB(config-if)# ptp 0 not-slave
SM24TAT4XB(config-if)# ptp 0 sync-interval 3
SM24TAT4XB(config-if)# ptp 0 two-step true
SM24TAT4XB(config-if)#
```

Messages:

Error setting port data instance 0 port 1

Error setting port data instance 0 port 22

Command: **pvlan**

Description: Configure Private VLANs for an interface.

Mode: Interface Config mode.

Syntax: **pvlan** <pvlan_list>

pvlan isolation

Parameters:		
	<range_list>	list of PVLANs. Range is from 1 to number of ports.
	isolation	Port isolation
	<cr>	

Example:

```
SM24TAT4XB(config-if)# pvlan 3
SM24TAT4XB(config-if)# pvlan isolation
SM24TAT4XB(config-if)#
```

Command: **qos**

Description: Set Quality of Service parameters for an interface.

Mode: Interface Config mode.

Syntax:

qos class <cosid>

qos cos <cos>

qos dei <dei>

qos dpl <dpl>

qos dscp-classify { zero | selected | any }

qos dscp-remark { rewrite | remap | remap-dp }

qos dscp-translate

qos egress-map <id>

qos ingress-map <id>

qos map cos-tag cos <cos> dpl <dpl> pcp <pcp> dei <dei>

qos map tag-cos pcp <pcp> dei <dei> cos <cos> dpl <dpl>

qos pcp <pcp>

qos policer <rate> [kbps | mbps | fps | kfps] [flowcontrol]

qos queue-policer queue <queue> <rate> [kbps | mbps]

qos queue-shaper queue <queue> <rate> [kbps | mbps] [excess | credit] [rate-type { line | data }]

qos shaper <rate> [kbps | mbps] [rate-type { line | data }]

qos storm { unicast | broadcast | unknown } <rate> [fps | kfps | kbps | mbps]

qos tag-remark { pcp <pcp> dei <dei> | mapped }

qos trust dscp

qos trust tag

qos wred-group <wred_group>

qos wrr <w0> <w1> [<w2> [<w3> [<w4> [<w5> [<w6> [<w7>]]]]]]

Parameters:

class	Class of service ID configuration
cos	Class of service configuration
dei	Drop Eligible Indicator configuration
dpl	Drop precedence level configuration
dscp-classify	DSCP ingress classification
dscp-remark	DSCP egress remarking
dscp-translate	DSCP ingress translation
egress-map	Egress map association
ingress-map	Ingress map association
map	QoS Map/Table configuration
pcp	Priority Code Point configuration
policer	Policer configuration
queue-policer	Queue policer configuration
queue-shaper	Queue shaper configuration
shaper	Shaper configuration
storm	Storm policer
tag-remark	Tag remarking configuration

trust	Trust configuration
wred-group	WRED group configuration
wrr	Weighted round robin configuration
<0-7>	Specific class of service ID
<0-7>	Specific class of service
<0-1>	Specific Drop Eligible Indicator
<0-3>	Specific drop precedence level
any	Classify to new DSCP always
selected	Classify to new DSCP if classify is enabled for specific DSCP value in global DSCP classify map
zero	Classify to new DSCP if DSCP is 0
<0-511>	Map ID (egress)
<0-255>	Map ID (ingress)
cos-tag	Map for cos to tag configuration
tag-cos	Map for tag to cos configuration
cos	Specify class of service
<0~7>	Specific class of service or range
dpl	Specify drop precedence level
<0~1>	Specific drop precedence level or range
pcp	Specify PCP (Priority Code Point)
<0-7>	Specific PCP
dei	Specify DEI (Drop Eligible Indicator)
<0-1>	Specific DEI
<0-7>	Specific Priority Code Point
<1-13128147>	Policer rate (default kbps). Internally rounded up to the nearest value supported by the port policer.
flowcontrol	Enable flow control
fps	Unit is frames per second
kbps	Unit is kilobits per second (default)
kfps	Unit is kiloframes per second
mbps	Unit is Megabits per second
queue	Specify queue
<0~7>	Specific queue or range
<1-13128147>	Policer rate (default kbps). Internally rounded up to the nearest value supported by the queue policer.
<1-13107100>	Shaper rate (default kbps). Internally rounded up to the nearest value supported by the port shaper
rate-type	Setup shaping rate type
data	Data rate shaping
line	Line rate shaping
broadcast	Police broadcast frames
unicast	Police unicast frames
unknown	Police unknown (flooded) frames
mapped	Used mapped values (COS, DPL -> PCP, DEI)
pcp	Specify default PCP
<0-7>	Specific PCP

dei	Specify default DEI
<0-1>	Specific DEI
dscp	DSCP value
tag	VLAN tag
<1-3>	Specific WRED group
<1-100>	Weight for queue 1 - queue 7
<cr>	

Example:

```
SM24TAT4XB(config-if)# qos class 1
SM24TAT4XB(config-if)# qos cos 3
SM24TAT4XB(config-if)# qos dei 0
SM24TAT4XB(config-if)# qos dpl 1
SM24TAT4XB(config-if)# qos dscp-classify any
SM24TAT4XB(config-if)# qos egress-map 50
SM24TAT4XB(config-if)# qos ingress-map 123
SM24TAT4XB(config-if)# qos map cos-tag cos 2 dpl 1 pcp 3 dei 0
SM24TAT4XB(config-if)# qos map tag-cos pcp 5 dei 0 cos 7 dpl 3
SM24TAT4XB(config-if)# qos pcp 3
SM24TAT4XB(config-if)# qos policer 75000 flowcontrol kbps
SM24TAT4XB(config-if)# qos queue-policer queue 0 75000 kbps
SM24TAT4XB(config-if)# qos shaper 440000 rate-type data
SM24TAT4XB(config-if)# qos storm broadcast 500000 kbps
SM24TAT4XB(config-if)# qos tag-remark mapped
SM24TAT4XB(config-if)# qos tag-remark pcp 2 dei 1
SM24TAT4XB(config-if)# qos trust dscp
SM24TAT4XB(config-if)# qos trust tag
SM24TAT4XB(config-if)# qos wred 1
SM24TAT4XB(config-if)# qos wrr 1 10  20 30 40 50 60 70
SM24TAT4XB(config-if)#
```

Command: **rmon**

Description: Configure Remote Monitoring on an interface.

Mode: Interface Config mode.

Syntax: **rmon** collection history <id> [buckets <buckets>] [interval <interval>]

rmon collection stats <id>

Parameters:

collection	Configure Remote Monitoring Collection on an interface
history	Configure history
stats	Configure statistics
<1-65535>	History entry ID
buckets	Requested buckets of intervals. Default is 50 buckets
interval	Interval to sample data for each bucket. Default is 1800 seconds
<1-65535>	Requested buckets of intervals
interval	Interval to sample data for each bucket. Default is 1800 seconds
<1-3600>	Interval in seconds to sample data for each bucket
<1-65535>	Statistics entry ID
<cr>	

Example:

```
SM24TAT4XB(config-if)# rmon collection history 1 buckets 1 interval 20
SM24TAT4XB(config-if)# rmon collection history 1
SM24TAT4XB(config-if)# rmon collection stats 1
SM24TAT4XB(config-if)#
```

Command: **sflow**

Description: Configure Statistics flow on an interface.

Mode: Interface Config mode.

Syntax: **sflow** [<sampler_idx_list>]

sflow counter-poll-interval [sampler <sampler_idx_list>] [<poll_interval>]

sflow max-sampling-size [sampler <sampler_idx_list>] [<max_sampling_size>]

sflow sampler-type [sampler <sampler_idx_list>] { rx | tx | all }

sflow sampling-rate [sampler <sampler_idx_list>] [<sampling_rate>]

Parameters:

counter-poll-interval	The interval - in seconds - between counter poller samples.
max-sampling-size	Specifies the maximum number of bytes to transmit per flow sample. To have room for any frame, the maximum datagram size should be roughly 100 bytes larger than the maximum header size.
sampler-type	Specifies the types of flow sample.
sampling-rate	Specifies the statistical sampling rate. The sample rate is specified as N to sample 1/Nth of the packets n the monitored flows. There are no restrictions on the value, but the switch will adjust it to the closest possible sampling rate.
<1-3600>	seconds
<14-200>	bytes
all	sflow sampler-type all
rx	sflow sampler-type rx
tx	sflow sampler-type tx

Example:

```
SM24TAT4XB(config-if)# sflow counter-poll-interval 900
SM24TAT4XB(config-if)# sflow max-sampling-size 80
SM24TAT4XB(config-if)# sflow sampler-type all
SM24TAT4XB(config-if)# sflow sampler-type rx
SM24TAT4XB(config-if)# sflow sampler-type tx
SM24TAT4XB(config-if)#
```

Command: **shutdown**

Description: Shutdown of the interface.

Mode: Interface Config mode.

Syntax: **shutdown** <cr>

Parameters: None

Example:

```
SM24TAT4XB(config-if)# shutdown
SM24TAT4XB(config-if)# shutdown
```

Command: **spanning-tree**

Description: Configure Spanning Tree protocol on an interface.

Mode: Interface Config mode.

Syntax: **spanning-tree**

spanning-tree auto-edge

spanning-tree bpdu-guard

spanning-tree edge

spanning-tree link-type { point-to-point | shared | auto }

spanning-tree mst <instance> cost { <cost> | auto }

spanning-tree mst <instance> port-priority <prio>

spanning-tree restricted-role

spanning-tree restricted-tcn

spanning-tree root-guard

Parameters:

auto-edge	Auto detect edge status
bpdu-guard	Enable/disable BPDU guard
edge	Edge port
link-type	Port link-type
mst	STP bridge instance
restricted-role	Port role is restricted (never root port)
restricted-tcn	Restrict topology change notifications
root-guard	Enable/disable root guard
auto	Auto detect
point-to-point	Forced to point-to-point
shared	Forced to Shared
<0-7>	instance (CIST=0, MSTI1=1...)
cost	STP Cost of this port
port-priority	STP priority of this port
<1-200000000>	Cost range
auto	Use auto cost

Example:

```
SM24TAT4XB(config-if)# spanning-tree auto-edge
SM24TAT4XB(config-if)# spanning-tree bpdu-guard
SM24TAT4XB(config-if)# spanning-tree edge
SM24TAT4XB(config-if)# spanning-tree link-type point-to-point
SM24TAT4XB(config-if)# spanning-tree link-type shared
SM24TAT4XB(config-if)# spanning-tree mst 0 cost 50000
SM24TAT4XB(config-if)# spanning-tree restricted-role
SM24TAT4XB(config-if)# spanning-tree restricted-tcn
SM24TAT4XB(config-if)# spanning-tree root-guard
SM24TAT4XB(config-if)#
```

Command: **speed**

Description: Configures interface speed on an interface. If you use 10, 100, or 1000 keywords with the auto keyword the port will only advertise the specified speeds.

Mode: Interface Config mode.

Syntax: **speed** { 10g | <has_speed_2g5> | <has_speed_1g> | <has_speed_100m> | <has_speed_10m> | auto { [<has_neg_10>] [<has_neg_100>] [<has_neg_1000>] [10g] } }

Parameters:

10g	10Gbps
<1000>	1Gbps
<100>	100Mbps
<10>	10Mbps
auto	Auto negotiation

Example:

```
SM24TAT4XB(config-if)# speed auto
SM24TAT4XB(config-if)# speed 100
10GigabitEthernet 1/1 does not support this mode/speed
10GigabitEthernet 1/2 does not support this mode/speed
10GigabitEthernet 1/3 does not support this mode/speed
10GigabitEthernet 1/4 does not support this mode/speed
SM24TAT4XB(config-if)# speed 1000
SM24TAT4XB(config-if)# speed 10g
GigabitEthernet 1/1 does not support this mode/speed
↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓
GigabitEthernet 1/24 does not support this mode/speed
SM24TAT4XB(config-if)#
SM24TAT4XB(config-if)#
```

Messages: *10GigabitEthernet 1/1 does not support this mode/speed*

Command: **switchport**

Description: Set VLAN switching mode characteristics.

Mode: Interface Config mode. Note that there are also switchport commands in Config mode.

Syntax:
switchport access vlan <pvid>
switchport forbidden vlan { add | remove } <vlan_list>
switchport hybrid acceptable-frame-type { all | tagged | untagged }
switchport hybrid allowed vlan { all | none | [add | remove | except] <vlan_list> }
switchport hybrid egress-tag { none | all [except-native] }
switchport hybrid ingress-filtering
switchport hybrid native vlan <pvid>
switchport hybrid port-type { unaware | c-port | s-port | s-custom-port }
switchport mode { access | trunk | hybrid }
switchport trunk allowed vlan { all | none | [add | remove | except] <vlan_list> }
switchport trunk native vlan <pvid>
switchport trunk vlan tag native
switchport vlan ip-subnet [id <1-128>] <ipv4> vlan <vid>
switchport vlan mac <mac_addr> vlan <vid>
switchport vlan mapping <gid>
switchport vlan protocol group <grp_id> vlan <vid>
switchport voice vlan discovery-protocol { oui | lldp | both }
switchport voice vlan mode { auto | force | disable }
switchport voice vlan security

Parameters:

access	Set access mode characteristics of the interface
forbidden	Adds or removes forbidden VLANs from the current list of forbidden VLANs
hybrid	Change PVID for hybrid port
mode	Set mode of the interface
trunk	Change PVID for trunk port
vlan	VLAN commands
voice	Voice appliance attributes
vlan	Set VLAN when interface is in access mode
<vlan_id>	VLAN ID of the VLAN when this port is in access mode
vlan	Add or modify VLAN entry in forbidden table.
add	Add to existing list.
remove	Remove from existing list.
<vlan_list>	VLAN IDs
acceptable-frame-type	Set acceptable frame type on a port
allowed	Set allowed VLAN characteristics when interface is in hybrid mode
egress-tag	Egress VLAN tagging configuration
ingress-filtering	VLAN Ingress filter configuration
native	Set native VLAN
port-type	Set port type
all	Allow all frames
tagged	Allow only tagged frames
untagged	Allow only untagged frames

access	Set mode to ACCESS unconditionally
hybrid	Set mode to HYBRID unconditionally
trunk	Set mode to TRUNK unconditionally
allowed	Set allowed VLAN characteristics when interface is in trunk mode
native	Set native VLAN
vlan	VLAN commands
vlan	Set allowed VLANs when interface is in trunk mode
<vlan_list>	VLAN IDs of the allowed VLANs when this port is in trunk mode
add	Add VLANs to the current list
all	All VLANs
except	All VLANs except the following
none	No VLANs
remove	Remove VLANs from the current list
ip-subnet	VCL IP Subnet-based VLAN configuration.
mac	MAC-based VLAN commands
mapping	Maps an interface to a VLAN translation group.
protocol	Protocol-based VLAN commands
<ipv4_subnet>	Source IP address and mask (Format: xx.xx.xx.xx/mm.mm.mm.mm).
id	Specify an index for the IP subnet entry (deprecated).
vlan	VLAN keyword
<vlan_id>	VLAN ID required for the group to VLAN mapping (Range: 1-4095)
<mac_ucast>	48 bit unicast MAC address: xx:xx:xx:xx:xx:xx
<1-28>	Group id
group	Protocol-based VLAN group commands
<word16>	Group Name (Range: 1 - 16 characters)
vlan	VLAN for voice traffic
discovery-protocol	Set Voice VLAN port discovery protocol
mode	Set Voice VLAN port mode
security	Enable Voice VLAN port security mode
both	Detect telephony device by OUI address and LLDP
lldp	Detect telephony device by LLDP
oui	Detect telephony device by OUI address
auto	Enable auto detect mode
disable	disjoin Voice VLAN
force	Force to join Voice VLAN

Example:

```
SM24TAT4XB(config-if)# switchport access vlan 10
SM24TAT4XB(config-if)# switchport forbidden vlan add 10
SM24TAT4XB(config-if)# switchport forbidden vlan remove 10
SM24TAT4XB(config-if)# switchport hybrid acceptable-frame-type tagged
SM24TAT4XB(config-if)# switchport hybrid acceptable-frame-type untagged
SM24TAT4XB(config-if)# switchport mode access
SM24TAT4XB(config-if)# switchport mode hybrid
SM24TAT4XB(config-if)# switchport mode trunk
SM24TAT4XB(config-if)# switchport trunk allowed vlan 10
SM24TAT4XB(config-if)# switchport vlan ip-subnet 192.168.1.77/255.255.255.0 vlan 10
SM24TAT4XB(config-if)# switchport voice vlan security
SM24TAT4XB(config-if)#
```

Command: **udld**

Description: UDLD configurations.

Mode: Interface Config mode.

Syntax: **udld** port [aggressive] [message time-interval <v_interval>]

Parameters:

port UDLD configuration on the interface

aggressive Enable UDLD in the aggressive mode on an interface

message Configures the period of time between UDLD probe messages on ports that are in the advertisement phase and are determined to be bidirectional. The range is 7 - 90 seconds. (Currently the default message time interval of 7 seconds is supported.)

time-interval Configures the period of time between UDLD probe messages on ports that are in the advertisement phase and are determined to be bidirectional. The range is 7 - 90 seconds (Currently the default message time interval of 7 seconds is supported).

<7-90> Configures the period of time between UDLD probe messages on ports that are in the advertisement phase and are determined to be bidirectional. The range is 7 - 90 seconds (Currently the default message time interval of 7 seconds is supported.)

<cr>

Example:

```
SM24TAT4XB(config-if)# udld port aggressive message time-interval 7
SM24TAT4XB(config-if)# do show udld

GigabitEthernet 1/1
---------------------------------------------------------------------
UDLD Mode               : Aggressive
Admin State             : Enable
Message Time Interval(Sec): 7
Device ID(local)         : 00-C0-F2-49-3E-0A
Device Name(local)       : SM24TAT4XB
Bidirectional state      : Indeterminant

No neighbor cache information stored
--------------------

GigabitEthernet 1/2
---------------------------------------------------------------------
UDLD Mode               : Aggressive
Admin State             : Enable
Message Time Interval(Sec): 7
Device ID(local)         : 00-C0-F2-49-3E-0A
Device Name(local)       : SM24TAT4XB
Bidirectional state      : Indeterminant

-- more --, next page: Space, continue: g, quit: ^C
SM24TAT4XB(config-if)#
```

Show Commands

Command: **show**

Description: Display statistics, counters, etc.

Mode: Exec mode.

Syntax:

show aaa
show access management [statistics | <access_id_list>]
show access-list [interface [(<port_type> [<v_port_type_list>])]] [rate-limiter [<rate_limiter_list>]] [ace statistics [<ace_list>]]
show access-list ace-status [static] [link-oam] [loop-protect] [dhcp] [ptp] [upnp] [arp-inspection] [evc] [mep] [ipmc] [ip-source-guard] [ip-mgmt] [tt-loop] [y1564] [ztp] [dms-client] [dms-server] [dms-ssdp] [dms-onvif] [agv-car] [dms-mdns] [ip] [conflicts] [switch <switch_list>]
show aggregation [mode]
show clock
show clock detail
show dot1x statistics { eapol | radius | all } [interface (<port_type> [<v_port_type_list>])]
show dot1x status [interface (<port_type> [<v_port_type_list>])] [brief]
show eps [<inst>] [detail]
show erps { [<groups>] } [detail | statistics]
show event
show event port
show format
show green-ethernet [interface (<port_type> [<port_list>])]
show green-ethernet eee [interface (<port_type> [<port_list>])]
show green-ethernet energy-detect [interface (<port_type> [<port_list>])]
show green-ethernet short-reach [interface (<port_type> [<port_list>])]
show history
show interface (<port_type> [<in_port_list>]) switchport [access | trunk |hybrid]
show interface (<port_type> [<v_port_type_list>]) CableDiag
show interface (<port_type> [<v_port_type_list>]) capabilities [detail]
show interface (<port_type> [<v_port_type_list>]) description
show interface (<port_type> [<v_port_type_list>]) statistics [{ packets | bytes | errors | discards | filtered | dot3br | { priority [<priority_v_0_to_7>] } }] [{ up | down }]
show interface (<port_type> [<v_port_type_list>]) status [err-disable]
show interface vlan [<vlist>]
show ip acd
show ip arp
show ip arp inspection [interface (<port_type> [<in_port_type_list>]) | vlan <in_vlan_list>]
show ip arp inspection entry [dhcp-snooping | static] [interface (<port_type> [<in_port_type_list>])]
show ip dhcp detailed statistics { server | client | snooping | relay | normal-forward | combined } [interface (<port_type> [<in_port_list>])]
show ip dhcp relay [statistics]
show ip dhcp server binding <ip>
show ip dhcp server binding [state { allocated | committed | expired }] [type { automatic | manual | expired }]
show ip dhcp server declined-ip
show ip dhcp server declined-ip <declined_ip>
show ip dhcp server statistics
show ip dhcp snooping [interface (<port_type> [<in_port_list>])]
show ip dhcp snooping table
show ip dhcp vlan [<vid>]
show ip domain

show ip http server secure status
show ip igmp snooping [vlan <v_vlan_list>] [group-database [interface (<port_type> [<v_port_type_list>])] [sfm-information]] [detail]
show ip igmp snooping mrouter [detail]
show ip interface [brief]
show ip link-local interface
show ip name-server
show ip route
show ip source binding [dhcp-snooping | static] [interface (<port_type> [<in_port_type_list>])]
show ip ssh
show ip ssh key
show ip statistics [system]
show ip telnet
show ip verify source [interface (<port_type> [<in_port_type_list>])]
show ipmc profile [<profile_name>] [detail]
show ipmc range [<entry_name>]
show ipv6 dhcp-client [interface vlan <v_vlan_list>]
show ipv6 interface [brief]
show ipv6 mld snooping [vlan <v_vlan_list>] [group-database [interface (<port_type> [<v_port_type_list>])] [sfm-information]] [detail]
show ipv6 mld snooping mrouter [detail]
show ipv6 neighbor
show ipv6 route
show ipv6 statistics [system] [interface vlan <vlan_list>]
show lacp { internal | statistics | system-id | neighbor } [details]
show licenses [mtd <mtd_name>] [section <section_id>] [component <component_id>] [description]
show line [alive]
show link-oam { [status] [link-monitor] [statistics] } [interface (<port_type> [<plist>])]
show lldp eee [interface (<port_type> [<v_port_type_list>])]
show lldp med media-vlan-policy [<v_0_to_31>]
show lldp med remote-device [interface (<port_type> [<port_list>])]
show lldp neighbors [interface (<port_type> [<v_port_type_list>])]
show lldp preempt [interface (<port_type> [<v_port_type_list>])]
show lldp statistics [interface (<port_type> [<v_port_type_list>])]
show logging <log_id> [switch <switch_list>]
show logging [info] [warning] [error] [emerg] [alert] [crit] [notice] [debug] [switch <switch_list>]
show loop-protect [interface (<port_type> [<plist>])]
show mac address-table [conf | static | aging-time | { { learning | count } [interface (<port_type> [<v_port_type_list>]) | vlan <v_vlan_id_2>] } | { address <v_mac_addr> [vlan <v_vlan_id>] } | vlan <v_vlan_id_1> | interface (<port_type> [<v_port_type_list_1>])]
show map-api-key
show mep [<inst>] [peer | cc | lm | dm | lt | lb | tst | aps | client | ais | lck | pm | syslog | tlv | bfd | rt | lst | lm-avail] [lm-hli] [detail]
show monitor [session { <session_number> | all }]
show mrp status [interface (<port_type> [<plist>])] [all | mvrp]
show mvr [vlan <v_vlan_list> | name <mvr_name>] [group-database [interface (<port_type> [<v_port_type_list>])] [sfm-information]] [detail]
show ntp status
show platform debug
show platform phy [interface (<port_type> [<v_port_type_list>])]
show platform phy failover
show platform phy id [interface (<port_type> [<v_port_type_list>])]
show platform phy instance
show poe config [interface (<port_type> [<v_port_type_list>])]
show poe power-delay [interface (<port_type> [<v_port_type_list>])]

show poe profile [id <has_id>]
show poe reboot
show poe status [interface (<port_type> [<v_port_type_list>])]
show poe { auto-check | auto-power-reset } [interface (<port_type> [<v_port_type_list>])]
show port-security [interface (<port_type> [<plist>])]
show port-security address [interface (<port_type> [<plist>])]
show privilege
show process list [detail]
show process load
show ptp <clockinst> filter-type
show ptp <clockinst> local-clock
show ptp <clockinst> slave-cfg
show ptp <clockinst> slave-table-unicast
show ptp <clockinst> virtual-port
show ptp <clockinst> { default | current | parent | time-property | filter | servo | clk | ho | uni | master-table-unicast | slave | { { port-state | port-statistics | port-ds | wireless | foreign-master-record } [interface (<port_type> [<v_port_type_list>])] } | log-mode }
show ptp cal
show ptp ext
show ptp ms-pdv all-apr-statistics cgu <cgu_id>
show ptp ms-pdv apr cgu <cgu_id>
show ptp ms-pdv cgu <cgu_id> server <server_id> status
show ptp ms-pdv cur-path-delays cgu <cgu_id>
show ptp ms-pdv path-statistics cgu <cgu_id>
show ptp ms-pdv psl-fcl-config cgu <cgu_id>
show ptp rs422
show ptp rs422 baudrate
show ptp servo mode-ref
show ptp servo source
show ptp system-time
show pvlan [<pvlan_list>]
show pvlan isolation [interface (<port_type> [<plist>])]
show qos [{ interface [(<port_type> [<port>])] } | wred | { maps [dscp-cos] [dscp-ingress-translation] [dscp-classify] [cos-dscp] [dscp-egress-translation] [{ ingress [<ing_id>] }] [{ egress [<egr_id>] }] } | storm| { qce [<qce>] }]
show radius-server [statistics]
show rmon alarm [<id_list>]
show rmon event [<id_list>]
show rmon history [<id_list>]
show rmon statistics [<id_list>]
show running-config [all-defaults]
show running-config feature <feature_name> [all-defaults]
show running-config interface (<port_type> [<list>]) [all-defaults]
show running-config interface vlan <list> [all-defaults]
show running-config line { console | vty } <list> [all-defaults]
show running-config vlan { [<vlan_list>] } [all-defaults]
show sflow
show sflow statistics { receiver [<rcvr_idx_list>] | samplers [interface [<samplers_list>] (<port_type> [<v_port_type_list>])] }
show smtp
show snmp
show snmp access [<group_name> [{ v1 | v2c | v3 | any } [{ auth | noauth | priv }]]]
show snmp community [<community>]
show snmp host [<conf_name>]
show snmp info
show snmp mib context

show snmp mib ifmib ifIndex [port] [aggregation] [vlan]
show snmp security-to-group [{ v1 | v2c | v3 } [<security_name>]]
show snmp trap [<source_name>]
show snmp user [<username> [<engineID>]]
show snmp view [<view_name> [<oid_subtree>]]
show spanning-tree [{ root-guard [interface (<port_type> [<v_port_type_list_r>])] } | summary | active | { interface (<port_type> [<v_port_type_list>]) } | { detailed [interface (<port_type> [<v_port_type_list_1>])] } | { mst [configuration | { <instance> [interface (<port_type> [<v_port_type_list_2>])] }] }]
show svl { [fid [<fid_list>]] | [vlan [<vlan_list>]] }
show switchport forbidden [{ vlan <vlan_list> } | { name <name> }]
show system
show system cpu status
show system reboot
show tacacs-server
show terminal
show udld [interface (<port_type> [<plist>])]
show upnp
show user-privilege
show users [myself]
show version [brief]
show vlan [id <vlan_list> | name <name> | brief] [all]
show vlan ip-subnet [<ipv4>]
show vlan mac [address <mac_addr>]
show vlan membership [id <vlan_list> | name <name>] [admin | combined | erps | evc | gvrp | mep | mstp | mvr | nas | rmirror | vcl | voice-vlan | mvrp | dms | mrp | forbidden]
show vlan protocol [eth2 { <etype> | arp | ip | ipx | at }] [snap { <oui> | rfc-1042 | snap-8021h } <pid>] [llc <dsap> <ssap>]
show vlan status [interface (<port_type> [<plist>])] [admin | all | combined | conflicts | erps | evc | gvrp | mep | mstp | mvr | nas | rmirror | vcl | voice-vlan]
show voice vlan [oui [<oui>] | interface (<port_type> [<port_list>])]
show watchdog mode
show web privilege group [<group_name>] level
show { non-stop-poe | always-on-poe }

Parameters:

aaa	Authentication, Authorization and Accounting methods
access	Access management
access-list	Access list
aggregation	Aggregation port configuration
always-on-poe	Show Non-Stop PoE Status (changed from “non-stop-poe” at FW v8.50.0016)
clock	Configure time-of-day clock
dot1x	IEEE Standard for port-based Network Access Control
eps	Ethernet Protection Switching
erps	Ethernet Ring Protection Switching
event	Show trap event configuration
green-ethernet	Green Ethernet (Power reduction)
history	Display the session command history
interface	Interface.
ip	Interface Internet Protocol configuration commands
ipmc	IPv4/IPv6 multicast configuration
ipv6	IPv6 configuration commands
lacp	LACP configuration/status
licenses	Display license information.

line	TTY line information
link-oam	Link OAM configuration
lldp	Link Layer Discover Protocol.
logging	System logging message
loop-protect	Loop protection configuration
mac	Mac Address Table information
map-api-key	show google map key configuration
mep	Maintenance Entity Point
monitor	Monitoring different system events
mrp	MRP status
mvr	Multicast VLAN Registration configuration
non-stop-poe	Show Non-Stop PoE Status (changed to “always-on poe” at FW v8.50.0016)
ntp	show NTP
platform	Platform configuration
poe	Power Over Ethernet.
port-security	Show Port Security overview status.
power	Power
privilege	Display command privilege
process	process
ptp	Precision time Protocol (1588)
pvlan	PVLAN configuration
qos	Quality of Service
radius-server	RADIUS configuration
rmon	RMON statistics
running-config	Show running system information
sflow	Statistics flow.
smtp	Show email information
snmp	Set SNMP server's configurations
spanning-tree	STP Bridge
svl	Shared VLAN Learning configuration
switchport	Display switching mode characteristics
system	system
tacacs-server	TACACS+ configuration
terminal	Display terminal configuration parameters
udld	Unidirectional Link Detection (UDLD) configurations, statistics and status
upnp	Display UPnP configuration
user-privilege	Users privilege configuration
users	Display information about terminal lines
version	System hardware and software status
vlan	VLAN status
voice	Voice appliance attributes
watchdog	show watchdog mode
web	Web

Show Command Examples

Command: **aaa**

Description: Show Authentication, Authorization and Accounting methods.

Mode: Exec mode.

Syntax: **show** aaa

Parameters: | Output modifiers
<cr>

Example:

```
SM48TAT4XA-RP# show aaa
Authentication :
  console : local
  telnet  : local
  ssh     : local
  http    : local
  https   : no
Authorization :
  console : no, commands disabled
  telnet  : no, commands disabled
  ssh     : no, commands disabled
Accounting :
  console : no, commands disabled, exec disabled
  telnet  : no, commands disabled, exec disabled
  ssh     : no, commands disabled, exec disabled
SM48TAT4XA-RP#
```

Command: **access**

Description: Show Access management parameters.

Mode: Exec mode.

Syntax: **show** access management [statistics | <access_id_list>]

Parameters:

management	Access management configuration
<1~16>	ID of access management entry
|	Output modifiers
statistics	Statistics data
<cr>	

Example:

```
SM48TAT4XA-RP# show access management 1
Switch access management mode is disabled

W: WEB/HTTPS
S: SNMP
T: TELNET/SSH

Idx VID  Start IP Address              End IP Address                W S T
--- ---  ------------------------------ ------------------------------ - - -

SM48TAT4XA-RP# show access management statistics
```

```
Access Management Statistics:
------------------------------
HTTP     Receive:          0    Allow:          0    Discard:          0
HTTPS    Receive:          0    Allow:          0    Discard:          0
SNMP     Receive:          0    Allow:          0    Discard:          0
TELNET   Receive:          0    Allow:          0    Discard:          0
SSH      Receive:          0    Allow:          0    Discard:          0
SM48TAT4XA-RP#
```

Command: **access-list**

Description: Show Access list information.

Mode: Exec mode.

Syntax:

show access-list [interface [(<port_type> [<v_port_type_list>])]] [rate-limiter [<rate_limiter_list>]] [ace statistics [<ace_list>]]
show access-list ace-status [static] [link-oam] [loop-protect] [dhcp] [ptp] [upnp] [arp-inspection] [evc] [mep] [ipmc] [ip-source-guard] [ip-mgmt] [tt-loop] [y1564] [ztp] [dms-client] [dms-server] [dms-ssdp] [dms-onvif] [agv-car] [dms-mdns] [ip] [conflicts] [switch <switch_list>]

Parameters:		
	|	Output modifiers
	ace	Access list entry
	ace-status	The local ACEs status
	interface	Select an interface to configure
	rate-limiter	Rate limiter
	statistics	Traffic statistics
	*	All switches or All ports
	GigabitEthernet	1 Gigabit Ethernet Port
	10GigabitEthernet	10 Gigabit Ethernet Port
	rate-limiter	Rate limiter
	<port_type_list>	Port list for all port types
	<port_type_list>	Port list in 1/1-24
	<port_type_list>	Port list in 1/1-4
	<1~16>	Rate limiter ID

Example:

```
M48TAT4XA-RP# show access-list ace statistics
ID   Type     Policy   Frame   Action Rate L.  Mirror   Counter
--   -------- -------- -----  ------- ------- -------- -------
1    LOCAL    Any      UDP     Permit Disabled Disabled     10
1    LOCAL    Any      UDP     Permit Disabled Disabled   8090
1    LOCAL    Any      UDP     Permit Disabled Disabled    344
1    LOCAL    Any      UDP     Permit Disabled Disabled      0
1    LOCAL    Any      UDP     Permit Disabled Disabled      0
2    LOCAL    Any      IPv4    Permit Disabled Disabled      0

Switch access-list ace number: 6
SM48TAT4XA-RP# show access-list rate-limiter
Switch access-list rate limiter ID 1 is 10 pps
Switch access-list rate limiter ID 2 is 10 pps
Switch access-list rate limiter ID 3 is 10 pps
Switch access-list rate limiter ID 4 is 10 pps
```

```
Switch access-list rate limiter ID 5 is 10 pps
Switch access-list rate limiter ID 6 is 10 pps
Switch access-list rate limiter ID 7 is 10 pps
Switch access-list rate limiter ID 8 is 10 pps
Switch access-list rate limiter ID 9 is 10 pps
Switch access-list rate limiter ID 10 is 10 pps
Switch access-list rate limiter ID 11 is 10 pps
Switch access-list rate limiter ID 12 is 10 pps
Switch access-list rate limiter ID 13 is 10 pps
Switch access-list rate limiter ID 14 is 10 pps
Switch access-list rate limiter ID 15 is 10 pps
Switch access-list rate limiter ID 16 is 10 pps
SM48TAT4XA-RP#
```

Command: **aggregation**

Description: Show Aggregation port configuration.

Mode: Exec mode.

Syntax: **show** aggregation mode <cr>

Parameters:

|	Output modifiers
mode	Traffic distribution mode
<cr>	

Example:

```
SM48TAT4XA-RP# show aggregation mode
Aggregation Mode:

SMAC  : Enabled
DMAC  : Disabled
IP    : Enabled
Port  : Enabled
SM48TAT4XA-RP#
```

Command: **always-on-poe**

Description: Show Always-on-poe status. FW v8.50.0016 changed "non-stop poe" to "always-on-poe”.

Description: Display Always-on-poe status information.

Mode: Exec mode.

Syntax: **show** always-on-poe <cr>

Parameters:

|	Output modifiers
<cr>	

Example:

```
SM24TAT4XB# show always-on-poe
Always On PoE Status : Enable
SM24TAT4XB#
```

Command: **clock**

Description: Show time-of-day clock.

Mode: Exec mode.

Syntax: **show** clock <detail | <cr>

Parameters: show clock
show clock detail

Example:

```
SM48TAT4XA-RP# show clock
System Time     : 2019-10-28T02:48:30+00:00

SM48TAT4XA-RP# show clock detail
System Time      : 2019-10-28T02:48:35+00:00

Timezone : Timezone Offset : 0 ( 0 minutes)
Timezone Acronym :

Daylight Saving Time Mode : Disabled.
Daylight Saving Time Start Time Settings :
       Week: 1
       Day: 1
       Month: 1
       Date: 1
       Year: 2014
       Hour: 0
       Minute: 0
Daylight Saving Time End Time Settings :
               Week: 1
       Day: 1
       Month: 1
       Date: 1
       Year: 2097
       Hour: 0
       Minute: 0
-- more --, next page: Space, continue: g, quit: ^C
```

Command: **dot1x**

Description: Show IEEE 802.1x standard for port-based Network Access Control.

Mode: Exec mode.

Syntax: **show** dot1x statistics { eapol | radius | all } [interface (<port_type> [<v_port_type_list>])]
show dot1x status [interface (<port_type> [<v_port_type_list>])] [brief]

Parameters:

statistics	Shows statistics for either EAPoL or RADIUS.
status	Shows dot1x status, such as admin state, port state and last source.
all	Show all dot1x statistics
eapol	Show EAPoL statistics
radius	Show Back-end Server statistics
|	Output modifiers
interface	Interface
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
10GigabitEthernet	10 Gigabit Ethernet Port
<port_type_list>	Port list in 1/1-24
<port_type_list>	Port list in 1/1-4
<port_type_list>	Port list for all port types
brief	Show status in a brief format (deprecated)

Example:

```
SM48TAT4XA-RP# show dot1x status
Interface  Admin Port State     Last Src         Last ID          QOS VLAN Gu
est
---------- ----- --------------- ---------------- ---------------- --- ---- --
---
Gi 1/1     Auth  Disabled       -                -                -   -    -
Gi 1/2     Auth  Disabled       -                -                -   -    -
Gi 1/3     Auth  Disabled       -                -                -   -    -
Gi 1/4     Auth  Disabled       -                -                -   -    -
Gi 1/5     Auth  Disabled       -                -                -   -    -
Gi 1/6     Auth  Disabled       -                -                -   -    -
Gi 1/7     Auth  Disabled       -                -                -   -    -
Gi 1/8     Auth  Disabled       -                -                -   -    -
Gi 1/9     Auth  Disabled       -                -                -   -    -
Gi 1/10    Auth  Disabled       -                -                -   -    -
Gi 1/11    Auth  Disabled       -                -                -   -    -
-- more --, next page: Space, continue: g, quit: ^C
SM48TAT4XA-RP# show dot1x statistics eapol
           Rx      Tx      Rx      Tx      Rx      Tx      Rx      Rx      Rx
Interface  Total   Total   RespId  ReqId   Resp    Req     Start   Logoff  Error
---------- ------- ------- ------- ------- ------- ------- ------- ------- -------
Gi 1/1          0       0       0       0       0       0       0       0   0
Gi 1/2          0       0       0       0       0       0       0       0   0
Gi 1/3          0       0       0       0       0       0       0       0   0
Gi 1/4          0       0       0       0       0       0       0       0   0
Gi 1/5          0       0       0       0       0       0       0       0   0
Gi 1/6          0       0       0       0       0       0       0       0   0
Gi 1/7          0       0       0       0       0       0       0       0   0
Gi 1/8          0       0       0       0       0       0       0       0   0
-- more --, next page: Space, continue: g, quit: ^C
```

Command: **eps**

Description: Show Ethernet Protection Switching information.

Mode: Exec mode.

Syntax: **show** eps [<inst>] [detail]

Parameters:

|	Output modifiers
<range_list>	The range of EPS instances.
detail	Show detailed state including configuration information.
<cr>	

Example:

```
SM48TAT4XA-RP# show eps detail

EPS state is:
    Inst       State    Wstate    Pstate    TxAps r b    RxAps r b    Fop
Pm    FopCm    FopNr    FopNoAps
       1     Disable       Ok        Ok       NR 0 0       NR 0 0    Fal
se    False    False       False


EPS Configuration is:
    Inst    Dom    Archi    Wflow    Pflow    Wmep    Pmep    APSmep
 Direct    Revert    Wtr    Hold    Aps
       1   Port   1plus1       1       2       3       1        5
 Unidir     False    w5m       0   False

EPS Command is:
    Inst         Command
       1            none

SM48TAT4XA-RP# show eps

EPS state is:
    Inst       State    Wstate    Pstate    TxAps r b    RxAps r b    Fop
Pm    FopCm    FopNr    FopNoAps
       1     Disable       Ok        Ok       NR 0 0       NR 0 0    Fal
se    False    False       False

SM48TAT4XA-RP#
```

Command: **erps**

Description: Show Ethernet Ring Protection Switching information.

Mode: Exec mode.

Syntax: **show** erps { [<groups>] } [detail | statistics]

Parameters:

1~64	Zero or more ERPS group numbers
|	Output modifiers
detail	Show detailed information
statistics	Show statistics
<cr>	

Example:

```
SM48TAT4XA-RP# show erps 1
(L=Link Up/Down; B=Blocked/Unblocked)      Maj RPL  RPL   RPL  FSM   R-APS
Gr Typ V Rev Port 0     L B Port 1     L B Grp Role Port  Blck State TX RX FOP
--+---+-+---+----------+-+-+----------+-+-+---+----+-----+----+-----+--+--+---
 1 M-I 2 Rev Gi 1/1     U B Gi 1/2     U U -   -    -     -    PEND  Y     N
SM48TAT4XA-RP# show erps statistics
Grp      RAPS RX    RAPS Drop      L-SF   L-SF Cl   R-SF RX   R-FS RX     NR TX
---+------------+------------+---------+---------+---------+---------+---------
  1           0           0         0         0         0         0         0
SM48TAT4XA-RP#
```

Command: **event**

Description: Show trap event configuration.

Mode: Exec mode.

Syntax: **show** event
show event port

Parameters:

port	Show event port configuration
<cr>	

Example:

```
SM48TAT4XA-RP# show event
Group Name                       Severity Level    Syslog Mode   Trap Mode      SMTP Mode
-------------------------------  ---------------  ------------  ----------------------
ACL                             Information       enable        disable       disable
ACL-Log                          Information      enable         disable       disable
Access-Mgmt                      Information      enable         disable       disable
Auth-Failed                      Warning          enable         disable       disable
Cold-Start                       Warning          enable         disable       disable
Config-Info                      Information      enable        disable       disable
DMS                             Information       enable       disable        disable
FAN                             Information       enable       disable        disable
Firmware-Upgrade                 Information      enable        disable       disable
SM48TAT4XA-RP#
```

Command: **show format**

Description: Display current date, time and port description format/information.

Mode: Exec mode.

Syntax: show format <cr>

Parameters: None.

Example:

```
SM24TAT4XB# show format
formatDateTime : disable
dateTime       : yyyy-mm-dd
timeFormat     : 24 hour
formatPortDesc : disable
SM24TAT4XB#
```

Command: **green-ethernet**

Description: Show Green Ethernet (Power reduction) information.

Mode: Exec mode.

Syntax: **show** green-ethernet [interface (<port_type> [<port_list>])]
show green-ethernet eee [interface (<port_type> [<port_list>])]
show green-ethernet energy-detect [interface (<port_type> [<port_list>])]
show green-ethernet short-reach [interface (<port_type> [<port_list>])]

Parameters:

eee	Shows green Ethernet EEE status for a specific port or ports.
energy-detect	Shows green Ethernet energy-detect status for a specific port or ports.
interface	Shows green Ethernet status for a specific port or ports.
short-reach	Shows green Ethernet short-reach status for a specific port or ports.
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
10GigabitEthernet	10 Gigabit Ethernet Port
<port_type_list>	Port list in 1/1-24
<port_type_list>	Port list in 1/1-4

Example:

```
SM48TAT4XA-RP# show green-ethernet eee
Interface              Lnk  EEE Capable  EEE Enabled  LP EEE Capable   EEE In Power Save
---------------------  ---  -----------  -----------  ---------------  -----------------
GigabitEthernet 1/1    Yes  Yes          No           No               No
GigabitEthernet 1/2    Yes  Yes          Yes          Yes              Yes
GigabitEthernet 1/3    Yes  Yes          Yes          No               No
GigabitEthernet 1/4    Yes  Yes          Yes          Yes              Yes
GigabitEthernet 1/5    Yes  Yes          Yes          Yes              Yes
GigabitEthernet 1/6    No   Yes          Yes          No               No
GigabitEthernet 1/7    Yes  Yes          Yes          No               No
GigabitEthernet 1/8    Yes  Yes          Yes          Yes              Yes
-- more --, next page: Space, continue: g, quit: ^C
```

Command: **history**

Description: Display the session command history.

Mode: Exec mode.

Syntax: show history <cr>

Parameters: | Output modifiers
<cr>

Example:

```
SM48TAT4XA-RP# show history
  exit
  interface *
  mvrp
  port-security violation restrict
  do show poe config
  do show poe status
  exit
  platform debug deny
  platform debug allow
  platform debug deny
  show aaa
  show access management 1
  show access management statistics
  show access-list ace statistics
  show access-list rate-limiter
  show aggregation mode
  show clock
  show clock detail
  show dot1x status
  show dot1x statistics eapol
-- more --, next page: Space, continue: g, quit: ^C
```

Command: **interface**

Description: Display Interface information.

Mode: Exec mode.

Syntax:
show interface (<port_type> [<in_port_list>]) switchport [access | trunk |hybrid]
show interface (<port_type> [<v_port_type_list>]) CableDiag
show interface (<port_type> [<v_port_type_list>]) capabilities [detail]
show interface (<port_type> [<v_port_type_list>]) description
show interface (<port_type> [<v_port_type_list>]) statistics [{ packets | bytes | errors | discards | filtered | dot3br | { priority [<priority_v_0_to_7>] } }] [{ up | down }]
show interface (<port_type> [<v_port_type_list>]) status [err-disable]
show interface vlan [<vlist>]

Parameters:		
	*	All switches or All ports
	GigabitEthernet	1 Gigabit Ethernet Port
	10GigabitEthernet	10 Gigabit Ethernet Port
	vlan	VLAN status
	<port_type_list>	Port list for all port types
	CableDiag	Display the latest cable diagnostic results.
	capabilities	Display capabilities.
	description	Show port description.
	statistics	Display statistics counters.
	status	Display status.
	switchport	Show interface switchport information
	detail	Display capabilities in detail.
	<vlan_list>	VLAN list
	access	Show access ports status
	hybrid	Show hybrid ports status
	trunk	Show trunk ports status
	<port_type_list>	Port list in 1/1-24
	<port_type_list>	Port list in 1/1-4
	bytes	Show byte statistics.
	discards	Show discard statistics.
	down	Show ports which are down
	errors	Show error statistics.
	filtered	Show filtered statistics.
	packets	Show packet statistics.
	priority	Show priority statistics.
	up	Show ports which are up

Example:

```
SM48TAT4XA-RP# show interface vlan
VLAN1
  LINK: 00-c0-f2-49-3e-44 Mtu:1500 <UP BROADCAST MULTICAST>
  IPv4: 192.168.1.77/24 192.168.1.255
  IPv6: fe80::2c0:f2ff:fe49:3e44/64 <>

VLAN10
  LINK: 00-c0-f2-49-3e-44 Mtu:1500 <BROADCAST MULTICAST>
SM48TAT4XA-RP# show interface GigabitEthernet 1/1 capabilities detail
SM48TAT4XA-RP# show interface GigabitEthernet 1/1 capabilities
```

```
SM48TAT4XA-RP# show interface GigabitEthernet 1/1 switchport
Name: GigabitEthernet 1/1
Administrative mode: access
Access Mode VLAN: 1
Trunk Native Mode VLAN: 1
Administrative Native VLAN tagging: disabled
Allowed VLANs: 1-4095
Hybrid port configuration
-------------------------
Port Type: C-Port
Acceptable Frame Type: All
Ingress filter: Disabled
Egress tagging: All except-native
Hybrid Native Mode VLAN: 1
Hybrid VLANs Enabled: 1-4095

SM48TAT4XA-RP#

SM24TAT4XB# show interface * capabilities
10GigabitEthernet 1/1 Capabilities:
Connector Type      : SFP or SFP Plus - LC
Fiber Type          : Reserved
TX Central Wavelength: 850
Bit Rate            : 10 Gbps
Vendor OUI          : 00-c0-f2
Vendor name         : Transition
Vendor PN           : TN-10GSFP-SR
Vendor revision     : 0001
Vendor Serial Number : 8801095
Data Code           : 120731
Temperature         : 43.81 C
Vcc                : 3.27 V
Mon1(Bias)          : 5 mA
Mon2(TX PWR)        : -2.83 dBm
Mon3(RX PWR)        : none

10GigabitEthernet 1/2 Capabilities:
Connector Type      : SFP or SFP Plus - LC
Fiber Type          : Single Mode (SM)
TX Central Wavelength: 1310
Bit Rate            : 1000 Mbps
-- more --, next page: Space, continue: g, quit: ^C

SM24TAT4XB# show interface * statistics priority
GigabitEthernet 1/1                    Rx Priority queue    Tx Priority queue
-------------------------------------  -------------------  ------------------
Priority 0                            29247                78102
Priority 1                            0                    0
Priority 2                            0                    0
Priority 3                            0                    0
Priority 4                            0                    0
Priority 5                            0                    0
Priority 6                            0                    0
Priority 7                            0                    964544
-- more --, next page: Space, continue: g, quit: ^C

SM24TAT4XB# show interface * switchport access
```

```
Name: GigabitEthernet 1/1
Administrative mode: access
Access Mode VLAN: 1
Trunk Native Mode VLAN: 1
Administrative Native VLAN tagging: disabled
Allowed VLANs: 1-4095
Hybrid port configuration
-------------------------
Port Type: C-Port
Acceptable Frame Type: All
Ingress filter: Disabled
Egress tagging: All except-native
Hybrid Native Mode VLAN: 1
Hybrid VLANs Enabled: 1-4095

Name: GigabitEthernet 1/2
Administrative mode: access
Access Mode VLAN: 1
Trunk Native Mode VLAN: 1
Administrative Native VLAN tagging: disabled
Allowed VLANs: 1-4095
Hybrid port configuration
-- more --, next page: Space, continue: g, quit: ^C
```

Command: **ip**

Description: Display Interface Internet Protocol configuration information.

Mode: Exec mode.

Syntax:

show ip acd
show ip arp
show ip arp inspection [interface (<port_type> [<in_port_type_list>]) | vlan <in_vlan_list>]
show ip arp inspection entry [dhcp-snooping | static] [interface (<port_type> [<in_port_type_list>])]
show ip dhcp detailed statistics { server | client | snooping | relay | normal-forward | combined } [interface (<port_type> [<in_port_list>])]
show ip dhcp relay [statistics]
show ip dhcp server binding <ip>
show ip dhcp server binding [state { allocated | committed | expired }] [type { automatic | manual | expired }]
show ip dhcp server declined-ip
show ip dhcp server declined-ip <declined_ip>
show ip dhcp server statistics
show ip dhcp snooping [interface (<port_type> [<in_port_list>])]
show ip dhcp snooping table
show ip dhcp vlan [<vid>]
show ip domain
show ip http server secure status
show ip igmp snooping [vlan <v_vlan_list>] [group-database [interface (<port_type> [<v_port_type_list>])] [sfm-information]] [detail]
show ip igmp snooping mrouter [detail]
show ip interface [brief]
show ip link-local interface
show ip name-server
show ip route
show ip source binding [dhcp-snooping | static] [interface (<port_type> [<in_port_type_list>])]
show ip ssh
show ip ssh key
show ip statistics [system]
show ip telnet
show ip verify source [interface (<port_type> [<in_port_type_list>])]

Parameters:		
	acd	Address Conflict Detection
	arp	Address Resolution Protocol
	dhcp	Dynamic Host Configuration Protocol
	domain	Default domain name
	http	Hypertext Transfer Protocol
	igmp	Internet Group Management Protocol
	interface	IP interface status and configuration
	link-local	Link-Local address binding interface
	name-server	Domain Name System
	route	Display the current IP routing table
	source	source command
	ssh	Secure Shell
	statistics	Traffic statistics
	telnet	Telnet

verify	verify command
inspection	ARP inspection
entry	ARP inspection entries
interface	ARP inspection entry interface configuration
vlan	VLAN configuration
dhcp-snooping	learn from DHCP snooping
interface	ARP inspection entry interface configuration
static	setting from static entries
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
10GigabitEthernet	10 Gigabit Ethernet Port
<vlan_list>	Select a VLAN id to configure
detailed	DHCP server
relay	DHCP relay agent configuration
server	DHCP server information
snooping	DHCP snooping
vlan	VLAN interface
binding	DHCP address bindings
declined-ip	Declined IP address
statistics	DHCP server statistics
<ipv4_ucast>	IP address in dotted-decimal notation
state	State of binding
type	Type of binding
<ipv4_addr>	IP address
server	HTTP web server
secure	Secure
status	Status
snooping	Snooping IGMP
detail	Detail running information/statistics of IGMP snooping
group-database	Multicast group database from IGMP
mrouter	Multicast router port status in IGMP
vlan	Search by VLAN
brief	Brief IP interface status
interface	show Link-Local address binding interface
binding	IP source binding
dhcp-snooping	learn from DHCP snooping
interface	IP source binding interface configuration
static	setting from static entries
key	ssh key
system	system statistics
interface	IP verify source interface configuration
<port_type_list>	Port list for all port types

Example:

```
SM48TAT4XA-RP# show ip acd
SM48TAT4XA-RP#
SM48TAT4XA-RP# show ip arp
169.254.7.49 via VLAN1:00-09-18-4e-20-e9
169.254.11.169 via VLAN1:00-16-6c-d4-dd-c2
169.254.17.188 via VLAN1:00-18-85-17-5b-23
169.254.48.195 via VLAN1:00-18-85-17-5b-23
```

```
169.254.103.34 via VLAN1:00-18-85-17-5b-23
169.254.124.70 via VLAN1:ac-cc-8e-ad-f8-2a
192.168.1.99 via VLAN1:00-1b-11-b2-6d-4b
192.168.1.100 via VLAN1:00-09-18-4e-20-e9
239.255.255.250 via VLAN1:01-00-5e-7f-ff-fa
255.255.255.255 via VLAN1:ff-ff-ff-ff-ff-ff
SM48TAT4XA-RP# show ip dhcp server statistics

Database Counters
=========================
  POOL                 0
  Excluded IP           0
  Declined IP           0
=========================

Binding Counters
=========================
  Automatic             0
  Manual                0
  Expired               0
=========================

Message Received Counters
=========================
  DISCOVER              0
  REQUEST               0
  DECLINE               0
  RELEASE               0
  INFORM                0
-- more --, next page: Space, continue: g, quit: ^C
SM48TAT4XA-RP# show ip domain

Current domain name is not configured.
SM48TAT4XA-RP# show ip http server secure status
Switch HTTP web server port is 80
Switch secure HTTP web server port is 443
Switch secure HTTP web server is disabled
Switch secure HTTP web redirection is disabled
Switch secure HTTP certificate is presented
SM48TAT4XA-RP# show ip interface
Interface  Address             Method   Status
---------- -------------------- -------- ------
VLAN 1     192.168.1.77/24      Manual   UP
SM48TAT4XA-RP# show ip link-local interface
Link-Local Address binding interface: 1
SM48TAT4XA-RP# show ip name-server

Configured DNS server 1 is set by NONE:
No address is used for DNS lookup.
Configured DNS server 2 is set by NONE:
No address is used for DNS lookup.
Configured DNS server 3 is set by NONE:
No address is used for DNS lookup.
Configured DNS server 4 is set by NONE:
No address is used for DNS lookup.
SM48TAT4XA-RP# show ip route
Codes: C - connected, S - static, O - OSPF,
```

```
      * - selected route, D - DHCP installed route


S* 0.0.0.0/0 [1/0] via 192.168.1.254, VLAN 1
C* 169.254.0.0/16 is directly connected, VLAN 1
C* 192.168.1.0/24 is directly connected, VLAN 1

SM48TAT4XA-RP# show ip source binding static
SM48TAT4XA-RP# show ip ssh
Switch SSH is enabled
Switch scp is disabled
SM48TAT4XA-RP# show ip ssh key
W ssh 04:01:25 135/process-daemon.cxx#235: Warning: ssh_showkey-256 STDOUT>
Public key portion is:
 521 ecdsa-sha2-nistp521 AAAAE2VjZHNhLXNoYTItbmlzdHA1MjEAAAAIbmlzdHA1MjEAAACFBAA
wrSaxIuscmTmooRk/Ka0tJTBYBb3LOb9hsYurBg5pN6QYZZb1xvpVTT8QJQip795EBQQlY8Qerhh/NL1
vAHrIwgF65Ccr00Aw6ihdJ0TviKLPT/muoypBw/ly0PAksoxpt1A0aV2ZUTng6XksPX5wy6zInscBtMG
1ZyOMZzh0KUj9CQ==
Fingerprint: md5 02:61:ee:4a:e2:84:df:21:14:55:0b:bf:2f:34:d4:86

SM48TAT4XA-RP# show ip telnet
Switch Telnet server is enabled
Switch Telnet server port is 23

SM48TAT4XA-RP# show ip verify source interface *

Port                    Port Mode    Dynamic Entry Limit
----                    ---------    -------------------
GigabitEthernet 1/1      disabled     unlimited
GigabitEthernet 1/2      disabled     unlimited
GigabitEthernet 1/3      disabled     unlimited
GigabitEthernet 1/4      disabled     unlimited
GigabitEthernet 1/5      disabled     unlimited
GigabitEthernet 1/6      disabled     unlimited
GigabitEthernet 1/7      disabled     unlimited
GigabitEthernet 1/8      disabled     unlimited
GigabitEthernet 1/9      disabled     unlimited
-- more --, next page: Space, continue: g, quit: ^C


Port                    Port Mode    Dynamic Entry Limit
----                    ---------    -------------------
10GigabitEthernet 1/1    disabled     unlimited
10GigabitEthernet 1/2    disabled     unlimited
10GigabitEthernet 1/3    disabled     unlimited
10GigabitEthernet 1/4    disabled     unlimited
SM48TAT4XA-RP#
SM48TAT4XA-RP#
```

Command: **ipmc**

Description: Display IPv4/IPv6 multicast configuration. IPMC (IP MultiCast) supports IPv4 and IPv6 multicasting. An IPMC Profile is used to deploy the access control on IP multicast streams.

Mode: Exec mode.

Syntax: **show** ipmc profile [<profile_name>] [detail]
show ipmc range [<entry_name>]

Parameters:

profile	IPMC profile configuration
range	A range of IPv4/IPv6 multicast addresses for the profile
<word16>	Profile name in 16 characters
detail	Detail information of a profile
|	Output modifiers
<word16>	Range entry name in 16 characters
<cr>	

Example:

```
SM48TAT4XA-RP# show ipmc profile detail

IPMC Profile is currently disabled, please enable profile to start filtering.
SM48TAT4XA-RP# show ipmc profile detail

IPMC Profile is now enabled to start filtering.

Profile: One (In VER-INI Mode)
Description: First MC FP Cfg

IGMP will deny matched address between [224.0.0.0 <-> 239.255.255.255]
MLD will deny matched address between [ff00:: <-> ffff:ffff:ffff:ffff:ffff:ffff:
ffff:ffff]
SM48TAT4XA-RP#
```

Command: **ipv6**

Description: Display IPv6 configuration commands.

Mode: Exec mode.

Syntax:
show ipv6 dhcp-client [interface vlan <v_vlan_list>]
show ipv6 interface [brief]
show ipv6 mld snooping [vlan <v_vlan_list>] [group-database [interface (<port_type> [<v_port_type_list>])] [sfm-information]] [detail]
show ipv6 mld snooping mrouter [detail]
show ipv6 neighbor
show ipv6 route
show ipv6 statistics [system] [interface vlan <vlan_list>]

Parameters:

dhcp-client	Manage DHCPv6 client service
interface	Select an interface to configure
mld	Multicast Listener Discovery
neighbor	IPv6 neighbors
route	IPv6 routes
statistics	Traffic statistics
interface	Select an interface to configure
brief	Brief summary of IPv6 status and configuration
snooping	Snooping MLD
detail	Detail running information/statistics of MLD snooping
group-database	Multicast group database from MLD
mrouter	Multicast router port status in MLD
vlan	Search by VLAN

Example:

```
SM48TAT4XA-RP# show ipv6 interface brief
Interface  Address                                  Status
---------- ----------------------------------------- ------
VLAN 1     fe80:0000:0000:0000:02c0:f2ff:fe7c:552a/64  UP
SM48TAT4XA-RP#
SM48TAT4XA-RP# show ipv6 mld snooping

MLD Snooping is disabled to stop snooping MLD control plane.
SM48TAT4XA-RP# show ipv6 mld snooping

MLD Snooping is enabled to start snooping MLD control plane.

Switch-1 MLD Interface Status

MLD snooping VLAN 1 interface is enabled.
Querier status is ACTIVE
RX MLD Query:0 V1Report:0 V2Report:1 V1Done:0
TX MLD Query:1 / (Source) Specific Query:0
Compatibility:MLD-Auto / Querier Version:Default / Host Version:Version 2
SM48TAT4XA-RP#

SM48TAT4XA-RP# show ipv6 statistics
IPv6 system statistics:
Rx Packets:                          1   Tx Packets:   35
Rx Octets:                          76   Tx Octets: 2048
```

```
Rx Unicast:                          0   Tx Unicast:    0
Rx Multicast:                        1   Tx Multicast:   35
Rx Broadcast:                        0   Tx Broadcast:    0
Rx Discards:                         0   Tx Discards:    0
Rx ReasmOKs:                         0   Tx FragOKs:    0
Rx ReasmReqds:                       0   Tx FragCreates:    0
Rx ReasmFails:                       0   Tx FragFails:    0
Rx Delivers:                         0
Rx HdrErrors:                        0
Rx AddrErrors:                       0
-- more --, next page: Space, continue: g, quit: ^C
```

Command: **lacp**

Description: Display LACP configuration/status.

Mode: Exec mode.

Syntax: **show** lacp { internal | statistics | system-id | neighbor } [details]

Parameters:

internal	Internal LACP configuration
neighbor	Neighbor LACP status
statistics	Internal LACP statistics
system-id	LACP system id
details	LACP state

Example:

```
SM48TAT4XA-RP# show lacp system-id
System ID: 32768 - 00:c0:f2:7c:55:2a
SM48TAT4XA-RP#
SM24TAT4XB# show lacp internal details
Port       State     Key   Priority  Activit  Timeout  Aggrege  Synchro  Collec
t  Distrib  Default  Expired
---------  --------  ----  --------  -------  -------  -------  -------  ------
Gi 1/2     Down      4     32768     Active   Fast     Yes      Yes      No
   No      Yes      No
Gi 1/3     Down      4     32768     Active   Fast     Yes      Yes      No
   No      Yes      No
Gi 1/4     Down      9     32768     Passive  Fast     Yes      Yes      No
   No      Yes      No
Gi 1/5     Down      5     32768     Active   Slow     Yes      Yes      No
   No      Yes      No
Gi 1/6     Down      1     32768     Active   Fast     Yes      Yes      No
   No      Yes      No
SM24TAT4XB# show lacp statistics details
Port       Activit  Timeout  Aggrege  Synchro  Collect  Distrib  Default  Expir
edRx Frames   Tx Frames   Rx Unknown  Rx Illegal
---------  -------  -------  -------  -------  -------  -------  -------  -----
-----------  ----------  ----------  ----------
Gi 1/2     0          9          0          0
Gi 1/3     0          0          0          0
Gi 1/4     0          0          0          0
Gi 1/5     0          9          0          0
Gi 1/6     0          0          0          0
SM24TAT4XB# show lacp system-id details
System ID: 32768 - 00:c0:f2:49:3e:0a
SM24TAT4XB#
```

Command: **licenses**

Description: Display license information.

Mode: Exec mode.

Syntax: **show** licenses [mtd <mtd_name>] [section <section_id>] [component <component_id>] [description]

Parameters:

|	Output modifiers
component	Component key word - Select a specific component to show
description	Description keyword - Shows the licenses description, else only an overview is shown.
mtd	MTD keyword - Select a specific MTD (file) to show
section	Section key word - Select a specific section to show
<word>	Name of MTD (file) to show
<uint>	Section ID to show

Example:

```
SM48TAT4XA-RP# show licenses
Image Name   SectionID    ComponentID  Component Name           Version
          Type                    Url
-----------  -----------  -----------  ------------------------  ---------------
---------  ------------------------  ---------------------------------------
RedBoot      No licenses found
linux        0           0            libstdc++                6.3.0
          GPLv3 (with exception)    http://ftpmirror.gnu.org/gcc/gcc-6.3.0/gcc-
6.3.0.tar.bz2
linux        0           1            uclibc                   1.0.22
          LGPLv2.1+                http://downloads.uclibc-ng.org/releases/1.0
.22/uClibc-ng-1.0.22.tar.xz
linux        0           2            linux-headers             4.9.13
          GPLv2                    https://cdn.kernel.org/pub/linux/kernel/v4.
x/linux-4.9.13.tar.xz
linux        0           3            mscc-linux               835a2802137cfe9
55a2fa48a9e67cb111058021a GPLv2

linux        0           4            mbedtls                  2.4.0
          Apache-2.0               https://tls.mbed.org/code/releases/mbedtls-
2.4.0-apache.tgz
-- more --, next page: Space, continue: g, quit: ^C
SM24TAT4XB# show licenses component 22
Image Name   SectionID    ComponentID  Component Name           Version
          Type                    Url
-----------  -----------  -----------  ------------------------  ---------------
---------  ------------------------  ---------------------------------------
RedBoot      No licenses found
linux        1           22           lzo                      2.09
          GPLv2+                   http://www.oberhumer.com/opensource/lzo/dow
nload/lzo-2.09.tar.gz
linux.bk     1           22           lzo                      2.09
          GPLv2+                   http://www.oberhumer.com/opensource/lzo/dow
nload/lzo-2.09.tar.gz
SM24TAT4XB#
```

Messages: *mdt named:bob doesn't exists*

Command: **line**

Description: Display TTY line information.

Mode: Exec mode.

Syntax: **show** line [alive]

Parameters:

|	Output modifiers
alive	Display information about alive lines
<cr>	

Example:

```
SM48TAT4XA-RP# show line alive
Line is vty 0.
---------------
    * You are at this line now.
    Alive from Telnet.
    Default privileged level is 2.
    Command line editing is disabled
    Display EXEC banner is enabled.
    Display Day banner is enabled.
    Terminal width is 80.
            length is 24.
            history size is 32.
            exec-timeout is 1440 min 0 second.

    Current session privilege is 15.
    Elapsed time is 0 day 21 hour 2 min 1 sec.
    Idle time is 0 day 0 hour 0 min 0 sec.

SM48TAT4XA-RP#
```

Command: **link-oam**

Description: Display Link OAM configuration.

Mode: Exec mode.

Syntax: **show** link-oam { [status] [link-monitor] [statistics] } [interface (<port_type> [<plist>])]

Parameters:

|	Output modifiers
interface	Interface status and configuration
link-monitor	Display link-monitor status parameters
statistics	Display statistics parameters
status	Display local and remote node status parameters
<port_type_list>	Port list for all port types
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
10GigabitEthernet	10 Gigabit Ethernet Port
<cr>	

Example:

```
SM48TAT4XA-RP# show link-oam link-monitor

GigabitEthernet 1/1
----------------------------------------
Sequence number :                          0

Local Symbol Period Status
--------------------------
Symbol period error event Timestamp:          0
Symbol period error event window:             0
Symbol period error event threshold:          0
Symbol period errors:                        0
Total symbol period errors:                   0
Total symbol period error events:             0


Remote Symbol Period Status
---------------------------
Symbol period error event Timestamp:          0
Symbol period error event window:             0
Symbol period error event threshold:          0
Symbol period errors:                        0
Total symbol period errors:                   0
-- more --, next page: Space, continue: g, quit: ^C

SM24TAT4XB# show link-oam interface 10GigabitEthernet 1/4

    Interface            Control    Mode       Status
--------------------     ---------  -------   -----------
10GigabitEthernet  1/4    disabled  passive   non operational

SM24TAT4XB# show link-oam status

GigabitEthernet 1/1
----------------------------------------
Admin state:                         Disabled
PDU permission:                      Receive only
```

```
Discovery state:                    Fault state
Remote MAC Address:                  -

                                 Local client         Remote Client
                                 -------------        --------------

port status:                      non operational        -------
Mode:                            passive                -------
Unidirectional operation support:   disabled               -------
Remote loopback support:          disabled                -------
Link monitoring support:          enabled                 -------
MIB retrieval support:            disabled                -------
MTU Size:                        1500                    -------
Multiplexer state:                Forwarding              -------
Parser state:                     Forwarding              -------
OUI:                             00-c0-f2                -------
PDU revision:                       0                    -------
-- more --, next page: Space, continue: g, quit: ^C

SM24TAT4XB# show link-oam status

GigabitEthernet 1/1
----------------------------------------
Admin state:                        Disabled
PDU permission:                     Receive only
Discovery state:                    Fault state
Remote MAC Address:                  -

                                 Local client         Remote Client
                                 -------------        --------------

port status:                      non operational        -------
Mode:                            passive                -------
Unidirectional operation support:   disabled               -------
Remote loopback support:          disabled                -------
Link monitoring support:          enabled                 -------
MIB retrieval support:            enabled                 -------
MTU Size:                        1500                    -------
Multiplexer state:                Forwarding              -------
Parser state:                     Forwarding              -------
OUI:                             00-c0-f2                -------
PDU revision:                       0                    -------
-- more --, next page: Space, continue: g, quit: ^C
```

Command: **lldp**

Description: Display Link Layer Discover Protocol information.

Mode: Exec mode.

Syntax:
show lldp eee [interface (<port_type> [<v_port_type_list>])]
show lldp med media-vlan-policy [<v_0_to_31>]
show lldp med remote-device [interface (<port_type> [<port_list>])]
show lldp neighbors [interface (<port_type> [<v_port_type_list>])]
show lldp preempt [interface (<port_type> [<v_port_type_list>])]
show lldp statistics [interface (<port_type> [<v_port_type_list>])]

Parameters:

eee	Display LLDP local and neighbor EEE information.
med	Display LLDP-MED neighbors information.
neighbors	Display LLDP neighbors information.
preempt	Display LLDP local and neighbor Preempt information.
statistics	Display LLDP statistics information.
|	Output modifiers
interface	Interface to display.
media-vlan-policy	Display media VLAN policies.
remote-device	Display remote device LLDP-MED neighbors information.
<0~31>	List of policies.
interface	
<cr>	

Example:

```
SM48TAT4XA-RP# show lldp neighbors
Local Interface     : GigabitEthernet 1/9
Chassis ID          : AC-CC-8E-AD-F8-2A
Port ID             : AC-CC-8E-AD-F8-2A
Port Description    : eth0
System Name         : axis-accc8eadf82a
System Description  : AXIS M3106-LVE Mk II Network Camera 8.30.1.1
System Capabilities : Bridge(-), WLAN Access Point(-), Router(-), Station Only(+
)
Management Address  : 192.168.0.90 (IPv4)
PoE Type            :
PoE Source          :
PoE Power           :
PoE Priority        :

SM48TAT4XA-RP# show lldp preempt
Local Interface     : GigabitEthernet 1/9

SM48TAT4XA-RP# show lldp statistics
LLDP global counters
Neighbor entries was last changed at 2019-10-28T01:17:05+00:00  (72094 secs. ago).
Total Neighbors Entries Added    1.
Total Neighbors Entries Deleted  0.
Total Neighbors Entries Dropped  0.
Total Neighbors Entries Aged Out 0.

LLDP local counters
                      Rx         Tx         Rx         Rx         Rx TLV
    Rx TLV      Rx TLV
```

```
Interface              Frames      Frames      Errors      Discards    Errors
    Unknown     Organiz.    Aged
---------              ------      ------      ------      --------    ------
    -------     --------    ----
GigabitEthernet 1/1     0          3803       0          0          0
    0          0          0
GigabitEthernet 1/2     0          3798       0          0          0
    0          0          0
GigabitEthernet 1/3     0          3798       0          0          0
    0          0          0
-- more --, next page: Space, continue: g, quit: ^C

SM48TAT4XA-RP# show lldp med media-vlan-policy
Policy Id  Application Type         Tag     Vlan ID  L2 Priority  DSCP
0         Streaming Video          Tagged   1       0           0
SM48TAT4XA-RP# show lldp med remote-device
No LLDP-MED entries found
SM48TAT4XA-RP#
```

Command: **logging**

Description: Display System logging messages.

Mode: Exec mode.

Syntax:
show logging <log_id> [switch <switch_list>]
show logging [info] [warning] [error] [emerg] [alert] [crit] [notice] [debug] [switch <switch_list>]

Parameters:		
	<1-4294967295>	Logging ID
	|	Output modifiers
	alert	Severity 1: Action must be taken immediately
	crit	Severity 2: Critical conditions
	debug	Severity 7: Debug-level messages
	emerg	Severity 0: System is unusable
	error	Severity 3: Error conditions
	info	Severity 6: Informational messages
	notice	Severity 5: Normal but significant condition
	warning	Severity 4: Warning conditions
	<cr>	

Example:

```
SM48TAT4XA-RP# show logging 100
Switch : 1
ID     : 100
Level  : Information
Time   : 2019-10-28T02:24:16+00:00
Message:
Message:
SM48TAT4XA-RP# show logging
Switch logging host mode is disabled
Switch logging host address is null
Switch logging host port is 514
Number of entries on Switch 1:
Emergency    : 0
```

```
Alert       : 0
Critical    : 0
Error       : 0
Warning     : 111
Notice      : 0
Information  : 131
Debug       : 0
All         : 242

ID    Level   Time                      Message

----  ----------- -------------------------  ----------------------------------------
   1  Warning    2016-01-01T00:01:35+00:00  SFP module inserted on port 49
Connector Type: SFP or SFP Plus - LC
Fiber Type    : Reserved
Tx Wavelength : 1550
-- more --, next page: Space, continue: g, quit: ^C
```

Command: **loop-protect**

Description: Display Loop protection configuration

Mode: Exec mode.

Syntax: **show** loop-protect [interface (<port_type> [<plist>])]

Parameters:

interface	Interface status and configuration
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
10GigabitEthernet	10 Gigabit Ethernet Port

Example:

```
SM48TAT4XA-RP# show loop-protect interface *

Loop Protection Configuration
=====================================
Loop Protection   : Disable
Transmission Time : 5 sec
Shutdown Time     : 180 sec

GigabitEthernet 1/1
------------------------------
    Loop protect mode is enabled.
    Action is shutdown.
    Transmit mode is enabled.
    No loop.
    The number of loops is 0.
    Status is up.

GigabitEthernet 1/2
------------------------------
    Loop protect mode is enabled.
    Action is shutdown.
    Transmit mode is enabled.
    No loop.
-- more --, next page: Space, continue: g, quit: ^C
```

Command: **mac**

Description: Display Mac Address Table information.

Mode: Exec mode.

Syntax:
show mac address-table [conf | static | aging-time | { { learning | count } [interface (<port_type> [<v_port_type_list>]) | vlan <v_vlan_id_2>] } | { address <v_mac_addr> [vlan <v_vlan_id>] } | vlan <v_vlan_id_1> | interface (<port_type> [<v_port_type_list_1>])]

Parameters:		
	|	Output modifiers
	address	VLAN IDs 1-4095
	aging-time	Aging time
	conf	User added static mac addresses
	count	Total number of mac addresses
	interface	Addresses in this VLAN
	learning	Learn/disable/secure state
	static	All static mac addresses
	vlan	VLAN IDs 1-4094
	<mac_addr>	MAC address lookup
	interface	Select an interface to configure
	vlan	VLAN lookup
	*	All switches or All ports
	GigabitEthernet	1 Gigabit Ethernet Port
	10GigabitEthernet	10 Gigabit Ethernet Port
	<vlan_id>	VLAN IDs 1-4094
	<cr>	

Example:

```
SM48TAT4XA-RP# show mac address-table
Type    VID  MAC Address       Ports
Dynamic 1    00:09:18:4e:20:e9 GigabitEthernet 1/4
Dynamic 1    00:16:6c:d4:dd:c2 GigabitEthernet 1/8
Dynamic 1    00:18:85:17:5b:23 GigabitEthernet 1/7
Dynamic 1    00:1b:11:b2:6d:4b GigabitEthernet 1/1-2
Static  1    01:00:0c:cc:cc:cc  CPU
Static  1    01:00:5e:00:00:fb GigabitEthernet 1/1-5,9
Static  1    01:00:5e:75:f8:2a GigabitEthernet 1/1-5,9
Static  1    33:33:00:00:00:01 GigabitEthernet 1/1-48 10GigabitEthernet 1/1-4 CPU
Static  1    33:33:ff:7c:55:2a GigabitEthernet 1/1-48 10GigabitEthernet 1/1-4 CPU
Static  1    33:33:ff:d4:dd:c2 GigabitEthernet 1/1-4,8
Dynamic 1    ac:cc:8e:ad:f8:2a GigabitEthernet 1/9
Dynamic 1    e0:55:3d:84:a8:96 GigabitEthernet 1/3
Static  1    ff:ff:ff:ff:ff:ff GigabitEthernet 1/1-48 10GigabitEthernet 1/1-4 CPU
SM48TAT4XA-RP# show mac address-table learn  vlan 100
Vlan 100 learning is enabled
SM48TAT4XA-RP#
```

Command: **map-api-key**

Description: Show Google Map Key configuration. You need a valid API key and a Google Cloud Platform billing account to access Google core product. If not, DMS Map View will not be able to load Google Map correctly. Go to the Google website below and follow the directions to get API key: https://developers.google.com/maps/documentation/directions/get-api-key

Mode: Exec mode.

Syntax: **show** map-api-key

Parameters: | Output modifiers
<cr>

Example:

```
SM48TAT4XA-RP# show map-api-key
Key    :
SM48TAT4XA-RP#
```

Command: **mep**

Description: Display Maintenance Entity Point

Mode: Exec mode.

Syntax: **show** mep [<inst>] [peer | cc | lm | dm | lt | lb | tst | aps | client | ais | lck | pm | syslog | tlv | bfd | rt | lst | lm-avail] [lm-hli] [detail]

Parameters:

<range_list>	The range of MEP instances
ais	Show AIS state
aps	Show APS state
cc	Show CC state
client	Show Client state
detail	Show detailed state including configuration information.
dm	Show DM state
lb	Show LB state
lck	Show LCK state
lm	Show LM state
lm-avail	show Availability state
lm-hli	show LM HLI state
lst	show LST state
lt	Show LT state
peer	Show peer MEP state
pm	Show PM state
syslog	Show Syslog state
tlv	show TLV state
tst	Show TST state

Example:

```
SM48TAT4XA-RP# show mep

Oper = 'Up' ->     The instance is UP meaning it is physically configured and operational
Oper = 'Down' ->   The instance is DOWN meaning it is NOT physically configured and operational
Oper = 'Config' -> The instance is DOWN due to invalid configuration
Oper = 'HW' ->     The instance is DOWN due to failing OAM supporting HW resources
Oper = 'MCE' ->    The instance is DOWN due to failing MCE resources

MEP state is:
  Inst    Oper  cLevel  cMeg  cMep  cAis  cLck cLoop cConf  cDeg  cSsf  aBlk  aTsd  aTsf  Peer MEP  cLoc
cRdi cPeriod cPrio
     1      Up   False False False False False False False False False False False False

SM48TAT4XA-RP# show mep detail ais

MEP AIS Configuration is:
    Inst       Rate     Protection

SM48TAT4XA-RP# show mep detail cc

MEP CC Configuration is:
    Inst     Prio       Rate  Tlv

SM48TAT4XA-RP# show mep tst
MEP TST state is:
    Inst     TX frame count     RX frame count     RX rate     Test time
       1                 0                  0           0             0

SM48TAT4XA-RP#
```

Messages:
E mep 21:53:37 143/apply_line_aps_config#1991: Error: Could not delete EPS VLAN 0
E mep 21:53:37 143/vtss_mep_run_line_aps_config#2001: Error: Could not set aps config for instance 0

Command: **monitor**

Description: Display Monitoring different system events.

Mode: Exec mode.

Syntax: **show** monitor [session { <session_number> | all }]

Parameters:

	session	MIRROR session
	<1-5>	MIRROR session number
	all	Show all MIRROR sessions
	<cr>	

Example:

```
SM48TAT4XA-RP# show monitor session 1

Session 1
---------
Mode                    : Disabled
Type                    : Mirror
Source VLAN(s)           :
CPU Port                :
SM48TAT4XA-RP#

SM24TAT4XB# show monitor session all

Session 1
---------
Mode                    : Disabled
Type                    : Mirror
Source VLAN(s)           :
CPU Port                :

Session 2
---------
Mode                    : Disabled
Type                    : Mirror
Source VLAN(s)           :
CPU Port                :

Session 3
---------
Mode                    : Disabled
Type                    : Mirror
Source VLAN(s)           :
CPU Port                :

-- more --, next page: Space, continue: g, quit: ^C
```

Command: **mrp**

Description: Display MRP status. Multiple Registration Protocol is a generic registration framework that defines the dynamic registration and de-registration of attributes across a Bridged Local Area Network. Such attributes could be for example VLAN identifiers or multicast group MAC addresses. The standard was originally defined by IEEE 802.1ak, and its latest incorporation is in IEEE 802.1Q-2014.

Mode: Exec mode.

Syntax: **show** mrp status [interface (<port_type> [<plist>])] [all | mvrp]

Parameters:

status	Show a collection of MRP statistics for each interface.
all	Show MRP statistics for all MRP Applications.
interface	Interface specification.
mvrp	Show MRP statistics for the MVRP Application.
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
10GigabitEthernet	10 Gigabit Ethernet Port
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-24
<port_type_list>	Port list in 1/1-4
<cr>	

Example:

```
SM48TAT4XA-RP#  show mrp status mvrp interface * 1/2-5
GigabitEthernet 1/2 :
---------------------
MRP Appl  FailedRegistrations  LastPduOrigin
--------  -------------------  -------------
MVRP      0                    00-00-00-00-00-00

GigabitEthernet 1/3 :
---------------------
MRP Appl  FailedRegistrations  LastPduOrigin
--------  -------------------  -------------
MVRP      0                    00-00-00-00-00-00

GigabitEthernet 1/4 :
---------------------
MRP Appl  FailedRegistrations  LastPduOrigin
--------  -------------------  -------------
MVRP      0                    00-00-00-00-00-00

GigabitEthernet 1/5 :
---------------------
MRP Appl  FailedRegistrations  LastPduOrigin
--------  -------------------  -------------
-- more --, next page: Space, continue: g, quit: ^C
```

Command: **mvr**

Description: Display Multicast VLAN Registration configuration. Multicast VLAN Registration (MVR) is a protocol for Layer 2 (IP)-networks that enables multicast-traffic from a source VLAN to be shared with subscriber-VLANs. The main reason for using MVR is to save bandwidth by preventing duplicate multicast streams being sent in the core network, instead the stream(s) are received on the MVR-VLAN and forwarded to the VLANs where hosts have requested it/them (Wikipedia).

Mode: Exec mode.

Syntax: **show** mvr [vlan <v_vlan_list> | name <mvr_name>] [group-database [interface (<port_type> [<v_port_type_list>])] [sfm-information]] [detail]

Parameters:

|	Output modifiers
detail	Detail information/statistics of MVR group database
group-database	Multicast group database from MVR
name	Search by MVR name
vlan	Search by VLAN
interface	Search by port
sfm-information	Including source filter multicast information from MVR
<word16>	MVR multicast VLAN name
<vlan_list>	MVR multicast VLAN list
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
10GigabitEthernet	10 Gigabit Ethernet Port
<cr>	

Example:

```
SM48TAT4XA-RP# show mvr detail group-database

MVR is currently disabled, please enable MVR to start group registration.

MVR Group Database

Switch-1 MVR Group Count: 0
SM48TAT4XA-RP# show mvr detail group-database

MVR is now enabled to start group registration.

MVR Group Database

Switch-1 MVR Group Count: 0
SM48TAT4XA-RP#
```

Command: **non-stop-poe**

Description: Show Non-Stop PoE Status status. FW v8.50.0016 changed " non-stop poe" to "always-on-poe”.

Description: Display non-stop-poe information.

Mode: Exec mode.

Syntax: **show** non-stop-poe <cr>

Parameters: | Output modifiers
<cr>

Example:

```
SM48TAT4XA-RP# show non-stop-poe
Non-Stop-PoE Status : Disable
SM48TAT4XA-RP# con t
SM48TAT4XA-RP(config)# non-stop-poe
Non-Stop-PoE Status : Enable
SM48TAT4XA-RP(config)# exit
SM48TAT4XA-RP# show non-stop-poe
Non-Stop-PoE Status : Enable
SM48TAT4XA-RP#
```

Command: **ntp**

Description: Display Network Timing Protocol status.

Mode: Exec mode.

Syntax: **show** ntp status <cr>

Parameters: None.

Example:

```
SM48TAT4XA-RP# show ntp status
NTP Mode : disabled
Idx   Server IP host address (a.b.c.d) or a host name string
---   ------------------------------------------------------
1
2
3
4
5
SM48TAT4XA-RP#
```

Command: **platform**

Description: Display Platform configuration information.

Mode: Exec mode.

Syntax:
show platform debug
show platform phy [interface (<port_type> [<v_port_type_list>])]
show platform phy id [interface (<port_type> [<v_port_type_list>])]
show platform phy instance
show platform phy status [interface (<port_type> [<v_port_type_list>])]

Parameters:

debug	Debug command setting
phy	PHYs' information
|	Output modifiers
failover	Failover status
id	phy id
instance	PHY Instance Information
interface	
<cr>	

Example:

```
SM48TAT4XA-RP# show platform debug

Platform debug command function is denied.

SM48TAT4XA-RP# show platform phy id
Port   Channel    API Base   Phy Id     Phy Rev.
----   -------    --------   -------    ------
1      0          0 (1g)     8514       0
2      1          0 (1g)     8514       0
3      2          0 (1g)     8514       0
4      3          0 (1g)     8514       0
5      0          0 (1g)     8514       0
6      1          0 (1g)     8514       0
7      2          0 (1g)     8514       0
8      3          0 (1g)     8514       0
9      0          0 (1g)     8514       0
10     1          0 (1g)     8514       0
11     2          0 (1g)     8514       0
12     3          0 (1g)     8514       0
13     0          0 (1g)     8514       0
14     1          0 (1g)     8514       0
15     2          0 (1g)     8514       0
-- more --, next page: Space, continue: g, quit: ^C
```

Command: **poe**

Description: Display Power Over Ethernet information.

Mode: Exec mode.

Syntax:
show poe config [interface (<port_type> [<v_port_type_list>])]
show poe power-delay [interface (<port_type> [<v_port_type_list>])]
show poe profile [id <has_id>]
show poe reboot
show poe status [interface (<port_type> [<v_port_type_list>])]
show poe { auto-check | auto-power-reset } [interface (<port_type> [<v_port_type_list>])]

Parameters:

auto-power-reset	Show PoE Auto Power Reset configuration.
config	Display PoE (Power Over Ethernet) config for the switch.
power-delay	Display PoE (Power Over Ethernet) power delay for the switch.
profile	poe scheduling profile
reboot	poe reboot scheduling
status	Display PoE (Power Over Ethernet) status for the switch.
|	Output modifiers
Interface	switch port(s)
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
10GigabitEthernet	10 Gigabit Ethernet Port
<port_type_list>	Port list in 1/1-48
GigabitEthernet	1 Gigabit Ethernet Port
10GigabitEthernet	10 Gigabit Ethernet Port
<port_type_list>	Port list in 1/1-4
id	poe scheduling profile id
<1-16>	profile id from 1 to 16

Example:

```
SM48TAT4XA-RP# show poe auto-power-reset

Ping Check : Enabled

Port  Ping IP Address  Startup  Interval Retry  Failure Log      Failure Action       Reboot Max.Reboot
                       Time     Time     Time                                        Time   Times
----  ---------------  -------- -------- ----- ---------------- ---------------      ------ ------
1     192.168.1.77     30       10       3     error=0,total=24    Reboot Remote PD    10     3
2     192.168.1.99     40       25       3     error=0,total=0     Reboot Remote PD     5     2
3     192.168.1.90     50       33       3     error=0,total=0     Reboot Remote PD     9     1
4     192.168.1.100    56       29       3     error=0,total=12    Reboot Remote PD     8     1
5     0.0.0.0          60       30       3     error=0,total=0     Nothing             15    3
-- more --, next page: Space, continue: g, quit: ^C
SM48TAT4XA-RP# show poe config interface GigabitEthernet 1/2
Primary Power Supply [W]     : 820

Port  Mode      Schedule                          Priority  Max. Power [W]
----  --------  --------------------------------   --------  --------------
2     Enabled   Disable                           Critical  30.0
SM48TAT4XA-RP# show poe status
Interface              PD Class  Port Status                              Pwr
Req Pwr Alloc Power   Current  Priority
```

```
                                                                    Used
[W] Used[W]   Used[W] Used[mA]
---------------------- --------- ---------------------------------------- ----
--- --------- ------- -------- --------
GigabitEthernet 1/1     -         No PD detected                          0
    0         0.0     0       Critical
GigabitEthernet 1/2     1         PoE turned ON                           4
    4         1.8     36      Critical
GigabitEthernet 1/3     4         PoE turned ON                           30
    30        8.6     169     High
GigabitEthernet 1/4     2         PoE turned ON                           7
    7         1.8     34      High
GigabitEthernet 1/5     1         PoE turned ON                           4
    4         1.8     35      Low
GigabitEthernet 1/6     -         No PD detected                          0
    0         0.0     0       Low
GigabitEthernet 1/7     3         PoE turned ON                           15
    15        6.1     107     Low
-- more --, next page: Space, continue: g, quit: ^C

SM48TAT4XA-RP# show poe profile id 1

PoE profile: Profile 1
             Start Time   End Time
  Week Day     HH : MM     HH : MM
 ----------    -------     -------
  Monday        0  0        0  0
  Tuesday       0  0        0  0
  Wednesday     0  0        0  0
  Thursday      0  0        0  0
  Friday        0  0        0  0
  Saturday      0  0        0  0
  Sunday        0  0        0  0

SM48TAT4XA-RP# show poe config
Primary Power Supply [W]     : 820

Port  Mode      Schedule                          Priority  Max. Power [W]
----  --------  --------------------------------   --------  --------------
1     Forced    Disable                           Critical  30.0
2     Forced    Disable                           High      30.0
3     Forced    Disable                           High      30.0
4     Forced    Profile 1                         Low       30.0
5     Forced    Profile 1                         Low       30.0
6     Forced    Profile 1                         Low       30.0
7     Forced    Profile 2                         Low       30.0
8     Forced    Profile 2                         Low       30.0
9     Forced    Disable                           Low       30.0
10    Forced    Disable                           Low       30.0
-- more --, next page: Space, continue: g, quit: ^C
```

Note: If the SM24TAT4XB ‘show poe config’ command does not show ‘poe force mode’ correctly, try the steps below and check again:

```
SM24TAT4XB# reload defaults keep-ip
SM24TAT4XB# copy running-config startup-config
```

Command: **port-security**

Description: Show Port Security overview and status.

Mode: Exec mode.

Syntax: **show** port-security [interface (<port_type> [<plist>])]
show port-security address [interface (<port_type> [<plist>])]

Parameters:

|	Output modifiers
address	Show MAC Addresses learned by Port Security
interface	Port interface
<port_type_list>	Port list in 1/1-4
<port_type_list>	Port list in 1/1-48
<port_type_list>	Port list for all port types
<cr>	

Example:

```
SM48TAT4XA-RP# show port-security address
VLAN MAC Address       State      Port       Age/Hold Time
---- ----------------- ---------- ---------- -------------
   1 e0-55-3d-84-a8-96 Forwarding Gi 1/3              N/A
   1 00-09-18-4e-20-e9 Forwarding Gi 1/4              N/A
   1 00-18-85-17-5b-23 Forwarding Gi 1/7              N/A
   1 00-16-6c-d4-dd-c2 Forwarding Gi 1/8              N/A

Number of MAC addresses manageable by port-security in the system: 1024
Number of MAC addresses currently used by port-security in the system: 4

SM48TAT4XA-RP# show port-security
Users:
  P = Port Security (Admin)
  8 = 802.1X
  V = Voice VLAN

Interface  Users Limit Current Violating Violation Mode State
---------- ----- ----- ------- --------- -------------- -------------
Gi 1/2     P--       4       0         0 Protect        Ready
Gi 1/3     P--       4       1         0 Protect        Ready
Gi 1/4     P--       4       1         0 Restrict       Ready
Gi 1/5     P--       4       0         0 Protect        Ready
Gi 1/6     P--       4       0         0 Restrict       Ready
Gi 1/7     P--       4       1         0 Restrict       Ready
Gi 1/8     P--       4       1         0 Restrict       Ready

Aging time: 360 seconds
Hold time: 30 seconds

SM48TAT4XA-RP#
```

Command: **power**

Description: Display Power information (SM48TAT4XA-RP only).

Mode: Exec mode.

Syntax: **show** power management <cr>

Parameters: management

Example:

```
SM48TAT4XA-RP# show power management
Power Management
========================
Power                  : A         B
Detected PSU           : SPSU-920 None
Power Good             : Good      Fail
FAN Speed (RPM)        : 8848     0
Temperature (Degree C)  : 32       0
Operating Mode         : Redundant
SM48TAT4XA-RP#
```

Command: **privilege**

Description: Display command privilege information.

Mode: Exec mode.

Syntax: **show** privilege <cr>

Parameters: None.

Example:

```
SM48TAT4XA-RP# show privilege
SM48TAT4XA-RP#
SM48TAT4XA-RP# show privilege

 ------------------------------------------
|   The order is as the input sequence and   |
|   the last one has the highest priority.   |
 ------------------------------------------

  privilege consoleflow level 14 consoleflow

SM48TAT4XA-RP#
```

Command: **process**

Description: Display process information.

Mode: Exec mode.

Syntax: **show** process list [detail]
show process load

Parameters:

|	Output modifiers
detail	optionally show thread call stack
<cr>	

Example:

```
SM48TAT4XA-RP# show process load
2.29 2.35 2.33 1/217 262
SM48TAT4XA-RP# show process list detail
PID   USER     COMMAND
    1 root     /usr/bin/stage2-loader
    2 root     [kthreadd]
    3 root     [ksoftirqd/0]
    4 root     [kworker/0:0]
>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
   58 root     [ipv6_addrconf]
   59 root     [ubi_bgt0d]
   60 root     [ubifs_bgt0_0]
   61 root     [loop0]
   62 root     [kworker/0:1H]
   63 root     [kworker/u2:1]
   64 root     [loop1]
   65 root     [loop2]
   66 root     /bin/sh -c /usr/bin/switch_app
   67 root     /usr/bin/switch_app
  137 root     /usr/sbin/zebra -f /etc/quagga/zebra.conf -i /tmp/zebra.pid -P 0
  174 root     /usr/sbin/dropbear -r /switch//dropbear_ecdsa_host_key -p 22 -j
  219 nobody   hiawatha -d -c /tmp/hiawatha
  257 root     /bin/sh -c ps
  258 root     ps
SM48TAT4XA-RP#
```

Command: **ptp**

Description: Display Precision time Protocol (1588) information.

Mode: Exec mode.

Syntax:
show ptp <clockinst> filter-type
show ptp <clockinst> local-clock
show ptp <clockinst> slave-cfg
show ptp <clockinst> slave-table-unicast
show ptp <clockinst> virtual-port
show ptp <clockinst> { default | current | parent | time-property | filter | servo | clk | ho | uni | master-table-unicast | slave | { { port-state | port-statistics | port-ds | wireless | foreign-master-record } [interface (<port_type> [<v_port_type_list>])] } | log-mode }
show ptp cal
show ptp ext
show ptp ms-pdv all-apr-statistics cgu <cgu_id>
show ptp ms-pdv apr cgu <cgu_id>
show ptp ms-pdv cgu <cgu_id> server <server_id> status
show ptp ms-pdv cur-path-delays cgu <cgu_id>
show ptp ms-pdv path-statistics cgu <cgu_id>
show ptp ms-pdv psl-fcl-config cgu <cgu_id>
show ptp rs422
show ptp rs422 baudrate
show ptp servo mode-ref
show ptp servo source
show ptp system-time

Parameters:

<0-3>	Show various PTP data
cal	Show the PTP calibration.
ext	Show External clock output config and VCXO frequency rate adjustment option.
ms-pdv	Show the configuration of the MS-PDV.
rs422	Shows config of the alternative clock, that is connected to the RS422 connector.
Servo	Show PTP servo information.
system-time	Show the PTP <-> system time synchronization mode.
clk	Show PTP slave clock options parameters.
current	Show PTP current data set (IEEE1588 paragraph 8.2.2).
default	Show PTP default data set (IEEE1588 paragraph 8.2.1).
filter	Show PTP filter parameters.
filter-type	Show PTP filter type
foreign-master-record	Show PTP port foreign masters.
ho	Show PTP slave holdover parameters.
local-clock	Show local clock current time
log-mode	Show PTP log mode.
master-table-unicast	Show PTP master list of connected unicast slaves.
parent	Show PTP parent data set (IEEE1588 paragraph 8.2.3).
port-ds	Show PTP port data set (IEEE1588 paragraph 8.2.5).
port-state	Show PTP port state.
port-statistics	Show PTP port statistics.
servo	Show PTP servo parameters.

slave	Show PTP slave clock lock threshold parameters.
slave-cfg	Show slave lock configuration
slave-table-unicast	Show the Unicast slave table of the requested unicast masters
time-property	Show PTP time properties data set (IEEE1588 paragraph 8.2.4).
uni	Show PTP slave unicast configuration parameters.
virtual-port	Show the configuration of a PTP clocks virtual port
wireless	Show PTP port wireless parameters.
|	Output modifiers
interface	Define interface list for the 'port' show commands. Default is show all interfaces.
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
10GigabitEthernet	10 Gigabit Ethernet Port
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-48
<port_type_list>	Port list in 1/1-4
all-apr-statistics	
apr	
cgu	Show cgu id
cur-path-delays	
path-statistics	
psl-fcl-config	
baudrate	Shows baud rate that has been configured for the RS422 port
mode-ref	
source	Show servo source
<cr>	

Example:

```
SM48TAT4XA-RP# show ptp ms-pdv all-apr-statistics cgu 1
W zl_30380 23:45:46 93.603,162 246/zl_30380_apr_show_statistics#1791: Warning: ZL Error
code: 7d2
SM48TAT4XA-RP# show ptp rs422
PTP RS422 clock mode: Disable, delay : 0, Protocol: Serial (Polyt), port: 1
SM48TAT4XA-RP# show ptp rs422 baudrate
Parameters of RS422 port are: baudrate = 115200, parity = none, wordlength = 8,
stopbits = 1, flags = 00000000
SM48TAT4XA-RP# show ptp servo source
Servo current source is type NONE ref 0, DPLL_type Generic
SM48TAT4XA-RP# show ptp servo mode-ref
Servo [0] mode NONE ref -1
Servo [1] mode NONE ref -1
Servo [2] mode NONE ref -1
Servo [3] mode NONE ref -1
SM48TAT4XA-RP# show ptp system-time
System clock synch mode (No System clock to PTP Sync)
SM48TAT4XA-RP#

SM48TAT4XA-RP# show ptp 3 clk
Option  threshold  'P'constant
------  ---------  -----------
free     1000      2
SM48TAT4XA-RP# show ptp 3 current
stpRm  OffsetFromMaster    MeanPathDelay
-----  ------------------  ------------------
0      0.000,000,000       0.000,000,000
```

```
SM48TAT4XA-RP# show ptp 1 default
ClockId  HW-Domain  DeviceType  Profile     2StepFlag  Ports  vtss_appl_clock_identity
-------  ---------  ----------  ----------  ---------  -----  ------------------------
1        1          Slaveonly   g8265.1     False      52     00:c0:f2:ff:fe:7c:55:2b

Dom  vtss_appl_clock_quality        Pri1  Pri2  Lpri
---  -----------------------------  ----  ----  ----
4    Cl:255 Ac:Unknwn Va:65535      255   128   128

Protocol       One-Way    VID    PCP  DSCP  PathTraceEnable
-------------  ---------  -----  ---  ----  ---------------
IPv4Uni        False      1      0    0     False
SM48TAT4XA-RP# show ptp 1 ho
Holdover filter  Adj threshold (ppb)
---------------  -------------------
            60                30.0
SM48TAT4XA-RP# show ptp 1 servo
Display  P-enable  I-enable  D-enable  'P'constant  'I'constant  'D'constant  gain const
-------  --------  --------  --------  -----------  -----------  -----------  -----------
False    True      True      True      3            80           40           1

SM48TAT4XA-RP#
```

Command: **pvlan**

Description: Display PVLAN configuration information.

Mode: Exec mode.

Syntax: **show** pvlan [<pvlan_list>]
show pvlan isolation [interface (<port_type> [<plist>])]

Parameters:

<range_list>	PVLAN ID to show configuration for
isolation	show isolation configuration
interface	List of port type and port ID, ex, Fast 1/1 Gigabit 2/3-5 Gigabit 3/2-4 10 Gigabit 4/6

Example:

```
SM48TAT4XA-RP# show pvlan 1
PVLAN ID  Ports
--------  --------------------------------------------------------------------------------
1         GigabitEthernet 1/1, GigabitEthernet 1/2, GigabitEthernet 1/3,
          GigabitEthernet 1/4, GigabitEthernet 1/5, GigabitEthernet 1/6,
          GigabitEthernet 1/7, GigabitEthernet 1/8, GigabitEthernet 1/9,
          GigabitEthernet 1/10, GigabitEthernet 1/11, GigabitEthernet 1/12,
          GigabitEthernet 1/13, GigabitEthernet 1/14, GigabitEthernet 1/15,
          GigabitEthernet 1/16, GigabitEthernet 1/17, GigabitEthernet 1/18,
          GigabitEthernet 1/19, GigabitEthernet 1/20, GigabitEthernet 1/21,
          GigabitEthernet 1/22, GigabitEthernet 1/23, GigabitEthernet 1/24,
          GigabitEthernet 1/25, GigabitEthernet 1/26, GigabitEthernet 1/27,
          GigabitEthernet 1/28, GigabitEthernet 1/29, GigabitEthernet 1/30,
          GigabitEthernet 1/31, GigabitEthernet 1/32, GigabitEthernet 1/33,
          GigabitEthernet 1/34, GigabitEthernet 1/35, GigabitEthernet 1/36,
          GigabitEthernet 1/37, GigabitEthernet 1/38, GigabitEthernet 1/39,
          GigabitEthernet 1/40, GigabitEthernet 1/41, GigabitEthernet 1/42,
          GigabitEthernet 1/43, GigabitEthernet 1/44, GigabitEthernet 1/45,
          GigabitEthernet 1/46, GigabitEthernet 1/47, GigabitEthernet 1/48,
          10GigabitEthernet 1/1, 10GigabitEthernet 1/2, 10GigabitEthernet 1/3,
          10GigabitEthernet 1/4
SM48TAT4XA-RP# show pvlan isolation ?
    interface    List of port type and port ID, ex, Fast 1/1 Gigabit 2/3-5
                 Gigabit 3/2-4 10 Gigabit 4/6
    <cr>
SM48TAT4XA-RP# show pvlan isolation
Port                            Isolation
-------------------------------  ---------
GigabitEthernet 1/1              Disabled
GigabitEthernet 1/2              Disabled
GigabitEthernet 1/3              Disabled
GigabitEthernet 1/4              Disabled
GigabitEthernet 1/5              Disabled
GigabitEthernet 1/6              Disabled
GigabitEthernet 1/7              Disabled
GigabitEthernet 1/8              Disabled
GigabitEthernet 1/9              Disabled
GigabitEthernet 1/10             Disabled
GigabitEthernet 1/11             Disabled
GigabitEthernet 1/12             Disabled
GigabitEthernet 1/13             Disabled
GigabitEthernet 1/14             Disabled
GigabitEthernet 1/15             Disabled
```

```
GigabitEthernet 1/16            Disabled
GigabitEthernet 1/17            Disabled
GigabitEthernet 1/18            Disabled
GigabitEthernet 1/19            Disabled
GigabitEthernet 1/20            Disabled
-- more --, next page: Space, continue: g, quit: ^C
```

Command: **qos**

Description: Display Quality of Service information.

Mode: Exec mode.

Syntax:

show qos [{ interface [(<port_type> [<port>])] } | wred | { maps [dscp-cos] [dscp-ingress-translation] [dscp-classify] [cos-dscp] [dscp-egress-translation] [{ ingress [<ing_id>] }] [{ egress [<egr_id>] }] } | storm | { qce [<qce>] }]

show qos frame-preemption status [interface (<port_type> [<port>])]

Parameters:		
	interface	Interface
	maps	QoS Maps/Tables
	qce	QoS Control Entry
	storm	Storm policer
	wred	Weighted Random Early Discard
	<port_type_list>	Port list for all port types
	<port_type_list>	Port list in 1/1-48
	cos-dscp	Map for COS to DSCP
	dscp-classify	Map for DSCP classify enable
	dscp-cos	Map for DSCP to COS
	dscp-egress-translation	Map for DSCP egress translation
	dscp-ingress-translation	Map for DSCP ingress translation
	egress	Map for egress configuration
	ingress	Map for ingress configuration

Example:

```
SM48TAT4XA-RP# show qos qce

static qce 1:
=============
 port: 1-52
 key parameters:
  dmac: any
  smac: any
  tag:
   type: any
   vid: any
   pcp: any
   dei: any
  inner tag:
   type: any
   vid: any
   pcp: any
   dei: any
  frametype: any
```

```
 action parameters:
  cos: 0
  dpl: default
  dscp: default
-- more --, next page: Space, continue: g, quit: ^C

SM48TAT4XA-RP# show qos interface GigabitEthernet 1/2
interface GigabitEthernet 1/2
 qos cos 1
 qos pcp 0
 qos dpl 0
 qos dei 0
 qos class 0
 qos trust tag enabled
 qos map tag-cos pcp 0 dei 0 cos 1 dpl 0
 qos map tag-cos pcp 0 dei 1 cos 1 dpl 1
 qos map tag-cos pcp 1 dei 0 cos 0 dpl 0
 qos map tag-cos pcp 1 dei 1 cos 0 dpl 1
 qos map tag-cos pcp 2 dei 0 cos 2 dpl 0
 qos map tag-cos pcp 2 dei 1 cos 2 dpl 1
 qos map tag-cos pcp 3 dei 0 cos 3 dpl 0
 qos map tag-cos pcp 3 dei 1 cos 3 dpl 1
 qos map tag-cos pcp 4 dei 0 cos 4 dpl 0
 qos map tag-cos pcp 4 dei 1 cos 4 dpl 1
 qos map tag-cos pcp 5 dei 0 cos 5 dpl 0
 qos map tag-cos pcp 5 dei 1 cos 5 dpl 1
 qos map tag-cos pcp 6 dei 0 cos 6 dpl 0
 qos map tag-cos pcp 6 dei 1 cos 6 dpl 1
 qos map tag-cos pcp 7 dei 0 cos 7 dpl 0
 qos map tag-cos pcp 7 dei 1 cos 7 dpl 1
 qos trust dscp disabled
 qos policer mode: enabled, rate: 500 kbps
 qos queue-policer queue 0 mode: disabled, rate: 500 kbps
 qos queue-policer queue 1 mode: disabled, rate: 500 kbps
 qos queue-policer queue 2 mode: disabled, rate: 500 kbps
 qos queue-policer queue 3 mode: disabled, rate: 500 kbps
 qos queue-policer queue 4 mode: disabled, rate: 500 kbps
 qos queue-policer queue 5 mode: disabled, rate: 500 kbps
 qos queue-policer queue 6 mode: disabled, rate: 500 kbps
 qos queue-policer queue 7 mode: disabled, rate: 500 kbps
 qos port shaper: enabled, rate: 500 kbps, mode: line-rate
 qos queue-shaper queue 0: enabled, rate: 500 kbps, mode: line-rate
 qos queue-shaper queue 1: enabled, rate: 500 kbps, mode: line-rate
 qos queue-shaper queue 2: enabled, rate: 500 kbps, mode: line-rate
 qos queue-shaper queue 3: disabled, rate: 500 kbps, mode: line-rate
 qos queue-shaper queue 4: disabled, rate: 500 kbps, mode: line-rate
 qos queue-shaper queue 5: disabled, rate: 500 kbps, mode: line-rate
 qos queue-shaper queue 6: disabled, rate: 500 kbps, mode: line-rate
 qos queue-shaper queue 7: disabled, rate: 500 kbps, mode: line-rate
 qos wrr mode: enabled, weight: q0:17(13%) q1:17(13%) q2:17(13%) q3:17(13%) q4:17(13%)
q5:17(13%) q6:17(13%) q7:17(13%)
 qos tag-remark default pcp 1 dei 0
-- more --, next page: Space, continue: g, quit: ^C

SM48TAT4XA-RP# show qos storm
qos storm:
==========
```

```
Unicast  : disabled      10 fps
Multicast: disabled      10 fps
Broadcast: disabled      10 fps
Storm detected: FALSE
SM48TAT4XA-RP#

SM48TAT4XA-RP# show qos wred
qos wred:
=========
Group  Queue  Dpl  Mode      Min Fl  Max Dp or Fl
-----  -----  ---  --------  ------  ----------------------
    1      0    1  disabled    0 %    50 % Drop Probability
    1      0    2  disabled    0 %    50 % Drop Probability
    1      0    3  disabled    0 %    50 % Drop Probability
    1      1    1  disabled    0 %    50 % Drop Probability
    1      1    2  disabled    0 %    50 % Drop Probability
    1      1    3  disabled    0 %    50 % Drop Probability
    1      2    1  disabled    0 %    50 % Drop Probability
    1      2    2  disabled    0 %    50 % Drop Probability
    1      2    3  disabled    0 %    50 % Drop Probability
    1      3    1  disabled    0 %    50 % Drop Probability
    1      3    2  disabled    0 %    50 % Drop Probability
    1      3    3  disabled    0 %    50 % Drop Probability
    1      4    1  disabled    0 %    50 % Drop Probability
    1      4    2  disabled    0 %    50 % Drop Probability
    1      4    3  disabled    0 %    50 % Drop Probability
    1      5    1  disabled    0 %    50 % Drop Probability
    1      5    2  disabled    0 %    50 % Drop Probability
    1      5    3  disabled    0 %    50 % Drop Probability
-- more --, next page: Space, continue: g, quit: ^C

SM48TAT4XA-RP# show qos maps cos-dscp
qos map cos-dscp:
=================
Cos  DSCP DP0   DSCP DP1   DSCP DP2   DSCP DP3
---  ---------  ---------  ---------  ---------
0    0  (BE)    0  (BE)    0  (BE)    0  (BE)
1    0  (BE)    0  (BE)    0  (BE)    0  (BE)
2    0  (BE)    0  (BE)    0  (BE)    0  (BE)
3    0  (BE)    0  (BE)    0  (BE)    0  (BE)
4    0  (BE)    0  (BE)    0  (BE)    0  (BE)
5    0  (BE)    0  (BE)    0  (BE)    0  (BE)
6    0  (BE)    0  (BE)    0  (BE)    0  (BE)
7    0  (BE)    0  (BE)    0  (BE)    0  (BE)

SM48TAT4XA-RP#
```

Command: **radius-server**

Description: Display RADIUS configuration information.

Mode: Exec mode.

Syntax: **show** radius-server [statistics]

Parameters:

|	Output modifiers
statistics	RADIUS statistics

Example 1:

```
SM24TAT4XB# show radius-server
Global RADIUS Server Timeout      : 5 seconds
Global RADIUS Server Retransmit   : 3 times
Global RADIUS Server Deadtime     : 0 minutes
Global RADIUS Server Key          :
Global RADIUS Server Attribute 4  :
Global RADIUS Server Attribute 95 :
Global RADIUS Server Attribute 32 :
RADIUS Server #1:
  Host name  : 192.168.1.30
  Auth port  : 1812
  Acct port  : 1813
  Timeout    : 60 seconds
  Retransmit : 350 times
  Key        : 1f6d8e15920db6546092294012732e45eba86af1ecdd4f5a85f9942bec3607d51
24865d40f79ba4d8baf9bae66e35597b6bd19898dc13d92024d0e73d34adb91
RADIUS Server #2:
  Host name  : 2.4.6.8
  Auth port  : 1812
  Acct port  : 1813
  Timeout    : 45 seconds
  Retransmit : 222 times
  Key        : d11e2eab62c1c190a9e0347c3e7d26e5bd681639d94b2e7b1d2ed338cacf78377
4f76742d8fc44d5e9bc88937838e92367c1c1802e7704f4734a3cc7695467163a4db7bf352e5afd0
3d7a897109df236
SM24TAT4XB#
```

Example 2:

```
SM48TAT4XA-RP# show radius-server
Global RADIUS Server Timeout      : 5 seconds
Global RADIUS Server Retransmit   : 3 times
Global RADIUS Server Deadtime     : 0 minutes
Global RADIUS Server Key          :
Global RADIUS Server Attribute 4  : 192.168.1.3
Global RADIUS Server Attribute 95 : 2001:db8:85a3::8a2e:370:7334
Global RADIUS Server Attribute 32 :
RADIUS Server #1:
  Host name  : 192.168.1.77
  Auth port  : 1812
  Acct port  : 1813
  Timeout    : 60 seconds
  Retransmit : 350 times
  Key        : 68c9379f1e77c63c0a0a2eebc9d38b151e9e422b40f96abbb8ddfe7276d1e5b3b
12bc28d783754ebb2618e761fc3dff5c95cddea369315de2ba524e716039e8f
RADIUS Server #2:
  Host name  : Radrvr2
```

```
  Auth port  : 1645
  Acct port  : 1646
  Timeout    : 45 seconds
  Retransmit : 222 times
  Key        : 7c17ed755300566d2310a509a6fe3675b0c4e9543df4d99a1cdbc0f1a5fbfda52
54ae37b14c44bc15ed23c91f750789a0fd7fa64c6821d374ffada202bfd4f4cb6792f86cfc8e5740
5b925f9b656f585
SM48TAT4XA-RP# show radius-server statistics
Global RADIUS Server Timeout      : 5 seconds
Global RADIUS Server Retransmit   : 3 times
Global RADIUS Server Deadtime     : 0 minutes
Global RADIUS Server Key          :
Global RADIUS Server Attribute 4  : 192.168.1.3
Global RADIUS Server Attribute 95 : 2001:db8:85a3::8a2e:370:7334
Global RADIUS Server Attribute 32 :
RADIUS Server #1:
  Host name  : 192.168.1.77
  Auth port  : 1812
  Acct port  : 1813
  Timeout    : 60 seconds
  Retransmit : 350 times
  Key        : 68c9379f1e77c63c0a0a2eebc9d38b151e9e422b40f96abbb8ddfe7276d1e5b3b
12bc28d783754ebb2618e761fc3dff5c95cddea369315de2ba524e716039e8f
RADIUS Server #2:
  Host name  : Radrvr2
  Auth port  : 1645
  Acct port  : 1646
  Timeout    : 45 seconds
  Retransmit : 222 times
  Key        : 7c17ed755300566d2310a509a6fe3675b0c4e9543df4d99a1cdbc0f1a5fbfda52
54ae37b14c44bc15ed23c91f750789a0fd7fa64c6821d374ffada202bfd4f4cb6792f86cfc8e5740
5b925f9b656f585

RADIUS Server #1 (192.168.1.77:1812) Authentication Statistics:
Rx Access Accepts:                 0   Tx Access Requests:                0
Rx Access Rejects:                 0   Tx Access Retransmissions:          0
Rx Access Challenges:              0   Tx Pending Requests:                0
Rx Malformed Acc. Responses:        0   Tx Timeouts:                       0
Rx Bad Authenticators:             0
Rx Unknown Types:                  0
Rx Packets Dropped:                0
State:                         Ready
Round-Trip Time:                   0 ms

RADIUS Server #1 (192.168.1.77:1813) Accounting Statistics:
Rx Responses:                      0   Tx Requests:                      0
Rx Malformed Responses:            0   Tx Retransmissions:                0
Rx Bad Authenticators:             0   Tx Pending Requests:               0
Rx Unknown Types:                  0   Tx Timeouts:                      0
Rx Packets Dropped:                0
State:                         Ready
Round-Trip Time:                   0 ms

RADIUS Server #2 (0.0.0.0:1645) Authentication Statistics:
Rx Access Accepts:                 0   Tx Access Requests:                0
Rx Access Rejects:                 0   Tx Access Retransmissions:          0
Rx Access Challenges:              0   Tx Pending Requests:                0
Rx Malformed Acc. Responses:        0   Tx Timeouts:                       0
Rx Bad Authenticators:             0
Rx Unknown Types:                  0
Rx Packets Dropped:                0
State:                         Ready
```

```
Round-Trip Time:                    0 ms

RADIUS Server #2 (0.0.0.0:1646) Accounting Statistics:
Rx Responses:                       0   Tx Requests:                      0
Rx Malformed Responses:              0   Tx Retransmissions:               0
Rx Bad Authenticators:               0   Tx Pending Requests:              0
Rx Unknown Types:                   0   Tx Timeouts:                      0
Rx Packets Dropped:                 0
State:                          Ready
Round-Trip Time:                    0 ms
SM48TAT4XA-RP#
```

Command: **rmon**

Description: Display RMON statistics information.

Mode: Exec mode.

Syntax: **show** rmon alarm [<id_list>]
show rmon event [<id_list>]
show rmon history [<id_list>]
show rmon statistics [<id_list>]

Parameters:		
	alarm	Display the RMON alarm table
	event	Display the RMON event table
	history	Display the RMON history table
	statistics	Display the RMON statistics table
	<1~65535>	Event entry list

Example:

```
SM48TAT4XA-RP# show rmon event

Event ID :     1
----------------
     Description     : one
     Type           : logandtrap
     LastSent        :   0d 00:00:00
SM48TAT4XA-RP#

SM48TAT4XA-RP# show rmon history

History ID :     1
------------------
    Data Source         : .1.3.6.1.2.1.2.2.1.1.1
    Data Bucket Request : 50
    Data Bucket Granted : 50
    Data Interval       : 1800

History ID :     2
------------------
    Data Source         : .1.3.6.1.2.1.2.2.1.1.2
    Data Bucket Request : 50
    Data Bucket Granted : 50
    Data Interval       : 900
SM48TAT4XA-RP#
SM24TAT4XB(config)# do show rmon alarm

Alarm ID :     1
----------------
     Interval         : 600
     Variable         : .1.3.6.1.2.1.2.2.1.14.1
     SampleType       : absoluteValue
     Value         : 0
     Startup          : risingOrFallingAlarm
     RisingThrld      : 3699
     FallingThrld     : -222222
     RisingEventIndex  : 3000
     FallingEventIndex : 0
SM24TAT4XB(config)#
```

Command: **running-config**

Description: Show running system information.

Mode: Exec mode.

Syntax: **show** running-config [all-defaults]
show running-config feature <feature_name> [all-defaults]
show running-config interface (<port_type> [<list>]) [all-defaults]
show running-config interface vlan <list> [all-defaults]
show running-config line { console | vty } <list> [all-defaults]
show running-config vlan { [<vlan_list>] } [all-defaults]

Parameters:

all-defaults	Include most/all default values
feature	Show configuration for specific feature
interface	Show specific interface or interfaces
line	Show line settings
vlan	VLAN
<cword>	Valid words are 'GVRP' 'MRP' 'MVRP' 'access' 'access-list' 'activate' 'aggregation' 'arp-inspection' 'auth' 'clock' 'dhcp' 'dhcp-snooping' 'dhcp6_client_interface' 'dhcp_server' 'dms-server' 'dns' 'dot1x' 'eps' 'erps' 'green-ethernet' 'http' 'icli' 'ip-igmp-snooping' 'ip-igmp-snooping-port' 'ip-igmp-snooping-vlan' 'ipmc-profile' 'ipmc-profile-range' 'ipv4' 'ipv6' 'ipv6-mld-snooping' 'ipv6-mld-snooping-port' 'ipv6-mld-snooping-vlan' 'json_rpc_notification' 'lacp' 'link-oam' 'lldp' 'logging' 'loop-protect' 'mac' 'mep' 'mstp' 'mvr' 'mvr-port' 'ntp' 'poe' 'port' 'port-security' 'ptp' 'pvlan' 'qos' 'rmon' 'sflow' 'smtp' 'snmp' 'source-guard' 'ssh' 'sysutil' 'trap_event' 'udld' 'upnp' 'user' 'vlan' 'voice-vlan' 'vtss-rmirror' 'web' 'web-privilege-group-level'
*	All switches or All ports
GigabitEthernet	1 Gigabit Ether net Port
10GigabitEthernet	10 Gigabit Ethernet Port
vlan	VLAN
<port_type_list>	Port list for all port types
all-defaults	Include most/all default values
<port_type_list>	Port list in 1/1-24
<port_type_list>	Port list in 1/1-4
<vlan_list>	List of VLAN numbers
console	Console line
vty	VTY line
<range_list>	List of console/VTYs

Example:

```
SM48TAT4XA-RP# show running-config all
Building configuration...
hostname SM48TAT4XA-RP
prompt %h
no logging on
no logging host
logging port 514
username admin privilege 15 password encrypted 6826e8f408c0e536b7a14cc51e89d19d0
383a81695f730ccb13f1250b9a7c1f7269e9cd7dc20609d11804ec1a70cd739c6772d2edbf0be80b
```

```
1e51c73732125da
nosystem contact
nosystem name SM48TAT4XA-RP
nosystem location
nosystem description Managed PoE+ Switch, 48-port 10/100/1000Base-T PoE Plus + (
4) 1G/10G SFP+ slots
Power Redundant
multi-language off
language selector off
switch-finder on off
language set English
language allow
language label
no access management
-- more --, next page: Space, continue: g, quit: ^C

SM48TAT4XA-RP# show running-config feature poe
Building configuration...
!
!
!
ipmc profile One
!
!
poe management mode lldp-consumption
poe ping-check enable
!
!
interface GigabitEthernet 1/1
 poe priority critical
!
interface GigabitEthernet 1/2
 poe priority critical
 poe failure-action reboot-Remote-PD
!
interface GigabitEthernet 1/3
 poe priority high
!
interface GigabitEthernet 1/4
-- more --, next page: Space, continue: g, quit: ^C
SM24TAT4XB# show running-config line console 1
% No such con, this system only has con 0
SM24TAT4XB# show running-config line console 0
Building configuration...
line console 0
!
end
SM24TAT4XB# show running-config line vty 0
Building configuration...
line vty 0
 exec-timeout 1440 0
!
end
SM24TAT4XB#
```

Command: **sflow**

Description: Display Statistics flow information.

Mode: Exec mode.

Syntax: **show** sflow
show sflow statistics { receiver [<rcvr_idx_list>] | samplers [interface [<samplers_list>] (<port_type> [<v_port_type_list>])] }

Parameters:

statistics	sFlow statistics.
receiver	Show statistics for receiver.
samplers	Show statistics for samplers.
interface	Show statistics for a specific interface or interfaces.
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
10GigabitEthernet	10 Gigabit Ethernet Port
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-24
<port_type_list>	Port list in 1/1-4

Example:

```
SM48TAT4XA-RP# show sflow statistics receiver
Tx Successes     Tx Errors       Flow Samples     Counter Samples
--------------  --------------  --------------  ---------------
            0               0               0               0
SM48TAT4XA-RP# show sflow statistics samplers

Per-Port Statistics:
====================

Interface              Rx Flow Samples  Tx Flow Samples  Counter Samples
---------------------  ---------------  ---------------  ----------------
GigabitEthernet 1/1                  0                0               0
GigabitEthernet 1/2                  0                0               0
GigabitEthernet 1/3                  0                0               0
GigabitEthernet 1/4                  0                0               0
GigabitEthernet 1/5                  0                0               0
GigabitEthernet 1/6                  0                0               0
GigabitEthernet 1/7                  0                0               0
GigabitEthernet 1/8                  0                0               0
GigabitEthernet 1/9                  0                0               0
GigabitEthernet 1/10                 0                0               0
GigabitEthernet 1/11                 0                0               0
GigabitEthernet 1/12                 0                0               0
GigabitEthernet 1/13                 0                0               0
GigabitEthernet 1/14                 0                0               0
GigabitEthernet 1/15                 0                0               0
GigabitEthernet 1/16                 0                0               0
-- more --, next page: Space, continue: g, quit: ^C
```

Command: **smtp**

Description: Display Show email information.

Mode: Exec mode.

Syntax: **show** smtp <cr>

Parameters: None.

Example:

```
SM48TAT4XA-RP# show smtp
Mail Server     : QSPmail
User Name       : jeffs
Password        : ********
Sender          : jeffs
Return Path     : jeffs@lantronix.com
Email Adress 1  : jeffs@comcast.net
Email Adress 2  :
Email Adress 3  :
Email Adress 4  :
Email Adress 5  :
Email Adress 6  :
SM48TAT4XA-RP#
```

Command: **snmp**

Description: Display Set SNMP server's configurations.

Mode: Exec mode.

Syntax:
show snmp
show snmp access [<group_name> [{ v1 | v2c | v3 | any } [{ auth | noauth | priv }]]]
show snmp community [<community>]
show snmp host [<conf_name>]
show snmp info
show snmp mib context
show snmp mib ifmib ifIndex [port] [aggregation] [vlan]
show snmp security-to-group [{ v1 | v2c | v3 } [<security_name>]]
show snmp trap [<source_name>]
show snmp user [<username> [<engineID>]]
show snmp view [<view_name> [<oid_subtree>]]

Parameters:

access	access configuration
community	Community
host	Show SNMP host's configurations
info	Show SNMP parameters
mib	MIB (Management Information Base)
security-to-group	security-to-group configuration
trap	Set SNMP host's configurations
user	User
view	MIB view configuration
context	MIB context
ifmib	IF-MIB

ifIndex	The IfIndex that is defined in IF-MIB
<word32>	group name
<word32>	Specify community name
<word32>	Name of the host configuration
v1	v1 security model
v2c	v2c security model
v3	v3 security model
<word32>	security user name
<cword>	Valid words are 'authenticationFailure' 'coldStart' 'entConfigChange' 'fallingAlarm' 'linkDown' 'linkUp' 'lldpRemTablesChange' 'newRoot' 'risingAlarm' topologyChange' 'warmStart'
<word32>	MIB view name

Example 1:

```
SM48TAT4XA-RP# show snmp

SNMP Configuration
SNMP Mode  : enabled
Engine ID  : 800014550300c0f27c552a

SNMPv3 Communities Table:
Community/Security Name : public
Source IP              : 0.0.0.0/0
Community secret       : public

Community/Security Name : private
Source IP              : 0.0.0.0/0
Community secret       : private


SNMPv3 Users Table:

SNMPv3 Groups Table;
Security Model : v1
Security Name  : public
Group Name     : default_ro_group

-- more --, next page: Space, continue: g, quit: ^C

SM48TAT4XA-RP# show snmp mib context
BRIDGE-MIB :
    - dot1dBase (.1.3.6.1.2.1.17)
    - dot1dTp (.1.3.6.1.2.1.17.4)
Dot3-OAM-MIB :
    - dot3OamMIB (.1.3.6.1.2.1.158)
ENTITY-MIB :
    - entityMIBObjects (.1.3.6.1.2.1.47.1)
EtherLike-MIB :
    - transmission (.1.3.6.1.2.1.10)
IEEE8021-BRIDGE-MIB :
    - ieee8021BridgeBasePortTable (.1.3.111.2.802.1.1.2.1.1.4)
IEEE8021-MSTP-MIB :
    - ieee8021MstpMib (.1.3.111.2.802.1.1.6)
IEEE8021-PAE-MIB :
    - ieee8021paeMIB (.1.0.8802.1.1.1.1)
IEEE8021-Q-BRIDGE-MIB :
```

```
    - ieee8021QBridgeMib (.1.3.111.2.802.1.1.4)
IEEE8023-LAG-MIB :
    - lagMIBObjects (.1.2.840.10006.300.43.1)
IF-MIB :
    - ifMIB (.1.3.6.1.2.1.31)
IP-FORWARD-MIB :
SM48TAT4XA-RP#
```

Example 2:

```
SM24TAT4XB# show snmp info

SNMP Info:
Conf VendorName:TN, VENDOR_GENERIC, PRODUCT:SM24TAT4XB
EngineID: 800014550300c0f2493e0a
Using    oid :1.3.6.1.4.1.868.2.77.2, length:10
SM24TAT4XB#
```

Command: **spanning-tree**

Description: Display STP Bridge information.

Mode: Exec mode.

Syntax: **show** spanning-tree [{ root-guard [interface (<port_type> [<v_port_type_list_r>])] } | summary | active | { interface (<port_type> [<v_port_type_list>]) } | { detailed [interface (<port_type> [<v_port_type_list_1>])] } | { mst [configuration | { <instance> [interface (<port_type> [<v_port_type_list_ 2>])] }] }]

Parameters:		
	active	STP active interfaces
	detailed	STP statistics
	interface	Choose port
	mst	Multiple STP
	root-guard	STP Root Guard
	summary	STP summary
	*	All switches or All ports
	GigabitEthernet	1 Gigabit Ethernet Port
	10GigabitEthernet	10 Gigabit Ethernet Port
	<port_type_list>	Port list for all port types
	<port_type_list>	Port list in 1/1-48
	<port_type_list>	Port list in 1/1-4
	<port_type_list>	Port list in 1/1-24
	<0-7>	STP bridge instance (CIST=0, MSTI1=1...)
	configuration	Show MSTI to VLAN mapping

Example 1:

```
SM48TAT4XA-RP# show spanning-tree active
CIST Bridge STP Status
Bridge ID    : 32768.00-C0-F2-7C-55-2A
Root ID      : 32768.00-C0-F2-7C-55-2A
Root Port    : -
Root PathCost: 0
Regional Root: 32768.00-C0-F2-7C-55-2A
Int. PathCost: 0
Max Hops     : 20
```

```
TC Flag      : Steady
TC Count     : 0
TC Last      : -
Port       Port Role       State       Pri  PathCost  Edge  P2P         Uptime
---------  --------------  ----------  ---  --------  ----  ---  -------------
Gi 1/1     DesignatedPort  Forwarding  128     20000  Yes   Yes    1d 01:13:59
Gi 1/2     DesignatedPort  Forwarding  128     20000  Yes   Yes    1d 00:43:06
Gi 1/3     DesignatedPort  Forwarding  128    200000  Yes   Yes    1d 00:43:06
Gi 1/4     DesignatedPort  Forwarding  128    200000  Yes   Yes    1d 00:43:08
Gi 1/5     DesignatedPort  Forwarding  128     20000  Yes   Yes    1d 00:43:06
Gi 1/7     DesignatedPort  Forwarding  128    200000  Yes   Yes    0d 00:17:57
Gi 1/8     DesignatedPort  Forwarding  128    200000  Yes   Yes    1d 00:09:41
Gi 1/9     DesignatedPort  Forwarding  128    200000  Yes   Yes    0d 23:57:51
SM48TAT4XA-RP# show spanning-tree summary
Protocol Version: MSTP
Hello Time      : 2
Max Age         : 20
Forward Delay   : 15
Tx Hold Count   : 6
Max Hop Count   : 20
BPDU Filtering  : Disabled
BPDU Guard      : Disabled
Error Recovery  : Disabled
CIST Bridge is active
SM48TAT4XA-RP#
```

Example 2:

```
SM24TAT4XB# show spanning-tree mst 0
CIST Bridge STP Status
Bridge ID    : 32768.00-C0-F2-49-3E-0A
Root ID      : 32768.00-C0-F2-49-3E-0A
Root Port    : -
Root PathCost: 0
Regional Root: 32768.00-C0-F2-49-3E-0A
Int. PathCost: 0
Max Hops     : 20
TC Flag      : Steady
TC Count     : 0
TC Last      : -
Mst    Port       Port Role       State       Pri  PathCost  Edge  P2P         Uptime
-----  ---------  --------------  ----------  ---  --------  ----  ---  -------------
CIST   Gi 1/1     DesignatedPort  Forwarding  128     20000  Yes   Yes    0d 03:13:15
CIST   Gi 1/3     DesignatedPort  Forwarding  128     20000  Yes   Yes    0d 03:13:14
SM24TAT4XB#
```

Command: **svl**

Description: Display Shared VLAN Learning configuration.

Mode: Exec mode.

Syntax: **show** svl { [fid [<fid_list>]] | [vlan [<vlan_list>]] }

Parameters:

|	Output modifiers
fid	Show a given FID
vlan	Show a given VLAN ID
<1~4095>	List of FIDs to show
<vlan_list>	List of VIDs to show
<cr>	

Example:

```
SM48TAT4XA-RP# show svl fid 100
FID   VLANs
----  ----------------------------
 100  100 (default)
SM48TAT4XA-RP# show svl vlan
VLAN  FID
----  ----
None
```

Command: **switchport**

Description: Display switching mode characteristics.

Mode: Exec mode.

Syntax: **show** switchport forbidden [{ vlan <vlan_list> } | { name <name> }]

Parameters:

forbidden	Lookup VLAN Forbidden port entry.
|	Output modifiers
name	Forbidden VLANs by VLAN name
vlan	Forbidden VLAN by VLAN ID
<word31>	VLAN name
<vlan_list>	VLAN IDs
<cr>	

Example:

```
SM48TAT4XA-RP# show switchport forbidden vlan 2-300
VLAN  Name                            Interfaces
----  ------------------------------  ----------
2     VLAN0002
3     VLAN0003
4     VLAN0004
5     VLAN0005                        Gi 1/3
6     VLAN0006                        Gi 1/3
7     VLAN0007                        Gi 1/3
8     VLAN0008                        Gi 1/3
9     VLAN0009                        Gi 1/3
10    VLAN0010                        Gi 1/3
11    VLAN0011                        Gi 1/3
12    VLAN0012                        Gi 1/3
13    VLAN0013                        Gi 1/3
14    VLAN0014                        Gi 1/3
15    VLAN0015                        Gi 1/3
16    VLAN0016                        Gi 1/3
17    VLAN0017                        Gi 1/3
18    VLAN0018                        Gi 1/3
19    VLAN0019                        Gi 1/3
20    VLAN0020                        Gi 1/3
21    VLAN0021                        Gi 1/3
-- more --, next page: Space, continue: g, quit: ^C
```

Command: **system**

Description: Display system information.

Mode: Exec mode.

Syntax: **show** system
show system cpu status
show system reboot

Parameters:

status	Average load
cpu	CPU
reboot	Switch reboot scheduling
<cr>	

Example:

```
SM48TAT4XA-RP# show system cpu status
    Average load in 100 ms  : 20%
    Average load in   1 sec : 15%
    Average load in  10 sec : 28%
SM48TAT4XA-RP# show system reboot
Switch Reboot Mode: Disable
Switch Reboot Entry:

            Reboot Time
  Week Day     HH : MM
 ----------    -------
  Monday        -  -
  Tuesday       -  -
  Wednesday     -  -
  Thursday      -  -
  Friday        -  -
  Saturday      -  -
  Sunday        -  -

SM48TAT4XA-RP# show system
Model Name                      : SM48TAT4XA-RP
System Description               : Managed PoE+ Switch, 48-port 10/100/1000Base-T PoE Plus
+ (4) 1G/10G SFP+ slots
Location                        :
Contact                         :
System Name                      : SM48TAT4XA-RP
System Date                      : 2016-01-01T04:19:23+00:00
System Uptime                    : 04:19:48
Bootloader Version                : V1.05
Firmware Version                 : v8.50.0096 2022-10-28
PoE Firmware Version              : 200-211
Hardware Version                 : v1.02
Mechanical Version               : v1.01
Serial Number                    : A171119BR2000001
MAC Address                      : 00-c0-f2-49-3e-44
Fan Speed                        : 1433(rpm)
Temperature 1                    : 34(C)
Temperature 2                    : 31(C)
SM48TAT4XA-RP#
```

Command: **tacacs-server**

Description: Display TACACS+ configuration.

Mode: Exec mode.

Syntax: **show** tacacs-server <cr>

Parameters: None.

Example 1:

```
SM48TAT4XA-RP# show tacacs-server
Global TACACS+ Server Timeout      : 5 seconds
Global TACACS+ Server Deadtime     : 0 minutes
Global TACACS+ Server Key          :
No servers configured!
SM48TAT4XA-RP#
```

Example 2:

```
SM24TAT4XB# show tacacs-server
Global TACACS+ Server Timeout      : 5 seconds
Global TACACS+ Server Deadtime     : 0 minutes
Global TACACS+ Server Key          : 84243982f34f465c3d9bd7f196b82f8542880b311b0
58af2988af5f0fbae12e17515171ff141b6d9a3641bab619bdb89f05912fe481fa10c86292c9eca6
f0d1c
TACACS+ Server #1:
  Host name  : 192.168.1.40
  Port       : 49
  Timeout    : 60 seconds
  Key        : 442c00e7285ce1793978bcab62a30ed543e75d99a43ca0659f3e32b9cb9e8d226
395c53d164dbac10c85e2f71d65b596a6ee6086f418225d2f94414bd013a8eb
TACACS+ Server #2:
  Host name  : 2.4.6.8
  Port       : 49
  Timeout    : 45 seconds
  Key        : 8eed106d7dbacc55be1a3decd48e2d35d29bc2232f4fba9feb9039b22dd67604a
2ef6e97aa4a6f6f7895001a28c96fb8e5dc9d5eabcc7195e8a8ea960c9cbecdc670338da70a87d95
b02dab5fd524fa1
SM24TAT4XB#
```

Command: **terminal**

Description: Display terminal configuration parameters.

Mode: Exec mode.

Syntax: **show** terminal <cr>

Parameters: | Output modifiers
<cr>

Example:

```
SM48TAT4XA-RP# show terminal
Line is vty 0.
---------------
    * You are at this line now.
    Alive from Telnet.
    Default privileged level is 2.
    Command line editing is disabled
    Display EXEC banner is enabled.
    Display Day banner is enabled.
    Terminal width is 80.
            length is 24.
            history size is 32.
            exec-timeout is 1440 min 0 second.

    Current session privilege is 15.
    Elapsed time is 1 day 1 hour 45 min 25 sec.
    Idle time is 0 day 0 hour 0 min 0 sec.

SM48TAT4XA-RP#
```

Command: **udld**

Description: Display Unidirectional Link Detection (UDLD) configurations, statistics and status.

Mode: Exec mode.

Syntax: **show** udld [interface (<port_type> [<plist>])]

Parameters:

interface	Choose port
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
10GigabitEthernet	10 Gigabit Ethernet Port
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-48
<port_type_list>	Port list in 1/1-4

Example 1:

```
SM48TAT4XA-RP# show udld interface 10GigabitEthernet 1/4

10GigabitEthernet 1/4
--------------------------------------------------------------------------
UDLD Mode               : Disable
Admin State             : Disable
Message Time Interval(Sec): 7
Device ID(local)         : 00-C0-F2-7C-55-2A
Device Name(local)       : SM48TAT4XA-RP
Bidirectional state      : Indeterminant

No neighbor cache information stored
---------------------
SM48TAT4XA-RP#
```

Example 2:

```
SM24TAT4XB# show udld interface *

GigabitEthernet 1/1
--------------------------------------------------------------------------
UDLD Mode               : Aggressive
Admin State             : Enable
Message Time Interval(Sec): 7
Device ID(local)         : 00-C0-F2-49-3E-0A
Device Name(local)       : SM24TAT4XB
Bidirectional state      : Indeterminant

No neighbor cache information stored
---------------------

GigabitEthernet 1/2
--------------------------------------------------------------------------
UDLD Mode               : Aggressive
Admin State             : Enable
Message Time Interval(Sec): 7
Device ID(local)         : 00-C0-F2-49-3E-0A
Device Name(local)       : SM24TAT4XB
Bidirectional state      : Indeterminant

-- more --, next page: Space, continue: g, quit: ^C
```

Command: **upnp**

Description: Display UPnP configuration.

Mode: Exec mode.

Syntax: **show** upnp <cr>

Parameters: | Output modifiers
<cr>

Example 1:

```
SM48TAT4XA-RP# show upnp
UPnP Mode                    : enabled
UPnP TTL                     : 4
UPnP Advertising Duration     : 100
UPnP IP Addressing Mode       : static
UPnP Static IP Interface ID   : 1
SM48TAT4XA-RP#
```

Example 1:

```
SM24TAT4XB# show upnp
UPnP Mode                    : disabled
UPnP TTL                     : 4
UPnP Advertising Duration     : 100
UPnP IP Addressing Mode       : dynamic
UPnP Static IP Interface ID   : 1
SM24TAT4XB#
```

Command: **user-privilege**

Description: Display Users privilege configuration.

Mode: Exec mode.

Syntax: **show** user-privilege <cr>

Parameters: None.

Example 1:

```
SM48TAT4XA-RP# show user-privilege
username admin privilege 15 password encrypted 6826e8f408c0e536b7a14cc51e89d19d0
383a81695f730ccb13f1250b9a7c1f7269e9cd7dc20609d11804ec1a70cd739c6772d2edbf0be80b
1e51c73732125da
SM48TAT4XA-RP#
```

Example 2:

```
SM24TAT4XB# show user-privilege
username admin privilege 15 password encrypted 563082d07cf7bb19acffc6c4b4533b514
f20cc8dcff9c1ea6140553c73f0399d58f506fb78fa78ccb010c9610f2c449296c2036cfab7aa776
e6b04309c81a046
SM24TAT4XB#
```

Command: **users**

Description: Display information about terminal lines.

Mode: Exec mode.

Syntax: **show** users

Parameters:

|	Output modifiers
myself	Display information about mine
<cr>	

Example:

```
SM48TAT4XA-RP# show users
Line is vty 0.
    * You are at this line now.
    Connection is from 192.168.1.99:50273 by Telnet.
    User name is admin.
    Privilege is 15.
    Elapsed time is 1 day 1 hour 57 min 35 sec.
    Idle time is 0 day 0 hour 0 min 0 sec.

SM48TAT4XA-RP#
```

Command: **version**

Description: Display System hardware and software status.

Mode: Exec mode.

Syntax: **show** version [brief]

Parameters: | Output modifiers
brief
<cr>

Example:

```
SM48TAT4XA-RP# show version brief
Version      : SM48TAT4XA-RP (standalone) v8.50.0096
Build Date   : 2022-10-28T17:30:04+08:00
SM48TAT4XA-RP# show version

MAC Address      : 00-c0-f2-49-3e-44
Previous Restart : Warm

System Contact   :
System Name      : SM48TAT4XA-RP
System Location  :
System Time      : 2016-01-01T19:02:44+00:00
System Uptime    : 19:03:09


Bootloader
----------
Version          : version V1.05
Date             : 17:25:15, May 15 2019

Active Image
------------
Image            : linux (primary)
Version          : SM48TAT4XA-RP (standalone) v8.50.0096
Date             : 2022-10-28T17:30:04+08:00

Backup Image
------------
Image            : linux.bk (backup)
Version          : SM48TAT4XA-RP (standalone) v8.50.0079
Date             : 2022-09-01T16:32:26+08:00

SM48TAT4XA-RP#
```

Command: **vlan**

Description: Display VLAN status.

Mode: Exec mode.

Syntax:
show vlan [id <vlan_list> | name <name> | brief] [all]
show vlan ip-subnet [<ipv4>]
show vlan mac [address <mac_addr>]
show vlan membership [id <vlan_list> | name <name>] [admin | combined | erps| evc | gvrp | mep | mstp | mvr | nas | rmirror | vcl | voice-vlan | forbidden | dms]
show vlan protocol [eth2 { <etype> | arp | ip | ipx | at }] [snap { <oui> | rfc-1042 | snap-8021h } <pid>] [llc <dsap> <ssap>]
show vlan status [interface (<port_type> [<plist>])] [admin | all | combined | conflicts | erps | evc | gvrp | mep | mstp | mvr | nas | rmirror | vcl | voice-vlan]

Parameters:		
	all	Show all VLANs (if left out only access VLANs are shown)
	brief	VLAN summary information
	id	VLAN status by VLAN id
	ip-subnet	Show VCL IP Subnet entries.
	mac	Show VLAN MAC entries.
	membership	VLAN membership
	name	VLAN status by VLAN name
	protocol	Protocol-based VLAN status
	status	Show the VLANs configured for each interface.
	brief	VLAN summary information
	id	VLAN status by VLAN id
	name	VLAN status by VLAN name
	<vlan_list>	VLAN IDs
	all	Show all VLANs (if left out only access VLANs are shown)
	<ipv4_subnet>	Specify a specific IP Subnet.
	address	Show a specific MAC entry.
	admin	VLAN name
	combined	Show the VLANs configured by administrator.
	dms	Show VLANs configurations that has forbidden.
	forbidden	Show the VLANs configured by Voice VLAN.
	gvrp	Show the VLANs configured by EVC.
	id	VLAN membership by VLAN id
	mep	Show the VLANs configured by GVRP.
	mvr	Show the VLANs configured by MSTP.
	name	VLAN IDs 1-4095
	nas	Show the VLANs configured by MVR.
	rmirror	Show the VLANs configured by NAS.
	voice-vlan	Show the VLANs configured by VCL.
	<word31>	VLAN name
	eth2	Ethernet protocol based VLAN status
	llc	LLC-based VLAN status
	snap	SNAP-based VLAN status
	<0x600-0xffff>	Ether Type (Range: 0x600 - 0xFFFF)
	arp	Ether Type is ARP
	at	Ether Type is AppleTalk

ip	Ether Type is IP
ipx	Ether Type is IPX
<0x0-0xff>	DSAP (Range: 0x00 - 0xFF)
<0x0-0xffffff>	SNAP OUI (Range 0x000000 - 0XFFFFFF)
rfc-1042	SNAP OUI is rfc-1042
snap-8021h	SNAP OUI is 8021h
<0x0-0xffff>	PID (Range: 0x0 - 0xFFFF)
<0x0-0xff>	DSAP (Range: 0x00 - 0xFF)
<0x0-0xff>	SSAP (Range: 0x00 - 0xFF)
admin	Show the VLANs configured by administrator.
all	Show VLANs configured VLANs for all VLAN users.
combined	Show the combined set of configured VLANs.
conflicts	Show VLAN configurations that have conflicts.
erps	Show the VLANs configured by ERPS.
gvrp	Show the VLANs configured by GVRP.
interface	Show the VLANs configured for a specific interface or interfaces.
mep	Show the VLANs configured by MEP.
mstp	Show the VLANs configured by MSTP.
mvr	Show the VLANs configured by MVR.
nas	Show the VLANs configured by NAS.
rmirror	Show the VLANs configured by Remote mirroring.
vcl	Show the VLANs configured by VCL.
voice-vlan	Show the VLANs configured by Voice VLAN.
<cr>	

Example:

```
SM48TAT4XA-RP# show vlan id 100 all
VLAN  Name                            Interfaces
----  --------------------------------  ----------
100   VLAN0100

SM48TAT4XA-RP#
SM48TAT4XA-RP# show vlan brief
VLAN  Name                            Interfaces
----  --------------------------------  ----------
1     default                         Gi 1/1-48 10G 1/1-4
2     VLAN0002                        Gi 1/2-3
3     VLAN0003                        Gi 1/2-3
4     VLAN0004                        Gi 1/2-3
5     VLAN0005                        Gi 1/2-3
6     VLAN0006                        Gi 1/2-3
7     VLAN0007                        Gi 1/2-3
100   VLAN0100                        Gi 1/2-3
200   VLAN0200                        Gi 1/2-3

SM48TAT4XA-RP#
SM48TAT4XA-RP# show vlan protocol snap 0x0 0x0 eth2 arp llc 0xff 0xdd
The requested protocol was not found
% (VCL Error - The requested entry was not found in the switch)
SM48TAT4XA-RP#

SM48TAT4XA-RP# show vlan status
GigabitEthernet 1/1 :
```

```
---------------------
VLAN User   PortType       PVID  Frame Type     Ing Filter  Tx Tag            UVID  Conflicts
----------  -------------  ----  -------------  ----------  -----------------  ----  --------
-
Combined    C-Port         1     All            Enabled     All                2     No
Admin       C-Port         1     All            Enabled     None               1
NAS                                                                                    No
GVRP                                                                                   No
MVR         C-Port               All                       All                2     No
Voice VLAN                                                                             No
MSTP                                                                                   No
ERPS                                       Enabled                                     No
-- more --, next page: Space, continue: g, quit: ^C
```

Command: **voice**

Description: Display Voice appliance attributes.

Mode: Exec mode.

Syntax: **show** voice vlan [oui [<oui>] | interface (<port_type> [<port_list>])]

Parameters:

vlan	VLAN for voice traffic
|	Output modifiers
interface	Select an interface to configure
oui	OUI configuration
<oui>	OUI value
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
10GigabitEthernet	10 Gigabit Ethernet Port
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-48
<port_type_list>	Port list in 1/1-4
<cr>	

Example:

```
SM48TAT4XA-RP# show voice vlan interface 10GigabitEthernet 1/3

10GigabitEthernet 1/3 :
-----------------------
10GigabitEthernet 1/3 switchport voice vlan mode is disabled
10GigabitEthernet 1/3 switchport voice security is disabled
10GigabitEthernet 1/3 switchport voice discovery protocol is oui
SM48TAT4XA-RP# show voice vlan oui
Telephony OUI  Description
-------------  -----------
SM48TAT4XA-RP#
SM24TAT4XB# show voice vlan oui
Telephony OUI  Description
-------------  -----------
11-22-33       OuiVendor
SM24TAT4XB#
```

Command: **watchdog**

Description: Display watchdog mode.

Mode: Exec mode.

Syntax: **show** watchdog mode <cr>

Parameters: None.

Example:

```
SM48TAT4XA-RP# show watchdog mode
Watchdog Status : Enable
SM48TAT4XA-RP#
```

Command: **web**

Description: Display Web privilege group information.

Mode: Exec mode.

Syntax: **show** web privilege group [<group_name>] level

Parameters:

<cword>

Aggregation	DHCP	DHCPv6_Client	DMS_Trouble_Shooting
DMS_Vbatch	DMS_client	DMS_server	Debug
Diagnostics	EPS	ERPS	ETH_LINK_OAM
FRR	Firmware	Green_Ethernet	IP
IPMC_Snooping	Install_Wizard	LACP	LLDP
Loop_Protect	MAC_Table	MEP	MRP
MVR	Miscellaneous	NTP	POE
PTP	Ports	Private_VLANs	QoS
RMirror	SMTP	Security(access)	Security(network)
Spanning_Tree	System	Trap_Event	UDLD
UPnP	VCL	VLAN_Translation	VLANs
Voice_VLAN	Watchdog	XXRP	consoleflow
level	sFlow	uFDMA_AIL	uFDMA_CIL

level Web privilege group level

Example:

```
SM48TAT4XA-RP# show web privilege group FRR level
Group Name                     Privilege Level
                              CRO CRW
------------------------------ --- ---
FRR                             5  10
SM48TAT4XA-RP# show web privilege group VLANS level
Group Name                     Privilege Level
                              CRO CRW
------------------------------ --- ---
VLANs                           5  10
SM48TAT4XA-RP#
```

Troubleshooting

The following tables provide information to troubleshoot problems by taking actions based on the suggested solutions.

Basic Troubleshooting

1. Make sure your switch model supports the feature or function attempted; see the Install Guide and check the Release Notes for your particular version.
2. Verify the install process; see the Install Guide.
3. Verify the initial switch configuration; see the Install Guide.
4. Troubleshoot connected network devices to pinpoint the problem to the switch.
5. Run System Diagnostics (ping, cable diagnostics, traceroute). See the Web User Guide or the CLI Reference.
6. Reset the switch; see the Install Guide.
7. Restore the switch to its factory default settings; see the `reload` command.
8. If using the CLI, try the Web UI and vice versa. See the Web User Guide or the CLI Reference.

LED Troubleshooting

Symptoms	Possible Causes	Suggested Solutions
System LED is Off	The switch is not receiving power.	1. Check if correct power cord is connected firmly to the switch and to the AC outlet socket. 2. Perform power cycling the switch by unplugging and plugging the power cord back into the switch. 3. If the LED is still off, try to plug power cord into different AC outlet socket to make sure correct AC source is supplied.
System LED is RED	An abnormal state has been detected by the switch.	Check the system log within the switch from Web UI to understand the abnormal state (e.g., exceeding operating temperature range) and take corresponding actions to resolve.
Port Status LED is Off in the Link/Act/Speed Mode	The port is not connected or the connection is not working.	1. Check if the cable connector plug is firmly inserted and locked into the port at both the switch and the connected device. 2. Make sure the connected device is up and running correctly. 3. If the symptom still exists, try different cable or different port, in order to identify if it is related to the cable or specific port. 4. Check if the port is disabled in the configuration settings via the Web UI.
Port Status LED is Off in the PoE Mode	The port is not supplying power.	1. Check if the cable connector plug is firmly inserted and locked into the port at both the switch and the connected device. 2. Make sure the correct Ethernet cables are used. 3. If the symptom still exists, try different cable or different port, to identify if it is related to the cable or specific port. 4. Check if the port is disabled in the Web UI settings.

PoE Troubleshooting

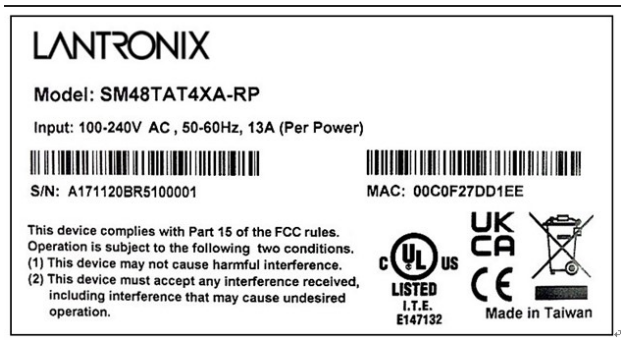
1. Get as much detail as possible regarding the symptom, including any system messages from the PoE switch. For example, does a PD not power up at all, or does it power up briefly and then power down?
2. Determine if the trouble occurred on initial installation or after the PD had been working normally?
3. If the trouble started after the PD was working, what changed? Were there any hardware or software changes?
4. Verify that the port is not shut down, disabled, or errored.
5. Verify that the Ethernet cable from the PD to the switch port is good.
6. Verify that the total cable length from the switch front panel to the connected PD is not more than 100 meters. Some of the power from the switch port is dissipated in the cable due to wire resistance, especially on cables as long as 100 meters. Only the remaining power is available to the PD. The 100-meter limit for twisted-pair Ethernet cable assumes **a)** not more than four RJ-45 connection points in the transmission path, **b)** 90 meters of solid-strand Category 5 or 5e, and **c)** 10 meters of flexible multistrand cable (2-to-5 meters of multistrand Category 5 patch cords).
7. Verify that the PSE switch power budget can power the PD. If the switch power budget is depleted, additional PDs will not power-on when connected to a PoE port. Verify that the switch power budget (available PoE) is not depleted before or after the PD is connected. Verify that sufficient power is available for the PD type.
8. Verify if non-powered Ethernet devices can establish an Ethernet link on any port and that PoE devices do not power up on the same port.
9. Review alarms reported previously by system messages.
10. If a working PD intermittently reloads or disconnects from inline power, verify all electrical connections from the switch to the PD. An unreliable connection results in power interruptions and intermittent PD operation, such as PD disconnects and reloads.
11. Check for changes in the electrical environment at the switch site. What is happening at the PD when the disconnect occurs? Check for error messages reported by the switch at the same time of the disconnect.
12. Verify that an PD is not losing access just before a reload occurs (a network problem, not a PoE problem).
13. Pre-standard and post-standard PoE powered devices (PDs) may use different detection and connect / disconnect methods. Note that PD detection occurs when an Ethernet device is first connected to a PoE port. If a non-PoE device is connected to a PoE port, detection is deactivated. If the non-PoE device is later disconnected and replaced by a PD, the switch may not detect it immediately.
14. Verify that the PD is not causing an overcurrent condition on the port. Specifically: does the VoIP phone initially power on and then disconnect? If so, the problem may be an initial current surge that exceeds a current-limit threshold for the switch port. Some PDs may have excessive “surge in” current when first connected to a PoE port. The switch initially provides power to the port, and then quickly removes power due to a momentary overcurrent condition. The PD starts to power up, but then quickly powers down.
15. Most PoE switches have voltage and current regulators that detect an overcurrent threshold and disconnect power from the line. This prevents excessive current from being delivered by the PoE port, which could possibly result in damage to port-level components.
16. A variety of disturbances on the AC power line (mains) can cause odd PoE problems. The power supplies in various switches and PDs can react uniquely to AC input disturbances. AC disruption problems are usually temporary or one-time occurrences. For example, a specific switch or PD may reboot due to an AC power problem, while other switches or PDs may show a greater immunity to the problem. This is a typical

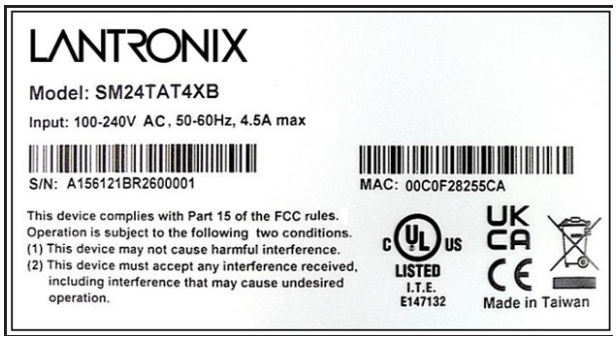
occurrence during lightning storms or AC power maintenance. In a worst-case scenario, a PoE power supply may appear to shut down, with no PoE output voltage to any port. It's possible the switch's Ethernet functions appear normal, and only the PoE functions are disrupted or degraded, or the switch may power down completely due to the AC disturbance. PDs may exhibit unusual behavior. In such cases, power cycle the switch (unplug the switch, wait at least three seconds, then plug it back in. This will ensure a total system reset that should restore normal operation.

17. Check if related features (LLDP mode, CDP mode) are enabled. See the Lantronix PoE Brochure for more information.

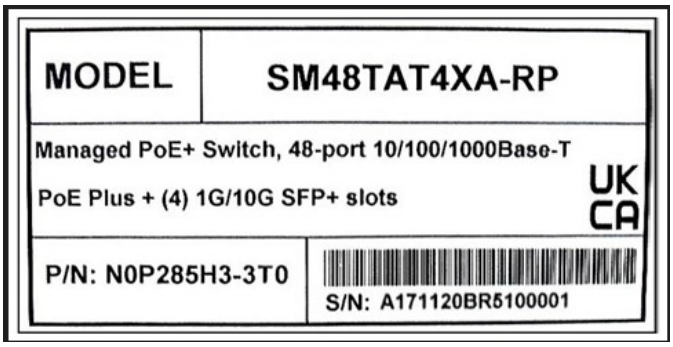
Device Label and Box Label

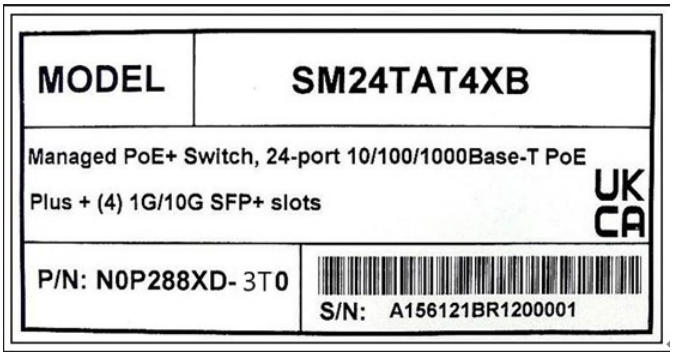
The device and box label provide information to record to help before calling Tech Support.





Device Label





Box Label

Record Device and System Information

After performing the troubleshooting steps, and before calling or emailing Technical Support, please record as much information as possible in order to help the Tech Support Specialist.

1. In the Web UI, select the **System Information** webpage. From the CLI, use the **show** commands to gather the information below or as requested by the Tech Support Specialist.

2. Record Model information: Model Name: _____

Serial Number: _____ Software Revision: _____

3. Record Port Configuration, PoE Configuration, and PoE Status: _____

_____

_____

4. SMxxTAT4Xx options installed:_____

5. Provide additional information to your Tech Support Specialist. See the "Troubleshooting" section above.

Your Lantronix service contract number: _____

Describe the failure: _____

_____

_____

Describe any action(s) already taken to resolve the problem (e.g., changing mode, rebooting, etc.): _____

_____

_____

_____

The model and serial numbers of other Lantronix devices in the network: _____

_____

_____

Describe your network environment (layout, cable type, etc.): _____

_____

_____

Network load and frame size at the time of trouble (if known): _____

PD equipment used: _____

_____

The device history (i.e., have you returned the device before, is this a recurring problem, etc.): _____

_____

_____

Any previous Return Material Authorization (RMA) numbers: _____

Appendix A – DHCP Per Port Configuration

DHCP Per Port

You can configure DHCP Per Port via the CLI as described below. The DHCP Per Port factory default mode is Disabled. See the *SM24DP4XA Web User Guide* for web UI mode operation.

The switch's DHCP server assigns IP addresses. Clients get IP addresses in sequence and the switch assigns IP addresses to on a per-port basis starting from the configured IP range. For example, if the IP address range is configured as 192.168.10.20 - 192.168.10.37 with one DHCP device connected to port 1, the client will always get IP address 192.168.10.20, then port 3 is always distributed IP address 192.168.10.22, even if port 2 is an empty port (because port 2 is always distributed IP address 192.168.10.21).

The switch does not allow a DHCP per Port pool to include the switch's address.

IP address assigned range and VLAN 1 should stay in the same subnet mask.

The configurable IP address range is allowed to configure over 18 IP addresses, but the switch always assigns one IP address per port connecting device.

The DHCP Per Port function is only supported on VLAN 1.

When the DHCP Per Port function is enabled, the switch software will automatically create the related DHCP pool named "DHCP_Per _Port".

Once the DHCP Per Port function is enabled on one switch, IPv4 DHCP client at VLAN1 mode (DMS DHCP mode), DHCP server mode are all limited to be enabled at the same time (an error message displays if attempted).

If the DHCP server pool has been configured, once you enable the DHCP Per port function that DHCP server pool configuration will be overwritten.

Only for VLAN 1, clients issued DHCP packets will not be broadcast/forwarded to other ports. DHCP packets in others VLANs will be broadcast/forwarded to others ports.

The DHCP Per Port function allows the switch to connect only one DHCP client device.

The DHCP Per Port function is configured and shown using these CLI commands:

```
SM48TAT4XA-RP # show ip dhcp server
SM48TAT4XA-RP (config)# ip dhcp server per-port
SM48TAT4XA-RP (config)# no ip dhcp server per-port

SM48TAT4XA-RP(config)# do show ip dhcp server ?
   <line>    Exec Command
   <cr>
SM48TAT4XA-RP(config)# do show ip dhcp server
show ip dhcp server
% Incomplete command.

% Fail to execute command in EXEC mode.

SM48TAT4XA-RP(config)# do show ip dhcp server ?
   <line>    Exec Command
   <cr>
SM48TAT4XA-RP(config)# do show ip dhcp server per-port

SM48TAT4XA-RP(config)#
```

The CLI commands to configure and show DHCP Per Port are described below.

Command: Show the current DHCP Server and DHCP Per Port configuration

Syntax: **show ip dhcp server** <cr>

Description: Show if DHCP server is globally enabled or disabled, if all VLANs are disabled or enabled, and if the DHCP server Per Port function is disabled or enabled.

Example: Display the current DHCP Server and Per Port configuration, change the config, and display the results:

```
SM48TAT4XA-RP(config)# do show ip dhcp server?
    <line>    Exec Command
    <cr>
SM48TAT4XA-RP(config)# do show ip dhcp server ?
do <command>
SM48TAT4XA-RP(config)# do show ip dhcp server do show dhcp server per-port
show ip dhcp server do show dhcp server per-port
                   ^
% Invalid word detected at '^' marker.
% Fail to execute command in EXEC mode.
SM48TAT4XA-RP(config)#
```

Command: Configure the DHCP Per Port function

Syntax: **ip dhcp server per-port** <cr>

Description: Toggle the DHCP Per Port function from Disabled (default) to Enabled.

Example: Toggle the DHCP Per Port function and show the resulting config:

```
SM48TAT4XA-RP# show ip dhcp server binding state ?
    allocated    Allocated state
    committed    Committed state
    expired      Expired state
SM48TAT4XA-RP# show ip dhcp server binding state committed ?
    |       Output modifiers
    type    Type of binding
    <cr>
SM48TAT4XA-RP# show ip dhcp server binding state committed
SM48TAT4XA-RP# show ip dhcp server ?
    binding        DHCP address bindings
    declined-ip    Declined IP address
    statistics     DHCP server statistics
SM48TAT4XA-RP# con t
SM48TAT4XA-RP(config)# ip dhcp ?
    relay       DHCP relay agent configuration
    server      Enable DHCP server
    snooping    DHCP snooping
    vlan        VLAN interface
SM48TAT4XA-RP(config)# ip dhcp server ?
    per-port    Enable DHCP server per port
SM48TAT4XA-RP(config)# ip dhcp server per-port
SM48TAT4XA-RP(config)#
```

DHCP Per Port VLAN

Command: **ip dhcp server per-port**

Description: Set DHCP per port VLAN (the VLAN associated with the IP interface). Only ports in this VLAN will be able to access the IP interface. This command is only available for input when creating a new interface. Added at FW v 8.50.0079.

Mode: Config mode

Syntax: **ip** dhcp server per-port [vlan { <pertPortVLAN> }]

Parameters:

	per-port	Enable DHCP server per port
	vlan	DHCP server per port VLAN
	<vlan_id>	Set DHCP server per port VLAN

Example:

```
SM48TAT4XA-RP(config)# ip dhcp server per-port vlan 10
% Failed to create interface vlan 10
SM48TAT4XA-RP(config)# ip dhcp server per-port vlan 1
SM48TAT4XA-RP(config)# do show ip dhcp vlan 10

VLAN: 10
 Mode:          Disabled
 Type:          Network
 IP Range:      0.0.0.0 - 0.0.0.0
 Lease Time:    86400
 Subnet Mask:   0.0.0.0
 Default Router: 0.0.0.0
 DNS Server:    0.0.0.0
SM48TAT4XA-RP(config)# do show ip dhcp vlan 1

VLAN: 1
 Mode:          Disabled
 Type:          Network
 IP Range:      0.0.0.0 - 0.0.0.0
 Lease Time:    86400
 Subnet Mask:   0.0.0.0
 Default Router: 0.0.0.0
 DNS Server:    0.0.0.0
SM48TAT4XA-RP(config)#
```

Messages: *VLAN 100 is not configured.*

Lantronix Corporate Headquarters
48 Discovery, Suite 250
Irvine, CA 92618, USA
Toll Free: 800-526-8766
Phone: 949-453-3990
Fax: 949-453-3995

Technical Support
Online: https://www.lantronix.com/technical-support/.

Sales Offices
For a current list of our domestic and international sales offices, go to the Lantronix web site at www.lantronix.com/about/contact.