SM12XPA

12-port Multi-Gig SFP+ with (2) 10G/25G SFP28 slots Managed Layer 3 Fiber Switch

CLI Reference

Part Number 33849
Revision B June 2024

Intellectual Property

Warranty

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

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Revision History

Date	Rev	Comments
5/26/22	A	Initial Lantronix release at t FW v8.90.884 and HW v1.01.
6/19/24	B	FW v8.10.0105: Implement Percepxion. Update Layer 3 modules (TSN, RIP, Router, OSPF, OSPF6). Remove CLI Command Summary. Add Note to verify modifications after upgrading FW.

Contents

1. CLI Management

Product Description

This switch is a next generation fully-managed Layer 3 Fiber Switch with 340 Gbps switching capacity. It provides (12) 1G/2.5G/5G/10G Multi-Gig SFP+ slots and (2) 10G/25G SFP28 slots.

About This Manual

This manual gives specific information on how to operate the Command Line Interface (CLI) to manage this switch. This manual is intended for use by network administrators who are responsible for operating and maintaining network equipment; consequently, it assumes a strong knowledge of layer 2 and layer 3 switch functions, Internet Protocol (IP), and Telnet Protocol. Note that this manual may provide links to third party websites for which Lantronix is not responsible.

Related Documentation

SM12DPXA Quick Start Guide, 33846
SM12DPXA Install Guide, 33847
SM12DPXA Web User Guide, 33848
SM12DPXA CLI Reference, 33849 (this manual)
Release Notes (version specific)

Connection

1. Attach the RJ45 serial port on the switch's front panel which used to connect to the switch for telnet configuration

2. At the "Com Port Properties" menu, configure these parameters: Baud rate = 115200, Stop bits = 1, Data bits = 8, Parity = N, Flow control = none.

Login

The command-line interface (CLI) is a text-based interface. You can access the CLI via either a direct serial connection to the device or a Telnet session (default IP address: 192.168.1.77). The default user and password to login into the Managed Switch are listed below:

Username: admin

Password: admin

After you login successfully, the prompt displays as "<sys_name>#" . See the following figures. It means you are an administrator and have the privilege for setting the Managed Switch.

If logged in as other than the administrator, the prompt displays as "<sys_name>>", which means you have guest privileges and are only allowed a subset of administrator privilege commands. Each CLI command has a particular privilege level.

Example:

```
Username: admin
Password: admin
SM12XPA#
```

Command Modes

The CLI is divided into several modes. If a user has enough privilege to run a particular command, the user must run the command in the correct mode. To see the commands of the mode, enter a "**?**" after the system prompt, then all commands will be listed on the screen.

The command modes are listed and described below:

Mode	Prompt	Command Function in this Mode
Exec	<sys_name>#	Display current configuration, diagnostics, maintenance
Config	<sys_name>(config)#	Configure features other than those below
Config-if	<sys_name>(config-interface)#	Configure ports
Config-if-vlan	<sys_name>(config-if-vlan)#	Configure static vlan
Config-line	<sys_name>(config-line)#	Line Configuration
Config-impc-profile	<sys_name>(config-impc-profile)#	IPMC Profile
Config-snmp-host	<sys_name>(config-snmp-host)#	SNMP Server Host
Config-stp-aggr	<sys_name>(config-stp-aggr)#	STP Aggregation
Config-dhcp-pool	<sys_name>(config-dhcp-pool)#	DHCP Pool Configuration

Commands reside in a specific mode and can run only in that mode. To run a particular command, you must change to the appropriate mode. The command modes are organized as a tree, starting in Exec mode. The following table explains how to change from one mode to another.

Change Between Command Modes

Mode	Enter Mode	Leave Mode
exec	--	--
config	Configure terminal	exit
config-interface	Interface <port-type> <port-type-list>	exit
config-vlan	Interface vlan <vlan_list>	exit

Privilege Levels

Every command has a privilege level of 0-15. Users can run a command if the session's privilege level is greater than or equal to the command's privilege level. The session's privilege level initially comes from the login account's privilege level, though it is possible to change the session's privilege level after logging in.

Privilege Level	Types of Commands at this Privilege Level
0	Display basic system information
13	Configure features except for login accounts, the authentication method sequence, multiple logins, and administrator and enable passwords.
15	Configure login accounts, the authentication method sequence, multiple logins, and administrator and enable passwords.

Exec Mode Commands

```
SM12XPA# ?
CableDiag       Cable Diagnostic keyword
aps             Automatic Protection Switching
clear           Clear
configure       Enter configuration mode
copy            Copy from source to destination
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
tsn	Time-Sensitive Networking

CableDiag

Cable Diagnostic keyword

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

Parameters:

10GigabitEthernet	10 Gigabit Ethernet Port
25GigabitEthernet	25 Gigabit Ethernet Port
<port_type_id>	Port ID in 1/1-12
<port_type_id>	Port ID in 1/1-2

Example:

```
SM12XPA# CableDiag interface 25GigabitEthernet 1/2
Starting Cable Diagnostic - Please wait
Interface               Link Status    Test Result    Length
----------------------  -------------  -------------  -------------
25GigabitEthernet 1/2   does not have Cable Diagnostic support
SM12XPA# CableDiag interface 10GigabitEthernet 1/6
Starting Cable Diagnostic - Please wait
Interface               Link Status    Test Result    Length
----------------------  -------------  -------------  -------------
10GigabitEthernet 1/6   does not have Cable Diagnostic support
SM12XPA#
```

Help

Description of the interactive help system.

Syntax: help

Parameters: None.

Example:

```
SM12XPA# 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?'.)
SM12XPA#
```

logout

Exit from EXEC mode.

Syntax: logout

Parameters: none

Example:

```
SM12XPA# logout
Username:
```

2. APS Commands

Configure Automatic Protection Switching. Ethernet automatic protection switching (APS) is a linear protection scheme designed to protect VLAN based Ethernet networks.

Syntax**:**

aps <inst> clear

aps <inst> exercise

aps <inst> freeze

aps <inst> lockout

aps <inst> switch { force | manual { protect-to-working | working-to-protect } }

Parameters:

<1-14>	APS instance number
clear	Clear a switchover (FS, MS-to-W, MS-to-P), lockout (LO), exercise (EXER) request and a WTR condition.
exercise	Exercise an APS instance. Use 'aps <inst> clear' to clear the request.
freeze	Freezes the state of the APS instance. While in this mode, additional near-end commands, condition changes, and received APS information are ignored. Use 'no aps <inst> freeze' to get out of this mode.
lockout	Lockout APS instance of protection. Use 'aps <inst> clear' to clear the request.
switch	Request a switchover from the working path to the protection path or vice versa. Use 'aps <inst> clear' to clear the request.
force	Causes a switchover if no lockout is in effect.
manual	Causes a switchover if the signal is good and no lockout is in effect.
protect-to-working	Causes a manual signal switchover from the protection path to the working path if the protection path signal has not failed.
working-to-protect	Causes a manual signal switchover from the working path to the protection path whether or not the working path signal is active.

Example:

```
SM12XPA# aps 1 ?
clear               Clear a switchover (FS, MS-to-W, MS-to-P), lockout (LO), exercise (EXER)
                    request and a WTR condition
exercise            Exercise an APS instance. Use 'aps <inst> clear' to clear the request.
freeze              Freezes the state of the APS instance. While in this mode, additional
                    near-end commands, condition changes, and received APS information are
                    ignored. Use 'no aps <inst> freeze' to get out of this mode.
lockout             Lockout APS instance of protection. Use 'aps <inst> clear' to clear the
                    request.
switch              Request a switchover from the working path to the protection path or
                    vice versa. Use 'aps <inst> clear' to clear the request.
SM12XPA#
```

3. Clear Commands

Table : Clear Commands

Command	Function
access	Access management
access-list	Access list
aps	Automatic Protection Switching
cfm	Connectivity Fault Management (CFM)
dot1x	IEEE Standard for port-based Network Access Control
erps	Ethernet Ring Protection Switching
ip	IP protocol
ipv6	IPv6 configuration commands
known-host-keys	Clear the cache of known hosts SSH keys
lacp	Clear LACP statistics
link-oam	Clear Link OAM statistics
lldp	Clears LLDP statistics.
logging	System logging message
mac	MAC Address Table
mvr	Multicast VLAN Registration configuration
network-clock	Clear active WTR timer.
port-security	Port Security
ptp	Precision Timing Protocol
sflow	Statistics flow.
spanning-tree	STP Bridge
statistics	Clear statistics for one or more given interfaces
tsn	clear TSN related flags

access

Clear Access management

Syntax: **clear** access management statistics

Parameters:

management	Access management configuration.
statistics	Statistics data.

Example:

```
SM12XPA# clear access management statistics
SM12XPA#
```

access-list

Clear Access list.

Syntax: **Clear** access-list ace statistics.

Parameters:

ace	Access list entry
statistics	Traffic statistics

Example:

```
SM12XPA# clear access-list ace statistics
SM12XPA#
```

aps

Clear Automatic Protection Switching.

Syntax: **clear** aps [<inst_list>] statistics

Parameters:

<range_list>	The range of APS instances.
statistics	Clear APS counters
|	Output modifiers
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines

Example:

```
SM12XPA# clear aps statistics | exclude 2
SM12XPA#
```

cfm

Clear Connectivity Fault Management (CFM).

Syntax: **clear** cfm meps [domain <md_name>] [service <ma_name>] [mep-id <mepid>] statistics

Parameters:

meps	Clear MEP statistics
domain	Select domain to clear counters for
<kword1-15>	Domain name to clear counters for
mep-id	Select a MEP to clear counters for
service	Select a service to clear counters for
statistics	Clear statistics

Example:

```
SM12XPA# clear cfm meps statistics
SM12XPA#
```

dot1x

Clear IEEE Standard for port-based Network Access Control.

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

Parameters:

statistics	Clears the statistics counters
interface	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 1/1-12
<port_type_list>	Port list in 1/1-4

Example:

```
SM12XPA# clear dot1x statistics interface GigabitEthernet 1/1-12
SM12XPA#
```

erps

Clear Ethernet Ring Protection Switching

Syntax:

clear erps 1~64 statistics

clear erps statistics

Parameters:

1~64	Zero or more ERPS group numbers
statistics	Clear ERPS statistics

Example:

```
SM12XPA# clear erps statistics
SM12XPA#
```

ip

Clear IP protocol.

Syntax:

clear ip acd [| (begin | exclude | include) <line>]

clear ip arp

clear ip dhcp detailed statistics { server | client | snooping | relay | helper | all } [interface { [*] | GigabitEthernet | 10 GigabitEthernet } < PORT_TYPE_LIST>]

clear ip dhcp relay statistics

clear ip dhcp server binding <ipv4_ucast>

clear ip dhcp server binding type [automatic | manual | expired]

clear ip dhcp server statistics

clear ip dhcp snooping statistics [interface { [*] | GigabitEthernet | 10 GigabitEthernet } < PORT_TYPE_LIST>]

clear ip igmp snooping statistics

clear ip igmp snooping vlan <vlan_list> statistics

clear ip statistics

Parameters:

acd	Address Conflict Detection
arp	Clear ARP cache
dhcp	Dynamic Host Configuration Protocol
igmp	Internet Group Management Protocol statistics Traffic statistics
|	Output modifiers
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines

detailed	Detailed statistics
relay	DHCP relay agent configuration
server	Miscellaneous DHCP server information
snooping	DHCP snooping
all	Clear all DHCP related statistics
client	DHCP client
helper	DHCP normal L2 or L3 forward
relay	DHCP relay
server	DHCP server
interface	Select an interface to configure
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-12
<port_type_list>	Port list in 1/1-4
binding	Clear DHCP binding
statistics	DHCP server statistics
<ipv4_ucast>	IP address of the binding
type	Type of bindings to clear
automatic	Clear (expire) automatic bindings
expired	Clear (remove) expired bindings
manual	Clear (expire) manual bindings
snooping	Snooping IGMP
statistics	Running IGMP snooping counters
vlan	Search by VLAN
<vlan_list>	VLAN identifier (VID)

Example:

```
SM12XPA# clear ip arp
SM12XPA#
```

IPv6

Clear IPv6 configuration commands.

Syntax:

clear ipv6 mld snooping [vlan <v_vlan_list>] statistics

clear ipv6 neighbors

clear ipv6 statistics

Parameters:

mld	Multicasat Listener Discovery
neighbors	Ipv6 neighbors
statistics	Traffic statistics
snooping	Snooping MLD
statistics	Running MLD snooping counters
vlan	Ipv6 interface traffic
<vlan_list>	VLAN identifier(s): VID

Example:

```
SM12XPA# clear ipv6 mld snooping vlan 3 statistics
SM12XPA# clear ipv6 neighbors
SM12XPA# Clear ipv6 statistics
SM12XPA#
```

known-host-keys

Clear the cache of known hosts SSH keys.

Syntax:

clear known-host-keys

Parameters:

known-host-keys	Clear the cache of known hosts SSH keys

Example:

```
SM12XPA# clear known-host-keys
SM12XPA#
```

lacp

Clear LACP statistics

Syntax:

clear lacp statistics

Parameters:

statistics	Clear all LACP statistics

Example:

```
SM12XPA# clear lacp statistics
SM12XPA#
```

Link-oam

Clear Link OAM statistics

Syntax:

clear link-oam statistics

clear link-oam statistics interface *

clear link-oam statistics interface (* | GigabitEthernet | 10GigabitEthernet) <port_type_list>

Parameters:

statistics	Clear Rx/Tx counters
interface	Clear Link OAM statistic on a specific interface or 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 1/1-12
<port_type_list>	Port list in 1/1-4

Example:

```
SM12XPA# clear link-oam statistics interface 10GigabitEthernet 1/1-3
SM12XPA#
```

lldp

Clear LLDP statistics.

Syntax:

clear lldp statistic

clear lldp statistic | [begin | exclude | include] <line>

clear lldp statistics global

clear lldp statistics global | [begin | exclude | include] <line>

clear lldp statistics interface *

clear lldp statistics interface * | [begin | exclude | include] <line>

clear lldp statistics interface * <port_type_list>

clear lldp statistics interface (GigabitEthernet | 10GigabitEthernet) <port_type_list>

Parameters:

statistics	Clear LLDP statistics
|	Output modifiers
global	Clear global counters
interface	Interface keyword
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines
*	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 1/1-12
<port_type_list>	Port list in 1/1-4

Example:

```
SM12XPA# clear lldp statistics interface *
SM12XPA#
```

logging

Clear System logging message.

Syntax:

clear logging

clear logging [error] [informational] [notice] [warning]

Parameters:

error	Severity 3: Error conditions
informational	Severity 6: Informational messages
notice	Severity 5: Normal but significant condition
warning	Severity 4: Warning conditions

Example:

```
SM12XPA# clear logging informational error warning
SM12XPA#
```

mac

Clear MAC Address Table.

Syntax:

Clear mac address-table

Parameters:

address-table	Flush MAC Address table.

Example:

```
SM12XPA# clear mac address-table
SM12XPA#
```

mvr

Clear Multicast VLAN Registration configuration.

Syntax:

clear mvr name <word16> statistics

clear mvr statistics

clear mvr vlan <vlan_list> statistics

Parameters:

name	MVR multicast name
statistics	Running MVR protocol counters
vlan	MVR multicast vlan
< word16>	MVR multicast VLAN name
<vlan_list>	MVR multicast VLAN list

Example:

```
SM12XPA# clear mvr vlan 25 statistics
SM12XPA#
```

network-clock

Clear active WTR timer.

Syntax:

clear network-clock clk-source <clk_list>

Parameters:

clk-source	commands related to a specific clock source.
<1~2>	Clock source number

Example:

```
SM12XPA# clear network-clock clk-source 1
SM12XPA#
```

port-security

Clear Port security.

Syntax:

clear port-security dynamic

clear port-security dynamic address <mac_addr>

clear port-security dynamic address <mac_addr> vlan <vlan_id>

clear port-security dynamic interface *

clear port-security dynamic interface * [<port_type_list> | vlan <vlan_id>]

clear port-security dynamic interface (GigabitEthernet | 10GigabitEthernet) <port_type_list>

clear port-security dynamic vlan <vlan_id>

Parameters:

dynamic	Dynamic entries
address	Clear a specific (VLAN, MAC) tuple
interface	Port interface
vlan	Delete all MAC addresses on a given VLAN
<mac_addr>	MAC address to clear
vlan	VLAN keyword
<vlan_id>	VLAN on which to clear all MAC addresses
*	All switches or All ports
GigabitEthernet 1	Gigabit Ethernet Port
10GigabitEthernet	10 Gigabit Ethernet Port
<port_type_list>	Port list for all port types

<vlan_id>	VLANs on interface to clear all MAC addresses for
<port_type_list>	Port list in 1/1-12
<port_type_list>	Port list in 1/1-4

Example:

```
SM12XPA# clear port-security dynamic vlan 1
SM12XPA#
```

ptp

Clear PTP parameters.

Syntax:

clear ptp <0-3> servo

Parameters:

<0-3>

servo

Example:

```
SM12XPA# clear ptp 1 servo
SM12XPA#
```

sflow

Clear Statistics flow.

Syntax:

clear sflow statistics receiver

clear sflow statistics samplers

clear sflow statistics samplers interface *

clear sflow statistics samplers interface * <port_type_list>

clear sflow statistics samplers interface (GigabitEthernet | 10GigabitEthernet) <port_type_list>

Parameters

statistics	sFlow statistics
receiver	Clear statistics for receiver.
samplers	Clear statistics for samplers
interface	Clear 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 1/1-12

<port_type_list>	Port list in 1/1-4

Example:

```
SM12XPA# clear sflow statistics interface GigabitEthernet 1/1-12
SM12XPA#
```

spanning-tree

Clear STP Bridge.

Syntax:

clear spanning-tree detected-protocols

clear spanning-tree detected-protocols interface *

clear spanning-tree detected-protocols interface * <port_type_list>

clear spanning-tree detected-protocols interface (GigabitEthernet | 10GigabitEthernet) <port_type_list>

clear spanning-tree statistics

clear spanning-tree statistics interface *

clear spanning-tree statistics interface * <port_type_list>

clear spanning-tree statistics interface (GigabitEthernet | 10GigabitEthernet) <port_type_list>

Parameters:

detected-protocols	Set the STP migration check
statistics	STP statistics
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 1/1-12

Example:

```
SM12XPA# clear spanning-tree detected-protocols interface *
SM12XPA#
```

statistics

Clear statistics for one or more given interfaces.

Syntax:

clear statistics *

clear statistics * <port_type_list>

clear statistics (GigabitEthernet | 10GigabitEthernet) <port_type_list>

clear statistics interface *

clear statistics interface * <port_type_list>

clear statistics interface (GigabitEthernet | 10GigabitEthernet) <port_type_list>

Parameters:

interface	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 1/1-12
<port_type_list>	Port list in 1/1-4

Example:

```
SM12XPA# clear statistics GigabitEthernet 1/1-12
SM12XPA#
```

system

Clear system LED status.

Syntax:

clear system led status (all | fatal | software)

clear system led status (all | fatal | software) (| (begin | exclude | include) <line>)

Parameters:

led	led
status	status
all	Clear all error status of the system LED and back to normal indication
fatal	Clear fatal error status of the system LED
software	Clear generic software error status of the system LED
|	Output modifiers
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines

Example:

```
SM12XPA# clear system led status software
SM12XPA#
```

tsn

Clear Time-Sensitive Networking related flags.

Syntax:

clear tsn flow meter [<index_list>] [mark-red]

clear tsn frer [<inst_list>] statistics

clear tsn stream filter [<index_list>] [statistics | stream-blocked-due-to-oversize-frame]

clear tsn stream gate [<index_list>] [gate-closed-due-to-octets-exceeded | gate-closed-due-to-invalid-rx]

Parameters:

flow	Clear flow-meter
frer	Frame Replication and Elimination for Reliability (802.1CB)
meter	Clear flow-meter
|	Output modifiers
begin	Begin with the line that matches
<line>	String to match output lines
exclude	Exclude lines that match
include	Include lines that match
<0~1023>	Id of flow meter
mark-red	Clear stream-blocked-due-to-oversize-frame flag
frer	Frame Replication and Elimination for Reliability (802.1CB)
<1~127>	The range of FRER instances to clear statistics for
statistics	Clear counters
stream	Clear stream gate closed flags
filter	Clear stream filter
gate	Clear stream gate closed flags
<0~1023>	Id of stream filter
statistics	Clear statistics for stream filter
stream-blocked-due-to-oversize-frame	Clear stream-blocked-due-to-oversize-frame flag
<0~1023>	Id of stream gate
gate-closed-due-to-invalid-rx	Clear gate-closed-due-to-invalid-rx flag
gate-closed-due-to-octets-exceeded	Clear gate-closed-due-to-octets-exceeded flag

Example:

```
SM12XPA# clear tsn stream gate gate-closed-due-to-octets-exceeded 1
SM12XPA#
```

4. Config Mode Commands

To enter Config mode from Exec mode type `configure terminal <cr>`.

Table : Configure Mode Commands

Command	Function
aaa	Authentication, Authorization and Accounting
access	Access management
access-list	Access list
aggregation	Aggregation mode
aps	Automatic Protection Switching
banner	Define a banner
cfm	Connectivity Fault Management (CFM)
clock	Configure time-of-day clock
command-history-log	Enable to Save Command History to Flash
ddmi	DDMI Information
default	Set a command to its defaults
dms	Enable DMS Master
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
erps	Ethernet Ring Protection Switching
event	Trap event severity level
exec-timeout	Set timeout time
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	Internet Protocol configuration commands
ipmc	IPv4/IPv6 multicast configuration
ipv6	IPv6 configuration commands
key	Authentication key management
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 Maps key string
monitor	Monitoring different system events
mvr	Multicast VLAN Registration configuration
mvrp	Enable MVRP feature globally
network-clock	Configure network clock
no	Negate a command or set its defaults
ntp	Configure NTP
percepxion	Percepxion configuration
port-security	Port Security
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.
snmp-server	Set SNMP server's configurations
spanning-tree	Spanning Tree protocol
stream	VCL stream definition
svl	Shared VLAN Learning
switchport	Set VLAN switching mode characteristics
system	Set the SNMP server's configurations
tacacs-server	Configure TACACS+
tsn	Time Sensitive Networking configuration
udld	Enable UDLD in the aggressive or normal mode and to 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

terminal

Configure from the terminal in Config mode. See chapter 4. Config Mode Commands on page 25.

Syntax: **configure** terminal <cr>

Parameters:

terminal Enter Config mode from Exec mode.

Example:

```
SM12XPA# configure terminal
SM12XPA# (config)#
```

aaa

Configure Authentication, Authorization and Accounting. Note that HTTPS is the default and HTTP will get redirected to HTTPS. Also, SSH is enabled and Telnet disabled by default; you have the option to enable Telnet.

Syntax:

aaa authentication login [ssh | telnet | http | console] [local | radius | tacacs]
aaa authorization (console | ssh | telnet) tacacs commands <0-15>
aaa authorization (console | ssh | telnet) tacacs commands <0-15> config-commands
aaa accounting (Console | ssh | telnet) tacacs exec
aaa accounting (Console | ssh | telnet) tacacs commands <0-15>

Parameters:

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

Example:

```
SM12XPA# (config)# aaa authentication login http radius
SM12XPA# (config)#
```

access

Configure Access management.

Syntax:

access management <1..16>

access management <1..16> <1..4095> [<ipv4_ucast> | <ipv6_ucast>] { [web] [snmp] [telnet] | all }

access management <1..16> <1..4095> [<ipv4_ucast> | <ipv6_ucast>] { [web] | [snmp] | [telnet] | [all] }

access management <1..16> <1..4095> [<ipv4_ucast> | <ipv6_ucast>] to <ipv4_ucast>

Parameters:

management	Access management configuration
< 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
<ipv4_ucast>	End IPv4 unicast address

Example:

```
SM12XPA# (config)# access management 10 3 192.168.1.1 all
SM12XPA# (config)#
```

access-list

Configure Access list commands.

Table : configure – access-list Commands

Command	Function
ace	Access list entry
rate-limiter	Rate limiter

ace

Access list entry.

Syntax:

access-list ace <1-512> action [deny | permit]

access-list ace <1-384> action { (deny | permit) [dmac-type | frame-type | ingress | logging | mirror | next | policy | rate-limiter | redirect | shutdown | tag | tag-priority | vid] }

access-list ace <1-512> action filter interface (* | GigabitEthernet | 10GigabitEthernet) [<port_type_list> | dmac-type | frame-type | ingress | logging | mirror | next | policy | rate-limiter | redirect | shutdown | tag | tag-priority | vid]

access-list ace <1-512> action (deny | permit) dmac-type (any | broadcast | multicast | unicast) [frame-type | ingress | logging | mirror | next | policy | rate-limiter | redirect | shutdown | tag | tag-priority | vid]

access-list ace <1-512> action (deny | permit) frame-type { (any [dmac-type | ingress | logging | mirror | next | policy | rate-limiter | redirect | shutdown | tag | tag-priority | vid]) }

access-list ace <1-512> action (deny | permit) frame-type { (arp [arp-flag | arp-opcode | dip | dmac-type | ingress | logging | mirror | next | policy | rate-limiter | redirect | shutdown | sip | smac | tag | tag-priority | vid]) }

access-list ace <1-512> action (deny | permit) frame-type { (etype [dmac | dmac-type | etype-value | ingress | logging | mirror | next | policy | rate-limiter | redirect | shutdown | smac | tag | tag-priority | vid]) }

access-list ace <1-512> action (deny | permit) frame-type { (ipv4 [dip | dmac-type | ingress | ip-flag | ip-protocol | logging | mirror | next | policy | rate-limiter | redirect | shutdown | sip | tag | tag-priority | vid]) }

access-list ace <1-512> action (deny | permit) frame-type { (ipv4-icmp [dip | dmac-type | icmp-code | icmp-type | ingress | ip-flag | ip-protocol | logging | mirror | next | policy | rate-limiter | redirect | shutdown | sip | tag | tag-priority | vid]) }

access-list ace <1-512> action (deny | permit) frame-type { (ipv4-tcp | ipv4-udp) [dip | dmac-type | dport | ingress | ip-flag | logging | mirror | next | policy | rate-limiter | redirect | shutdown | sip | sport | tag | tag-priority | vid]) }

access-list ace <1-512> action (deny | permit) frame-type { (ipv6 | ipv6-udp) [dmac-type | hop-limit | ingress | logging | mirror | next | policy | rate-limiter | redirect | shutdown | sip | tag | tag-priority | vid]) }

access-list ace <1-512> action (deny | permit) frame-type { (ipv6-icmp [dip | dmac-type | icmp-code | icmp-type | ingress | logging | mirror | next | policy | rate-limiter | redirect | shutdown | sip | tag | tag-priority | vid]) }

access-list ace <1-512> action (deny | permit) frame-type { (ipv6-tcp [dmac-type | dport | hop-limit | ingress | logging | mirror | next | policy | rate-limiter | redirect | shutdown | sip | sport | tag | tag-priority | tcp-flag | vid]) }

access-list ace <1-512> action (deny | permit) ingress{ (any [dmac-type | frame-type | logging | mirror | next | policy | rate-limiter | redirect | shutdown | tag | tag-priority | vid]) | { interface (* | GigabitEthernet | 10GigabitEthernet) [<port_type_list> | dmac-type | frame-type | ingress | logging | mirror | next | policy | rate-limiter | redirect | shutdown | tag | tag-priority | vid] }

access-list ace <1-512> action (deny | permit) logging [disable | dmac-type | frame-type | ingress | mirror | next | policy | rate-limiter | redirect | shutdown | tag | tag-priority | vid]

access-list ace <1-512> action (deny | permit) mirror [disable | dmac-type | frame-type | ingress | logging | next | policy | rate-limiter | redirect | shutdown | tag | tag-priority | vid]

access-list ace <1-512> action (deny | permit) next (<1-512> | last) [dmac-type | frame-type | ingress | logging | mirror | policy | rate-limiter | redirect | shutdown | tag | tag-priority | vid]

access-list ace <1-512> action (deny | permit) policy <0-127> [dmac-type | frame-type | ingress | logging | mirror | next | policy-bitmask | rate-limiter | redirect | shutdown | tag | tag-priority | vid]

access-list ace <1-512> action (deny | permit) rate-limiter (<1-16> | disable) [dmac-type | frame-type | ingress | logging | mirror | next | policy | redirect | shutdown | tag | tag-priority | vid]

access-list ace <1-512> action (deny | permit) redirect { (disable [dmac-type | frame-type | ingress | logging | mirror | next | policy | rate=limiter| shutdown | tag | tag-priority | vid]) } | { interface (* | GigabitEthernet | 10GigabitEthernet) [<port_type_list> | dmac-type | frame-type | ingress | logging | mirror | next | policy | rate-limiter | shutdown | tag | tag-priority | vid] }

access-list ace <1-512> action (deny | permit) shutdown [disable | dmac-type | frame-type | ingress | logging | mirror | next | policy | rate-limiter | redirect | tag | tag-priority | vid]

access-list ace <1-512> action (deny | permit) tag (any | tagged | untagged) [dmac-type | frame-type | ingress | logging | mirror | next | policy | rate-limiter | redirect | shutdown | tag-priority | vid]

access-list ace <1-512> action (deny | permit) tag-priority (0-1 | 0-3 | 2-3 | 4-5 | 4-7 | 6-7 | <0-7> | any) [dmac-type | frame-type | ingress | logging | mirror | next | policy | rate-limiter | redirect | shutdown | tag | vid]

access-list ace <1-512> action (deny | permit) vid (<1-4095> | any) [dmac-type | frame-type | ingress | logging | mirror | next | policy | rate-limiter | redirect | shutdown | tag | tag-priority]

access-list ace update <1-512> [action | dmac-type | frame-type | ingress | logging | mirror | next | policy | rate-limiter | redirect | shutdown | tag | tag-priority | vid]

Parameters:

<1-512>	ACE ID
update	Update an existing ACE
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	Gigabit Ethernet Ports
10GigabitEthernet	10Gigabit Ethernet Ports
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-12
<port_type_list>	Port list in 1/1-4
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
sip	Source IP address field
smac	Source MAC address field
dmac	Destination MAC address field
dmac-type	The type of destination MAC address
etype-value	Ether type value
ip-flag	IP flag
ip-protocol	IPv4 protocol field
icmp-code	ICMP code field
icmp-type	ICMP type field
dport	TCP/UDP destination port field
sport	TCP/UDP source port field

tcp-flag	TCP flag
hop-limit	IPv6 hop limiter field
disable	Disable logging
<1-512>	The next ID
last	Place the current ACE to the end of access list
<0-127>	Policy ID
policy-bitmask	The bitmask for policy ID
<1-16>	Rate limiter ID
disable	Disable rate-limiter
disable	Disable
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:

```
SM12XPA# (config)# access-list ace 10 action deny
SM12XPA# (config)#
```

rate-limiter

Configure Rate limiter parameters.

Syntax:

access-list rate-limiter (10pps <0-500000>) | (25kbps <0-400000>) | <1~16> (10pps <0-500000> | 25kbps <0-400000>)

Parameters:

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

Example:

```
SM12XPA# (config)# access-list rate-limiter 25kbps 0
SM12XPA# (config)#
```

aggregation

Configure Aggregation mode.

Syntax:

aggregation mode [dmac | ip | port | smac]

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:

```
SM12XPA# (config)# aggregation mode dmac
SM12XPA# (config)#
```

aps

Configure Automatic Protection Switching.

Syntax:

aps <inst>

Parameters:

<1-14>	APS instance number

Example:

```
SM12XPA# (config)# aps 1
SM12XPA# (config-aps)# ?
<to be supplied>
SM12XPA#
```

banner

Define a banner.

Syntax:

banner [<LINE>]

banner (exec | login | motd) <LINE>

Parameters:

<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

Example:

```
SM12XPA#(config)# banner exec LINE
Enter TEXT message. End with the character 'L'.
L
SM12XPA#(config)#
```

cfm

Configure Connectivity Fault Management. CFM is an IEEE 802.1ag and ITU Y.1731 standard for managing connectivity at the Ethernet service level.

Syntax:

cfm domain <md_name>

cfm interface-status-tlv { disable | enable }

cfm organization-specific-tlv { disable | enable oui <oui> subtype <subtype> value <value> }

cfm port-status-tlv { disable | enable }

cfm sender-id-tlv { disable | chassis | management | chassis-management }

Parameters:

domain	Maintenance Domain (MD)
<kword1-15>	Domain name
interface-status-tlv	Include or exclude Interface Status TLV in CCM PDUs (may be overridden in domain and service)
disable	Exclude Interface Status TLV from PDUs (default)
enable	Include Interface Status TLV in PDUs
organization-specific-tlv	Include or exclude Organization-Specific TLV in PDUs (may be overridden in domain and service)
disable	Exclude Organization-Specific TLV from PDUs (default)
enable	Include Organization-Specific TLV in PDUs
port-status-tlv	Include or exclude Port Status TLV in CCM PDUs (may be overridden in domain and service)
disable	Do not include Port Status TLV in PDUs (default)

enable	Include Port Status TLV in PDUs
sender-id-tlv	Default Sender ID TLV format to be used in PDUs (may be overridden in domain and service)
chassis	Enable Sender ID TLV and send Chassis ID (MAC Address)
chassis-management	Enable Sender ID TLV and send both Chassis ID (MAC Address) and Management Address (IPv4 Address)
disable	Exclude Sender ID TLV from PDUs (default)
management	Enable Sender ID TLV and send Management address (IPv4 Address)

Example:

```
SM12XPA#(config)# cfm sender-id-tlv management
SM12XPA#(config)#
```

clock

Configure time-of-day clock.

Syntax:

clock summer-time <word16> date ([<1-12>]) | (<1-12> <1-31> <2000-2097> <hhmm> <1-12> <1-31> <2000-2097> <hhmm> [<1-1439>])

clock summer-time <word16> recurring ([<1-5>]) | (<1-5> <1-7> <1-12> <hhmm> <1-5> <1-7> <1-12> <hhmm> [<1-1439>])

clock timezone <word16> <-23-23> [<0-59> <0-9>]

Parameters:

summer-time	Configure summer (daylight savings) time
timezone	Configure time zone
<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)
<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
<1-5>	Week number to start
<1-7>	Weekday to start
<-23-23>	Hours offset from UTC

<0-59> Minutes offset from UTC

<0-9> Sub type of time zone

Example:

```
SM12XPA#(config)# clock clock timezone taipei 8
SM12XPA#(config)#
```

command-history-log

Enable to Save Command History to Flash

Syntax: **command-history-log** <cr>

Parameters:

Example:

```
SM12XPA(config)# command-history-log
SM12XPA(config)#
```

ddmi

Configure Digital Diagnostics Monitoring Interface information.

Syntax:

Parameters:

ddmi DDMI Information

Example:

```
SM12XPA#(config)# ddmi
SM12XPA#(config)# ?
<to be supplied>
SM12XPA#(config)#
```

default

Set a command to its defaults.

Syntax:

default access-list rate-limiter [<1-16>]

Parameters:

access-list Access list

rate-limiter Rate limiter

<1-16> Rate limiter ID

Example:

```
SM12XPA#(config)# default access-list rate-limiter 3
SM12XPA#(config)#
```

do

Run exec commands in Configuration mode.

Syntax:

do < LINE > [< LINE >]

Parameters:

<line> Exec Command

Example:

```
SM12XPA#(config)# do clear statistics interface GigabitEthernet 1/1-1
SM12XPA#(config)#
```

dot1x

Configure IEEE Standard for port-based Network Access Control.

Syntax:

dot1x authentication timer re-authenticate <1-3600>

dot1x authentication timer inactivity <10-1000000>

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

dot1x guest-vlan [<1-4095> | supplicant]

dot1x max-reauth-req <1-255>

dot1x re-authentication

dot1x system-auth-control

dot1x timeout (tx-period <1-65535>) | (quiet-period <10-1000000>)

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
timer	timer
inactivity	Time in seconds between check for activity on successfully authenticated MAC addresses.
re-authenticate	The period between re-authentication attempts in seconds
<10-1000000>	seconds
<1-3600>	seconds
guest-vlan	Globally enables/disables state of guest-vlan
radius-qos	Globally enables/disables state of RADIUS-assigned QoS.

radius-vlan	Globally enables/disables state of RADIUS-assigned VLAN.
<1-4095>	Guest VLAN ID used when entering the Guest VLAN
supplicant	The switch remembers if an EAPOL frame has been received on the port for the lifetime of the port. Once the switch considers whether to enter the Guest VLAN, it will first check if this option is enabled or disabled. If disabled (unchecked, default), the switch will only enter the Guest VLAN if an EAPOL frame has not been received on the port for the life-time of the port. If enabled (checked), the switch will consider entering the Guest VLAN even if an EAPOL frame has been received on the port for the life-time of the port.
<1-255>	number of times
quiet-period	Time in seconds before a MAC-address that failed authentication gets a new authentication chance.
tx-period	the time between EAPOL retransmissions.
<1-65535> seconds	

Example:

```
SM12XPA#(config)# dot1x authentication timer re-authenticate 1000
SM12XPA#(config)#
```

enable

Assign and modify password and secret parameters.

Syntax:

enable password (level <1-15> <word32>) | (<word32>)

enable secret (0 | 5) (level <1-15> <word32>) | (<word32>)

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
<1-15>	Level number
0	Specifies an UNENCRYPTED password will follow
5	Specifies an ENCRYPTED secret will follow

Example:

```
SM12XPA#(config)# enable password level 10 999
SM12XPA#(config)#
```

end

Go back to EXEC mode.

Syntax:

end

Example:

```
SM12XPA#(config)# end
SM12XPA#
```

erps

Configure Ethernet Ring Protection Switching.

Syntax:

erps 1-64 guard 10-2000

erps 1-64 holdoff 0-10000

erps 1-64 major port0 interface (GigabitEthernet | 10GigabitEthernet) <port_type_id> port1 interface (GigabitEthernet | 10GigabitEthernet) <port_type_id> [interconnect]

erps 1-64 mep port0 sf <1-3124> aps <1-3124> port1 sf <1-3124> aps <1-3124>

erps 1-64 revertive 1-12

erps 1-64 rpl (neighbor | owner) [port0 | port1]

erps 1-64 sub port0 interface (GigabitEthernet | 10GigabitEthernet) <port_type_id> (interconnect 1-64 [virtual-channel]) | port1 interface (GigabitEthernet | 10GigabitEthernet) <port_type_id> [virtual-channel]

erps 1-64 topology-change propagate

erps 1-64 version [1 | 2]

erps 1-64 vlan { (add | remove) <vlan_list> } | { [<vlan_list> | none] }

Parameters:

1-64	ERPS group number
guard	Guard time
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
0-10000	Hold-off time in ms
port0	ERPS Port 0 interface

interface	Select an interface to configure
GigabitEthernet	Gigabit Ethernet Ports
10GigabitEthernet	10Gigabit Ethernet Ports
<port_type_list>	Port list in 1/1-12
<port_type_list>	Port list in 1/1-4
port1	ERPS Port 1 interface
interconnect	Major ring is interconnected
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
<1-3124>	Index of Port 1 SignalFail MEP
<1-3124>	Index of Port 1 APS MEP
1-12	Wait-to-restore time in minutes
neighbor	Neighbor role
owner	Owner role
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

Example:

```
SM12XPA#(config)# erps 1 rpl neighbor port0
SM12XPA#(config)#
```

event

Configure Trap event severity level.

Syntax:

event group [aclaccess-mgmt | arp-inspection | auth-failed | bsc-protection | cold-start | dhcp | dhcp-snooping | ip-source-guard | lacp | link-updown | login | logout | loop-protection | mac-table | maintenance | mgmt-ip-change | nas | port | port-security | rmon | sfp | spanning-tree | system | user | warm-start] { [level < 0-7 >] | { syslog [enable | disable] } | { trap [enable | disable] } | { smtp [enable | disable] }}

event group [acl | aclaccess-mgmt | arp-inspection | auth-failed | bsc-protection | cold-start | dhcp | dhcp-snooping | ip-source-guard | lacp | link-updown | login | logout | loop-protection | mac-table | maintenance | mgmt-ip-change | nas | port | port-security | rmon | sfp | spanning-tree | system | user | warm-start] [level | syslog | trap | smtp]

event group [acl | aclaccess-mgmt | arp-inspection | auth-failed | bsc-protection | cold-start | dhcp | dhcp-snooping | ip-source-guard | lacp | link-updown | login | logout | loop-protection | mac-table | maintenance | mgmt-ip-change | nas | port | port-security | rmon | sfp | spanning-tree | system | user | warm-start] [level | syslog | trap] < 0-7 > { syslog [enable | disable] [trap] } | { trap [enable | disable] [syslog] }

Parameters:

group	Trap Event group name
acl	Group ID ACL
access-mgmt	Group ID ACCESS-MGMT
arp-inspection	Group ID ARP-INSPECTION
auth-failed	Group ID AUTH-FAILED
bsc-protection	Group ID BCS-PROTECTION
cold-start	Group ID COLD-START
dhcp	Group ID DHCP
dhcp-snooping	Group ID DHCP-SNOOPING
ip-source-guard	Group ID IP-SOURCE-GUARD
lacp	Group ID LACP
link-updown	Group ID LINK-UPDOWN
login	Group ID LOGIN
logout	Group ID LOGOUT
loop-protection	Group ID LOOP-PROTECTION
mac-table	Group ID MAC-TABLE
maintenance	Group ID MAINTENANCE
mgmt-ip-change	Group ID MGMT-IP-CHANGE
nas	Group ID NAS
port	Group ID PORT
port-security	Group ID PORT-SECURITY
rmon	Group ID RMON
sfp	Group ID SFP
spanning-tree	Group ID SPANNING-TREE

system	Group ID SYSTEM
user	Group ID USER
warm-start	Group ID WARM-START
level	event group 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 (0..7)
enable	syslog mode enable
disable	syslog mode disable
enable	trap mode enable
disable	trap mode disable
disable	smtp mode disable
enable	smtp mode enable

Example:

```
SM12XPA#(config)# event group lacp trap enable
SM12XPA#(config)#
```

exec-timeout

Set timeout time

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

Parameters:

autologout	autologout
0	off
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:

```
SM12XPA(config)# exec-timeout autologout 5
SM12XPA(config)# exec-timeout autologout 0
SM12XPA(config)#
```

exit

Exit from current mode.

Syntax:

Exit from current mode

Parameters:

exit Exit from current mode

Example:

```
SM12XPA#(config)# exit
SM12XPA#
```

green-ethernet

Configure Green ethernet (Power reduction).

Syntax:

green-ethernet eee optimize-for-power

Parameters:

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

Example:

```
SM12XPA#(config)# green-ethernet eee optimize-for-power
SM12XPA#
```

gvrp

Configure GVRP (GARP VLAN Registration Protocol or Generic VLAN Registration Protocol) parameters.

Syntax:

gvrp

gvrp max-vlans <1-4094>

gvrp time [join-time <1-20>] [leave-time <60-300>] [leave-all-time <1000-5000>]

Parameters:

max-vlans	Number of simultaneously VLANs that GVRP can control
time	Configure GARP protocol timer parameters. IEEE 802.1D-2004, clause 12.11.
max-vlans	<1-4094>
join-time	Set GARP protocol parameter JoinTime.
leave-all-time	Set GARP protocol parameter LeaveAllTime.
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.

Example:

```
SM12XPA#(config)# gvrp max-vlans 333
SM12XPA#(config)# gvrp time join-time 13 leave-all-time 3000 leave-time 200
SM12XPA#(config)#
```

help

Show a description of the interactive help system.

Syntax:

help

Parameters:

none

Example:

```
SM12XPA#(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?'.)
XFGS-3814YA(config)#
```

hostname

Set system's network name.

Syntax:

hostname <hostname>

Parameter:

<host_name> This system's network name.

Example:

```
SM12XPA#(config)# hostname abc
abc(config)#
```

interface

Select an interface to configure. This command changes from Config mode to Interface Config mode.
See "Interface Config Mode Commands" on page 228.

Syntax:

interface (<port_type> [<plist>])

interface llag <llag_id>

interface vlan <vlist>

Parameters:

*	All switches or All ports
10GigabitEthernet	10Gigabit Ethernet Ports
25GigabitEthernet	25 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 1/1-12
<port_type_list>	Port list in 1/1-2
<1-7>	ID of LLAG interface
<vlan_list>	List of VLAN interface numbers

Example:

```
SM12XPA#(config)# interface GigabitEthernet 1/1-12
SM12XPA(config)# interface 25GigabitEthernet 1/2
SM12XPA(config-if)# exit
SM12XPA(config)# interface 10GigabitEthernet 1/9
SM12XPA(config-if)# interface vlan 3
SM12XPA(config-if-vlan)#
SM12XPA#(config)# interface llag 1
SM12XPA (config-llag)#
```

ip

Configure Interface Internet Protocol parameters.

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>] | delete | generate }

ip http secure-server port <port>

ip igmp host-proxy [leave-proxy]

ip igmp snooping

ip igmp snooping vlan <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> [distance <v_distance>]

ip route <v_ipv4_subnet> <v_ipv4_gw> [distance <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

ip ssh keyregen

ip ssh port <port>

ip telnet port <port>

ip verify source

ip verify source translate

Parameters:

arp	Address Resolution Protocol
dhcp	Configure DHCP server parameters
dns	Domain Name System
domain	IP DNS Resolver
helper-address	DHCP helper server address
http	Hypertext Transfer Protocol
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
inspection	ARP inspection
entry	ARP inspection entry
translate	ARP inspection translate all entries
vlan	ARP inspection vlan setting
interface	Select an interface to configure
GigabitEthernet	Gigabit Ethernet Ports
10GigabitEthernet	10Gigabit Ethernet Ports
<port_type_list>	Port list in 1/1-12
<port_type_list>	Port list in 1/1-4
<vlan_id>	Select a VLAN id to configure
<mac_ucast>	Select a MAC address to configure
<ipv4_ucast>	Select an IP Address to configure
<vlan_list>	arp inspection vlan list
logging	ARP inspection vlan logging mode configuration
all	log all entries
deny	log denied entries
permit	log permitted entries
excluded-address	Prevent DHCP from assigning certain addresses
pool	Configure DHCP address pools
relay	DHCP relay agent configuration
server	Enable DHCP server

snooping	DHCP snooping
<ipv4_addr>	Low IP address
<ipv4_addr>	High IP address
<word32>	Pool name in 32 characters
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
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
<ipv4_ucast>	IP address of the DHCP relay server
secure-certificate	HTTPS certificate
secure-redirect	Secure HTTP web redirection
secure-server	Secure HTTP web server
delete	Delete the current certificate
generate	Generate a new self-signed RSA certificate
upload	Upload a certificate PEM file
<url_file>	Uniform Resource Locator 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.
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

<0-3>	Preference of DNS server. Default selection is 0
<ipv4_ucast>	A valid IPv4 unicast address
<ipv6_ucast>	A valid IPv6 unicast address
dhcp	Dynamic Host Configuration Protocol
<ipv4_addr>	Network
<ipv4_netmask>	Netmask
<ipv4_ucast>	Gateway
<1-255>	Distance value for this route
<mac_ucast>	Select a MAC address to configure
source	verify source
translate IP	verify source translate all entries

Example:

```
SM12XPA(config)# ip arp inspection
SM12XPA(config)#
```

ipmc

Configure IPv4/IPv6 multicast parameters.

Syntax:

ipmc profile <word16>

ipmc range <word16> [<ipv4_mcast> | <ipv6_mcast>]

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

Example:

```
SM12XPA(config)# ipmc profile test
SM12XPA(config-ipmc-profile)#
```

ipv6

Configure IPv6 configuration parameters.

Syntax:

ipv6 mld host-proxy [leave-proxy]

ipv6 mld snooping [vlan <vlan_list>]

ipv6 mld ssm-range <ipv6_mcast>

ipv6 mld unknown-flooding

Parameters:

mld	Multicasat 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
vlan	MLD VLAN
<vlan_list>	VLAN identifier (VID)
<ipv6_subnet>	IPv6 prefix x:x::y/z
<ipv6_mcast>	Valid IPv6 multicast address

Example:

```
SM12XPA(config)# ipv6 mld host-proxy
SM12XPA(config)# ipv6 mld snooping
SM12XPA(config)#
```

key

Configure keychain parameters. A keychain is a sequence of keys that provides dynamic authentication to ensure secure communication by periodically changing the key and authentication algorithm without service interruption.

Syntax:

key chain <keychain_name>

Parameters:

chain	Key-chain management
<word31>	keychain sequence of keys

Example:

```
SM12XPA(config)# key chain asdf1234
% Internal framework access error.
SM12XPA(config)#
```

lacp

Configure Link Aggregation Control Protocol settings.

Syntax:

lacp system-priority <1-65535>

Parameters:

system-priority	System priority
<1-65535>	Priority value, lower means higher priority

Example:

```
SM12XPA(config)# lacp system-priority 333
SM12XPA(config)#
```

line

Configure a terminal line.

Syntax:

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

Parameters:

<0~16>	List of line numbers
console	Console terminal line
vty	Virtual terminal
0	Console Line number
<0~15>	List of vty numbers

Example:

```
SM12XPA(config)# lacp system-priority 333
SM12XPA(config)#
```

lldp

Configure Link Layer Discover Protocol parameters.

Syntax:

lldp holdtime <2-10>

lldp med datum [wgs84 | nad83_navd88 | nad83_mllw]

lldp med fast <1-10>

lldp med location-tlv altitude [meters | floors] <word11>

lldp med location-tlv civic-addr (additional-code | additional-info | apartment | block | building | city | country | county | district | floor | house-no | house-no-suffix | landmark | leading-street-direction | name | p-o-box | plase-type | postal-community-name | room-number | state | street | street-suffix | trailing-street-suffix | zip-code) <line250> [<line250>]

lldp med location-tlv elin-addr <dword25>

lldp med location-tlv latitude (north | south) <word8>

lldp med location-tlv longitude (west | east) <word9>

lldp med media-vlan-policy <0-31> (guest-voice | guest-voice-signaling | softphone-voice | streaming-video | video-conferencing | video-signaling | voice | voice-signaling) tagged <vlan_id> [dscp <0-63>] | [l2-priority <0-7>] dscp <0-63>

lldp med media-vlan-policy <0-31> (guest-voice | guest-voice-signaling | softphone-voice | streaming-video | video-conferencing | video-signaling | voice | voice-signaling) untagged [dscp <0-63>]

lldp reinit <1-10>

lldp timer <5-32768>

lldp transmission-delay <1-8192>

Parameters:

Holdtime	Sets LLDP hold time (The neighbor switch will be 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. 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.
datum	Datum (geodetic system) type.
fast	Number of times to repeat LLDP frame transmission at fast start.
location-tlv L	LDP-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.
floors	Specify the altitude in floor
meter	Specify the altitude in meters
<word11>	Altitude value. Valid range -2097151.9 to 2097151.9
additional-code	Additional code - Example: 1320300003.
additional-info	Additional location info - Example: South Wing.
apartment	Unit (Apartment, suite) - Example: Apt 42.
block	Neighborhood, block.
building	Building (structure) - Example: Low Library.
city	City, township, shi (Japan) - Example: Copenhagen.
country	The two-letter ISO 3166 country code in capital ASCII letters - Example: DK, DE or US.
county	County, parish, gun (Japan), district.
district	City division, borough, city district, ward, chou (Japan).
floor	Floor - Example: 4.
house-no	House number - Example: 21.

house-no-suffix	House number suffix - Example: A, 1/2.
landmark	Landmark or vanity address - Example: Columbia University.
leading-street-direction	Leading street direction - Example: N.
name	Name (residence and office occupant) - Example: John Doe.
p-o-box	Post office box (P.O. BOX) - Example: 12345.
place-type	Place type - Example: Office.
postal-community-name	Postal community name - Example: Leonia.
room-number	Room number - Example: 450F.
state	National subdivisions (state, canton, region, province, prefecture).
street	Street - Example: Oxford Street.
street-suffix	Street suffix - Example: Ave, Platz.
trailing-street-suffix	Trailing street suffix - Example: SW.
zip-code	Postal/zip code - Example: 2791.
<line250>	Value for the corresponding selected civic address.
<dword25>	ELIN value
north	Setting latitude direction to north.
south	Setting latitude direction to south.
<word8>	Latitude degrees (0.0000-90.0000).
east	Setting longitude direction to east.
west	Setting longitude direction to west.
<word9>	Longitude degrees (0.0000-180.0000).
<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 untagged frames.
<vlan_id>	The VLAN the policy uses 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>	Priority 0-7.
<1-10>	1-10 seconds.
<5-32768>	5-32768 seconds.

<1-8192> 1-8192 seconds.

Example:

```
SM12XPA(config)# lldp holdtime 5
SM12XPA(config)# lldp med fast 5
SM12XPA(config)# lldp reinit 3
SM12XPA(config)# lldp timer 555
SM12XPA(config)# lldp transmission-delay 333
Note: According to IEEE 802.1AB-clause 10.5.4.2 the transmission-delay must not be larger
than LLDP timer * 0.25. LLDP timer changed to 13332
```

logging

Set System logging parameters.

Syntax:

logging host [<hostname> | <ipv4_ucast>]

logging level [error | informational | notice | warning]

logging notification listen <kword127> level (error | informational | notice | warning) <line255>

logging on

Parameters:

host	host
level	Severity level
notification	notification
on	Enable Switch logging host mode
<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
error	Severity 3: Error conditions
informational	Severity 6: Informational messages
notice	Severity 5: Normal but significant condition
warning	Severity 4: Warning conditions
listen	listen
<kword127>	A name identifying the listen command
level	Severity level
<line255>	Identification of the notification source

Example:

```
SM12XPA(config)# logging host 3 192.155.3.2
SM12XPA(config)#
SM12XPA(config)# logging on
SM12XPA(config)#
```

loop-protect

Set Loop protection parameters.

Syntax:

loop-protect [(shutdown-time <0-604800>) | (transmit-time <1-10>)]

Parameters:

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

Example:

```
SM12XPA(config)# loop-protect
SM12XPA(config)# loop-protect shutdown-time 333
SM12XPA(config)# loop-protect transmit-time 3
SM12XPA(config)#
```

mac

Configure MAC table entry parameters.

Syntax:

mac address-table aging-time <0,10-1000000>

mac address-table learning vlan <vlan_list>

mac address-table static <mac_addr> vlan <vlan_id> [interface { * [<port_type_list>] } | { (GigabitEthernet | 10GigabitEthernet) <port_type_list> { [* | GigabitEthernet | 10GigabitEthernet] } [<port_type_list>] }

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
vlan	VLAN keyword
<vlan_id>	VLAN IDs 1-4095
interface	Select an interface to configure
*	All switches or All ports
GigabitEthernet	Gigabit Ethernet Ports
10GigabitEthernet	10Gigabit Ethernet Ports

<port_type_list> Port list for all port types

<port_type_list> Port list in 1/1-12

<port_type_list> Port list in 1/1-4

Example:

```
SM12XPA(config)# mac address-table aging-time 3333
SM12XPA(config)#
```

map-api-key

Set Google Maps key string.

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

Parameters: <word127>

Example:

```
SM12XPA(config)# map-api-key aaalbCd34jy*()&^%$)
SM12XPA(config)# do show map
Key    : aaalbCd34jy*()&^%$)
SM12XPA(config)#
```

monitor

Configure monitoring of mirror sessions.

Syntax:

monitor session <1-5>

monitor session <1-5> destination [interface { * [<port_type_list>] } | { (GigabitEthernet | 10GigabitEthernet) <port_type_list> { [* | GigabitEthernet | 10GigabitEthernet] } [<port_type_list>] }

monitor session <1-5> destination remote vlan <vlan_id> reflector-port (GigabitEthernet | 10GigabitEthernet) <port_type_list>

monitor session <1-5> source cpu [both | rx | tx]

monitor session <1-5> source interface * ([<port_type_list>] | [both] | [rx] | [tx])

monitor session <1-5> source interface [(GigabitEthernet | 10GigabitEthernet) <port_type_list>]

monitor session <1-5> source remote vlan <vlan_id>

monitor session <1-5> source vlan <vlan_id>

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

remote	MIRROR destination Remote
*	All switches or All ports
GigabitEthernet	Gigabit Ethernet Ports
10GigabitEthernet	10Gigabit Ethernet Ports
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-12
vlan	MIRROR destination Remote number
<vlan_id>	Remote MIRROR destination RMIRROR VLAN number
reflector-port	Remote MIRROR reflector interface
cpu	MIRROR source CPU
interface	MIRROR source interface
remote	MIRROR source Remote
vlan	MIRROR source VLAN
both	MIRROR source CPU receive both
rx	MIRROR source CPU receive Rx
tx	MIRROR source CPU receive Tx

Example:

```
SM12XPA(config)# monitor session 1 source vlan 1
SM12XPA(config)#
```

mvr

Configure Multicast VLAN Registration configuration.

Syntax:

mvr

mvr (name | vlan <vlan_list>) <word16> channel <word16>

mvr (name | vlan <vlan_list>) <word16> election

mvr (name | vlan <vlan_list>) <word16> frame [priority <0-7>] | [tagged]

mvr (name | vlan <vlan_list>) <word16> igmp-address <ipv4_ucast>

mvr (name | vlan <vlan_list>) <word16> last-member-query-interval <0-31744>

mvr (name | vlan <vlan_list>) <word16> mode [compatible | dynamic]

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 seconds

mode	MVR mode of operation
<word16>	Profile name in 16 characters
priority	Interface CoS priority
tagged	Tagged IGMP/MLD frames will be sent
<0-7>	CoS priority ranges from 0 to 7
<ipv4_ucast>	A valid IPv4 unicast address
<0-31744>	0 - 31744 tenths of seconds
compatible	Compatible MVR operation mode
dynamic	Dynamic MVR operation mode

Example:

```
SM12XPA(config)# mvr vlan 10 mode dynamic
SM12XPA(config)#
```

mvrp

Enable Multi VLAN Registration Protocol feature globally.

Syntax:

mvrp

mvrp managed vlan <vlan_list>

mvrp managed vlan (add | except | remove) <vlan_list>

mvrp managed vlan (all | none)

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

Example:

```
SM12XPA(config)# mvrp managed vlan all
SM12XPA(config)#
```

network-clock

Set network clock parameters.

Syntax:

network-clock clk-source <clk_list> nominate { clk-in | { ptp <ptp_inst> } | { interface <port_type> <port> } }

network-clock clk-source <clk_src> aneg-mode { master | slave | forced }

network-clock clk-source <clk_src> hold-timeout <v_3_to_18>

network-clock clk-source <clk_src> priority <prio>

network-clock clk-source <clk_src> ssm-overwrite { prc | ssua | ssub | eec2 | eec1 | dnu | prs | stu | st2 | tnc | st3e | smc | prov | dus }

network-clock input-source { 1544khz | 2048khz | 10mhz }

network-clock option { eec1 | eec2 }

network-clock output-source { 1544khz | 2048khz | 10mhz }

network-clock selector { { manual clk-source <v_uint> } | selected | nonrevertive | revertive | holdover | freerun }

network-clock ssm-freerun { prc | ssua | ssub | eec2 | eec1 | dnu | inv | prs | stu | st2 | tnc | st3e | smc | prov | dus }

network-clock ssm-holdover { prc | ssua | ssub | eec2 | eec1 | dnu | inv | prs | stu | st2 | tnc | st3e | smc | prov | dus }

network-clock wait-to-restore <wtr_value>

Parameters:

clk-source	clk-source - commands related to a specific clock source.
<1~2>	Clock source number
aneg-mode	Sets the preferred negotiation.
forced	Activate forced slave negotiation
master	Activate prefer master negotiation
slave	Activate prefer slave negotiation
hold-timeout	The hold off timer value in 100 ms. Valid values are in the range 3-18 or 100 (test value).
<3-18,100>	Value in 100ms. E.g 9 gives a hold timeout of 900 ms.
nominate	Nominate a clk input to become a selectable clock source.
clk-in	Nominate the station clock input as a source. The PCB104 SyncE module supports 10 MHz station clock input.
interface	select an interface to configure
10GigabitEthernet	10 Gigabit Ethernet Port
<port_type_id>	Port ID in 1/1-12
25GigabitEthernet	25 Gigabit Ethernet Port
ptp	Nominate an ethernet interface as a source
<0-3>	Instance number
priority	Priority of nominated clock sources.
<0-1>	Clock source priority

ssm-overwrite	Clock source SSM overwrite
dnu	dnu
eec1	eec1 (synchronous Ethernet Equipment Clock 1)
prc	prc (Primary Reference Clock)
ssua	ssua (primary level Synchronization Supply Unit)
ssub	ssub (secondary level Synchronization Supply Unit)
input-source	Sets the station clock input frequency
10mhz	Station clock set to 10 MHz
1544khz	Station clock set to 1544 kHZ
2048khz	Station clock set to 2048 kHZ
option	EEC options
output-source	Sets the station clock output frequency
selector	Selection mode of nominated clock sources
freerun	Selector is forced in free run
holdover	Selector is forced in holdover
manual	Selector is manually set to the chosen clock source
nonrevertive	Selector is automatically selecting the best clock source - non revertively
revertive	Selector is automatically selecting the best clock source – revertively
selected	Selector is manually set to the pt. selected clock source (not possible in unlocked mode)
ssm-freerun	Free Running SSM overwrite
inv	inv
ssm-holdover	Hold Over SSM overwrite
wait-to-restore	WTR time (0-12 min) '0' is disable
<0-12>	wait-to-restore value in min

Example:

```
SM12XPA(config)# network-clock wait-to-restore 1
SM12XPA(config)#
```

no

Negate a command or set its defaults.

Table : configure – no Commands

Command	Function
aaa	Authentication, Authorization and Accounting
access	Access management
access-list	Access list
aggregation	Aggregation mode
aps	Delete a particular or all APS instances

banner	Define a banner
cfm	Connectivity Fault Management (CFM)
clock	Configure time-of-day clock
command-history-log	Disable to Save Command History to Flash
ddmi	DDMI Information
dot1x	IEEE Standard for port-based Network Access Control
enable	Modify enable password parameters
erps	Delete a particular or all ERPS instances
exec-timeout	Negate the exec timeout setting
green-ethernet	Green Ethernet (Power reduction)
gvrp	Enable GVRP feature
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
key	Key
lacp	LACP settings
lldp	Link Layer Discover Protocol.
logging	System logging message
loop-protect	Loop protection configuration
mac	MAC table entries/configuration
monitor	Monitoring different system events
mvr	Multicast VLAN Registration configuration
mvrp	Multicast VLAN Registration Protocol
network-clock	network-clock
ntp	Configure Network Timing Protocol
port-security	Port Security
privilege	Command privilege parameters
prompt	Default the prompt to hostname
ptp	Precision Time Protocol (1588)
qos	Quality of Service
radius-server	Configure RADIUS
rmon	Remote Monitoring
router	router
sflow	Statistics flow.
snmp-server	Set SNMP server's configurations
spanning-tree	STP Bridge
stream	Stream

svl	Unmap Shared VLAN Learning for a range or all FIDs
switchport	VLAN
system	Set the SNMP server's configurations
tacacs-server	Configure TACACS+
tsn	Time-Sensitive Networking
udld	Disable UDLD configurations on all fiber-optic ports.
upnp	Set UPnP configuration
username	Establish User Name Authentication
vlan	VLAN commands
voice	Voice appliance attributes
web	Web

aaa

No Authentication, Authorization and Accounting.

Syntax:

no aaa accounting (console | ssh | telnet)

no aaa authentication login (console | http | ssh | telnet)

no aaa authorization (console | ssh | telnet)

Parameters:

authentication	Authentication
authorization	Authorization
accounting	Accounting
console	Console
ssh	SSH
telnet	Telnet
login	Login
console	Disable Console authentication
http	Disable HTTP authentication
ssh	Disable SSH authentication
telnet	Disable Telnet authentication
console	Disable Console authorization
ssh	Disable SSH authorization
telnet	Disable Telnet authorization

Example:

```
SM12XPA(config)# no aaa authentication login ssh
SM12XPA(config)#
```

access

No Access management.

Syntax:

no access management [<1~16>]

Parameters:

management	Access management configuration
<1~16>	ID of access management entry

Example:

```
SM12XPA(config)# no access management
SM12XPA(config)#
```

access-list

No Access list.

Syntax:

no access-list (ace <1~512>) | (rate-limiter [<1~16>])

Parameters:

ace	Access list entry
rate-limiter	Rate limiter
<1~512>	ACE ID
<1~16>	Rate limiter ID

Example:

```
SM12XPA(config)# no access list ace 1
SM12XPA(config)#
```

aggregation

No Aggregation mode.

Syntax:

no aggregation mode

Parameters:

mode	Traffic distribution mode

Example:

```
SM12XPA(config)# no aggregation mode
SM12XPA(config)#
```

APS

No Automatic Protection Switching.

Syntax:

no aps <inst>

Parameters:

<1-14>	APS instance number

Example:

```
SM12XPA(config)# no aps 1
SM12XPA(config-aps)#
```

banner

Negate define a banner.

Syntax:

no banner [motd | login | exec]

Parameters:

exec	Set EXEC process creation banner
login	Set login banner
motd	Set Message of the Day banner

Example:

```
SM12XPA(config)# no banner login
SM12XPA(config)#
```

cfm

No Connectivity Fault Management (CFM).

Syntax:

no cfm domain { <md_name> | all }

Parameters:

domain	Maintenance Domain (MD)
<kword1-15>	Domain name
interface-status-tlv	Include or exclude Interface Status TLV in CCM PDUs (may be overridden in domain and service)
disable	Exclude Interface Status TLV from PDUs (default)
enable	Include Interface Status TLV in PDUs
organization-specific-tlv	Include or exclude Organization-Specific TLV in PDUs (may be overridden in domain and service)
disable	Exclude Organization-Specific TLV from PDUs (default)
enable	Include Organization-Specific TLV in PDUs

port-status-tlv	Include or exclude Port Status TLV in CCM PDUs (may be overridden in domain and service)
disable	Do not include Port Status TLV in PDUs (default)
enable	Include Port Status TLV in PDUs
sender-id-tlv	Default Sender ID TLV format to be used in PDUs (may be overridden in domain and service)
chassis	Enable Sender ID TLV and send Chassis ID (MAC Address)
chassis-management	Enable Sender ID TLV and send both Chassis ID (MAC Address) and Management Address (IPv4 Address)
disable	Exclude Sender ID TLV from PDUs (default)
management	Enable Sender ID TLV and send Management address (IPv4 Address)

Example:

```
SM12XPA(config)# no cfm sender-id-tlv management
SM12XPA(config)#
```

clock

Negate configure time-of-day clock.

Syntax:

no clock summer-time

no clock timezone

Parameters:

summer-time	Configure summer (daylight savings) time
timezone	Configure time zone
<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)
<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
<1-5>	Week number to start
<1-7>	Weekday to start

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

Example:

```
SM12XPA(config)# no clock summer-time
SM12XPA(config)#
```

command-history-log

Disable to Save Command History to Flash

Syntax: **no command-history-log** <cr>

Parameters:

Example:

```
SM12XPA(config)# no command-history-log
SM12XPA(config)#
```

ddmi

DDMI Information

Syntax:

no ddmi <cr>

Parameters:

ddmi	DDMI Information

Example:

```
SM12XPA(config)# no ddmi
SM12XPA(config)#
```

dot1x

No IEEE Standard for port-based Network Access Control.

Syntax:

no dot1x authentication timer inactivity

no dot1x authentication timer re-authenticate

no dot1x feature { [guest-vlan] [radius-qos] [radius-vlan] }*1

no dot1x guest-vlan

no dot1x guest-vlan supplicant

no dot1x max-reauth-req

no dot1x re-authentication

no dot1x system-auth-control

no dot1x timeout quiet-period

no dot1x timeout tx-period

Parameters:

authentication	Authentication
feature	Globally enables/disables a dot1x feature functionality
guest-vlan	Guest VLAN
max-reauth-req	The number of time 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
timer	timer
re-authenticate	The period between re-authentication attempts in seconds
guest-vlan	Globally enables/disables state of guest-vlan
radius-qos	Globally enables/disables state of RADIUS-assigned QoS.
radius-vlan	Globally enables/disables state of RADIUS-assigned VLAN.
supplicant	The switch remembers if an EAPOL frame has been received on the port for the life-time of the port. Once the switch considers whether to enter the Guest VLAN, it will first check if this option is enabled or disabled. If disabled (unchecked, default), the switch will only enter the Guest VLAN if an EAPOL frame has not been received on the port for the life-time of the port. If enabled (checked), the switch will consider entering the Guest VLAN even if an EAPOL frame has been received on the port for the life-time of the port.

Example:

```
SM12XPA(config)# no dot1x authentication timer re-authenticate
SM12XPA(config)# no dot1x guest-vlan supplicant
SM12XPA(config)# no dot1x max-reauth-req
SM12XPA(config)# no dot1x re-authentication
SM12XPA(config)# no dot1x system-auth-control
SM12XPA(config)# no dot1x timeout tx-period
SM12XPA(config)#
```

enable

Negate modify enable password parameters

Syntax:

no enable password [level <1-15>]

no enable secret [0 | 5 { level <1-15> }]

Parameters:

password	Assign the privileged level clear password
secret	Assign the privileged level secret
0	Specifies an UNENCRYPTED password will follow
5	Specifies an ENCRYPTED password will follow
level	Set exec level password

Example:

```
SM12XPA(config)# no enable secret level 15
SM12XPA(config)# no enable password level 15
SM12XPA(config)#
```

erps

No Ethernet Ring Protection Switching.

Syntax:

no erps { <inst> | all }

Parameters:

<1-64>	Delete a particular ERPS instance
all	Delete all ERPS instances

Example:

```
SM12XPA(config)# no erps 1
SM12XPA(config)#
```

exec-timeout

Negate the exec timeout setting

Syntax: **no** exec-timeout autologout

Parameters: autologout

Example:

```
SM12XPA(config)# no exec-timeout autologout
SM12XPA(config)#
```

green-ethernet

No Green ethernet (Power reduction)

Syntax:

no green-ethernet eee optimize-for-power

Parameters:

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

Example:

```
SM12XPA(config)# no green-ethernet eee optimize-for-power
SM12XPA(config)#
```

gvrp

Negate Enable GVRP feature.

Syntax:

no gvrp

no gvrp max-vlans <1-4094>

no gvrp time [join-time <1-20>] [leave-time <60-300>] [leave-all-time <1000-5000>]

Parameters:

max-vlans	Number of simultaneously VLANs that GVRP can control
time	Config GARP protocol timer parameters. IEEE 802.1D-2004, clause 12.11.
join-time	Set GARP protocol parameter JoinTime. See IEEE 802.1D-2004, clause 12.11
leave-all-time	Set GARP protocol parameter LeaveAllTime. See IEEE 802.1D-2004, clause 12.11
leave-time Set	GARP protocol parameter LeaveTime. See IEEE 802.1D-2004, clause 12.11
<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:

```
SM12XPA(config)# no gvrp max-vlans 1
SM12XPA(config)#
```

hostname

No system's network name.

Syntax:

no hostname

Parameters:

none

Example:

```
SM12XPA(config)# no hostname
SM12XPA(config)#
```

interface

Negate an interface to configure.

Syntax:

no interface (llag 1-26) | (vlan <vlan_list>)

Parameters:

llag	Local link aggregation interface configuration
vlan	VLAN interface configurations
1-26	ID of LLAG interface
<vlan_list>	List of VLAN interface numbers

Example:

```
SM12XPA(config)# no interface vlan 10
SM12XPA(config)#
```

ip

Negate Interface Internet Protocol configuration commands

Syntax:

no ip arp inspection

no ip arp inspection entry interface (GigabitEthernet | 10GigabitEthernet) <port_type_id> <vlan_id> <mac_ucast> <ipv4_ucast>

no ip arp inspection vlan <vlan_list> [logging]

no ip dhcp excluded-address <ipv4_addr> [<ipv4_addr>]

no ip dhcp pool <word32>

no ip dhcp relay information [option | policy]

no ip dhcp [server | snooping]

no ip dns proxy

no ip domain name

no ip helper-address

no ip http (secure-redirect | secure-server)

no ip igmp host-proxy [leave-proxy]

no ip igmp snooping [vlan <vlan_list>]

no ip igmp (ssm-range | unknown-flooding)

no ip name-server [<0-3>]

no ip route <ipv4_addr> <ipv4_netmask> <ipv4_ucast>

no ip routing

no ip source binding interface (GigabitEthernet | 10GigabitEthernet) <port_type_id> <vlan_id> <ipv4_ucast> <mac_ucast>

no ip ssh

no ip verify source

Parameters:

arp	Address Resolution Protocol
dhcp	Configure DHCP server parameters
dns	Domain Name System
domain	IP DNS Resolver
helper-address	
http	Hypertext Transfer Protocol
igmp	Internet Group Management Protocol
name-server	Domain Name System
route	
routing	Disable routing for IPv4 and IPv6
source	source command
ssh	Secure Shell
verify	verify command

inspection	ARP inspection
entry	ARP inspection entry
vlan	ARP inspection vlan setting
interface	Select an interface to configure
GigabitEthernet	Gigabit Ethernet Ports
10GigabitEthernet	10Gigabit Ethernet Ports
<port_type_list>	Port list in 1/1-12
<port_type_list>	Port list in 1/1-4
<vlan_id>	Select a VLAN id to configure
<mac_ucast>	Select a MAC address to configure
<ipv4_ucast>	Select an IP Address to configure
<vlan_list>	arp inspection vlan list
logging	ARP inspection vlan logging mode configuration
excluded-address	Prevent DHCP from assigning certain addresses
pool	Configure DHCP address pools
relay	DHCP relay agent configuration
server	Enable DHCP server
snooping	DHCP snooping
<ipv4_addr>	Low IP address
<ipv4_addr>	High IP address
<word32>	Pool name in 32 characters
Information	DHCP information option (Option 82)
option	DHCP option
policy	Policy for handling the receiving DHCP packet already include the information option
proxy	DNS proxy service
name	Define the default domain name
secure-redirect	Secure HTTP web redirection
secure-server	Secure HTTP web server
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)
<0-3>	Preference of DNS server. Default selection is 0
<ipv4_addr>	Network
<ipv4_netmask>	Netmask
<ipv4_ucast>	Gateway

binding	IP source binding
<mac_ucast>	Select a MAC address to configure
source	verify source

Example:

```
SM12XPA(config)# no ip ssh
SM12XPA(config)#
```

ipmc

No IPv4/IPv6 multicast configuration.

Syntax:

no ipmc (profile | range) [<word16>]

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

Example:

```
SM12XPA(config)# no ipmc profile aa
SM12XPA(config)#
```

ipv6

No IPv6 configuration commands.

Syntax:

no ipv6 mld host-proxy [leave-proxy]

no ipv6 mld snooping [vlan <vlan_list>]

no ipv6 mld ssm-range

no ipv6 mld unknown-flooding

no ipv6 mld route <ipv6_subnet>

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

vlan	MLD VLAN
<vlan_list>	VLAN identifier (VID)
<ipv6_subnet>	IPv6 prefix x:x::y/z

Example:

```
SM12XPA(config)# no ipv6 mld snooping
SM12XPA(config)#
```

key

No Key chain.

Syntax:

no key chain <key_chain_name>

Parameters:

Chain <word1-31>

Example:

```
SM12XPA(config)# no key chain 1
SM12XPA(config)#
```

lacp

No LACP settings.

Syntax:

no lacp system-priority <1-65535>

Parameters:

system-priority	System priority
<1-65535>	Priority value, lower means higher priority

Example:

```
SM12XPA(config)# no lacp system-priority 1
SM12XPA(config)#
```

lldp

Link Layer Discover Protocol.

Syntax:

no lldp holdtime

no lldp med datum

no lldp med fast

no lldp med location-tlv altitude

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

no lldp med location-tlv elin-addr

no lldp med location-tlv latitude

no lldp med location-tlv longitude

no lldp med media-vlan-policy <0~31>

no lldp reinit

no lldp timer

no lldp transmission-delay

Parameters:

Holdtime	Sets LLDP hold time (The neighbor switch will discard the LLDP information after 'hold time' multiplied with 'timer' seconds).
Med	Media Endpoint Discovery.
Reinit	Sets LLDP reinitialization delay.
timer	Sets LLDP TX interval (The time between each LLDP frame transmitted in seconds).
transmission-delay	Sets LLDP transmission-delay. LLDP transmission delay (the amount of time that the transmission of LLDP frames will delayed after LLDP configuration has changed) in seconds.)
datum	Set datum to default value.
fast	Set fast repeat count to default value.
location-tlv	LLDP-MED Location Type Length Value parameter
media-vlan-policy	Delete a policy.
altitude	Setting altitude to default.
civic-addr	Civic address information and postal information.
elin-addr	Set ELIN address to default value.
latitude	Setting Latitude parameter to default.
longitude	Setting longitude to default.
<0~31>	Policy to delete.
additional-code	Additional code - Example: 1320300003.
additional-info	Additional location info - Example: South Wing.
apartment	Unit (Apartment, suite) - Example: Apt 42.

block	Neighborhood, block.
building	Building (structure) - Example: Low Library.
city	City, township, shi (Japan) - Example: Copenhagen.
country	The two-letter ISO 3166 country code in capital ASCII letters - Example: DK, DE or US.
county	County, parish, gun (Japan), district.
district	City division, borough, city district, ward, chou (Japan).
floor	Floor - Example: 4.
house-no	House number - Example: 21.
house-no-suffix	House number suffix - Example: A, 1/2.
landmark	Landmark or vanity address - Example: Columbia University.
leading-street-direction	Leading street direction - Example: N.
name	Name (residence and office occupant) - Example: John Doe.
p-o-box	Post office box (P.O. BOX) - Example: 12345.
place-type	Place type - Example: Office.
postal-community-name	Postal community name - Example: Leonia.
room-number	Room number - Example: 450F.
state	National subdivisions (state, canton, region, province, prefecture).
street	Street - Example: Oxford Street.
street-suffix	Street suffix - Example: Ave, Platz.
trailing-street-suffix	Trailing street suffix - Example: SW.
zip-code	Postal/zip code - Example: 2791.

Example:

```
SM12XPA(config)# no lldp holdtime
SM12XPA(config)# no lldp med location-tlv civic-addr floor
SM12XPA(config)# no lldp reinit
SM12XPA(config)# no lldp timer
SM12XPA(config)# no lldp transmission-delay
```

logging

No System logging message

Syntax:

no logging host

no logging notification listen [<kword127>]

no logging on

Parameters:

host	host
notification	notification
on	Enable Switch logging host mode

listen	listen
<kword127>	A name identifying the listen command

Example:

```
SM12XPA(config)# no logging host 3
SM12XPA(config)# no logging on
SM12XPA(config)#
```

loop-protect

No Loop protection configuration.

Syntax:

no loop-protect [shutdown-time | transmit-time]

Parameters:

shutdown-time Loop protection shutdown time interval

transmit-time Loop protection transmit time interval

Example:

```
SM12XPA(config)# no loop-protect shutdown-time
SM12XPA(config)# no loop-protect transmit-time
SM12XPA(config)#
```

mac

No MAC table entries/configuration.

Syntax:

no mac address-table aging-time [<0,10-1000000>]

no mac address-table learning vlan <vlan_list>

no mac address-table static <mac_addr> vlan <vlan_id> [interface { * [<port_type_list>] } | { (GigabitEthernet | 10GigabitEthernet) <port_type_list> { [* | GigabitEthernet | 10GigabitEthernet] } [<port_type_list>] }

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
vlan	VLAN keyword

<vlan_id>	VLAN IDs 1-4095
interface	Select an interface to configure
*	All switches or All ports
GigabitEthernet	Gigabit Ethernet Ports
10GigabitEthernet	10Gigabit Ethernet Ports
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-12
<port_type_list>	Port list in 1/1-4

Example:

```
SM12XPA(config)# no mac address-table aging-time
SM12XPA(config)#
```

monitor

No Monitoring of system events.

Syntax:

no monitor session <session_number> [destination { interface (<port_type> [<di_list>]) | remote } | source { interface (<port_type> [<si_list>]) [both | rx | tx] | remote | vlan <source_vlan_list> | cpu [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
remote	MIRROR destination Remote
*	All switches or All ports
GigabitEthernet	Gigabit Ethernet Ports
10GigabitEthernet	10Gigabit Ethernet Ports
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-12
vlan	MIRROR destination Remote number
<vlan_id>	Remote MIRROR destination RMIRROR VLAN number
reflector-port	Remote MIRROR reflector interface
cpu	MIRROR source CPU
interface	MIRROR source interface
remote	MIRROR source Remote
vlan	MIRROR source VLAN
both	MIRROR source CPU receive both
rx	MIRROR source CPU receive Rx

tx	MIRROR source CPU receive Tx

Example:

```
SM12XPA(config)# no monitor session 1 source vlan 1
SM12XPA(config)#
```

mvr

No Multicast VLAN Registration configuration.

Syntax:

no mvr
no mvr name <mvr_name> channel
no mvr name <mvr_name> frame priority
no mvr name <mvr_name> frame tagged
no mvr name <mvr_name> last-member-query-interval
no mvr name <mvr_name> mode
no mvr name <mvr_name> { election | igmp-address }
no mvr vlan <v_vlan_list>
no mvr vlan <v_vlan_list> channel
no mvr vlan <v_vlan_list> frame priority
no mvr vlan <v_vlan_list> frame tagged
no mvr vlan <v_vlan_list> last-member-query-interval
no mvr vlan <v_vlan_list> mode
no mvr vlan <v_vlan_list> { election | igmp-address }

Parameter:

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 seconds
mode	MVR mode of operation
<word16>	Profile name in 16 characters
priority	Interface CoS priority
tagged	Tagged IGMP/MLD frames will be sent
<0-7>	CoS priority ranges from 0 to 7
<ipv4_ucast>	A valid IPv4 unicast address
<0-31744>	0 - 31744 tenths of seconds

compatible	Compatible MVR operation mode
dynamic	Dynamic MVR operation mode

Example:

```
SM12XPA(config)# no mvr vlan 10 mode dynamic
SM12XPA(config)#
```

mvrp

No MVRP settings

Syntax:

no mvrp

Example:

```
SM12XPA(config)# no mvrp
SM12XPA(config)#
```

network-clock

No network clock.

Syntax:

no network-clock clk-source <clk_list> nominate
no network-clock clk-source <clk_src> aneg-mode
no network-clock clk-source <clk_src> hold-timeout
no network-clock clk-source <clk_src> priority
no network-clock clk-source <clk_src> ssm-overwrite
no network-clock input-source
no network-clock option
no network-clock output-source
no network-clock selector
no network-clock ssm-freerun
no network-clock ssm-holdover
no network-clock wait-to-restore

Parameters:

clk-source	clk-source - commands related to a specific clock source.
<1~2>	Clock source number
aneg-mode	Sets the preferred negotiation.
forced	Activate forced slave negotiation
master	Activate prefer master negotiation
slave	Activate prefer slave negotiation
hold-timeout	The hold off timer value in 100 ms. Valid values are range 3-18 or 100 (test value).

<3-18,100>	Value in 100ms. E.g 9 gives a hold timeout of 900 ms.
nominate	Nominate a clk input to become a selectable clock source.
clk-in	Nominate the station clock input as a source. The PCB104 SyncE module supports 10 MHz station clock input.
interface	select an interface
10GigabitEthernet	10 Gigabit Ethernet Port
<port_type_id>	Port ID in 1/1-12
25GigabitEthernet	25 Gigabit Ethernet Port
ptp	Nominate an ethernet interface as a source
<0-3>	
priority	Priority of nominated clock sources.
<0-1>	Clock source priority
ssm-overwrite	Clock source SSM overwrite
dnu	dnu
eec1	eec1
prc	prc
ssua	ssua
ssub	ssub
input-source	Sets the station clock input frequency
10mhz	Station clock set to 10 MHz
1544khz	Station clock set to 1544 kHZ
2048khz	Station clock set to 2048 kHZ
option	EEC options
output-source	Sets the station clock output frequency
selector	Selection mode of nominated clock sources
freerun	Selector is forced in free run
holdover	Selector is forced in holdover
manual	Selector is manually set to the chosen clock source
nonrevertive	Selector is automatically selecting the best clock source - non revertively
revertive	Selector is automatically selecting the best clock source - revertively
selected	Selector is manually set to the pt. selected clock source (not possible in unlocked mode)
ssm-freerun	Free Running SSM overwrite
inv	inv
ssm-holdover	Hold Over SSM overwrite
wait-to-restore	WTR time (0-12 min) '0' is disable
<0-12>	wait-to-restore value in min

Example:

```
SM12XPA(config)# no network-clock wait-to-restore 1
SM12XPA(config)#
```

ntp

Negate NTP configuration.

Syntax:

no ntp

no ntp server <1-5>

Parameters:

server	Configure NTP server
<1-5>	index number

Example:

```
SM12XPA(config)# no ntp server 2
SM12XPA(config)#
```

port-security

No Port Security.

Syntax:

no port-security (aging | 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.
time	Violating MAC addresses are held non-forwarding for 300 seconds

Example:

```
SM12XPA(config)# no port-security hold
SM12XPA(config)#
```

Privilege

No Command privilege parameters.

Syntax:

no privilege <cword> level <0-15> <line128> [<line128>]

Parameters:

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

Example:

```
SM12XPA(config)# no privilege config-vlan level 1
SM12XPA(config)#
```

prompt

No default the prompt to hostname.

Syntax:

no prompt

Parameters:

none

Example:

```
SM12XPA(config)# no prompt
SM12XPA(config)#
```

ptp

No Precision Time Protocol (IEEE 1588).

Syntax:

no ptp

no ptp <0-3> [afi–announce | afi-sync | clk | domain | localpriority | log | path-trace-enable | priority1 | priority2 | servo displaystates | uni <0-4>]

no ptp <0-3> mode [bcfrontend | boundary | e2etransparent | master | p2ptransparent | slave]

no ptp <0-3> virtual-port [accuracy | class | local-priority | priority1 | priority2 | variance]

no ptp <0-3> virtual-port io-pin [| (begin | exclude | include) <line>] <line>

no ptp [ext | ho-spec | system-time]

no ptp io-pin <0-3>

Parameters:

<0-3>	Instance number: 0-3
ext	Set the External clock output configuration and VCXO frequency rate adjustment option to default values
ho-spec	Clear the Holdover specification for G8275 PTP clocks
io-pin	Clear input/output pin configuration (i.e., disable the pin)
system-time	Disable synchronization between PTP and System time
afi-announce	Disable PTP Announce automatic frame injection
afi-sync	Disable PTP Sync automatic frame injection
clk	Set PTP slave clock options to free running
domain	Default Clock domain
localpriority	Default Clock local priority
log	Disable the PTP debug logging
mode	Delete PTP clock instance
path-trace-enable	Disable path trace option (i.e. no Path Trace added to Announce messages)
priority1	Default Clock priority 1
priority2	Default Clock priority 2
servo	Set Servo parameters
uni	Clear a Unicast Slave configuration entry
virtual-port	
bcfrontend	Delete if Boundary clock front end
boundary	Delete if boundary clock
e2etransparent	Delete if e2e TC
master	Delete if master only
p2ptransparent	Delete if p2p TC
slave	Delete if slave only
displaystates	Enable logging of servo parameters on the console
<0-4> [0..4]	Index in the slave table
accuracy	
class	
io-pin	
local-priority	
priority1	
priority2	
variance	
|	Output modifiers
begin	Begin with the line that matches
exclude	Exclude lines that match

include	Include lines that match
<line>	String to match output lines
<0-3>	Pin number

Example:

```
SM12XPA(config)# no ptp system-time
SM12XPA(config)#
```

qos

No Quality of Service.

Syntax:

no qos fmi <0-4294967295> [mark-red | mark-red-enable]

no qos map cos-dscp <0~7> dpl <0~3>

no qos map (dscp-classify | dscp-cos | dscp-egress-translation | dscp-ingress-translation) [<0~63> | af11 | af12 | af13 | af21 | af22 | af23 | af31 | af32 | af33 | af41 | af42 | af43 | be | cs1 | cs2 | cs3 | cs4 | cs5 | cs6 | cs7 | ef | va]

no qos map egress <0~511>

no qos map ingress <0~255>

no qos qce <1~256>

no qos sfi <0-4294967295> [block-oversize | block-oversize-enable]

no qos sgi <0-4294967295> [close-invalid-rx | close-invalid-rx-enable | gate-enabled]

no qos storm [broadcast | multicast | unicast]

Parameters:

fmi	SFP Flow Meter Instance
map	Global QoS Map/Table
qce	QoS Control Entry
sfi	PSFP Stream Filter Instance
sgi	PSFP Stream Gate Instance
storm	Storm policer
<0-4294967295>	Flow Meter Instance ID
mark-red	Configure Flow Meter Mark All Frames Red
mark-red-enable	Configure Flow Meter Mark All Frames Red Enable
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
<0~7>	Specific class of service or range

dpl	Specify drop precedence level
<0~3>	Specific drop precedence level or range
<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
<0~255>	Map ID
<1~256>	QCE ID
<0-4294967295>	Stream Filter Instance ID
block-oversize C	onfigure Stream Blocked Due To Oversize Frame
block-oversize-enable	Configure Stream Blocked Due To Oversize Frame
<0-4294967295>	Stream Gate Instance ID
close-invalid-rx	Configure Gate Closed Due To Invalid Rx
close-invalid-rx-enable	Configure Gate Closed Due To Invalid Rx Enable
gate-enabled	Configure Stream Gate Instance
broadcast	Police broadcast frames
multicast	Police multicast frames
unicast	Police unicast frames
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

Example:

```
SM12XPA(config)# no qos map cos-queue 3
SM12XPA(config)#
```

radius-server

Negate RADIUS configuration.

Syntax:

no radius-server attribute [32 | 4 | 95]

no radius-server deadtime

no radius-server host <word1-255> | [acct-port <0-65535>] [auth-port <0-65535>]

no radius-server [key | retransmit | timeout]

Parameters:

attribute	RADIUS Attribute
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 32 - NAS-Identifier
4	Attribute 4 - NAS-IP-Address
95	Attribute 95 - NAS-IPv6-Address
<word1-255>	Hostname or IPv4/IPv6 address
acct-port	UDP port for RADIUS accounting server
auth-port	UDP port for RADIUS authentication server
<0-65535>	UDP port number

Example:

```
SM12XPA(config)# no radius-server attribute 4
SM12XPA(config)# no radius-server deadtime
SM12XPA(config)# no radius-server key
SM12XPA(config)# no radius-server retransmit
SM12XPA(config)#
```

rmon

No Remote Monitoring.

Syntax:

no rmon (alarm | event) <1-65535>

Parameters:

alarm	Configure an RMON alarm
event	Configure an RMON event
<1-65535>	Alarm entry ID
<1-65535> E	vent entry ID

Example:

```
SM12XPA(config)# no rmon alarm 1000
SM12XPA(config)#
```

router

No Router parameters.

Syntax:

no router access-list <access_list_name>

no router access-list <access_list_name> { permit | deny } { any | <ipv4_addr> <ipv4_netmask> }

no router ospf

no router ospf6

no router rip

Parameters:

access-list	Router access list
<word1-31>	The name of the access list
deny	Deny the access right for the following IPv4 network domain
<ipv4_addr>	The IPv4 address for the access list entry
any	Any IPv4 address
permit	Permit the access right for the following IPv4 network domain
ospf	Open Shortest Path First (OSPF)
ospf6	Open Shortest Path First for IPv6 (OSPFv3). The OSPFv3 routing protocol for IPv6 is similar to OSPFv2 in its concept of a link state database, intra- and inter-area, and AS external routes and virtual links.
rip	Routing Information Protocol (RIP). The RIP protocol lets routers exchange network topology information. RIP is considered an interior gateway protocol, typically used in small to medium-sized networks.

Example:

```
SM12XPA(config)# no router rip
SM12XPA(config)#
```

sflow

Negate Statistics flow.

Syntax:

no sflow agent-ip

no sflow collector-address

no sflow collector-port

no sflow max-datagram-size

no sflow timeout

Parameters:

agent-ip	Sets the agent IP address used as agent-address in UDP datagrams to 127.0.0.1.
collector-address	Collector address
collector-port	Collector UDP port
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.

Example:

```
SM12XPA(config)# no sflow agent-ip
SM12XPA(config)# no sflow collector-address
SM12XPA(config)# no sflow collector-port
SM12XPA(config)# no sflow collector-port
SM12XPA(config)# no sflow max-datagram-size
SM12XPA(config)# no sflow timeout
SM12XPA(config)#
```

snmp-server

No SNMP server's configurations.

Syntax:

no snmp-server access <word32> model [v1 | v2c | v3 | any] level [auth | noauth | priv]

no snmp-server community <word32> [(ip-range <ipv4_addr> <ipv4_netmask>) | (ipv6-range <ipv6_subnet>)]

no snmp-server [contact | location]

no snmp-server engine-id local

no snmp-server host <word32>

no snmp-server security-to-group model { v1 | v2c | v3 } name < word32>

no snmp-server trap <cword> [<word255> (exclude | include)] | [id <0-127>]

no snmp-server user <word32> engine-id <word10-64>

no snmp-server view <word32> <word255>

Parameters:

access	access configuration
community	Delete a SNMP community
contact	Clear the SNMP server's contact string
engine-id	Set SNMP engine ID
host	Set SNMP host's configurations
location	Clear the SNMP server's location string
security-to-group	security-to-group configuration
trap	Trap source configuration
user	user who can access SNMP server
view	MIB view configuration
<word32>	group name
model	security model
v1	v1 security model
v2c	v2c security model
v3	v3 security model
any	any security model
level	security level
auth	authNoPriv Security Level
noauth	noAuthNoPriv Security Level
priv authPriv	Security Level
<word32>	Security name
ip-range	Use IPv4 range
ipv6-range	Use IPv6 range
<ipv4_addr>	IPv4 address
<ipv4_netmask>	IPv4 netmask
<ipv6_subnet>	IPv6 subnet
local Set SNMP	local engine ID
model	security model
v1	v1 security model
v2c	v2c security model
v3	v3 security model
name	security user
<word32>	security user name
<cword>	Valid words are 'authenticationFailure' 'coldStart' 'entConfigChange' 'fallingAlarm' 'linkDown' 'linkUp' 'lldpRemTablesChange' 'newRoot' 'risingAlarm' 'topologyChange' 'warmStart'
<word255>	OID to use as index filter
id	Use specific filter ID

exclude	Exclude filter type
include	Include filter type
<0-127>	Trap source filter ID
<word32>	name of user
engine-id	engine ID
<word10-64>	engine ID octet string
<word32>	MIB view name
<word255>	MIB view OID

Example:

```
SM12XPA(config)# no snmp-server engine-id local
SM12XPA(config)#
```

spanning-tree

No STP Bridge.

Syntax:

no spanning-tree edge (bpdu-filter | bpdu-guard)
no spanning-tree mode
no spanning-tree mst <0-7> [priority | vlan]
no spanning-tree mst forward-time
no spanning-tree mst hello-time
no spanning-tree mst max-age
no spanning-tree mst max-hops
no spanning-tree mst name
no spanning-tree recovery interval
no spanning-tree transmit hold-conut

Parameters:

edge	Edge ports
mode	STP protocol mode
mst	STP bridge instance
recovery	The error recovery timeout
transmit	Transmit
bpdu-filter	Enable BPDU filter (stop BPDU tx/rx)
bpdu-guard	Enable BPDU guard
<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	Bridge name keyword
priority	Priority of the instance
vlan	VLAN keyword
interval	Interval
hold-count	Hold Count

Example:

```
SM12XPA(config)# no spanning-tree mode
SM12XPA(config)# no spanning-tree mst max-age
SM12XPA(config)#
```

stream

No stream configuration.

Syntax:

no stream <id>

Parameters:

<uint>

Example:

```
SM12XPA(config)# no stream
SM12XPA(config)#
```

svl

Unmap Shared VLAN Learning for a range or all FIDs.

Syntax:

no svl fid [<1~4095> | all]

Parameters:

fid	Filter ID keyword
<1~4095>	List of filter IDs to default
all	Default all Filter IDs

Example:

```
SM12XPA(config)# no svl fid all
SM12XPA(config)#
```

switchport

No switchport Vlan mapping.

Syntax:

no switchport vlan mapping <1-53> [<vlan_list>] | (both | egress | ingress) <vlan_id>

Parameters:

vlan	VLAN translation entry configuration.
mapping	Group id
<1-53>	VLAN ID List (deprecated)
<vlan_list>	
both	Bi-directional Translation
egress	Egress-only Translation
ingress	Ingress-only Translation
<vlan_id>	VLAN ID

Example:

```
SM12XPA(config)# no switchport mapping 1 both 1
SM12XPA(config)#
```

system

No system parameters.

Syntax:

no system [contact | description | location | name | reboot]

Parameters:

contact	Clear the SNMP server's contact string
description	Clear the system description string
location	Clear the SNMP server's location string
name	Clear the SNMP server's system model name string
reboot	erase all Switch Reboot scheduling

Example:

```
SM12XPA(config)# no system reboot
SM12XPA(config)#
```

tacacs-server

No TACACS+ config.

Syntax:

no tacacs-server deadtime

no tacacs-server host <word1-255> [port <0-65535>]

no tacacs-server key

no tacacs-server timeout

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
<word1-255>	Hostname or IPv4/IPv6 address
port	TCP port for TACACS+ server
<0-65535>	TCP port number

Example:

```
SM12XPA(config)# no tacacs-server deadtime
SM12XPA(config)# no tacacs-server key
SM12XPA(config)# no tacacs-server timeout
SM12XPA(config)#
```

tsn

No Time Sensitive Networking.

Syntax:

no tsn flow meter <inst>

no tsn frer { <inst> | all }

no tsn ptp-check procedure

no tsn ptp-check ptp-port

no tsn ptp-check timeout

no tsn stream filter <inst>

no tsn stream gate <inst>

no tsn tas always-guard-band

Parameters:

flow	Delete a flow meter
meter	Delete a flow meter
<uint>	The flow meter instance to be deleted
frer	Frame Replication and Elimination for Reliability (802.1CB)
<1-127>	Delete a particular FRER instance
all	Delete all FRER instances
ptp-check	Specify how to ensure that TSN functions start with a coordinated PTP time
procedure	Set ptp-check procedure to default, which is wait
ptp-port	Set the PTP port to use for sensing PTP status to default
timeout	Set ptp-check timeout to default
stream	Delete a stream filter
filter	Delete a stream filter
<uint>	The stream filter instance to be deleted
gate	Delete a stream gate
<uint>	The stream gate instance to be deleted
tas	Time Aware Shaping
always-guard-band	Guard band is implemented for any queue to scheduled queues transition.

Example:

```
SM12XPA(config)# no tsn tas always-guard-band
SM12XPA(config)#
```

udld

Disable UDLD configurations on all fiber-optic ports..

Syntax:

no udld (aggressive | enable)

Parameters:

aggressive	Disable UDLD aggressive mode on all fiber-optic interfaces.
enable	Disable UDLD on all fiber-optic interfaces.

Example:

```
SM12XPA(config)# no udld enable
% Only fiber ports are allowed, port_no: 1
% Only fiber ports are allowed, port_no: 2
% Only fiber ports are allowed, port_no: 3
% Only fiber ports are allowed, port_no: 4
,
,
,
,
,
,
% Only fiber ports are allowed, port_no: x
SM12XPA(config)#
```

upnp

No Universal Plug and Play configuration.

Syntax:

no upnp

no upnp advertising-duration

no upnp interface-vlan

no upnp static interface vlan

Parameters:

advertising-duration	Set advertising duration
ip-addressing-mode	Set IP addressing mode
static	Set static VLAN interface ID
interface	Select an interface to configure
vlan	VLAN Interface

Example:

```
SM12XPA(config)# no upnp advertising-duration
SM12XPA(config)#
```

username

No User Name Authentication.

Syntax:

no username word31

Parameters:

word31 User name allows letters, numbers and underscores

Example:

```
SM12XPA(config)# no username aaa
SM12XPA(config)#
```

vlan

No VLAN parameters.

Syntax:

no vlan <vlan_list>

no vlan ethertype s-custom-port

no vlan protocol eth2 <0x600-0xffff> [group <word16>]

no vlan protocol eth2 arp [group <word16>]

no vlan protocol eth2 (at | ip | ipx) [group]

no vlan protocol llc <0x0-0xff> <0x0-0xff> [group <word16>]

no vlan protocol snap <0x0-0xffffff> <0x0-0xffff> [group <word16>]

no vlan protocol snap (rfc-1042 | snap-8021h) <0x0-0xff> [group <word16>]

Parameters:

<vlan_list>

ethertype

protocol	Protocol-based VLAN commands
s-custom-port	s-custom-port
eth2	Ethernet protocol based VLAN status
llc	LLC-based VLAN group
snap	SNAP-based VLAN group
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

<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
group	Protocol-based VLAN group commands (deprecated since mapping is unique)
<word16>	Group Name (Range: 1 - 16 characters) (deprecated since mapping is unique)
<0x0-0xff>	SSAP (Range: 0x00 - 0xFF)
<0x0-0xffff>	PID (Range: 0x0 - 0xFFFF)

Example:

```
SM12XPA(config)# no vlan 3
SM12XPA(config)#
```

voice

No Voice appliance attributes.

Syntax:

no voice vlan

no voice vlan aging-time

no voice vlan class

no voice vlan oui <oui>

no voice vlan 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
<oui>	Traffic class value

Example:

```
SM12XPA(config)# no voice vlan vid 3
SM12XPA(config)#
```

web

No web privilege group setting.

Syntax:

no web privilege group <cword> level

Parameters:

privilege	Web privilege
group	Web privilege group
<CWORD>	Valid words are 'Aggregation' 'Alarm' 'DDMI' 'DHCP' 'DHCPv6_Client' 'Debug' 'Diagnostics' 'EPS' 'ERPS' 'ETH_LINK_OAM' 'FRR' 'Firmware' 'Green_Ethernet' 'IP' 'IPMC_Snooping' 'LACP' 'LLDP' 'Loop_Protect' 'MAC_Table' 'MEP' 'MRP' 'MVR' 'Miscellaneous' 'NTP' 'POE' 'PTP' 'Ports' 'Private_VLANs' 'QoS' 'RMirror' 'Security(access)' 'Security(network)' 'Spanning_Tree' 'System' 'UDLD' 'UPnP' 'VCL' 'VLAN_Translation' 'VLANs' 'Voice_VLAN' 'XXRP' 'sFlow' 'uFDMA_AIL' 'uFDMA_CIL'
level	Web privilege group level

Example:

```
SM12XPA(config)# no web privilege group LACP level
SM12XPA(config)#
```

ntp

Set Network Timing Protocol server parameters.

Syntax:

ntp

ntp server <1-5> ip-address [<domain_name> | <ipv4_ucast> | <ipv6_ucast>]

Parameters:

server	Configure NTP server
<1-5>	index number
ip-address	ip address
<domain_name>	Domain name
<ipv4_ucast>	IPv4 address
<ipv6_ucast>	IPv6 address

Example:

```
SM12XPA(config)# ntp server 3 ip-address 192.168.1.1
SM12XPA(config)#
```

percepxion

Percepxion configuration. Percepxion is Lantronix cloud-hosted or on-premise management platform that provides a single pane of glass for centralized management and automated monitoring of deployed Lantronix devices, along with real-time notifications, managed APIs and data dashboards. For more information see https://www.lantronix.com/percepxion/.

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 the configuration mode
end	Go back to EXEC mode
exit	Exit from current mode
help	Description of the interactive help system
no	Removes
show	Displays the current configuration
state	Percepxion state
status	Sets the status update interval
connection	Sets active connection to Connection <number>
<1-2>	Sets active connection to Connection <number>
configuration	Sets the action on configuration updates
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
updates	Sets the mode on firmware updates
disable	Restores the default action on new firmware (do not apply)
enable	Automatically apply new firmware
<1-2>	Sets the connection 1 or connection 2
connect	Sets the mode to connect
host	Sets the Hostname or IP address of Percepxion
port	Sets the Port of Percepxion
secure	Sets the mode on HTTPS
validate	Sets the mode on certificate validation
to	Sets the mode to connect
cloud	Sets the connect mode to Cloud
on	Sets the on connect mode to On-premise
<line256>	Sets the Hostname or IP address of Percepxion
<line256>	Sets the Hostname or IP address of Percepxion
<1-65535>	Sets the Port of Percepxion
port	Sets the mode on HTTPS
disable	Disables HTTPS for Percepxion client
enable	Enables HTTPS for Percepxion client
disable	Disables certificate validation for Percepxion client
enable	Enables certificate validation for Percepxion 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
<word32>	Sets the Device ID
<word32>	Sets the Device Key
<word256>	Sets the Device Name
<line>	Exec Command
connection	Shows the connection 1 or connection 2
statistics	Displays the Percepxion statistics

<1-2>	Shows the connection 1 or connection 2
update	Sets the status update interval
interval	Sets the status update interval
<1-1440>	Sets the status update interval

Example 1:

```
SM12XPA(config-percepxion)# active connection connection 1
SM12XPA(config-percepxion)# connection 1 connect to cloud
SM12XPA(config-percepxion)# connection 1 host 1.2.3.4 BobB
SM12XPA(config-percepxion)# connection 1 port 444
SM12XPA(config-percepxion)# connection 1 secure port enable
SM12XPA(config-percepxion)# connection 1 validate certificates enable
SM12XPA(config-percepxion)# content check interval 2000
SM12XPA(config-percepxion)# show connection 1
Percepxion Connection 1 Configuration:
Connect To : Cloud
Host : 1.2.3.4 BobB
Port : 444
Secure Port : Enabled
Validate Certificates: Enabled
SM12XPA(config-percepxion)#
```

Example 2:

```
SM12XPA(config-percepxion)# show statistics
Client Status : Running
Not registered - Device ID or Key not set
Last Status Update : Not available
Last Content Check : Not available
Available Firmware Updates: Not available
Available Configuration Updates: Not available
SM12XPA(config-percepxion)# state enable
SM12XPA(config-percepxion)# status update interval 350
```

port-security

This command is obsolete.

Syntax:

port-security

port-security [aging] [time] <10-10000000>

port-security [hold] [time <10-10000000>]

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

Example:

```
SM12XPA(config)# port security
SM12XPA(config)#
```

privilege

Set command privilege parameters.

Syntax:

privilege <cword> level <0-15> <line128>

Parameters:

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

Example:

```
SM12XPA(config)# privilege configure level 1 test
SM12XPA(config)#
```

prompt

Set prompt.

Syntax:

prompt <word32>

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:

```
SM12XPA(config)# prompt %h
SM12XPA(config)#
```

ptp

Set Precision Time Protocol (IEEE 1588) parameters.

Syntax:

ptp <clockinst> afi-announce

ptp <clockinst> afi-sync

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

ptp <clockinst> domain <domain>

ptp <clockinst> filter [delay <delay>] [period <period>] [dist <dist>]

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-full-on-path-freq | aci-bc-full-on-path-phase | aci-freq-accuracy-fdd | aci-freq-accuracy-xdsl | aci-elec-freq | aci-elec-phase | aci-phase-relaxed-c60w | aci-phase-relaxed-c150 | aci-phase-relaxed-c180 | aci-phase-relaxed-c240 | aci-phase-ocxo-s3e-r4-6-1 | aci-basic-phase | aci-basic-phase-low | basic }

ptp <clockinst> ho [filter <ho_filter>] [adj-threshold <adj_threshold>]

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 | ip6mixed | ethip4ip6-combo] [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 ad <ad>

ptp <clockinst> servo ai <ai>

ptp <clockinst> servo ap <ap>

ptp <clockinst> servo displaystates

ptp <clockinst> servo gain <gain>

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 and External clock output configuration and
ho-spec	Set the Holdover specification for G8275 PTP clocks
io-pin	Set or show input/output 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> [1..40]	The offset increment/decrement adjustment factor
<0-127>	PTP domain: range = 0-127
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
auto AUTO Select clock control, based on PTP profile and available hardware resources
ext Enable external clock frequency output
ltc Select Local Time Counter (LTC) frequency control
<1-25000000> [1..25.000.000] External Clock output frequency in Hz
cat1 Define cat1 time
cat2 Define cat2 time
cat3 Define cat3 time
<0-999999999> cat1 time in sec
<0-3> Pin number
domain Set domain assigned to this pin.
freq Set clock frequency in the waveform case
interface Set PTP slave interface
pps-output Set input/output configuration to 1-pps output
waveform-output Set input/output configuration to waveform (clock) output
<0-2> Domain number 0..2
<1-25000000> Clock frequency in Hz
GigabitEthernet Gigabit Ethernet Ports
10GigabitEthernet 10Gigabit Ethernet Ports
<port_type_list> Port list in 1/1-12
<port_type_list> Port list in 1/1-4
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

Example:

```
SM12XPA(config)# ptp 0 clk sync 300 ap 12
SM12XPA(config)# ptp 0 filter delay 3 dist 3 period 600
SM12XPA(config)# ptp 0 mode boundary dscp 3 onepps vid 100
SM12XPA(config)# ptp 0 log 4 max-time 5 control
SM12XPA(config)# ptp 0 slave-cfg offset-ok 6000 stable-offset 7000 offset-fail 8000
SM12XPA(config)# ptp ext ext 1000000 output
SM12XPA(config)# ptp ho-spec cat1 99999
SM12XPA(config)# ptp system-time set
System clock synch mode (Set System time from PTP time)
SM12XPA(config)#
```

Messages:

Error setting system clock synch mode (cannot get system time if ptp BC/Slave is enabled)

Basic Servo parameters can be modified only with basic filter

qos

Configure Quality of Service.

Syntax:

qos map cos-dscp <0-7> dpl <0-3> dscp [<0-63> | af11 | af12 | af13 | af21 |af22 | af23 | af31 | af32 | af33 | af41 | af42 | af43 | be | cs1 | cs2 | cs3 | cs4 | cs5 | cs6 | cs7 | ef | va]

qos map (dscp-classify | dscp-cos | dscp-egress-translation | dscp-ingress-translation) [<0-63> | af11 | af12 | af13 | af21 |af22 | af23 | af31 | af32 | af33 | af41 | af42 | af43 | be | cs1 | cs2 | cs3 | cs4 | cs5 | cs6 | cs7 | ef | va]

qos map egress <0-511>

qos map ingress <0-255>

qos qce <1-256> [action] cos (<0-7> | default) [dmac | dpl | dscp | frame-type | ingress-mep | inner-tag | interface | last | next | pcp-dei | policy | smac | tag]

qos qce <1-256> [action] dpl (<0-3> | default) [cos | dmac | dscp | frame-type | ingress-mep | inner-tag | interface | last | next | pcp-dei | policy | smac | tag]

qos qce <1-256> [action] dscp [<0-63> | af11 | af12 | af13 | af21 |af22 | af23 | af31 | af32 | af33 | af41 | af42 | af43 | be | cs1 | cs2 | cs3 | cs4 | cs5 | cs6 | cs7 | ef | va]

qos qce <1-256> [action] ingress-map (<0-255> | default) [cos | dmac | dpl | dscp | frame-type | inner-tag | interface | last | next | pcp-dei | policy | smac | tag]

qos qce <1-256> [action] pcp-dei ((<0-7> <0-1>) | default) [cos | dmac | dscp | frame-type | ingress-mep | inner-tag | interface | last | next | policy | smac | tag]

qos qce <1-256> [action] policy (<0-127> | default) [cos | dmac | dpl | dscp | frame-type | ingress-mep | inner-tag | interface | last | next | pcp-dei | smac | tag]

qos qce <1-256> dmac (<mac_addr> | any | broadcast | multicast | unicast) [action | frame-type | inner-tag | interface | last | next | smac | tag]

qos qce <1-256> frame-type (any | etype | ipv4 | ipv6 | llc | snap) [action | dmac | frame-type | inner-tag | interface | last | next | smac | tag | vid]

qos qce <1-256> inner-tag (dei (<0-1> | any) | pcp (<pcp> | any) | type (any | c-tagged | s-tagged | tagged | untagged) | vid (<vcap_vr> | any)) [action | dmac | frame-type | inner-tag | interface | last | next | pcp | smac | tag | vid]

qos qce <1-256> interface { * [<port_type_list> | action | dmac | frame-type | inner-tag | last | next | smac | tag] } | { (GigabitEthernet | 10GigabitEthernet) <port_type_list> [* | GigabitEthernet | 10GigabitEthernet action | dmac | frame-type | inner-tag | last | next | smac | tag]

qos qce <1-256> next <1-256> [action | dmac | frame-type | inner-tag | interface | smac | tag | vid]

qos qce <1-256> smac (<mac_addr> | any)) [action | dmac | frame-type | inner-tag | interface | last | next | tag]

qos qce <1-256> tag (dei (<0-1> | any) | pcp (<pcp> | any) | type (any | c-tagged | s-tagged | tagged | untagged) | vid (<vcap_vr> | any)) [action | dmac | frame-type | inner-tag | interface | last | next | pcp | smac | tag | vid]

qos qce refresh

qos qce update <1-256> [action | dmac | frame-type | inner-tag | interface | last | next | smac | tag]

qos storm (broadcast | multicast | unicast) <-13128147> [fps | kbps | kfps | mbps]

Parameters:

map	Global QoS Map/Table
qce	QoS Control Entry
storm	Storm policer
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
<0~7>	Specific class of service or range
dpl	Specify drop precedence level
<0~3>	Specific drop precedence level or range
dscp	Specify DSCP
<0-63>	Specific DSCP
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

<0-255>	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
<0-7>	Assign class of service
default	Keep existing class of service
<0-3>	Assign drop precedence level
default	Keep existing drop precedence level
<0-255>	Assign ingress map id
default	Keep existing ingress map
<0-7>	Assign PCP
default	Keep existing PCP and DEI
<0-1>	Assign DEI
<0-127>	Assign ACL policy
default	Keep existing ACL policy
<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
<0-1>	Matched DEI
any	Match any DEI
<pcp>	Matched PCP value/range
any	Match any PCP
any	Match tagged and untagged frames
c-tagged	Match C-tagged frames
s-tagged	Match S-tagged frames
untagged	Match untagged frames
<vcap_vr>	Matched VLAN ID value/range
any	Match any VLAN ID
*	All switches or All ports
GigabitEthernet	Gigabit Ethernet Ports
10GigabitEthernet	10Gigabit Ethernet Ports
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-12
<port_type_list>	Port list in 1/1-4
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

Example:

```
SM12XPA(config)# qos group 1 queue 0 dpl 1 min-fl 0 max 1 fill-level
SM12XPA(config)#
```

radius-server

Configure RADIUS server parameters.

Syntax:

radius-server attribute 32 <line1-253>

radius-server attribute 4 <ipv4_ucast>

radius-server attribute 95 <ipv6_ucast>

radius-server deadtime <1-1440>

radius-server host <word1-255> [auth-port <0-65535>] [acct-port <0-65535>] [timeout <1-1000>] [retransmit <Retries :1-1000>]

radius-server host <word1-255> key [<line1-63> | (encrypted <word96-224>) | unencrypted]

radius-server key [<line1-63> | (encrypted <word96-224>) | unencrypted]

radius-server retransmit <1-1000>

radius-server timeout <1-1000>

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
<line1-253>	NAS-Identifier
<ipv4_ucast>	NAS-IP-Address
<ipv6_ucast>	<NAS-IPv6-Address>

<1-1440>	Time in minutes
<word1-255>	Hostname or IPv4/IPv6 address
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 authentication
<1-1000>	Number of retries for a transaction
<1-1000>	Wait time in seconds
<line1-63>	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.
<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.

Example:

```
SM12XPA(config)# radius-server host device key 12
SM12XPA(config)#
```

rmon

Configure Remote Monitoring.

Syntax:

rmon alarm <1-65535> [ifInOctets | ifInUcastPkts | ifInNUcastPkts | ifInDiscards | ifInErrors | ifInUnknownProtos | ifOutOctets | ifOutUcastPkts | ifOutNUcastPkts | ifOutDiscards | ifOutErrors] <uint> <1-2147483647> [absolute | delta] rising-threshold <-2147483648-2147483647> [<0-65535> | falling-threshold] <-2147483648-2147483647> [<0-65535>] { [rising | falling | both] }

rmon event <1-65535> [log] | [trap <word127>] | [description <line127>]

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 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

<1-65535> E vent entry ID

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

<word127> OBSOLETE: SNMP community string

Example:

```
SM12XPA(config)# rmon alarm 10000 ifInErrors 6 9999 absolute rising-threshold 0 falling-
threshold 0 both
SM12XPA(config)#
```

router

Configure router parameters. A router is a networking device that forwards data packets between computer networks. Routers perform the traffic directing functions on the Internet. Data is sent through the internet, such as a web page or email, in the form of data packets. A packet is typically forwarded from one router to another router through an internetwork until it reaches its destination node. A router is connected to two or more data lines from different IP networks. When a data packet comes in on one of the lines, the router reads the network address information in the packet header to determine the ultimate destination. Then, using information in its routing table or routing policy, it directs the packet to the next network on its journey.

Syntax:

router access-list <access_list_name> { permit | deny } { any | <ipv4_addr> <ipv4_netmask> }

router ospf

router rip

Parameters:

access-list	Router access list
<word1-31>	The name of the access list
deny	Deny the access right for the following IPv4 network domain
<ipv4_addr>	The IPv4 address for the access list entry
any	Any IPv4 address
permit	Permit the access right for the following IPv4 network domain
ospf6	Open Shortest Path First for IPv6 (OSPFv3). The OSPFv3 routing protocol for IPv6 is similar to OSPFv2 in its concept of a link state database, intra- and inter-area, and AS external routes and virtual links.
rip	Routing Information Protocol (RIP). The RIP protocol lets routers exchange network topology information. RIP is considered an interior gateway protocol, typically used in small to medium-sized networks.

Example:

```
SM12XPA(config)# router rip
SM12XPA(config)# router ospf
<to be supplied>
SM12XPA(config)#
```

sflow

Configure Statistics flow.

Syntax:

sflow agent-ip { ipv4 <ipv4_addr> | ipv6 <ipv6_addr> }

sflow collector-address

sflow collector-address{ <domain_name> | <ipv4_addr> | <ipv6_addr> }

sflow collector-port <1-65535>

sflow max-datagram-size <200-1468>

sflow timeout <0-2147483647>

Parameters:

agent-ip	The agent IP address used as agent-address in UDP datagrams. Defaults to IPv4 loopback address
collector-address	Collector address
collector-port	Collector UDP port
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 of its parameters are reset to defaults.
Ipv4	Internet Protocol v4
Ipv6	Internet Protocol v6
<ipv4_addr>	IPv4 address
<ipv6_addr>	IPv6 address
<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:

```
SM12XPA(config)# sflow agent-ip ipv4 192.168.1.2
SM12XPA(config)# sflow collector-port 3
SM12XPA(config)# sflow max-datagram-size 333
SM12XPA(config)# sflow timeout 3333
SM12XPA(config)#
```

snmp-server

Set SNMP server parameters.

Command	Function
access	access configuration
community	Set the SNMP 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

access

Set SNMP server access configuration.

Syntax:

snmp-server access <word32> model [v1 | v2c | v3 | any] level [auth | noauth | priv]

snmp-server access <word32> model [v1 | v2c | v3 | any] level [auth | noauth | priv] [read | write] <word32>

Parameters:

<word32>	group name
model	security model
any	any security model
v1 v1	security model
v2c v2c	security model
v3 v3	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
<word32>	read view name
<word32>	write view name

Example:

```
SM12XPA(config)# snmp-server access text model v2c level noauth write text
SM12XPA(config)# SM12XPA(config)#
```

community

Set the SNMP server community.

Syntax:

snmp-server community <word32> <word32>

snmp-server community <word32> encrypted <word96-160>

snmp-server community <word32> ip-range <ipv4_addr> <ipv4_netmask>

snmp-server community <word32> ipv6-range <ipv6_subnet>

Parameters:

<word32>	Security name
encrypted	Use encrypted community secret
ip-range	Use IPv4 range
ipv6-range	Use IPv6 range
<word96-160>	Encrypted community secret
<ipv4_addr>	IPv4 address
<ipv4_netmask>	IPv4 netmask
<ipv6_subnet>	IPv6 subnet

Example:

```
SM12XPA(config)# snmp-server community a a
SM12XPA(config)# SM12XPA(config)#
```

contact

Set the SNMP server's contact string.

Syntax:

snmp-server contact <line255>

Parameters:

<line255> contact string

Example:

```
SM12XPA(config)# snmp-server contact aa
SM12XPA(config)#
```

engine-id

Set SNMP server engine ID.

Syntax:

snmp-server engine-id local <word10-64>

Parameters:

local	Set SNMP local engine ID
<word10-64>	local engine ID

Example:

```
SM12XPA(config)# snmp-server engine-id local 1234567890
SM12XPA(config)#
```

host

Set SNMP server host's configurations.

Syntax:

snmp-server host <word32>

Parameters:

<word32> Name of the host configuration

Example:

```
SM12XPA(config)# snmp-server host aa
SM12XPA(config-snmps-host)# ?
<to be supplied>
SM12XPA(config-snmps-host)#
```

location

Set the SNMP server's location string.

Syntax:

snmp-server location <line255>

Parameters:

<line255> location string

Example:

```
SM12XPA(config)# snmp-server location aa
SM12XPA(config)#
```

security-to-group

Set the SNMP server's security-to-group configuration.

Syntax:

snmp-server security-to-group model [v1 | v2c | v3] name <word32> group <word32>

Parameters:

model	security model
v1	v1 security model
v2c	v2c security model
v3	v3 security model
name	security user
<word32>	security user name
group	security group
<word32>	security group name

Example:

```
SM12XPA(config)# snmp-server security-to-group model v2c name text group text
SM12XPA(config)#
```

user

Set the SNMPv3 server user's parameters.

Syntax:

snmp-server user <word32> engine-id <word10-64>

snmp-server user <word32> engine-id <word10-64> md5 <word8-32>

snmp-server user <word32> engine-id <word10-64> md5 <word8-32> priv [aes | des]

snmp-server user <word32> engine-id <word10-64> md5 encrypted <word16-64>

snmp-server user <word32> engine-id <word10-64> md5 encrypted <word16-64> priv [aes | des]

Parameters:

<word32>	Security user name (word32)
engine-id	engine ID
<word10-64>	Engine ID octet string
md5	Set MD5 protocol
sha	Set SHA protocol
<word8-32>	MD5 unencrypted password
encrypted	Specifies an ENCRYPTED password will follow
aes	Set AES protocol
des	Set DES protocol
<word16-64>	MD5 encrypted password

Example:

```
SM12XPA(config)# snmp-server user A engine-id 123456789876 md5 encrypted
12222222222213123213123 priv aes
SM12XPA(config)#
```

view

Set the SNMP server's MIB view configuration.

Syntax:

snmp-server view <word32> < word255> [include | exclude]

Parameters:

<word32>	MIB view name
<word255>	MIB view OID
include	Included type from the view
exclude	Excluded type from the view

Example:

```
SM12XPA(config)# snmp-server view text .1 include
SM12XPA(config)#
```

spanning-tree

Configure Spanning Tree Protocol (STP) parameters.

Table : configure –spanning-tree Commands

Command	Function
aggregation	Aggregation mode
edge	Edge ports
mode	STP protocol mode
mst	STP bridge instance
recovery	The error recovery timeout
transmit	BPDUs to transmit

aggregation

Configure STP Aggregation mode.

Syntax:

spanning-tree aggregation

Example:

```
SM12XPA(config)# spanning-tree aggregation
SM12XPA (config-stp-aggr) # ?
<to be supplied>
SM12XPA (config-stp-aggr) #
```

edge

Configure STP Edge ports.

Syntax:

spanning-tree edge [bpdu-filter | bpdu-guard]

Parameters:

bpdu-filter Enable BPDU filter (stop BPDU tx/rx)

bpdu-guard Enable BPDU guard

Example:

```
SM12XPA(config)# spanning-tree edge bpdu-guard
SM12XPA(config)#
```

mode

Configure STP protocol mode.

Syntax:

spanning-tree mode [stp | rstp | mstp]

Parameters:

mstp	Multiple Spanning Tree (802.1s)
rstp	Rapid Spanning Tree (802.1w)
stp	802.1D Spanning Tree

Example:

```
SM12XPA(config)# spanning-tree mode stp
SM12XPA(config)#
```

mst

Configure STP bridge instance.

Syntax:

spanning-tree mst <0-7> priority <0-61440>

spanning-tree mst <0-7> vlan <vlan_list>

spanning-tree mst forward-time <4-30>

spanning-tree mst hello-time <1-10>

spanning-tree mst max-age <6-40>

spanning-tree mst max-age <6-40> forward-time

spanning-tree mst max-hops <6-40>

spanning-tree mst name <word32> revision <0-65535>

Parameters:

<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.
<vlan_list>	Range of VLANs
<4-30>	Range in seconds
<1-10>	Hello BPDU timer value
<6-40>	Range in seconds
forward-time	Forward time in seconds
<4-30>	Forward time range
<6-40>	Hop count range
<word32>	Name of the bridge
revision	Revision keyword
<0-65535>	Revision number

Example:

```
SM12XPA(config)# spanning-tree mst name a revision 4
SM12XPA(config)#
```

recovery

Configure STP error recovery interval time.

Syntax:

spanning-tree recovery interval <30-86400>

Parameters:

interval	The interval
<30-86400>	Range in seconds

Example:

```
SM12XPA(config)# spanning-tree recovery interval 33
SM12XPA(config)#
```

transmit

Configure STP BPDUs to transmit.

Syntax:

spanning-tree hold-count <1-10>

Parameters:

hold-count	Max number of transmit BPDUs per sec
<1-10>	1-10 per sec, 6 is default

Example:

```
SM12XPA(config)# spanning-tree transmit hold-count 3
SM12XPA(config)#
```

stream

Configure VCL (VLAN Control List) stream instance name.

Syntax:

stream <inst>

Parameters:

<1-127>	Stream instance name

Example:

```
SM12XPA(config)# stream 1
<to be supplied>
SM12XPA(config)#
```

svl

Configure Shared VLAN Learning.

Syntax:

svl fid <1-4095> vlan <vlan_list>

Parameters:

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

Example:

```
SM12XPA(config)# svl fid 1 vlan 3
SM12XPA(config)#
```

switchport

Set VLAN switching mode characteristics.

Syntax:

switchport vlan mapping <1-53> <vlan_list> <vlan_id>

switchport vlan mapping <1-53> [both | egress | ingress] <vlan_id> <vlan_id>

Parameters:

vlan	VLAN
mapping	VLAN translation entry configuration
<1-53>	Group id
<vlan_list>	VLAN ID List (deprecated)
both	Bi-directional Translation
egress	Egress-only Translation
ingress	Ingress-only Translation
<vlan_id>	Translated VLAN ID
<vlan_id>	VLAN ID

Example:

```
SM12XPA(config)# switchport vlan mapping 3 3 3
%% Failed to add VLAN Translation mapping.
% (VLAN Translation Error - The provided Translation VLAN ID is the same as the VLAN ID -
makes no sense to translate a VLAN to itself)
SM12XPA(config)#
```

system

Set the system parameters.

Syntax:

system [contact | description | location | name] <line128>
system di [high | low]
system do [close | open]
system do relay [close | open]
system [Fri | Mon | Sat | Sun | Thr | Tue | Wed] <0-23> <0-55>
system mode [disable | enable]

Parameters:

contact	Set the system contact string
description	Configure System Description
di	Set the Switch DI input configurations
do	Set the Switch DO output configurations
location	Set the system location string
name	Set the system model name string
reboot	Set the Switch Reboot configurations
<line128>	contact string
<line128>	System Description string
high	Set High is Normal mode
low	Set low is Normal mode
close	Set close is Normal mode
open	Set open is Normal mode
relay	Set the Switch DO relay configurations
close	Set off for DO to close state
open	Set on for DO to open state
<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
<0-23>	start hour
<0-55>	start miniute, value must be multiples of 5
disable	Disable Switch Reboot

enable	Enable Switch Reboot

Example:

```
SM12XPA(config)# system contact 222
SM12XPA(config)# system location 333
SM12XPA(config)# system name GE
SM12XPA(config)#
```

tacacs-server

Configure TACACS+ server parameters.

Syntax:

tacacs-server deadtime <1-1440>

tacacs-server host <word1-255>

tacacs-server host <word1-255> key <line1-63>

tacacs-server host <word1-255> key encrypted <word96-224>

tacacs-server host <word1-255> key unencrypted <line1-63>

tacacs-server host <word1-255> port <0-65535>

tacacs-server host <word1-255> timeout <1-1000>

tacacs-server key <line1-63>

tacacs-server key encrypted <word96-224>

tacacs-server key unencrypted <line1-63>

tacacs-server timeout <1-1000>

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
key	Server specific key (overrides default)
port	TCP port for TACACS+ server
timeout	Time to wait for this TACACS+ server to reply (overrides default)
<line1-63>	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
<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.
<0-65535>	TCP port number
<1-1000>	Wait time in seconds

Example:

```
SM12XPA(config)# tacacs-server deadtime 300
SM12XPA(config)# tacacs-server key 33
SM12XPA(config)# tacacs-server timeout 300
SM12XPA(config)#
```

tsn

Configure Time Sensitive Networking (TSN) parameters. The Time-Sensitive Networking (TSN) Task Group (TG) is a part of the IEEE 802.1 Working Group (WG). The charter of the TSN TG is to provide deterministic services through IEEE 802 networks, i.e., guaranteed packet transport with bounded latency, low packet delay variation, and low packet loss.

Syntax:

tsn flow meter <inst>

tsn frer <inst>

tsn ptp-check procedure { none | ptp | wait }

tsn ptp-check ptp-port <ptp_port_val>

tsn ptp-check timeout <time_val>

tsn stream filter <inst>

tsn stream gate <inst>

tsn tas always-guard-band

Parameters:

flow	Flow Meter
meter	Flow Meter
<0-1022>	Flow meter instance number
frer	Frame Replication and Elimination for Reliability (802.1CB)
<1-127>	FRER instance number
ptp-check	Specify how to ensure that TSN functions start with a coordinated PTP time
procedure	Chose procedure to start with a coordinated PTP time
none	Procedure: Start TSN functions immediately without any delay
ptp	Procedure: Monitor the status of PTP time. Start if it is Locking or Locked. If Locking or Locked is not achieved within wait time, then start anyway
wait	Procedure: Wait timeout number of seconds before starting TSN functions
ptp-port	The PTP port to use for sensing PTP status
timeout	Set ptp-check timeout in seconds
<10-200>	
stream	Stream Filter
filter	Stream Filter
<0-1022>	Stream Filter instance number
gate	Stream Gate
<0-1022>	Stream Gate instance number
tas	Time Aware Shaping
always-guard-band	Guard band is implemented for any queue to scheduled queues transition.
cbs	Committed Burst Size
cir	Committed Information Rate
color-mode	Color mode
coupling-flag	Coupling flag
do	To run exec commands in the configuration mode

```
drop-on-yellow    Configure Flow Meter Drop on Yellow
ebs               Excess Burst Size
eir               Excess Information Rate
end               Go back to EXEC mode
exit              Exit from current mode
help              Description of the interactive help system
mark-red-enable   Configure Flow Meter Mark All Frames Red Enable
no                Negate a command or set its defaults
<uint>            Burst Size in bytes. Internally rounded up to the nearest value supported by the policer.
<uint>            Rate in kbps. Internally rounded up to the nearest value supported by the policer.
<uint>            Rate in kbps. Internally rounded up to the nearest value supported by the policer.
admin-state       Enable or disable a FRER instance
do                To run exec commands in the configuration mode
egress            Select egress ports that this FRER instance will hit
end               Go back to EXEC mode
exit              Exit from current mode
frer-vlan         Select the VLAN ID that ingress flows get classified to
help              Description of the interactive help system
ingress           Configure ingress parameters
mode              Choose this FRER instance's mode of operation (generation or recovery)
no                Negate a command or set its defaults
interface         Select egress ports that this FRER instance will hit
*                 All switches or All ports
10GigabitEthernet   10 Gigabit Ethernet Port
25GigabitEthernet   25 Gigabit Ethernet Port
<port_type_list>  Port list in 1/1-12
<vlan_id>         The FRER VLAN ID
procedure         Chose procedure to start with a coordinated PTP time
ptp-port          The PTP port to use for sensing PTP status
timeout           Set ptp-check timeout in seconds
none              Procedure: Start TSN functions immediately without any delay
ptp               Procedure: Monitor the status of PTP time. Start if it is Locking or Locked. If Locking or Locked is
                  not achieved within wait time, then start anyway
wait              Procedure: Wait timeout number of seconds before starting TSN functions
<0-3>             PTP port (tsn ptp-check ptp-port)
<10-200>          tsn ptp-check
<0-1022>          Stream Filter instance number
block-due-to-oversize-enable   Set PSFP Stream Blocked Due To Oversize Frame Enable
do                To run exec commands in the configuration mode
end               Go back to EXEC mode
exit              Exit from current mode
flow-meter        Set PSFP Flow Meter Instance ID
```

gate	Gate
help	Description of the interactive help system
max-sdu	Set PSFP Maximum SDU Size
no	No
priority	Priority
stream-id	Configure stream id
<uint>	The maximum sdu size
<0-7>	Priority of traffic to match
any	Match any priority
<uint>	Id of the stream configured
always-guard-band	Guard band is implemented for any queue to scheduled queues transition.

Example:

```
SM12XPA(config)# tsn stream gate 0
SM12XPA(config-flow-meter)# color-mode
SM12XPA(config-flow-meter)# coupling-flag
SM12XPA(config-flow-meter)# drop-on-yellow
SM12XPA(config-frer)# admin-state enable
% When administratively enabled, at least one Ingress Stream ID must be specified
SM12XPA(config-frer)# frer-vlan 100
SM12XPA(config-frer)# exit
SM12XPA(config)# tsn ptp-check ptp-port 0
SM12XPA(config)# tsn ptp-check timeout 90
SM12XPA(config)# tsn stream filter 0
SM12XPA(config-stream-filter)# stream-id 1
% TSN: No such stream!
SM12XPA(config-stream-filter)# max-sdu 1
SM12XPA(config-stream-filter)# exit
SM12XPA(config)# tsn tas always-guard-band
SM12XPA(config)#
```

udld

Enable UDLD in aggressive or normal mode and set the configurable message timer on all fiber-optic ports.

Syntax:

udld [aggressive | enable]

udld message time-interval <7-90>

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 from 7 to 90 seconds (Currently default message time interval 7 sec 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 from 7 to 90 seconds (Currently default message time interval 7 sec 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 from 7 to 90 seconds (Currently default message time interval 7 sec is supported.)

Example:

```
SM12XPA(config)# udld aggressive
% Only fiber ports are allowed, port_no: 1
% Only fiber ports are allowed, port_no: 2
% Only fiber ports are allowed, port_no: 3
% Only fiber ports are allowed, port_no: 4
.
.
.
SM12XPA(config)#
```

upnp

Set Universal Plug and Play parameters.

Syntax:

upnp

upnp advertising-duration <100-86400>

upnp ip-addressing-mode [dynamic | static]

upnp static interface-vlan <vlan_id>

Parameters:

advertising-duration	Set advertising duration
ip-addressing-mode	Set IP addressing mode
static	Set static VLAN interface ID
<100-86400>	advertising duration
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:

```
SM12XPA(config)# upnp advertising-duration 188
SM12XPA(config)# upnp static interface vlan 33
SM12XPA(config)#
```

username

Establish User Name Authentication.

Syntax:

username <word31> privilege <0-15> password [encrypted <word128> | none | unencrypted <line31>]

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. 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. Notice that you have no chance to get the Plain Text password after this command. The system will always display the ENCRYPTED password.

Example:

```
SM12XPA(config)# username alan privilege 15 password none
SM12XPA(config)#
```

vlan

Set VLAN parameters.

Syntax:

vlan <vlan_list>

vlan ethertype s-custom-port <0x0600-0xffff>

vlan protocol eth2 [<0x600-0xffff> | arp | at | ip | ipx] group <word16>

vlan protocol llc <0x0-0xff> <0x0-0xff> group <word16>

vlan protocol snap [<0x0-0xffffff> | rfc-1042 | snap-8021h] <0x0-0xffff> group <word16>

Parameter

<vlan_list>	ISL VLAN IDs
ethertype	Ethertype for Custom S-ports
protocol	Protocol-based VLAN commands
s-custom-port	Custom S-ports configuration
<0x0600-0xffff>	EtherType (Range: 0x0600-0xffff)
eth2	Ethernet-based VLAN commands
llc	LLC-based VLAN group
snap S	NAP-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)
<0x0-0xff>	DSAP (Range: 0x00 - 0xFF)
<0x0-0xff>	SSAP (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)

Example:

```
SM12XPA(config)# vlan ethertype s-custom-port 0x1111
SM12XPA(config)# vlan protocol eth2 0x6000 group aa
SM12XPA(config)#
```

voice

Voice appliance attributes.

Syntax:

voice vlan

voice vlan aging-time < 10-10000000>

voice vlan vid class <0-7>

voice vlan oui <oui>

voice vlan oui <oui> description <line32>

voice vlan vid <vlan_id>

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
<vlan_id>	VLAN ID, 1-4095

Example:

```
SM12XPA(config)# voice vlan aging-time 3333
SM12XPA(config)# voice vlan class 7
SM12XPA(config)# voice vlan vid 3000
```

web

Configure web privileges.

Syntax:

web privilege group <cword> level [configRoPriv | configRwPriv | statusRoPriv | statusRwPriv] <0-15>

Parameters:

privilege Web privilege

group	Web privilege group:		
<cword>	Valid words are:		
	PS	Aggregation	CFM
	DDMI	DHCP	DHCPv6_Client
	DMS_Trouble_Shooting	DMS_Vbatch	DMS_client
	DMS_server	Debug	Diagnostics
	ERPS	ETH_LINK_OAM	Firmware
	Green_Ethernet	IP	IPMC_Snooping
	Install_Wizard	LACP	LLDP
	Loop_Protect	MAC_Table	MRP
	MVR	Miscellaneous	NTP
	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	percepxion	sFlow
	uFDMA_AIL	uFDMA_CIL	
level	Web privilege group level		
configRoPriv	Configuration Read-only level		
configRwPriv	Configuration Read-write level		
statusRoPriv	Status/Statistics Read-only level		
statusRwPriv	Status/Statistics Read-write level		
<0-15>	Level		

Example:

```
SM12XPA(config)# web privilege group DDMI level configRoPriv 3
SM12XPA(config)# SM12XPA(config)#
```

5. Copy Commands

Copy a config file from source to destination.

Syntax:

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

Parameters:

running-config	Current running configuration
startup-config	Startup configuration
<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.
|	Output modifiers
syntax-check	Perform syntax check on source configuration
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines

Example:

```
SM12XPA# copy startup-config running-config
SM12XPA#
```

6. Delete Commands

Delete one file in flash: file system.

Syntax:

delete <url_file>

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:

```
SM12XPA# delete text
SM12XPA#
```

7. Dir Commands

Directory of all files in flash: file system.

Syntax:

dir

dir | [begin | exclude | include] <line>

Parameters:

|	Output modifiers
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines

Example:

```
SM12XPA# dir
Directory of flash:
r- 2018-07-13 09:27:54 650 default-config
rw 1970-01-01 00:30:38 10466 startup-config
2 files, 11116 bytes total.
Flash size: 3284992 bytes (3.1 MiB)
Flash free: 3239936 bytes (3.1 MiB)
SM12XPA#
```

8. Disable Commands

Turn off privileged commands.

Syntax:

disable

disable <0-15>

Parameters:

<0-15> Privilege level

Example:

```
SM12XPA# disable 1
SM12XPA#
```

9. Do Commands

To run Exec mode commands in Configuration mode.

Syntax:

do <LINE>{[LINE]}

Parameters:

LINE Exec Command

Example:

```
SM12XPA# do show clock
System Time : 2011-01-01T00:03:44+00:00
SM12XPA#
```

10. Dot1X Commands

IEEE Standard for port-based Network Access Control.

Syntax:

dot1x initialize

dot1x initialize interface *

dot1x initialize interface * <port_type_list>

dot1x initialize interface (GigabitEthernet | 10GigabitEthernet) <port_type_list>

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 for all port types
<port_type_list>	Port list in 1/1-12
<port_type_list>	Port list in 1/1-4

Example:

```
SM12XPA# dot1x initialize interface GigabitEthernet 1/1-46
SM12XPA#
```

11. Enable Commands

Turn on privileged commands.

Syntax:

Enable

Enable <1-15>

Parameters:

<0-15> Choose privileged level

Example:

```
SM12XPA# enable 10
SM12XPA#
```

12. ERPS Commands

Configure Ethernet Ring Protection Switching.

Syntax:

erps 1-64 command [clear | force | manual] [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

Example:

```
SM12XPA# erps 4 command clear port1
SM12XPA#
```

13. Firmware Commands

Firmware upgrade/swap.

Syntax:

firmware swap

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

Parameter

swap	Swap between Active and Alternate firmware image.
upgrade	upgrade
<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:

```
SM12XPA# firmware upgrade tftp://192.168.1.1/running-config
Programming image...
SM12XPA#
```

Note to verify the upgrade, follow these steps after upgrading FW:

1. Login to device via CLI.
2. Type the command "reload defaults".
3. Type the command "copy running-config startup-config".
4. Reboot the device.

14. IP Commands

IPv4 commands.

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:

```
SM12XPA# ip dhcp retry interface vlan 1
SM12XPA#
```

15. iperf Commands

Network bandwidth measurement tool

Syntax:

iperf host <word1-255> [interval <1-60>] | [port <1-65535>] | [time <1-60>] | [ttl <1-255>]

Parameters:

host	host address
<word1-255>	host address
interval	seconds between periodic bandwidth reports
port	server port
time	time in seconds to transmit for
ttl	time-to-live, for multicast
<1-60>	seconds between periodic bandwidth reports
<1-65535>	server port (default 5001)
<1-60>	time in seconds to transmit for (default 10 secs)
<1-255>	time-to-live, for multicast (default 1)

Example:

```
SM12XPA# iperf host xxx.xxx.xxx.xxx
SM12XPA#
```

16. iperf3 Commands

Network bandwidth measurement tool

Syntax:

iperf host <word1-255> [interval <1-60>] | [port <1-65535>] | [time <1-60>]

Parameters:

host	host address
<word1-255>	host address
interval	seconds between periodic bandwidth reports
port	server port
time	time in seconds to transmit for
<1-60>	seconds between periodic bandwidth reports
<1-65535>	server port (default 5001)
<1-60>	time in seconds to transmit for (default 10 secs)

Example:

```
SM12XPA# iperf host xxx.xxx.xxx.xxx
SM12XPA#
```

17. ipv6 Commands

IPv6 configuration commands.

Syntax:

ipv6 dhcp-client restart

ipv6 dhcp-client restart interface vlan <vlan_list>

Parameters:

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

Example:

```
SM12XPA# ipv6 dhcp-client restart interface vlan 3
SM12XPA#
```

18. Link OAM Commands

Link OAM configuration.

Syntax:

link-oam remote-loopback [Start | stop] interface *

link-oam remote-loopback [Start | stop] interface * <port_type_list>

link-oam remote-loopback [Start | stop] interface (GigabitEthernet | 10GigabitEthernet) <port_type_list>

Parameters:

remote-loopback	Configure remote loopback on interface
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 for all port types
<port_type_list>	Port list in 1/1-12
<port_type_list>	Port list in 1/1-4

Example:

```
SM12XPA# link-oam remote-loopback start interface 10GigabitEthernet 1/1-4
SM12XPA#
```

19. More Commands

Display file.

Syntax:

more <url_file>

more <url_file> | [begin | exclude | include] <line>

Parameters:

<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
|	Output modifiers
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines

Example:

```
SM12XPA# more tftp://192.168.1.1/ddd | begin a
% Loading /ddd from TFTP server 192.168.1.1
SM12XPA#
```

20. No Commands

Negate a command or set its defaults.

Syntax:

no aps <inst> freeze

no debug gdbserver

no debug interrupt monitor [source <intr_name>]

no debug kr-options

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:

alarm	alarm
debug	Debugging functions
ptp	Misc non persistent 1588 settings
terminal	Set terminal line parameters
suppress	suppress
<kword127>	alarm name
|	Output modifiers
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines
gdbserver	remote debugging
interrupt	Application-handled interrupt source
ipv6	IPv6 configuration commands
ptp	PTP
trace	Trace
monitor	Print a line on the console everytime the corresponding source interrupt fires
source	Select a particular source interrupt to monitor
<cword>	Valid words are 'AMS' 'CLK_ADJ' 'CLK_TSTAMP' 'EGR_ENGINE_ERR' 'EGR_FIFO_OVERFLOW' 'EGR_RW_FCS_ERR' 'EGR_TIMESTAMP_CAPTURED' 'EXT_1_SYNC' 'EXT_SYNC' 'FLNK' 'INGR_ENGINE_ERR' 'INGR_RW_FCS_ERR' 'INGR_RW_PREAM_ERR' 'LOS' 'PTP_PIN_0' 'PTP_PIN_1' 'PTP_PIN_2' 'PTP_PIN_3' 'PUSH_BUTTON' 'SYNC' 'VOE'

nd	IPv6 Neighbor Discovery debugging
ms-pdv	
log level	
hunt	
<0-3>	Clock instance [0-3]
wireless	Enable wireless mode for one or more interfaces
mode	Enable wireless mode for an interface
interface	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 1/1-12
<port_type_list>	Port list in 1/1-4
editing	Enable command line editing
exec-timeout	Set the EXEC timeout
history	Control the command history function
length	Set number of lines on a screen
width	Set width of the display terminal
size	Set history buffer size

Example:

```
SM12XPA# no ptp 3 wireless m interface GigabitEthernet 1/1
Wireless mode not available for ptp instance 3, port 1
Wireless mode requires a two-step or Oam based BC
SM12XPA#
```

21. Ping Commands

Send ICMP echo messages.

Syntax:

ping ip [<ipv4_addr> | <domain_name>]

ping ip [<ipv4_addr> | <domain_name>] [data <0-255> | quiet | repeat <1-60> | saddr <ipv4_addr> | size <2-1452> | ttl <1-255> | verbose]

ping ip [<ipv4_addr> | <domain_name>] sif (GigabitEthernet | 10GigabitEthernet) <port_type_list>

ping ip [<ipv4_addr> | <domain_name>] sif vlan <vlan_id>

ping ipv6 [<ipv6_addr> | <domain_name>]

ping ipv6 [<ipv6_addr> | <domain_name>] [data <0-255> | quiet | repeat <1-60> | saddr <ipv6_addr> | size <2-1452> | ttl <1-255> | verbose]

ping ipv6 [<ipv6_addr> | <domain_name>] sif (GigabitEthernet | 10GigabitEthernet) <port_type_list>

ping ip [<ipv46_addr> | <domain_name>] sif vlan <vlan_id>

Parameters:

ip	ICMPv4 Echo Request
ipv6	ICMPv6 Echo Request
<domain_name>	Destination hostname or FQDN
<ipv4_addr>	Destination IPv4 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
<0-255>	Payload data: 0-255; Default is 0
<1-60>	Packets: 1-60; Default is 5
<ipv4_addr>	Source Address of interface
<2-1452>	Size (bytes): 2-1452; Default is 56 (excluding MAC, IP and ICMP headers)
<1-255>	IPv4 TTL: 1-255; Default is 64
vlan	Send from VLAN interface with source address
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 1/1-12
<port_type_list>	Port list in 1/1-4
<vlan_id>	Source VLAN interface

<ipv6_addr> Destination IPv6 address

Example:

```
SM12XPA# ping ip 192.168.1.1 repeat 3 size 3
PING 192.168.1.1 (192.168.1.1): 3 data bytes
11 bytes from 192.168.1.1: seq=0 ttl=64
11 bytes from 192.168.1.1: seq=1 ttl=64
11 bytes from 192.168.1.1: seq=2 ttl=64
--- 192.168.1.1 ping statistics ---
3 packets transmitted, 3 packets received, 0% packet loss
SM12XPA#
```

22. Platform Debug Commands

Platform debug configuration. Note that there may be debug commands in Exec mode, Config mode, and Interface Config mode. Contact Tech Support for more information on debug commands.

Syntax:

platform debug (allow | deny)

Parameters:

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

Example:

```
SM12XPA# platform debug deny
SM12XPA#
```

Warning: The use of 'debug' commands may negatively impact system behavior. Debug commands are only to be used by or at the direction of Transition Networks Tech Support. 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.

23. PTP Commands

Precision Time Protocol commands.

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:

<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
<-10000000-10000000>	Ratio in units of 0,1 PPB, (ratio > 0 => faster clock, ratio < 0 => slower clock)
delay	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)
<0-1000000>	Incremental wireless transmission delay pr. byte (in picoseconds)
interface	Interface parameter
*	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 1/1-12
<port_type_list>	Port list in 1/1-4
interface	Interface
1pps	
p2p	
port	

t-plane	
<-100000-100000>	Latency of the cable used for calibration
<port_type_id>	Port ID in 1/1-12
<port_type_id>	Port ID in 1/1-4
mode	Mode
reset	Reset
start	
100m-cu	
10g	
10m-cu	
1g	
1g-cu	
2g5	
5g	
All	
cable-latency	
ext	Specifies that external loopback is to be used
int	Specifies that internal loopback is to be used

Example:

```
SM12XPA# ptp cal port GigabitEthernet 1/1 start
Starting calibration of port: 1 using external reference.
Port link status is 'down' - cannot calibrate.
SM12XPA# ptp cal 1pps 5000
Calibration of 1PPS input (cable_latency = 5000)
Now waiting up tp 30 seconds for calibration to be performed.
SM12XPA# ptp 0 wireless mode interface ?
    *                    All switches or All ports
    10GigabitEthernet    10 Gigabit Ethernet Port
    25GigabitEthernet    25 Gigabit Ethernet Port
SM12XPA# ptp 0 wireless mode interface 25GigabitEthernet ?
    <port_type_list>    Port list in 1/1-2
SM12XPA# ptp 0 wireless mode interface 25GigabitEthernet 1/2
Wireless mode not available for ptp instance 0, port 14
Wireless mode requires a two-step or Oam based BC
SM12XPA#
```

24. Reload Commands

Reload system.

Syntax:

reload cold

reload defaults

reload defaults keep-ip

Parameters:

cold	Reload cold
defaults	Reload defaults without rebooting.
keep-ip	Attempt to keep VLAN1 IP setup

Example:

```
SM12XPA# reload defaults keep-ip
SM12XPA#
```

25. Send Commands

Send a message to other tty lines.

Syntax:

send { * | <0-16> | console 0 | vty <0~15> } <line128>

Parameters:

*	All tty lines
<0~16>	Send a message to multiple lines
console	Primary terminal line
vty	Virtual terminal
0	Send a message to a specific line
<0~15>	Send a message to multiple lines
<lINE128>	Message to be sent to lines, in 128 char's

Example:

```
SM12XPA# send * aaa
----------------------------------------
*** Message from line 0:
----------------------------------------
SM12XPA#
```

26. Show Commands

Display various functions parameters.

Table : Show Commands

Command	Function
aaa	Authentication, Authorization and Accounting methods
access	Access management
access-list	Access list
aggregation	Aggregation port configuration
aps	Automatic Protection Switching
cfm	Connectivity Fault Management (CFM)
clock	Configure time-of-day clock
command-history-log	Command History List
ddmi	DDMI configuration
dot1x	IEEE Standard for port-based Network Access Control
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	Show 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 Maps key configuration
monitor	Monitoring different system events
mrp	MRP status
mvr	Multicast VLAN Registration configuration
network-clock	Show selector state.
ntp	Show NTP Config
platform	Show Platform configuration

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.
snmp	Show SNMP server's configurations
spanning-tree	STP Bridge
stream	Stream
svl	Shared VLAN Learning configuration
switchport	Display switching mode characteristics
system	Show system inf
tacacs-server	TACACS+ configuration
tech-support	Tech support information
terminal	Display terminal configuration parameters
tsn	Time Sensitive Network (TSN)
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	Show Web info

aaa

Show Authentication, Authorization and Accounting methods.

Syntax:

show aaa

show aaa | [begin | exclude | include] <line>

Parameters:

|	Output modifiers
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines

Example:

```
SM12XPA# show aaa

Authentication :
console : local
telnet : local
ssh : local
http : local

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
SM12XPA#
```

access

Access management.

Syntax:

show access management

show access management <1~16>

show access management <1~16> | [begin | exclude | include] <line>

show access management | [begin | exclude | include] <line>

show access management statistics

show access management statistics | [begin | exclude | include] <line>

Parameters:

management	Access management configuration
<1~16>	ID of access management entry list (1-16)
|	Output modifiers
statistics	Statistics data
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines

Example:

```
SM12XPA# show access management 3
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
--- --- ------------------------------ ------------------------------ - - -
SM12XPA#
```

access-list

Show Access list.

Syntax:

show access-list | [begin | exclude | include] <line>

show access-list ace statistics

show access-list ace statistics <1~512>

show access-list ace-status

show access-list ace-status [arp-inspection | conflicts | dhcp | ip | ip-source-guard | ipmc | link-oam | loop-protect | mep | ptp | static | upnp]

show access-list interface *

show access-list interface * <port_type_list>

show access-list interface (GigabitEthernet | 10GigabitEthernet) <port_type_list>

show access-list rate-limiter

show access-list rate-limiter <1~16>

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
<1~512>	ACE ID
arp-inspection	The ACEs that are configured by ARP Inspection module conflicts The ACEs that did not get applied to the hardware due to hardware limitations
dhcp	The ACEs that are configured by DHCP module
ip	The ACEs that are configured by IP module
ip-source-guard	The ACEs that are configured by IP Source Guard module
ipmc	The ACEs that are configured by IPMC module
link-oam	The ACEs that are configured by Link OAM module
loop-protect	The ACEs that are configured by Loop Protect module
mep	The ACEs that are configured by MEP module
ptp	The ACEs that are configured by PTP module
static	The ACEs that are configured by users manually
upnp	The ACEs that are configured by UPnP module
*	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 1/1-12

<port_type_list>	Port list in 1/1-4
<1~16>	Rate limiter ID

Example:

```
SM12XPA# show access-list statistics ace 3
Switch access-list ace number: 0
SM12XPA#
```

aggregation

Show Aggregation port configuration.

Syntax:

show aggregation

show aggregation | [begin | exclude | include] <line>

show aggregation mode

Parameters:

mode	Traffic distribution mode
|	Output modifiers
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines

Example:

```
SM12XPA# show aggregation mode
Aggregation Mode:
SMAC : Enabled
DMAC : Disabled
IP : Enabled
Port : Enabled
SM12XPA#
```

aps

Show Automatic Protection Switching.

Syntax:

show aps [<inst_list>] { [statistics] | [details] }

Parameters:

|	Output modifiers
begin	Begin with the line that matches
<line>	String to match output lines
exclude	Exclude lines that match
include	Include lines that match
<range_list>	The range of APS instances.
details	Show detailed status
statistics	Show APS PDU Rx and Tx counters

Example:

```
SM12XPA# show aps | begin 5 5
SM12XPA#
```

cfm

Show Connectivity Fault Management.

Syntax

show cfm domains [domain <md_name>] [details]

show cfm errors

show cfm meps [domain <md_name>] [service <ma_name>] [mep-id <mepid>] [details]

show cfm services [domain <md_name>] [service <ma_name>] [details]

Parameters:

domains	Show CFM Domains
|	Output modifiers
<line>	String to match output lines
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
details	Show details of the domain(s)
domain	Show particular domain, only
<kword1-15>	Show particular domain, only
errors	Show errors
meps	Show MEPs
details	Show detailed information

domain	Select domain to show info for
mep-id	Select a MEP to show info for
<1-8191>	Particular MEP-ID to show info for
service	Select a service to show info for
services	Show CFM Services

Example:

```
SM12XPA# show cfm meps mep-id 1 domain
SM12XPA# show cfm domains details
Domain:                    domain
Format:                    String
Level:                     0
Name:                      "DEFAULT"
Sender-ID TLV:             Deferred
Port Status TLV:           Enabled
Interface Status TLV:      Enabled
Organization-Specific TLV: Deferred
Services:                  <None>

SM12XPA# show cfm domains
Domain          Services Level Format Name
--------------- -------- ----- ------ ----------------------------------------
domain                 0     0 String "DEFAULT"

SM12XPA#
```

clock

Show system day, date, and time.

Syntax:

show clock

show clock detail

Parameters:

detail Display detailed information

Example:

```
SM12XPA# show clock
System Time : 2017-01-01 01:30:50
SM12XPA# show clock detail
System Time     : 2020-01-02T20:49:27+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
Daylight Saving Time Offset : 1 (minutes)
SM12XPA#
```

command-history-log

Display Command History List

Syntax: **show** command-history-log status

Parameters:

status Enable/Disable to Save Command History to Flash

| Output modifiers

<cr>

Example:

```
SM12XPA# show command-history-log status
The status of termal for Command History Feature : Disable
SM12XPA#
```

ddmi

Show Digital Diagnostics Monitoring Interface configuration.

Syntax:

show ddmi

Parameters:

ddmi DDMI configuration

Example:

```
SM12XPA# show ddmi
Current mode: Enabled
SM12XPA#
```

dot1x

Show IEEE Standard for port-based Network Access Control.

Syntax:

show dot1x status

show dot1x status | [begin | exclude | include] <line>

show dot1x status brief

show dot1x status interface * <port_type_list>

show dot1x status interface (GigabitEthernet | 10GigabitEthernet) <port_type_list>

show dot1x statistics [eapol | radius | all]

show dot1x statistics [eapol | radius | all] | [begin | exclude | include] <line>

show dot1x statistics [eapol | radius | all] interface * <port_type_list>

show dot1x statistics [eapol | radius | all] interface (GigabitEthernet | 10GigabitEthernet) <port_type_list>

Parameters:

statistics	Shows statistics for either EAPoL or RADIUS
Status	Shows dot1x status, such as admin state, port state and last source
|	Output modifiers
brief	Show status in a brief format (deprecated)
interface	Interface
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines
*	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 1/1-12
<port_type_list>	Port list in 1/1-4
all	Show all dot1x statistics
eapol	Show Extensible Authentication Protocol over LAN statistics
radius	Show Backend Server statistics

Example:

```
SM12XPA# show dot1x statistics radius
Rx Access Rx Other Rx Auth. Rx Auth. Tx MAC
Interface Challenges Requests Successes Failures Responses Address
-------------------- ---------- ---------- ---------- ---------- ---------- -------
Gi 1/1 0 0 0 0 0 -
Gi 1/2 0 0 0 0 0 -
Gi 1/3 0 0 0 0 0 -
Gi 1/4 0 0 0 0 0 -
Gi 1/5 0 0 0 0 0 -
```

```
.
.
.
.
Gi 1/N 0 0 0 0 0 -
SM12XPA# show dot1x status brief
Interface  Admin Port State      Last Src          Last ID           QOS VLAN Guest
---------- ----- -------------- ----------------- ----------------- --- ---- -----
10G 1/1    Auth  Disabled       -                 -                 -   -    -
10G 1/2    Auth  Disabled       -                 -                 -   -    -
10G 1/3    Auth  Disabled       -                 -                 -   -    -
10G 1/4    Auth  Disabled       -                 -                 -   -    -
10G 1/5    Auth  Disabled       -                 -                 -   -    -
10G 1/6    Auth  Disabled       -                 -                 -   -    -
10G 1/7    Auth  Disabled       -                 -                 -   -    -
10G 1/8    Auth  Disabled       -                 -                 -   -    -
10G 1/9    Auth  Disabled       -                 -                 -   -    -
10G 1/10   Auth  Disabled       -                 -                 -   -    -
10G 1/11   Auth  Disabled       -                 -                 -   -    -
10G 1/12   Auth  Disabled       -                 -                 -   -    -
25G 1/1    Auth  Disabled       -                 -                 -   -    -
25G 1/2    Auth  Disabled       -                 -                 -   -    -
SM12XPA#
```

erps

Show Ethernet Ring Protection Switching information.

Syntax:

show erps [<inst_list>] [statistics] [details]

Parameters:

|	Output modifiers
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines
<1~64>	List of ERPS instances to show
details	Show detailed status or statistics
statistics	Show statistics

Example:

```
SM12XPA# show erps statistics 1
<to be supplied>
SM12XPA#
```

event

Show trap event configuration.

Syntax:

show event

Example:

```
SM12XPA# show event
Group Name                       Severity Level    Syslog Mode   Trap Mode     SMTP Mode
-------------------------------  ---------------  ------------  ------------  -----------
ACL                              Informational     enable        disable       disable
ACL-Log                          Informational     enable        disable       disable
Access-Mgmt                      Informational     enable        disable       disable
Auth-Failed                      Warning           enable        disable       disable
Cold-Start                       Warning           enable        disable       disable
Config-Info                      Informational     enable        disable       disable
DMS                              Informational     enable        disable       disable
FAN                              Informational     enable        disable       disable
Firmware-Upgrade                 Informational     enable        disable       disable
-- more --, next page: Space, continue: g, quit: ^C
```

green-ethernet

Show Green ethernet (Power reduction).

Syntax:

show green-ethernet

show green-ethernet | [begin | exclude | include] <line>

show green-ethernet [eee | energy-detect | short-reach]

show green-ethernet [eee | energy-detect | short-reach] interface *

show green-ethernet [eee | energy-detect | short-reach] interface * <port_type_list>

show green-ethernet[eee | energy-detect | short-reach] interface (GigabitEthernet | 10GigabitEthernet) <port_type_list>

show green-ethernet interface *

show green-ethernet interface * <port_type_list>

show green-ethernet interface (GigabitEthernet | 10GigabitEthernet) <port_type_list>

Parameters:

|	Output modifiers
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
begin	Begin with the line that matches
exclude	Exclude lines that match

include	Include lines that match
<line>	String to match output lines
*	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 1/1-12
<port_type_list>	Port list in 1/1-4

Example:

```
SM12XPA# show green-ethernet eee
Interface           Lnk EEE Capable     EEE Enabled  LP EEE Capable      EEE In Power Save
------------------ ---  -----------     -----------  ---------------     -----------------
GigabitEthernet     1/1    No           Yes          No                  No
GigabitEthernet     1/2    No           Yes          No                  No
GigabitEthernet     1/3    No           Yes          No                  No
GigabitEthernet     1/4    No           Yes          No                  No
......
10GigabitEthernet    1/1   No           No           N/A                 N/A
10GigabitEthernet   1/2    No           No           N/A                 N/A
10GigabitEthernet   1/3    No           No           N/A                 N/A
10GigabitEthernet   1/4    No           No           N/A                 N/A
SM12XPA#
```

history

Display the session command history.

Syntax:

show history

show history | [begin | exclude | include] <line>

Parameters:

|	Output modifiers
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines

Example:

```
SM12XPA# show history
show green-ethernet eee
show history
SM12XPA#
```

interface

Show Interface parameters.

Syntax:

show interface (<port_type> [<in_port_list>]) switchport [access | trunk | hybrid]

show interface (<port_type> [<plist>]) description

show interface (<port_type> [<v_port_type_list>]) CableDiag

show interface (<port_type> [<v_port_type_list>]) capabilities

show interface (<port_type> [<v_port_type_list>]) kr-status [{ details }]

show interface (<port_type> [<v_port_type_list>]) statistics [{ packets | bytes | errors | discards | filtered | dot3br | { priority [<priority_v_0_to_7>] } | average | average-type }] [{ up | down }]

show interface (<port_type> [<v_port_type_list>]) status [err-disable]

Parameters:

*	All switches or All ports
10GigabitEthernet	10 Gigabit Ethernet Port
25GigabitEthernet	25 Gigabit Ethernet Port
vlan	VLAN status
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-12
<port_type_list>	Port list in 1/1-2
capabilities	Display capabilities
description	Description of interface
kr-status	Display kr status.
statistics	Display statistics counters
status	Display status
switchport	Show interface switchport information
transceiver	Show interface transceiver
veriphy	Display the latest cable diagnostic results
|	Output modifiers
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
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match

<line>	String to match output lines
access	Show access ports status
hybrid	Show hybrid ports status
trunk	Show trunk ports status
<vlan_list>	VLAN list

Example 1:

```
SM12XPA# show interface 25GigabitEthernet 1/1-2 capabilities
25GigabitEthernet 1/1 Capabilities:
  SFP Vendor P/N:        None
  SFP Vendor S/N:        None
  SFP Vendor Name:       None
  SFP Vendor Revision:   None
  SFP Date Code:         None
  SFP Type:              None
  Speed cap:             1000,2.5G,5G,10G,25G,auto
  Duplex cap:            full,auto
  Trunk encap. type:     802.1Q
  Trunk mode:            access,hybrid,trunk
  Channel:               yes
  Broadcast suppression: no
  Flowcontrol:           yes
  Fast Start:            no
  QoS scheduling:        tx-(8q)
  CoS rewrite:           yes
  ToS rewrite:           yes
  UDLD:                  no
  Inline power:          no
  RMirror:               yes
-- more --, next page: Space, continue: g, quit: ^C
```

Example 2:

```
SM12XPA# show interface vlan 100
VLAN 100
  LINK: 00-c0-f2-8b-98-92 Mtu:1500 <BROADCAST MULTICAST>
SM12XPA# show interface * status
Interface              Mode     Speed/Duplex  Media Type  Flow Control  Max Frame  Excessive  Link
---------------------  -------  ------------  ----------  ------------  ---------  ---------  ------
10GigabitEthernet 1/1  enabled  1Gfdx         sfp         disabled      10240      Discard    1Gfdx
Fiber
10GigabitEthernet 1/2  enabled  1Gfdx         sfp         disabled      10240      Discard    Down
10GigabitEthernet 1/3  enabled  1Gfdx         sfp         disabled      10240      Discard    Down
10GigabitEthernet 1/4  enabled  1Gfdx         sfp         disabled      10240      Discard    Down
10GigabitEthernet 1/5  enabled  10Gfdx        sfp         disabled      10240      Discard    Down
10GigabitEthernet 1/6  enabled  10Gfdx        sfp         disabled      10240      Discard    Down
```

```
10GigabitEthernet 1/7   enabled  10Gfdx        sfp         disabled      10240      Discard    Down
10GigabitEthernet 1/8   enabled  10Gfdx        sfp         disabled      10240      Discard    Down
10GigabitEthernet 1/9   enabled  10Gfdx        sfp         disabled      10240      Discard    Down
-- more --, next page: Space, continue: g, quit: ^C
```

Messages:

25GigabitEthernet 1/2 does not have Cable Diagnostic support

10GigabitEthernet 1/4 does not have Cable Diagnostic support

% No SFP module is detected

Example 3:

```
SM12XPA# show interface * switchport
Name: 10GigabitEthernet 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: 10GigabitEthernet 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
```

ip

Show Internet Protocol configuration parameters.

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

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 neighbor

show ip ospf

show ip ospf database [{ router | network | summary | asbr-summary | external | nssa-external } [link-state-id <link_state_id>]] [adv-router <adv_router_id> | self-originate]

show ip ospf interface [vlan <vlan_list> | vlink <vlink_list>]

show ip ospf neighbor [detail]

show ip ospf route

show ip rip [database]

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
name-server	Domain Name System
neighbor	Neighbor list
ospf	Open Shortest Path First (OSPF)
rip	Routing Information Protocol (RIP)

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
static	setting from static entries
*	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 1/1-12
<port_type_list>	Port list in 1/1-4
<vlan_list>	Select a VLAN id to configure
detailed	DHCP server
excluded-address	Excluded IP database
pool	DHCP pools information
relay	DHCP relay agent configuration
server	DHCP server information
snooping	DHCP snooping
statistics	Traffic statistics
client	DHCP client
combined	Show all DHCP related statistics
normal-forward	DHCP normal L2 or L3 forward
relay	DHCP relay
server	DHCP server
snooping	DHCP snooping
interface	Select an interface to configure
|	Output modifiers
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines
<word32>	Pool name in 32 characters
statistics	Traffic statistics
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
allocated	Allocated state
committed	Committed state
expired	Expired state
type	Type of binding
automatic	Automatic binding
expired	Expired binding that is aged out
manual	Manual binding for a specific host
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
sfm-information	Including Source Filter Multicast information from IGMP
<vlan_list>	VLAN identifier (VID)
vlan	VLAN interface
vlink	Virtual link interface
brief	Brief IP interface status
neighbor	Neighbor list
<vlan_list>	List of VLAN IDs, e.g., 1,3-5,7
source	verify source
system	System
database	database summary
interface	Interface status
neighbor	Neighbor list
route	routing information
adv-router	Advertising router link state
asbr-summary	ASBR summary link states
external	External link states
network	Network link states
nssa-external	NSSA external link states
router	Router link states
self-originate	Self-originated link states
summary	Network summary link states
<ipv4_addr>	Advertising router ID (as an IPv4 address format)
link-state-id	Link state
<ipv4_addr>	Link state ID (as an IPv4 address format)
vlan	VLAN interface
vlink	Virtual link interface
<vlan_list>	List of VLAN ID, e.g. 1,3-5,7
detail	Detailed neighbor information
database	Database - RIP

Example 1:

```
SM12XPA# show ip interface brief
Interface Address            Method Status
--------- ------------------ ------ ------
VLAN 1    169.254.89.251/16  Manual UP
VLAN 1    172.27.195.105/24  Manual UP
SM12XPA#
```

Example 2:

```
SM12XPA# show ip domain
Current domain name is not configured.
SM12XPA# show ip link-local interface
Link-Local Address binding interface: 1
SM12XPA# show ip neighbor
169.254.11.36 via VLAN 1:00-c0-f2-82-3e-8b <STALE>
169.254.224.13 via VLAN 1:00-c0-f2-83-83-28 <REACHABLE>
172.27.195.1 via VLAN 1:18-7a-3b-38-8e-8a <REACHABLE>
172.27.195.90 via VLAN 1:00-c0-f2-82-3e-8b <DELAY>
SM12XPA#
```

Example 3:

```
SM12XPA# show ip route
Codes: C - connected, S - static, O - OSPF, R - RIP
       * - FIB route, D - DHCP installed route

S* 0.0.0.0/0 [1/0] via 172.27.195.1, VLAN 1, 00:00:00
C* 169.254.0.0/16 is directly connected, VLAN 1, 00:00:00
C* 172.27.195.0/24 is directly connected, VLAN 1, 00:00:00
SM12XPA# show ip link-local interface
Link-Local Address binding interface: 1
SM12XPA#
```

Example 4:

```
SM12XPA# show ip arp
169.254.37.70 via VLAN 1:00-c0-f2-86-d9-42 <STALE>
169.254.54.105 via VLAN 1:00-c0-f2-9a-18-6a <REACHABLE>
169.254.58.63 via VLAN 1:00-c0-f2-9a-b6-28 <REACHABLE>
169.254.58.71 via VLAN 1:00-c0-f2-8c-09-30 <REACHABLE>
169.254.115.26 via VLAN 1:00-c0-f2-4e-4c-d5 <STALE>
169.254.121.12 via VLAN 1:00-c0-f2-83-83-28 <DELAY>
169.254.166.232 via VLAN 1:00-c0-f2-4d-6e-4e <REACHABLE>
169.254.171.69 via VLAN 1:00-c0-f2-83-8a-1e <DELAY>
172.27.195.1 via VLAN 1:18-7a-3b-38-8e-8a <REACHABLE>
172.27.195.50 via VLAN 1:00-c0-f2-8c-09-30 <STALE>
172.27.195.75 via VLAN 1:00-c0-f2-86-d9-42 <STALE>
172.27.195.85 via VLAN 1:00-c0-f2-85-54-54 <STALE>
```

```
172.27.195.140 via VLAN 1:00-c0-f2-83-83-28 <REACHABLE>
SM12XPA#
```

ipmc

Show IPv4/IPv6 multicast configuration.

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
<word16>	Range entry name in 16 characters

Example:

```
SM12XPA# show ipmc profile range

IPMC Profile is currently disabled, please enable profile to start filtering.
% Invalid profile name range.

SM12XPA# show ipmc profile

IPMC Profile is now enabled to start filtering.

Profile: Prof1 (In VER-INI Mode)
Description: First IPMC profile
SM12XPA# show ipmc profile range

IPMC Profile is now enabled to start filtering.
% Invalid profile name range.

SM12XPA# show ipmc profile detail

IPMC Profile is now enabled to start filtering.

Profile: Prof1 (In VER-INI Mode)
Description: First IPMC profile

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]
SM12XPA#
```

ipv6

Show IPv6 configuration parameters.

Syntax:
show ipv6 dhcp relay [interface vlan <v_vlan_id>]
show ipv6 dhcp relay statistics [interface vlan <vlan_id>]
show ipv6 dhcp snooping [interface (<port_type> [<in_port_list>])]
show ipv6 dhcp snooping statistics [interface (<port_type> [<in_port_list>])] [zero-suppress]
show ipv6 dhcp snooping table [all]
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 ospf
show ipv6 ospf database [{ router | network | inter-prefix | inter-router | external | link | intra-prefix } [link-state-id <link_state_id>]] [adv-router <adv_router_id> | self-originate]
show ipv6 ospf interface [vlan <vlan_list>]
show ipv6 ospf neighbor [detail]
show ipv6 ospf route
show ipv6 route
show ipv6 source binding [dhcpv6-snooping | static] [interface (<port_type> [<port_list>])]
show ipv6 statistics [system] [interface vlan <vlan_list>]
show ipv6 verify source [interface (<port_type> [<port_list>])]

Parameters:

dhcp	Dynamic Host Configuration Protocol V6
dhcp-client	Manage DHCPv6 client service
interface	IPv6 configuration commands
mld	IPv6 configuration commands
neighbor	IPv6 neighbors
ospf	Open Shortest Path First for IPv6 (OSPFv3)
route	IPv6 routes
source	source command
statistics	Traffic statistics
verify	verify command
interface	Select an interface to configure
vlan	VLAN of IPv6 interface
<vlan_list>	IPv6 interface VLAN list
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
sfm-information	Including source filter multicast information from MLD
system	IPv6 system traffic

relay DHCPv6 relay agent
snooping DHCPv6 Snooping
interface Select an interface to view
statistics View statistics
vlan VLAN to view
<vlan_id> ID of VLAN
* All switches or All ports
10GigabitEthernet 10 Gigabit Ethernet Port
25GigabitEthernet 25 Gigabit Ethernet Port
<port_type_list> Port list for all port types
interface Select an interface to configure
zero-suppress Skip ports with all-zero counters
brief Brief summary of IPv6 status and configuration
database database summary
interface Select an interface to configure
neighbor Neighbor list
route routing information
adv-router Advertising router link state
external External link states
inter-prefix Inter Area Prefix link states
inter-router Inter Area Router link states
intra-prefix Intra Area Prefix states
link Link LSA link states
network Network link states
router Router link states
self-originate Self-originated link states
<ipv4_addr> Advertising router ID (as an IPv4 address format)
link-state-id Link state
<ipv4_addr> Link state ID (as an IPv4 address format)
detail Detailed neighbor information
system IPv6 system traffic

Example:

```
SM12XPA# show ipv6 mld snooping detail
MLD Snooping is enabled to start snooping MLD control plane.
Multicast streams destined to unregistered MLD groups will be flooding.
SM12XPA# show ipv6 dhcp snooping interface * 1/1
DHCPv6 snooping per-port configuration:
 Port Name                      Trust Mode
 -----------------------------------------------
 10GigabitEthernet 1/1          Untrusted
 25GigabitEthernet 1/1          Untrusted
SM12XPA# show ipv6 interface brief
Interface Address                                    Status
--------- ------------------------------------------ ------
VLAN 1    fe80::2c0:f2ff:fe8b:9892/64                UP
SM12XPA# show ipv6 ospf database external link-state-id 2.2.2.2 adv-router 3.3.3.3
```

```
SM12XPA# show ipv6 route
Codes: C - connected, S - static, O - OSPF
       * - FIB route

C* fe80::/64 is directly connected, VLAN 1, 00:00:00


SM12XPA#
```

lacp

Show Link Aggregation Control Protocol configuration/status.

Syntax:

show lacp [internal | statistics | system-id | neighbour] [| {begin | exclude | include } <line>]

show lacp [internal | statistics | system-id | neighbour] detail

Parameters:

internal	Internal LACP configuration
neighbour	Neighbour LACP status
statistics	Internal LACP statistics
system-id	LACP system id
|	Output modifiers
details	LACP state
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines

Example 1:

```
SM12XPA# show lacp internal
Port        State     Key   Priority
----------  --------  ----  --------
10G 1/1     Down      1     32768
10G 1/2     Down      4     32768
10G 1/3     Down      4     32768
10G 1/4     Down      1     32768
SM12XPA#
```

Example 2:

```
SM12XPA# show lacp internal details
Port        State     Key   Priority  Activit  Timeout  Aggrege  Synchro  Collect  Distrib
Default  Expired
----------  --------  ----  --------  -------  -------  -------  -------  -------  -------
-------  -------
```

```
10G 1/1     Down      1     32768     Active   Fast     Yes      Yes      No       No
Yes      No
10G 1/2     Down      4     32768     Passive  Fast     Yes      Yes      No       No
Yes      No
10G 1/3     Down      4     32768     Passive  Slow     Yes      Yes      No       No
Yes      No
10G 1/4     Down      1     32768     Active   Fast     Yes      Yes      No       No
Yes      No
```

license

Display license information.

Syntax:

show license

show license | {begin | exclude | include } <line>

show license { [component <uint>] | description | [mtd <word>] [section <uint>] }

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
|	Output modifiers
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines
<uint>	Component ID to show
<word>	Name of MTD (file) to show

Example:

```
SM12XPA# show licenses
License summary
===============

Component Name                  Version                                          License
Type
Source
--------- --------------------- ------------------------------------------------ ---------
-------------------------------------------------------------------------------------------
Appl      WebStaX                                                                Microsemi
Appl      ISC DHCP              4.1.0                                            ISC
http://www.isc.org/software/dhcp
Appl      MD5                                                                    BSD
Appl      Host AP               0.5.9                                            BSD
http://hostap.epitest.fi/hostapd
Appl      WPA Supplicant        0.6.1                                            BSD
http://hostap.epitest.fi/wpa_supplicant
Appl      NET-SNMP RMON                                                          BSD-like
http://net-snmp.sourceforge.net/download.html
Appl      NET-SNMP                                                               NET-SNMP
(BSD-Style)
Appl      UCD-SNMP              4.1.2                                            UCD-SNMP
http://net-snmp.sourceforge.net/download.html
Appl      CPU-load                                                               BSD
m0n0wall
```

```
Appl      TACACS-plus           libtacplus 0.2
BSD
http://sourceforge.net/projects/libtacplus/
Appl      avltree               None
MIT
https://github.com/bijalthanawala/avl-tree
Appl      MooTools
MIT
http://mootools.net/
-- more --, next page: Space, continue: g, quit: ^C
```

line

Display TTY line information.

Syntax:

show line

show line | {begin | exclude | include } <line>]

show line [alive]

Parameters:

|	Output modifiers
alive	Display information about alive lines
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines

Example:

```
SM12XPA# show line alive
Line is con 0.
---------------
* You are at this line now.
Alive from Console.
Default privileged level is 2.
Command line editing is enabled
Display EXEC banner is enabled.
Display Day banner is enabled.
Terminal width is 80.
length is 24.
history size is 32.
exec-timeout is 10 min 0 second.
Current session privilege is 15.
Elapsed time is 0 day 2 hour 19 min 54 sec.
Idle time is 0 day 0 hour 0 min 0 sec.


SM12XPA#
```

link-oam

Show Link OAM configuration.

Syntax:

show link-oam

show link-oam | {begin | exclude | include } <line>

show link-oam interface [* | (GigabitEthernet | 10GigabitEthernet) <port_type_list>]

show link-oam [link-monitor | statistics | status]

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
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines
*	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 1/1-12
<port_type_list>	Port list in 1/1-4

Example:

```
SM12XPA# show link-oam interface GigabitEthernet 1/1-4
Interface Control Mode Status
------------------- --------- ------- -----------
GigabitEthernet 1/1 disabled passive non operational
GigabitEthernet 1/2 disabled passive non operational
SM12XPA# show link-oam link-monitor status
10GigabitEthernet 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
SM12XPA#
```

lldp

Display Link Layer Discover Protocol parameters.

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
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines
*	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 1/1-12
<port_type_list>	Port list in 1/1-4
media-vlan-policy	Display media vlan policies
remote-device	Display remote device LLDP-MED neighbors information
<0~31>	List of policies
interface	Interface to display

Example:

```
SM12XPA# show lldp statistics
LLDP global counters
Neighbor entries was last changed at 2024-01-15T14:26:15+00:00  (939698 secs. ago).
Total Neighbors Entries Added    0.
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
---------            ------      ------      ------      --------    ------      -------     --------    ----
10GigabitEthernet 1/1   0           31323       0           0           0           0           0           0
10GigabitEthernet 1/2   0           86          0           0           0           0           0           0
10GigabitEthernet 1/3   0           12          0           0           0           0           0           0
-- more --, next page: Space, continue: g, quit: ^C

SM12XPA# show lldp neighbors
Local Interface     : 10GigabitEthernet 1/1
Chassis ID          : 00-C0-F2-9A-B6-28
Port ID             : 25
Port Description    : Port #25
System Name         : SM24TAT2SA
System Description  : Smart Managed Switch, 24-port Gigabit PoE+, 2-port 100/1000 SFP
System Capabilities : Bridge(+)
Management Address  : 172.27.195.100 (IPv4) - if-index:0
SM12XPA# show lldp preempt
Local Interface     : 10GigabitEthernet 1/1
Frame Preemption Status Local & Remote
=======================================
LocalPreemptSupported: TRUE
LocalPreemptEnabled : FALSE
LocalPreemptActive  : FALSE
LocalFragSize       : 0 (64 octets)
RemotePreemptSupported: FALSE
RemotePreemptEnabled: FALSE
RemotePreemptActive : FALSE
RemoteFragSize      : 0 (64 octets)

SM12XPA#
```

logging

Show System logging message.

Syntax:

show logging
show logging [<1-4294967295> | error | informational | notice | warning]
show logging <1-4294967295> [exclude | include] <line>
show logging <1-4294967295> switch <switch_list>
show logging | {begin | exclude | include } <line>

Parameters:

<1-4294967295>	Logging ID
|	Output modifiers
error	Severity 3: Error conditions
informational	Severity 6: Informational messages
notice	Severity 5: Normal but significant condition
warning	Severity 4: Warning conditions
exclude	Exclude lines that match
include	Include lines that match
switch	Switch
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines
<switch_list>	Switch ID list in 1

Example:

```
SM12XPA# show logging informational
Switch logging host mode is disabled
Switch logging host address is null
Switch logging level is informational
Number of entries on Switch 1:
Error : 0
Warning : 0
Notice : 55
Informational: 1
All : 56
ID Level Time & Message
---------- ------------ --------------
1 Informational 1970-01-01T00:00:45+00:00
SYS-BOOTING: Switch just made a cold boot.

SM12XPA#
```

loop-protect

Show Loop protection configuration.

Syntax:

show loop-protect

show loop-protect interface [* | (GigabitEthernet | 10GigabitEthernet) <port_type_list>]

Parameters:

interface	Interface status and configuration
*	All switches or All ports
10GigabitEthernet	10 Gigabit Ethernet Port
25GigabitEthernet	25 Gigabit Ethernet Port
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-12
<port_type_list>	Port list in 1/1-4

Example:

```
SM12XPA# show loop-protect interface 25GigabitEthernet 1/1-2
Loop Protection Configuration
=====================================
Loop Protection   : Enable
Transmission Time : 4 sec
Shutdown Time     : 100 sec

25GigabitEthernet 1/1
------------------------------
    Loop protect mode is enabled.
    Action is log only.
    Transmit mode is enabled.
    No loop.
    The number of loops is 0.
    Status is down.

25GigabitEthernet 1/2
------------------------------
    Loop protect mode is enabled.
    Action is log only.
    Transmit mode is enabled.
    No loop.
    The number of loops is 0.
    Status is down.
SM12XPA#
```

mac

Show Mac Address Table information.

Syntax:

show mac address-table

show mac address-table | [begin | exclude | include] <line>

show mac address-table address <mac_ucast>

show mac address-table address <mac_ucast> vlan <vlan_id>

show mac address-table [aging-time | conf | count | learning | static]

show mac address-table count interface [* | (GigabitEthernet | 10GigabitEthernet) <port_type_list>]

show mac address-table count vlan <vlan_id>

show mac address-table interface [* | (GigabitEthernet | 10GigabitEthernet) <port_type_list>]

show mac address-table learning interface [* | (GigabitEthernet | 10GigabitEthernet) <port_type_list>]

show mac address-table learning vlan <vlan_id>

show mac address-table vlan <vlan_id>

Parameters:

address-table	Mac Address Table
|	Output modifiers
address	MAC address lookup
aging-time	Aging time
conf	User added static mac addresses
count	Total number of mac addresses
interface	Select an interface to configure
learning	Learn/disable/secure state
static	All static mac addresses
vlan	Addresses in this VLAN
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines
<mac_ucast>	48 bit MAC address: xx:xx:xx:xx:xx:xx
vlan	VLAN lookup
<vlan_id>	VLAN IDs 1-4095
*	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 1/1-12
<port_type_list>	Port list in 1/1-4

Example:

```
SM12XPA# show mac address-table count interface 10GigabitEthernet 1/1-2
Port Dynamic addresses
10GigabitEthernet 1/1             6
10GigabitEthernet 1/2             0

Total learned dynamic addresses for the switch: 6
Total static addresses in table: 8
SM12XPA# show mac address-table vlan 1
Type    VID  MAC Address       Ports
Dynamic 1    00:c0:f2:4c:d0:33 10GigabitEthernet 1/1
Dynamic 1    00:c0:f2:4c:f0:53 10GigabitEthernet 1/1
Dynamic 1    00:c0:f2:4d:6e:4e 10GigabitEthernet 1/1
Dynamic 1    00:c0:f2:4e:4c:d5 10GigabitEthernet 1/1
Dynamic 1    00:c0:f2:6a:95:90 10GigabitEthernet 1/1
Dynamic 1    00:c0:f2:82:3e:8b 10GigabitEthernet 1/1
Dynamic 1    00:c0:f2:83:83:28 10GigabitEthernet 1/1
Dynamic 1    00:c0:f2:83:8a:1e 10GigabitEthernet 1/1
Dynamic 1    00:c0:f2:85:54:54 10GigabitEthernet 1/1
Dynamic 1    00:c0:f2:86:d9:42 10GigabitEthernet 1/1
Static  1    00:c0:f2:8b:98:92  CPU
Dynamic 1    00:c0:f2:8c:09:30 10GigabitEthernet 1/1
Dynamic 1    00:c0:f2:9a:18:6a 10GigabitEthernet 1/1
Dynamic 1    00:c0:f2:9a:b6:28 10GigabitEthernet 1/1
Dynamic 1    18:7a:3b:38:8e:8a 10GigabitEthernet 1/1
Static  1    33:33:00:00:00:01 10GigabitEthernet 1/1-12 25GigabitEthernet 1/1-2 CPU
Static  1    33:33:ff:8b:98:92 10GigabitEthernet 1/1-12 25GigabitEthernet 1/1-2 CPU
Dynamic 1    80:1f:12:f6:20:27 10GigabitEthernet 1/1
Dynamic 1    80:1f:12:f6:24:1a 10GigabitEthernet 1/1
-- more --, next page: Space, continue: g, quit: ^C
```

map-api-key

Show Google Maps key configuration.

Syntax: show map-api-key

Parameters:

Example:

```
SM12XPA# show map-api-key
Key    :
SM12XPA#
```

monitor

Show Monitoring (mirroring) information.

Syntax:

show monitor

show monitor session [<1-5> | all | remote]

Parameters:

session	MIRROR session
<1-5>	MIRROR session number
all	Show all MIRROR sessions
remote	Show only Remote MIRROR sessions

Example:

```
SM12XPA# show monitor session remote
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 :
Session 4
---------
Mode : Disabled
Type : Mirror
Source VLAN(s) :
CPU Port :
Session 5
---------
Mode : Disabled
Type : Mirror
Source VLAN(s) :
CPU Port
SM12XPA#
```

mrp

Show Media Redundancy Protocol status.

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	Show a collection of MRP statistics for a specific interface(s)
mvrp	Show MRP statistics for the MVRP Application
*	All switches or All ports
10GigabitEthernet	10 Gigabit Ethernet Port
25GigabitEthernet	25 Gigabit Ethernet Port
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-12
<port_type_list>	Port list in 1/1-2

Example:

```
SM12XPA# show mrp status
10GigabitEthernet 1/1 :
-----------------------
MRP Appl  FailedRegistrations  LastPduOrigin
--------  -------------------  -------------
MVRP      0                    00-00-00-00-00-00

10GigabitEthernet 1/2 :
-----------------------
MRP Appl  FailedRegistrations  LastPduOrigin
--------  -------------------  -------------
MVRP      0                    00-00-00-00-00-00

10GigabitEthernet 1/3 :
-----------------------
MRP Appl  FailedRegistrations  LastPduOrigin
--------  -------------------  -------------
MVRP      0                    00-00-00-00-00-00

10GigabitEthernet 1/4 :
-----------------------
MRP Appl  FailedRegistrations  LastPduOrigin
--------  -------------------  -------------
-- more --, next page: Space, continue: g, quit: ^C
```

mvr

Show Multicast VLAN Registration configuration.

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
sfm-information	Including source filter multicast information from MVR
interface	Search by port
*	All switches or All ports
10GigabitEthernet	10 Gigabit Ethernet Port
25GigabitEthernet	25 Gigabit Ethernet Port
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-12
<port_type_list>	Port list in 1/1-2
<word16>	MVR multicast VLAN name
<vlan_list>	MVR multicast VLAN list

Example 1:

```
SM12XPA# show mvr

MVR is currently disabled, please enable MVR to start group registration.
SM12XPA# show mvr

MVR is now enabled to start group registration.

Switch-1 MVR-IGMP Interface Status

IGMP MVR VLAN 100 (Name is huntski) interface is enabled.
Querier status is IDLE
RX IGMP Query:0 V1Join:0 V2Join:0 V3Join:0 V2Leave:0
TX IGMP Query:0 / (Source) Specific Query:0
Interface Channel Profile: <No Associated Profile>

Switch-1 MVR-MLD Interface Status

MLD MVR VLAN 100 (Name is huntski) interface is enabled.
Querier status is IDLE
RX MLD Query:0 V1Report:0 V2Report:0 V1Done:0
TX MLD Query:0 / (Source) Specific Query:0
Interface Channel Profile: <No Associated Profile>
```

Example 2:

```
SM12XPA# show mvr vlan 100

MVR is now enabled to start group registration.

Switch-1 MVR-IGMP Interface Status

IGMP MVR VLAN 100 (Name is huntski) interface is enabled.
Querier status is IDLE
RX IGMP Query:0 V1Join:0 V2Join:0 V3Join:0 V2Leave:0
TX IGMP Query:0 / (Source) Specific Query:0
Interface Channel Profile: <No Associated Profile>

Switch-1 MVR-MLD Interface Status

MLD MVR VLAN 100 (Name is huntski) interface is enabled.
Querier status is IDLE
RX MLD Query:0 V1Report:0 V2Report:0 V1Done:0
TX MLD Query:0 / (Source) Specific Query:0
Interface Channel Profile: <No Associated Profile>
SM12XPA#
```

network-clock

Show network clock parameters.

Syntax:

show network-clock

show network-clock clock-selection-config

show network-clock port-config

show network-clock port-status

show network-clock ptp-ports

show network-clock source-nomination-config

show network-clock station-clock-config

show network-clock synchronization

Parameters:

clock-selection-config	
port-config	Port configuration
port-status	Port status
ptp-ports	PTP port
source-nomination-config	
station-clock-config	Show station clock configuration
synchronization	Show Synchronization

Example:

```
SM12XPA# show network-clock
Selector State is: Free Run
Alarm State is:
Clk:        1        2
LOCS:    TRUE     TRUE
SSM:     FALSE    FALSE
WTR:     FALSE    FALSE

LOL:     TRUE
DHOLD:   FALSE

SSM State is:
Interface                    Tx SSM       Rx SSM Mode

SM12XPA# show network-clock ptp-ports
Instance  SSM_RX   PTSF
--------  -------  ------------
0         unknown  none
1         unknown  none
2         unknown  none
3         unknown  none
SM12XPA# show network-clock port-status
Interface               SSM_TX   SSM_RX   Mode
----------------------  -------  -------  ------
10GigabitEthernet 1/1   QL_INV   QL_NONE  Master
```

```
10GigabitEthernet 1/2   QL_INV   QL_NONE  Master
10GigabitEthernet 1/3   QL_INV   QL_NONE  Master
10GigabitEthernet 1/4   QL_INV   QL_NONE  Master
10GigabitEthernet 1/5   QL_INV   QL_NONE  Master
10GigabitEthernet 1/6   QL_INV   QL_NONE  Master
10GigabitEthernet 1/7   QL_INV   QL_NONE  Master
10GigabitEthernet 1/8   QL_INV   QL_NONE  Master
10GigabitEthernet 1/9   QL_INV   QL_NONE  Master
10GigabitEthernet 1/10  QL_INV   QL_NONE  Master
10GigabitEthernet 1/11  QL_INV   QL_NONE  Master
10GigabitEthernet 1/12  QL_INV   QL_NONE  Master
25GigabitEthernet 1/1   QL_INV   QL_NONE  Master
25GigabitEthernet 1/2   QL_LINK  QL_LINK  Master

SM12XPA# show network-clock source-nomination-config
Source  Nominated  Port   Priority  SSM Overwrite  Holdoff   ANEG mode
------  ---------  -----  --------  -------------  --------  --------------
     1  False          1         0  qlNone         Disabled  none
     2  False          1         0  qlNone         Disabled  none
     3  False          1         0  qlNone         Disabled  none
SM12XPA# show network-clock clock-selection-config
Selection Mode    Source  Wtr Time  SSM Holdover  SSM Freerun  EEC Option
----------------  ------  --------  ------------  -----------  ----------
autoRevertive          1         5  qlNone        qlNone       eecOption1
SM12XPA#
```

ntp

Show Network Time Protocol configuration.

Syntax:

show ntp status

Parameters:

status Show NTP status

Example:

```
SM12XPA# show ntp status
NTP Mode : disabled
Idx Server IP host address (a.b.c.d) or a host name string
--- ----------------------------------------------------
1     10.2.30.45
2
3
4
5

SM12XPA#
```

platform

Show Platform configuration.

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	ID
instance	PHY Instance Information
interface	Interface
*	All switches or All ports
10GigabitEthernet	10 Gigabit Ethernet Port
25GigabitEthernet	25 Gigabit Ethernet Port
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-12
<port_type_list>	Port list in 1/1-2

Example:

```
SM12XPA# show platform phy interface GigabitEthernet 1/1
Port API Inst WAN/LAN/1G Mode Duplex Speed Link
---- --------- --------- ---- ------ ----- ----
1 Default 1G ANEG FDX 1G No

SM12XPA# show platform debug

Platform debug command function is denied.
SM12XPA# show platform phy failover
Port         Active     Channel    Broadcast  After reset
----         ------     -------    ---------  ------------
M12XPA# show platform phy id interface 10GigabitEthernet 1/1
Port   Channel    API Base   Phy Id     Phy Rev.
----   -------    --------   -------    ------
SM12XPA#
```

port-security

Show Port Security configured parameters.

Syntax:

show port-security

show port-security | [begin | exclude | include] <line>

show port-security address

show port-security address interface [* | (GigabitEthernet | 10GigabitEthernet) <port_type_list>]

show port-security switch interface [* | (GigabitEthernet | 10GigabitEthernet) <port_type_list>]

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
*	All switches or All ports
10GigabitEthernet	10 Gigabit Ethernet Port
25GigabitEthernet	25 Gigabit Ethernet Port
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-12
<port_type_list>	Port list in 1/1-2

Example:

```
SM12XPA# show port-security interface 25GigabitEthernet 1/1-2
Users:
  P = Port Security (Admin)
  8 = 802.1X
  V = Voice VLAN

Interface  Users Limit Current Violating Violation Mode Sticky State
---------- ----- ----- ------- --------- -------------- ------ -------------
25G 1/1    ---     N/A       0       N/A Disabled       No     No users
25G 1/2    ---     N/A       0       N/A Disabled       No     No users

Aging time: 3600 seconds
Hold time: 300 seconds

SM12XPA# show port-security address
VLAN MAC Address       Type    State      Port       Age/Hold Time
---- ----------------- ------- ---------- ---------- -------------

Number of MAC addresses manageable by port-security in the system: 1024
Number of MAC addresses currently used by port-security in the system: 0

SM12XPA#
```

power

Show Power information.

Syntax: **show** power management <cr>

Parameters:

Example:

```
SM12XPA# show power management
Power Management
========================
Power                    : A        B
Detected PSU             : UMEC-250 UMEC-250
Power Good               : Good     Good
FAN Speed (RPM)          : 2977     2967
Temperature (Degree C)   : 46       49
Operating Mode           : Redundant
SM12XPA#
```

privilege

Display command privilege level information. Privilege Levels can be configured to 0 - 15 (where 0 is lowest level and 15 is highest level). Every group has an authorization Privilege level for the following sub groups: read-only, read-write. User Privilege should be same or greater than the authorization Privilege level to have the access to that function.

Syntax:

show privilege

show privilege | [begin | exclude | include] <line>

Parameters:

|	Output modifiers
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines

Example:

```
SM12XPA# show privilege
SM12XPA#
```

process

Show process information.

Syntax:

show process list

show process list | [begin | exclude | include] <line>

show process list detail

show process load

Parameters:

list	list
load	load
detail	optionally show thread call stack

Example:

```
SM12XPA# show process load
1.65 1.62 1.63 1/169 183
M12XPA# show process list
PID   USER     COMMAND
    1 root     /sbin/init
    2 root     [kthreadd]
    3 root     [rcu_gp]
    4 root     [rcu_par_gp]
    6 root     [kworker/0:0H]
    8 root     [mm_percpu_wq]
    9 root     [ksoftirqd/0]
   10 root     [rcu_sched]
   11 root     [migration/0]
   12 root     [cpuhp/0]
   13 root     [cpuhp/1]
   14 root     [migration/1]
   15 root     [ksoftirqd/1]
   16 root     [kworker/1:0-mm_]
   17 root     [kworker/1:0H]
   18 root     [kdevtmpfs]
   19 root     [kworker/0:1-eve]
   20 root     [kworker/1:1-mm_]
   21 root     [oom_reaper]
   22 root     [writeback]
   23 root     [kcompactd0]
   39 root     [cryptd]
   78 root     [kblockd]
  137 root     [kswapd0]
  140 root     [spi0]
  141 root     [ipv6_addrconf]
  142 root     [kworker/0:2]
  143 root     [ubi_bgt0d]
  144 root     [ubifs_bgt0_0]
  145 root     /usr/bin/switch_app
  213 root     /usr/sbin/zebra -f /etc/quagga/zebra.conf -i /tmp/zebra.pid -P 0
  214 root     /usr/sbin/staticd -f /tmp/staticd.conf -i /tmp/staticd.pid -P 0
  232 root     /usr/sbin/dropbear -r /sSM12XPA#
```

ptp

Show Precision Time Protocol (1588) information.

Syntax:

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 cmlds default-ds

show ptp cmlds { port-state | port-ds | port-statistics } interface (<port_type> [<v_port_type_list>])

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
|	Output modifiers
cal	Show the PTP calibration.
ext	Show External clock output configuration and VCXO frequency rate adjustment option.
ms-pdv	Show the configuration of the MS-PDV.
servo	Show servo information
system-time	Show the PTP <-> system time synchronization mode.
<line>	String to match output lines
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.
interface	Define interface list for the 'port' show commands. Default is show all interfaces
*	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 1/1-12
<port_type_list>	Port list in 1/1-4
all-apr-statistics	
apr	
cgu	
cur-path-delays	
path-statistics	
psl-fcl-config	
<0-3>	
server	
<0-3>	
status	
mode-ref	
source	

Example:

```
SM12XPA# show ptp ext
PTP External One PPS mode: Output, Clock output enabled: True, frequency : 1000000,
Preferred adj method: Auto
SM12XPA# show ptp 0 clk
Option  threshold  'P'constant
------  ---------  -----------
free     1000       2
```

```
SM12XPA# show ptp cmlds port-ds interface 10GigabitEthernet 1/6
Port  Delay-Asym         Dly-thresh         Init-Pdel-Int  Use-Mgt-Pdel-Int  Mgt-Pdel-Int
Init-comp-ratio  Use-Mgt-ratio  Mgt-comp-ratio  Init-comp-del  Use-Mgt-del  Mgt-comp-del
allow-lost-resp  allow-faults
----  -----------------  -----------------  -------------  ----------------  ------------
--------------  -------------  --------------  -------------  -----------  ------------  -
--------------  ------------
   6  0.000,006,000,000  0.000,000,800,000  0              False             0
True             False          True            True           False        True          3
40

SM12XPA# show ptp system-time
System clock synch mode (Set System time from PTP time)
SM12XPA# show ptp ext
PTP External One PPS mode: Output, Clock output enabled: True, frequency : 1000000,
Preferred adj method: Auto

SM12XPA# show ptp servo mode-ref
Servo [0] mode PACKET ref -1
Servo [1] mode NONE ref -1
Servo [2] mode PACKET ref -1
Servo [3] mode NONE ref -1
SM12XPA# show ptp servo source
Servo current source is type NONE ref 0, DPLL_type Generic
SM12XPA#
```

pvlan

Show Private VLAN configuration.

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
*	All switches or All ports
10GigabitEthernet	10 Gigabit Ethernet Port
25GigabitEthernet	25 Gigabit Ethernet Port
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-12
<port_type_list>	Port list in 1/1-2

Example:

```
SM12XPA# show pvlan 1-4
PVLAN ID  Ports
--------  --------------------------------------------------------------------------
1         10GigabitEthernet 1/1, 10GigabitEthernet 1/2, 10GigabitEthernet 1/3,
          10GigabitEthernet 1/4, 10GigabitEthernet 1/5, 10GigabitEthernet 1/6,
          10GigabitEthernet 1/7, 10GigabitEthernet 1/8, 10GigabitEthernet 1/9,
          10GigabitEthernet 1/10, 10GigabitEthernet 1/11, 10GigabitEthernet 1/12,
          25GigabitEthernet 1/1, 25GigabitEthernet 1/2
2         10GigabitEthernet 1/1, 10GigabitEthernet 1/2, 10GigabitEthernet 1/4,
          10GigabitEthernet 1/5, 10GigabitEthernet 1/6
3         10GigabitEthernet 1/1, 10GigabitEthernet 1/3, 10GigabitEthernet 1/4,
          10GigabitEthernet 1/7
SM12XPA# show pvlan isolation
Port                              Isolation
--------------------------------  ---------
10GigabitEthernet 1/1             Enabled
10GigabitEthernet 1/2             Enabled
10GigabitEthernet 1/3             Enabled
10GigabitEthernet 1/4             Enabled
10GigabitEthernet 1/5             Enabled
10GigabitEthernet 1/6             Enabled
10GigabitEthernet 1/7             Disabled
10GigabitEthernet 1/8             Disabled
10GigabitEthernet 1/9             Disabled
10GigabitEthernet 1/10            Disabled
```

```
10GigabitEthernet 1/11            Disabled
10GigabitEthernet 1/12            Disabled
25GigabitEthernet 1/1             Disabled
25GigabitEthernet 1/2             Disabled
SM12XPA#
```

qos

Show Quality of Service parameters.

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>] }]

Parameters:

|	Output modifiers
interface	Interface
maps	QoS Maps/Tables
qce	QoS Control Entry
storm	Storm policer
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines
*	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 1/1-12
<port_type_list>	Port list in 1/1-4
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
<1-256>	QCE ID

Example 1:

```
SM12XPA# 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)

SM12XPA# show qos qce 1

static qce 1:
=============
 port: 1-14
 key parameters:
  dmac: any
  smac: any
  tag:
   type: untagged
   vid: any
   pcp: any
   dei: any
  inner tag:
   type: tagged
   vid: any
   pcp: any
   dei: 0
  frametype: etype any
 action parameters:
  cos: 0
  dpl: default
  dscp: default
-- more --, next page: Space, continue: g, quit: ^C
```

Example 2:

```
SM12XPA# show qos maps
qos map dscp-cos:
=================
DSCP       Trust     Cos  Dpl
---------  --------  ---  ---
```

```
0  (BE)    disabled  0    0
1          disabled  0    0
2          disabled  0    0
3          disabled  0    0
4          disabled  0    0
5          disabled  0    0
6          disabled  0    0
7          disabled  0    0
8  (CS1)   disabled  0    0
9          disabled  0    0
10 (AF11)  disabled  0    0
11         disabled  0    0
12 (AF12)  disabled  0    0
13         disabled  0    0
14 (AF13)  disabled  0    0
15         disabled  0    0
16 (CS2)   disabled  0    0
17         disabled  0    0
-- more --, next page: Space, continue: g, quit: ^C
```

Example 3:

```
SM12XPA# show qos storm
qos storm:
==========
Unicast  : disabled       10 fps
Multicast: disabled       10 fps
Broadcast: disabled       10 fps
Storm detected: FALSE
SM12XPA#
```

radius-server

Show RADIUS server configuration.

Syntax:

show radius-server [statistics]

Parameters:

|	Output modifiers
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines
statistics	RADIUS statistics

Example:

```
SM12XPA# show radius-server
Global RADIUS Server Timeout      : 4 seconds
Global RADIUS Server Retransmit   : 3 times
Global RADIUS Server Deadtime     : 1 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  : 1.2.3.4
  Auth port  : 1812
  Acct port  : 1813
  Timeout    : 50 seconds
  Retransmit : 90 times
  Key        :
9d5c3930157f5e1d119fa715c9c91b551233d4fac1acac5fb1ed73317c79b84ff937d93b35e4fdf43ef774ce955
3462640df9bda703fa57ed7bc4620eef911b4
RADIUS Server #2:
  Host name  : 2.4.6.8
  Auth port  : 1845
  Acct port  : 1846
  Timeout    : 40 seconds
  Retransmit : 80 times

SM12XPA# show radius-server statistics
Global RADIUS Server Timeout      : 4 seconds
Global RADIUS Server Retransmit   : 3 times
Global RADIUS Server Deadtime     : 1 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  : 1.2.3.4
  Auth port  : 1812
  Acct port  : 1813
  Timeout    : 50 seconds
  Retransmit : 90 times
  Key        :
9d5c3930157f5e1d119fa715c9c91b551233d4fac1acac5fb1ed73317c79b84ff937d93b35e4fdf43ef774ce955
3462640df9bda703fa57ed7bc4620eef911b4
RADIUS Server #2:
  Host name  : 2.4.6.8
  Auth port  : 1845
  Acct port  : 1846
  Timeout    : 40 seconds
  Retransmit : 80 times
-- more --, next page: Space, continue: g, quit: ^C
```

Messages: *No servers configured!*

rmon

Show Remote Monitoring parameters.

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>	Alarm entry list
<1-65535>	Event entry list
<1-65535>	History entry list
<1-65535>	Statistics entry list

Example:

```
SM12XPA# show rmon alarm

Alarm ID :     1
----------------
      Interval          : 30
      Variable          : .1.3.6.1.2.1.2.2.1.10.1
      SampleType        : deltaValue
      Value             : 56290
```

```
      Startup           : risingOrFallingAlarm
      RisingThrld       : 4
      FallingThrld      : 2
      RisingEventIndex  : 3
      FallingEventIndex : 1

Alarm ID :     2
----------------
      Interval          : 30
      Variable          : .1.3.6.1.2.1.2.2.1.10.2
      SampleType        : absoluteValue
      Value             : 723
      Startup           : fallingAlarm
      RisingThrld       : 5
      FallingThrld      : 3
SM12XPA# show rmon event 1

Event ID :     1
----------------
      Description     : one
      Type            : log
      LastSent        : 0d 00:00:00
SM12XPA# show rmon history 1-2

History ID :     1
------------------
    Data Source         : .1.3.6.1.2.1.2.2.1.1.2
    Data Bucket Request : 50
    Data Bucket Granted : 50
    Data Interval       : 1800

History ID :     2
------------------
    Data Source         : .1.3.6.1.2.1.2.2.1.1.1
    Data Bucket Request : 50
    Data Bucket Granted : 50
    Data Interval       : 1800
SM12XPA# show rmon statistics 2

Statistics ID :     2
---------------------
    Data Source : .1.3.6.1.2.1.2.2.1.1.2
    etherStatsDropEvents          : 0
    etherStatsOctets              : 40788
    etherStatsPkts                : 530
    etherStatsBroadcastPkts       : 0
    etherStatsMulticastPkts       : 285
    etherStatsCRCAlignErrors      : 0
    etherStatsUndersizePkts       : 0
    etherStatsOversizePkts        : 0
    etherStatsFragments           : 245
```

```
    etherStatsJabbers             : 0
    etherStatsCollisions          : 0
    etherStatsPkts64Octets        : 0
    etherStatsPkts65to127Octets   : 190
    etherStatsPkts128to255Octets  : 95
    etherStatsPkts256to511Octets  : 0
    etherStatsPkts512to1023Octets : 0
    etherStatsPkts1024to1518Octets: 0
SM12XPA#
```

running-config

Show running system information.

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:

|	Output modifiers
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
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines
<cword>	Valid words are 'GVRP' 'MRP' 'MVRP' 'Percepxion' 'access' 'access-list' 'aggregation' 'aps' 'arp-inspection' 'auth' 'cfm' 'clock' 'cpuport' 'ddmi' 'dhcp' 'dhcp-snooping' 'dhcp6-snooping' 'dhcp6_client_interface' 'dhcp6_relay' 'dhcp_server' 'dms-server' 'dns' 'dot1x' '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' 'ipv6-source-guard' 'lacp' 'link-oam' 'lldp' 'logging' 'loop-protect' 'mac' 'mstp' 'mvr' 'mvr-port' 'network-clock' 'ntp' 'ospf' 'ospf6' 'port' 'port-security' 'ptp' 'pvlan' 'qos' 'rip' 'rmon' 'router_global_conf' 'router_keychain_conf' 'sflow' 'smtp' 'snmp' 'source-guard' 'ssh' 'sysutil' 'trap_event' 'tsn' 'udld' 'upnp' 'user' 'vlan' 'voice-vlan' 'vtss-rmirror' 'web' 'web-privilege-group-level'
all-defaults	Include most/all default values

*	All switches or All ports
10GigabitEthernet	10 Gigabit Ethernet Port
25GigabitEthernet	25 Gigabit Ethernet Port
vlan	VLAN
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-12
<port_type_list>	Port list in 1/1-2
console	Console
vty	VTY
<range_list>	List of console/VTYs
<vlan_list>	List of VLAN numbers

Example 1:

```
SM12XPA# show running-config all-defaults
Building configuration...
hostname SM12XPA
prompt %h
no logging on
command-history-log
no logging host
logging port 514
username admin privilege 15 password encrypted
00b02a07346ef8e64e1ed2f70bac7c49502b5c26dfd1ee21186237686b89e67e02c44829f9c518af4ad93b2a2f2
c2b9dc237a710eb4524713eb186a3e7ae0529
username Admin123 privilege 14 password encrypted
ba9aa1a831eaef1c5fdbd4c8a499b4b75a1e7151fa89faecd4abb6d84b5c5bf3f7c4f1c051ffb94c93e0d41d119
87264d8d54ac0717228cbe396d238055be08c
nosystem contact
nosystem name SM12XPA
nosystem location
nosystem description Managed Switch, 12-port 1G/10G SFP+ with 2-port 10G/25G SFP28
Power Redundant
multi-language off
language selector off
switch-finder on off
-- more --, next page: Space, continue: g, quit: ^C
```

Example 2:

```
SM12XPA# show running-config interface 25GigabitEthernet 1/2
Building configuration...
interface 25GigabitEthernet 1/2
 loop-protect action log
 frame-length-check
 network-clock synchronization ssm
 mrp timers join-time 8 leave-time 95 leave-all-time 2200
 mrp periodic
 mvrp
!
end
SM12XPA#
```

```
SM12XPA# show running-config vlan all-defaults
Building configuration...
vlan 1
!
!
end
SM12XPA# show running-config vlan
Building configuration...
vlan 1
!
!
end
SM12XPA#
```

sflow

Show Statistics flow parameters.

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.
|	Output modifiers
interface	Show statistics for a specific interface or interfaces.
*	All switches or All ports
10GigabitEthernet	10 Gigabit Ethernet Port
25GigabitEthernet	25 Gigabit Ethernet Port
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-12
<port_type_list>	Port list in 1/1-2

Example 1:

```
SM12XPA# show sflow statistics samplers interface 25GigabitEthernet 1/1-2

Per-Port Statistics:
====================

Interface               Rx Flow Samples  Tx Flow Samples  Counter Samples
----------------------  ---------------  ---------------  ---------------
25GigabitEthernet 1/1                 0                0                0
25GigabitEthernet 1/2                 0                0                0
SM12XPA#
```

Example 2:

```
SM12XPA# show sflow

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

Agent Address: 127.0.0.1

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

Owner        : <none>
Receiver     : 0.0.0.0
UDP Port     : 6343
Max. Datagram: 1400 bytes
Time left    : 0 seconds

No enabled collectors (receivers). Skipping displaying per-port info.
SM12XPA#
```

smtp

Show email information

Syntax: **show** smtp <cr>

Parameters: none

Example:

```
SM12XPA# show smtp
Mail Server     :
User Name       :
Password        :
Sender          :
Return Path     :
Email Adress 1  :
Email Adress 2  :
Email Adress 3  :
Email Adress 4  :
Email Adress 5  :
Email Adress 6  :
SM12XPA#
```

snmp

Set SNMP parameters.

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	Set SNMP host's configurations
info	Information
mib	MIB (Management Information Base)
security-to-group	security-to-group configuration
trap	Set SNMP host's configurations
user	User
view	MIB view configuration
<word32>	Group name
v1 v1	security model
v2c v2c	security model
v3 v3	security model
any	any security model
auth	authNoPriv Security Level
noauth	noAuthNoPriv Security Level
priv	authPriv Security Level
<word32>	Specify community name
<word32>	Name of the host configuration
context	MIB context
ifmib	IF-MIB
ifIndex	The IfIndex that is defined in IF-MIB
aggregation	show aggregation information
port	show port information
vlan	show VLAN information
<word32>	Security user name
<cword>	Valid words are 'authenticationFailure' 'coldStart' 'entConfigChange' 'fallingAlarm' 'linkDown' 'linkUp' 'lldpRemTablesChange' 'newRoot' 'risingAlarm' 'topologyChange' 'warmStart'

<word10-64> Security Engine ID
<word32> MIB view name
<word255> MIB view OID

Example:

```
SM12XPA# show snmp view
View Name : default_view
OID Subtree : .1
View Type : included

SM12XPA# show snmp access
Group Name       : default_ro_group
Security Model   : any
Security Level   : NoAuth, NoPriv
Read View Name   : default_view
Write View Name  : <no writeview specified>

Group Name       : default_rw_group
Security Model   : any
Security Level   : NoAuth, NoPriv
Read View Name   : default_view
Write View Name  : default_view

SM12XPA# show snmp community
Community/Security Name : public
Source IP               : 0.0.0.0/0
Community secret        : public
Community/Security Name : public
Source IP               : ::/0
Community secret        : public
Community/Security Name : private
Source IP               : 0.0.0.0/0
Community secret        : private
Community/Security Name : private
Source IP               : ::/0
Community secret        : private
SM12XPA# show snmp info

SNMP Info:
Conf VendorName:TN, VENDOR_TN, PRODUCT:SM12XPA
EngineID: 800003640300c0f28b9892
Using     oid :1.3.6.1.4.1.868.2.77.7, length:10
SM12XPA#
```

spanning-tree

Show STP Bridge information.

Syntax:

show spanning-tree [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
summary	STP summary
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 1/1-12
<port_type_list>	Port list in 1/1-4
<0-7>	STP bridge instance (CIST=0, MSTI1=1...)
configuration	Show MSTI to VLAN mapping

Example:

```
SM12XPA# 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

SM12XPA#
```

stream

Show stream information.

Syntax:

show stream [<index_list>] status

Parameters:

<range_list>	Id of stream for which to show status
status	Show status for stream
|	Output modifiers
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines

Example:

```
SM12XPA# show stream 1 status
Stream      Client    Client
    Id        type        Id
------  ----------  --------
SM12XPA#
```

svl

Show Shared VLAN Learning parameters.

Syntax:

show svl | [begin | exclude | include] <line>

show svl fid

show svl fid <1~4095>

show svl vlan

show svl vlan <vlan_list>

Parameters:

|	Output modifiers
fid	Show a given FID
vlan	Show a given VLAN ID
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines
<1~4095>	List of FIDs to show
<vlan_list>	List of VIDs to show

Example:

```
SM12XPA# show svl fid 1
FID VLANs
---- ------------------------------
1 1 (default)
SM12XPA#
```

switchport

Display switching mode characteristics.

Syntax:

show switchport forbidden [{ vlan <vlan_list> } | { name <name> }]

Parameters:

forbidden	Lookup VLAN Forbidden port entry
name	Forbidden VLANs by VLAN name
vlan	Forbidden VLAN by VLAN ID
<vword>	VLAN name
<vlan_list>	VLAN IDs

Example:

```
SM12XPA# show switchport forbidden vlan 1
VLAN Name Interfaces
---- -------------------------------- ----------
1 defaulty
SM12XPA# show switchport forbidden vlan 10-20
VLAN  Name                             Interfaces
----  -------------------------------  ----------
10    VLAN0010
11    VLAN0011
12    VLAN0012
13    VLAN0013
14    VLAN0014
15    VLAN0015
16    VLAN0016
17    VLAN0017
18    VLAN0018
19    VLAN0019
20    VLAN0020

SM12XPA#
```

system

Show system status information.

Syntax:

show system [cpu | led] status

Parameters:

cpu	CPU
led	led
status	Average load
status	status

Example:

```
SM12XPA# show system
Model Name                          : SM12XPA
System Description                  : Managed Switch, 12-port 1G/10G SFP+ with 2-port
10G/25G SFP28
Location                            :
Contact                             :
System Name                         : SM12XPA
System Date                         : 2020-01-09T22:29:36+00:00
System Uptime                       : 8d 22:29:40
Bootloader Version                  : 2019.10
Firmware Version                    : v8.10.0105 2024-01-02
Hardware Version                    : v1.01
Mechanical Version                  : v1.01
Serial Number                       : A198122AR0800039
MAC Address                         : 00-c0-f2-8b-98-92
Fan Speed                           : 2143(rpm)
Temperature 1                       : 34(C) ; 93(F)
Temperature 2                       : 34(C) ; 93(F)
SM12XPA# show system led status
System LED: green, solid, normal indication.
SM12XPA#
```

tacacs-server

Show TACACS+ configuration.

Syntax: **show** tacacs-server

Example:

```
SM12XPA# show tacacs-server
Global TACACS+ Server Timeout : 5 seconds
Global TACACS+ Server Deadtime : 0 minutes
Global TACACS+ Server Key :
No servers configured!
SM12XPA#
```

tech-support

Show system version and status information.

Syntax:

show tech-support

Parameters:

|	Output modifiers
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines

Example:

```
SM12XPA# show tech-support | begin 1
====================================
System version
====================================
Linux (none) 5.4.45-svn1 #1 SMP Thu Jan 28 15:25:40 CST 2021 aarch64 GNU/Linux
====================================
System status
====================================
Mem: 160828K used, 1888356K free, 0K shrd, 10992K buff, 52884K cached
CPU: 50% usr 0% sys 0% nic 50% idle 0% io 0% irq 0% sirq
Load average: 1.00 1.00 1.00 2/145 294
PID PPID USER STAT VSZ %VSZ %CPU COMMAND
145 1 root S 2062m 103% 50% /usr/bin/switch_app
210 145 root S 81744 4% 0% /usr/sbin/zebra -f /etc/quagga/zebra.conf -i /tmp/zebra.pid -P 0 -z
/tmp/zebra.socket
263 145 nobody SN 19416 1% 0% hiawatha -d -c /tmp/hiawatha
211 145 root S 6524 0% 0% /usr/sbin/staticd -f /tmp/staticd.conf -i /tmp/staticd.pid -P 0 -z
/tmp/zebra.socket
292 145 root S 5052 0% 0% {dump-env.sh} /bin/sh /usr/bin/dump-env.sh
SM12XPA#
```

terminal

Display terminal configuration parameters.

Syntax:

show terminal | [begin | exclude | include] <line>

Parameters:

|	Output modifiers
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines

Example:

```
SM12XPA# show terminal
Line is con 0.
---------------
* You are at this line now.
Alive from Console.
Default privileged level is 2.
Command line editing is enabled
Display EXEC banner is enabled.
Display Day banner is enabled.
Terminal width is 80.
length is 24.
history size is 32.
exec-timeout is 10 min 0 second.
Current session privilege is 15.
Elapsed time is 0 day 1 hour 33 min 36 sec.
Idle time is 0 day 0 hour 0 min 0 sec.

SM12XPA#
```

tsn

Show Time Sensitive Network parameters.

Syntax:

show tsn flow meter [<index_list>] status

show tsn frame-preemption status [interface (<port_type> [<port>])]

show tsn frer [<inst_list>] [statistics] [details]

show tsn stream filter [<index_list>] { statistics | status }

show tsn stream gate [<index_list>] status

show tsn tas status [interface (<port_type> [<port>])]

Parameters:

flow	Flow meter status
meter	Flow meter status
<0~1023>	Id of flow meter
status	Stream filter statistics
status	Status of frame preemption
|	Output modifiers
interface	Interface
*	All switches or All ports
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-12
10GigabitEthernet	10 Gigabit Ethernet Port
25GigabitEthernet	25 Gigabit Ethernet Port
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines
frame-preemption	Frame preemption
frer	Frame Replication and Elimination for Reliability (IEEE 802.1CB)
<1~127>	List of FRER instances to show
details	Show detailed status or statistics
statistics	Show statistics
stream	Stream status
filter	Stream filter statistics
<0~1023>	Id of stream filter
statistics	Stream filter statistics
status	Stream filter statistics
gate	Stream gate state
tas	Time Aware Shaping
status	Status of operational parameters

Example 1:

```
SM12XPA# show tsn flow meter 1 status
Flow   Mark all
Meter  frames red
-----  ----------
    1       false
SM12XPA# show tsn frame status
interface 10GigabitEthernet 1/1
 HoldAdvance         : 0 nanoseconds
 ReleaseAdvance      : 0 nanoseconds
 PreemptionActive    : FALSE
 HoldRequest         : FALSE
 StatusVerify        : initial
 LocPreemptSupported : TRUE
 LocPreemptEnabled   : FALSE
 LocPreemptActive    : FALSE
 LocAddFragSize      : 0 (64 octets)
interface 10GigabitEthernet 1/2
 HoldAdvance         : 0 nanoseconds
 ReleaseAdvance      : 0 nanoseconds
 PreemptionActive    : FALSE
 HoldRequest         : FALSE
 StatusVerify        : indeterminate
 LocPreemptSupported : TRUE
 LocPreemptEnabled   : FALSE
 LocPreemptActive    : FALSE
 LocAddFragSize      : 0 (64 octets)
interface 10GigabitEthernet 1/3
 HoldAdvance         : 0 nanoseconds
-- more --, next page: Space, continue: g, quit: ^C

SM12XPA# show tsn frer 1
Inst Operational State Mode       Latent Errors
---- ----------------- ---------- --------------
   1 Admin disabled    Generation
SM12XPA# show tsn stream filter 0 status
Filter  Stream blocked due to
    Id         oversize frame
------  --------------------
     0                 false
SM12XPA#
```

Example 2:

```
SM12XPA# show tsn tas status | begin 1
interface 10GigabitEthernet 1/1
GateEnabled :              FALSE
OperGateStates :           0xff
OperCycleTime :            100 ms
OperCycleTimeExtension:    256 nanoseconds
OperBaseTime :             0 seconds, 0 nanoseconds
ConfigChangeTime :         0 seconds, 0 nanoseconds
TickGranularity :          1 tenths of nanoseconds
CurrentTime :              1052 seconds, 861855016 nanoseconds
ConfigPending :            FALSE
ConfigChangeError :        0
```

```
SupportedListMax :        256
OperControlListLength :   0
interface 10GigabitEthernet 1/2
GateEnabled :             FALSE
OperGateStates :          0xff
OperCycleTime :           100 ms
OperCycleTimeExtension:   256 nanoseconds
OperBaseTime :            0 seconds,   0 nanoseconds
ConfigChangeTime :        0 seconds, 0 nanoseconds
TickGranularity :         1 tenths of nanoseconds
CurrentTime :             1052 seconds, 863334872 nanoseconds

SM12XPA#
```

Example 3:

```
SM12XPA# show tsn stream gate status
Stream Gate 0 status:
State:                open
Cycle time:           0 ns
Cycle time extension: 0 ns
Base time:            0 seconds 0 nanoseconds
Config change time:   0 seconds 0 nanoseconds
Tick granularity:     1 ns
Current time:         772695 seconds 228380519 nanoseconds
Config pending:       false
Config change errors: 0
Priority value:       0
Closed-due-to-invalid-rx     :  false
Closed-due-to-octets-exceeded:  false
SM12XPA#
```

udld

Show Unidirectional Link Detection (UDLD) configurations, statistics and status.

Syntax:

show udld [interface (<port_type> [<plist>])]

Parameters:

|	Output modifiers
interface	Choose port
*	All switches or All ports
10GigabitEthernet	10 Gigabit Ethernet Port
25GigabitEthernet	25 Gigabit Ethernet Port
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-12
<port_type_list>	Port list in 1/1-2

Example:

```
SM12XPA# show udld interface 25GigabitEthernet 1/1-2

25GigabitEthernet 1/1
------------------------------------------------------------------------
UDLD Mode                 : Disable
Admin State               : Disable
Message Time Interval(Sec): 7
Device ID(local)          : 00-C0-F2-8B-98-92
Device Name(local)        : SM12XPA
Bidirectional state       : Indeterminant

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

25GigabitEthernet 1/2
------------------------------------------------------------------------
UDLD Mode                 : Disable
Admin State               : Disable
Message Time Interval(Sec): 7
Device ID(local)          : 00-C0-F2-8B-98-92
Device Name(local)        : SM12XPA
Bidirectional state       : Indeterminant

No neighbor cache information stored
---------------------
SM12XPA#
```

upnp

Display Universal Plug and Play configuration.

Syntax:

show upnp

show upnp | [begin | exclude | include] <line>

Parameters:

|	Output modifiers
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines

```
SM12XPA# show upnp
UPnP Mode : disabled
UPnP TTL : 4
UPnP Advertising Duration : 100
UPnP IP Addressing Mode : dynamic
UPnP Static IP Interface ID : 1

SM12XPA#
```

user-privilege

Show Users privilege configuration

Syntax:

show user-privilege

Example:

```
SM12XPA# show user-privilege
username admin privilege 15 password encrypted
323304556fb07923a9adce8f73e3659b3a07d59c6abc2bd84634d8ae18a9abef2437ae80ab7c2f42377e75ceaae
6442be77a04a9ec8ab2b9401cf64606388516

SM12XPA#
SM12XPA# show user-privilege
username admin privilege 15 password encrypted
00b02a07346ef8e64e1ed2f70bac7c49502b5c26dfd1ee21186237686b89e67e02c44829f9c518af4ad93b2a2f2
c2b9dc237a710eb4524713eb186a3e7ae0529
username Admin123 privilege 14 password encrypted
ba9aa1a831eaef1c5fdbd4c8a499b4b75a1e7151fa89faecd4abb6d84b5c5bf3f7c4f1c051ffb94c93e0d41d119
87264d8d54ac0717228cbe396d238055be08c
SM12XPA#
```

users

Display information about terminal lines.

Syntax:

show users

show users | [begin | exclude | include] <line>

show users myself

Parameters:

myself	Display information about mine
|	Output modifiers
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines

Example:

```
SM12XPA# show users myself
Line is con 0.
* You are at this line now.
Connection is from Console.
User name is admin.
Privilege is 15.
Elapsed time is 0 day 1 hour 51 min 34 sec.
Idle time is 0 day 0 hour 0 min 0 sec.

SM12XPA#
```

version

Show system hardware and software status.

SYNTAX

show version

show version | [begin | exclude | include] <line>

show version brief

Parameters:

brief	Brief version info
|	Output modifiers
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<line>	String to match output lines

Example:

```
SM12XPA# show version brief
Version      : SM12XPA (standalone) v8.10.0105
Build Date   : 2024-01-02T17:47:50+08:00
SM12XPA# show version

MAC Address      : 00-c0-f2-8b-98-92
Previous Restart : Warm

System Contact   :
System Name      : SM12XPA
System Location  :
System Time      : 2020-01-09T22:42:55+00:00
System Uptime    : 8d 22:42:58


Bootloader
----------
Image            : UBoot
Version          : 2019.10
Date             : (Feb 01 2021 - 09:46:39 +0800)fireant

Primary Image
-------------
Image            : linux (Active)
Version          : v8.10.0105
Date             : 2024-01-02T17:47:50+08:00

Backup Image
------------
Image            : linux.bk
Version          : v8.90.884
Date             : 2022-02-16T11:35:15+08:00

SM12XPA
```

vlan

Show VLAN status.

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 | gvrp | 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 | gvrp | 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
<vlan_list>	VLAN IDs
<vword32>	VLAN name
<ipv4_subnet>	Specify a specific IP Subnet
<ipv4_addr>	Destination IPv4 address
address	Show a specific MAC entry
<mac_ucast>	The specific MAC entry to show
<vword32>	VLAN name
eth2	Ethernet protocol based VLAN status
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
<0x0-0xff>	DSAP (Range: 0x00 - 0xFF)
<0x0-0xff>	SSAP (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)
admin	Show the VLANs configured by administrator.
all	Show VLANs configured VLANs for all VLAN users.
combined	Show the combined set of configured VLANs.
dms	Show the VLANs configured by DMS.
forbidden	Show VLANs configurations that has forbidden.
gvrp	Show the VLANs configured by GVRP.
id	VLAN membership by VLAN id
conflicts	Show VLAN configurations that have conflicts.
gvrp	Show the VLANs configured by GVRP.
interface	Show the VLANs configured for a specific interface or interfaces.
mvr	Show the VLANs configured by MVR.
rmirror	Show the VLANs configured by Remote mirroring.
voice-vlan	Show the VLANs configured by Voice VLAN.
interface	Show the VLANs configured for a specific interface or interfaces
*	All switches or All ports
10GigabitEthernet	10 Gigabit Ethernet Port
25GigabitEthernet	25 Gigabit Ethernet Port
port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-12
<port_type_list>	Port list in 1/1-2

Example 1:

```
SM12XPA# show vlan
VLAN  Name                             Interfaces
----  -------------------------------  ----------
1     default                          10G 1/1-12 25G 1/1-2

SM12XPA# show vlan ip-subnet
IP Address       Mask Length  VID   Interfaces
----------       -----------  ---   ----------
188.26.126.0     24           10    10GigabitEthernet 1/2-3,5-7
SM12XPA#
```

Example 2:

```
SM12XPA# show vlan membership mvr
VLAN  Name                             User Type   Interfaces
----  -------------------------------  ----------  ----------
100   VLAN0100                         MVR         10G 1/1,3

SM12XPA# show vlan protocol
Protocol Type  Protocol (Value)          Group ID
-------------  ------------------------  --------
EthernetII     ETYPE:0x800               pbVlan1
LLC_SNAP       OUI-00:e0:2b; PID:0x1     pbVlan1
LLC_Other      DSAP:0xff; SSAP:0xff      Grp3

Switch #1
---------
Group ID          VID   Ports
----------------  ----  -----
Grp1              10    10GigabitEthernet 1/2,4,6
Grp2              20    10GigabitEthernet 1/3,5,7
SM12XPA#
```

Example 3:

```
SM12XPA# show vlan status conflicts
10GigabitEthernet 1/1 :
-----------------------
VLAN User   PortType       PVID  Frame Type     Ing Filter  Tx Tag             UVID
Conflicts
----------  -------------  ----  -------------  ----------  -----------------  ----  ------
---

10GigabitEthernet 1/2 :
-----------------------
VLAN User   PortType       PVID  Frame Type     Ing Filter  Tx Tag             UVID
Conflicts
----------  -------------  ----  -------------  ----------  -----------------  ----  ------
---

10GigabitEthernet 1/3 :
-----------------------
VLAN User   PortType       PVID  Frame Type     Ing Filter  Tx Tag             UVID
Conflicts
----------  -------------  ----  -------------  ----------  -----------------  ----  ------
---

10GigabitEthernet 1/4 :
-- more --, next page: Space, continue: g, quit: ^C
```

voice

Show Voice appliance attributes.

Syntax:

show voice vlan [oui [<oui>] | interface (<port_type> [<port_list>])]

Parameters:

vlan	VLAN for voice traffic
interface	Select an interface to configure
oui	Organizationally Unique Identifier configuration
*	All switches or All ports
10GigabitEthernet	10 Gigabit Ethernet Port
25GigabitEthernet	25 Gigabit Ethernet Port
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-12
<port_type_list>	Port list in 1/1-2
<oui>	OUI value

Example:

```
SM12XPA# show voice vlan interface 25GigabitEthernet 1/1-2

25GigabitEthernet 1/1 :
-----------------------
25GigabitEthernet 1/1 switchport voice vlan mode is disabled
25GigabitEthernet 1/1 switchport voice security is disabled
25GigabitEthernet 1/1 switchport voice discovery protocol is oui

25GigabitEthernet 1/2 :
-----------------------
25GigabitEthernet 1/2 switchport voice vlan mode is disabled
25GigabitEthernet 1/2 switchport voice security is disabled
25GigabitEthernet 1/2 switchport voice discovery protocol is oui
SM12XPA# show voice vlan oui
Telephony OUI  Description
-------------  -----------
SM12XPA#
```

watchdog

Show watchdog mode

Parameters:

mode Get the watchdog mode status

```
SM12XPA# show watchdog mode
Watchdog Status : Enable
SM12XPA#
```

web

Show web privilege parameters.

Syntax:

show web privilege group [<group_name>] level

Parameters:

privilege	Web privilege
group	Web privilege group
<cword>	Valid words are 'APS' 'Aggregation' 'CFM' 'DDMI' 'DHCP' 'DHCPv6_Client' 'DMS_Trouble_Shooting' 'DMS_Vbatch' 'DMS_client' 'DMS_server' 'Debug' 'Diagnostics' 'ERPS' 'ETH_LINK_OAM' 'Firmware' 'Green_Ethernet' 'IP' 'IPMC_Snooping' 'Install_Wizard' 'LACP' 'LLDP' 'Loop_Protect' 'MAC_Table' 'MRP' 'MVR' 'Miscellaneous' 'NTP' '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' 'percepxion' 'sFlow' 'uFDMA_AIL' 'uFDMA_CIL'
level	Web privilege group level
|	Output modifiers

Example:

```
SM12XPA# show web privilege group level
Group Name                       Privilege Level
                                 CRO CRW
-------------------------------- --- ---
Aggregation                        5  10
APS                                5  10
CFM                                5  10
DDMI                               5  10
Debug                             15  15
DHCP                               5  10
DHCPv6_Client                      5  10
Diagnostics                        5  10
DMS_client                         5  10
DMS_server                         5  10
DMS_Trouble_Shooting               5  10
DMS_Vbatch                         5  10
ERPS                               5  10
ETH_LINK_OAM                       5  10
Firmware                           5  10
Green_Ethernet                     5  10
Install_Wizard                     5  10
IP                                 5  10
IPMC_Snooping                      5  10
-- more --, next page: Space, continue: g, quit: ^C
```

27. Terminal Commands

Set terminal line parameters.

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
<0-3600>	Timeout in seconds
size	Set history buffer size
<0-32>	Number of history commands, 0 means disable
<0,3-512>	Number of lines on screen (0 for no pausing)
<0,40-512>	Number of characters on a screen line (0 for unlimited width)

Example:

```
SM12XPA# terminal exec-timeout 3
SM12XPA# terminal width 90
SM12XPA# terminal editing
SM12XPA#
```

28. Traceroute Commands

Configure and run Traceroute program.

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>] [firstttl <firstttl>] [maxttl <maxttl>] [numeric]

Parameters:

ip	Traceroute (IPv4)
ipv6	Traceroute (IPv6)
<domain_name>	Destination hostname or FQDN
<ipv4_addr>	Destination IPv4 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)
<0-63>	DSCP value (decimal value, default 0)
<1-30>	First number of hops (default 1)
<1-255>	Max number of hops (default 30)
<1-60>	Number of probes per hop (default 3)
<ipv4_addr>	Source Address of interface
10GigabitEthernet	10 Gigabit Ethernet Port
25GigabitEthernet	25 Gigabit Ethernet Port
<port_type_list>	Port list in 1/1-12
<port_type_list>	Port list in 1/1-2
vlan	Send from VLAN interface with source address
<vlan_id>	Source VLAN interface
<1-86400>	Time to wait for a response in seconds (default 3)
<ipv6_addr>	Destination IPv6 address
<ipv6_addr>	Source Address of interface

Example:

```
SM12XPA# traceroute ip 192.168.1.1 probes 3
```

```
traceroute to 192.168.1.1 (192.168.1.1), 30 hops max, 38 byte packets 1 192.168.1.1
(192.168.1.1) 0.146 ms 0.149 ms 0.100 ms
SM12XPA# traceroute ip 127.27.95.100
traceroute to 127.27.95.100 (127.27.95.100), 30 hops max, 46 byte packets
 1  127.27.95.100 (127.27.95.100)  0.035 ms  0.022 ms  0.007 ms
SM12XPA#
```

29. Interface Config Mode Commands

To switch to Interface Config mode from config mode, enter the command interface and one of the following Interface options:

Interfaces:

*	All switches or All ports
10GigabitEthernet	10 Gigabit Ethernet Port
25GigabitEthernet	25 Gigabit Ethernet Port
llag	Local link aggregation interface configuration
vlan	VLAN interface configurations
<port_type_list>	Port list for all port types

Interface config mode commands:

access-list	Access list
aggregation	Create an aggregation
description	Up to 47 characters describing this interface
do	To run exec commands in config 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
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	Internet Protocol
ipv6	IPv6 configuration commands
lacp	Enable LACP on this interface
link-oam	Enable or Disable (when the no keyword is entered)
lldp	LLDP configurations.
loop-protect	Loop protection configuration on port
mac	MAC keyword
media-type	Media type.
mrp	Media Redundancy Protocol
mtu	Maximum transmission unit
mvr	Multicast VLAN Registration configuration
mvrp	Enable MVRP on the interface
network-clock	Network Clock
no	Negate a command or set its defaults
port-security	Enable/disable port security per interface.
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.
stream-id	Associate stream with port
switchport	Configure Switching mode characteristics.

access-list

Configure Access list parameters.

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 | port-copy } interface { <port_type> <port_type_id> | (<port_type> [<port_type_list>]) }

Parameters

action	Access list action
logging	Logging frame information.
mirror	Mirror frame to destination mirror port
policy	Policy
port-state	Re-enable shutdown port that was shut down by access-list module
rate-limiter	Rate limiter
redirect	Redirect frame to specific port
shutdown	Shutdown incoming port.
deny	Deny action
permit	Permit action
<PolicyId : 0-255>	Policy ID
<RateLimiterId : 1-16>	Rate limiter ID
interface	Select an interface to configure
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
PORT_LIST	Port list for all port types

EXAMPLE

```
SM12XPA(config-if)# access-list action permit
SM12XPA(config-if)# access-list action deny
SM12XPA(config-if)#
Username: admin
Password:
SM12XPA(config-if)# access-list logging
SM12XPA(config-if)# access-list mirror
SM12XPA(config-if)# access-list policy 0
SM12XPA(config-if)# access-list port-state
SM12XPA(config-if)# access-list rate-limiter 1
SM12XPA(config-if)#
```

aggregation

Create an aggregation.

Syntax

aggregation group <v_uint>

Parameters

group Create an aggregation group

<uint> The aggregation group id

EXAMPLE

```
SM12XPA(config-if)# aggregation group 1
SM12XPA(config-if)#
```

Messages: *The aggregation cannot include more than 16 ports*

description

Enter up to 47 characters describing this interface.

Syntax

description <port_descr>

Parameters

<line47>

EXAMPLE

```
SM12XPA(config-if)# description myline
SM12XPA(config-if)#
```

do

To run Exec mode commands in Config mode.

Syntax

do <command>

Parameters

LINE Exec Command

<cr>

EXAMPLE

```
SM24TBT2DPA# do show vlan
VLAN  Name                            Interfaces
----  --------------------------------  ----------
1     default                           Gi 1/1-26
SM24TBT2DPA# do show ip interface brief
Vlan Address              Method   Status
---- -------------------- -------- ------
   1 192.168.1.77/24      Manual   UP
SM24TBT2DPA#
```

dot1x

Configure IEEE Standard for port-based Network Access Control.

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

```
SM12XPA(config-if)# dot1x guest-vlan
SM12XPA(config-if)# dot1x radius-qos
SM12XPA(config-if)# dot1x radius-vlan
SM12XPA(config-if)# dot1x re-authenticate
SM12XPA(config-if)#
```

duplex

Configure duplex mode for an interface.

Syntax

duplex { half | full | auto [half | full] }

Parameters

duplex auto	Auto negotiation of duplex mode.
duplex full	Forced full duplex.
duplex half	Forced half duplex.

EXAMPLE

```
SM12XPA(config-if)# duplex auto
SM12XPA(config-if)# duplex auto full
SM12XPA(config-if)# duplex half
GigabitEthernet 1/3 with current speed does not support half duplex, duplex chan
ged to full duplex
SM12XPA(config-if)#
```

end

Go back to EXEC mode.

Syntax: **end**

Parameters

<cr>

EXAMPLE

```
SM12XPA(config-if)# end
SM24TBT2DPA#
```

excessive restarts

Syntax

excessive-restart

Parameters

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

<cr>

EXAMPLE

```
SM12XPA(config-if)# excessive-restart
SM12XPA(config-if)#
```

exit

Exit from current mode.

Syntax

end

Parameters

<cr>

EXAMPLE

```
SM24TBT2DPA# exit

Username:
Password:
```

flow control

Configure flow control for an interface.

Syntax

flowcontrol { on | off }

Parameters

off Disable flow control.

on Enable flow control.

EXAMPLE

```
SM12XPA(config-if)# flowcontrol off
SM12XPA(config-if)# flowcontrol on
SM12XPA(config-if)#
```

frame-length-check

Drop frames with mismatch between EtherType/Length field and actual payload size.

Syntax: frame-length-check

Parameters:

Example:

```
SM12XPA(config-if)# frame-length-check
SM12XPA(config-if)#
```

green-ethernet

Configure Green ethernet (Power reduction) for an interface.

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. Valid range is 1-8.

EXAMPLE

```
SM12XPA(config-if)# green-ethernet eee
GigabitEthernet 1/25 is not EEE capable. Skipping
GigabitEthernet 1/26 is not EEE capable. Skipping
SM12XPA(config-if)# green-ethernet energy-detect
SM12XPA(config-if)# green-ethernet short-reach
SM12XPA(config-if)# green-ethernet eee urgent-queues 1-4
SM12XPA(config-if)#
```

gvrp

Enable GVRP on interface or interfaces.

Syntax

gvrp

gvrp join-request vlan <v_vlan_list>

Parameters

join-request Emit a Join-Request for test purpose

vlan

<vlan_list> List of VLANs

EXAMPLE

```
SM12XPA(config-if)# gvrp join-request vlan 10
E xxrp 00:56:04 133/funktor_portvlan#247: Error: rc=-1
SM12XPA(config-if)#
```

help

Description of the interactive help system.

Syntax

See below.

Parameters

None.

EXAMPLE

```
SM12XPA(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?'.)


SM12XPA(config-if)#
```

ip

Configure Internet Protocol for an interface.

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 config
logging	ARP inspection logging mode config
trust	ARP inspection trust config
all	log all entries
deny	log denied entries
permit	log permitted entries
filter	Access control on IGMP multicast group registration
immediate-leave	Immediate leave configuration
max-groups	IGMP group throttling configuration
mrouter	Multicast router port configuration
<ProfileName : word16>	Profile name in 16 char's
<Throttling : 1-10>	Maximun number of IGMP group registration
source	verify source
limit	limit command
<0-2>	the number of limit

EXAMPLE

```
SM12XPA(config-if)# ip arp inspection check-vlan
SM12XPA(config-if)# ip arp inspection logging all
SM12XPA(config-if)# ip arp inspection trust
SM12XPA(config-if)#
```

```
SM12XPA(config-if)# ip igmp snooping filter IgmpProf1
% Please specify correct filter profile name.
SM12XPA(config-if)# ip igmp snooping immediate-leave
SM12XPA(config-if)# ip igmp snooping max-groups 1
SM12XPA(config-if)# ip igmp snooping mrouter
SM12XPA(config-if)# ip verify source limit 0
SM12XPA(config-if)#
```

ipv6

Configure IPv6 for an interface.

Syntax

ipv6 mld snooping filter <profile_name>

ipv6 mld snooping immediate-leave

ipv6 mld snooping max-groups <throttling>

ipv6 mld snooping mrouter

ipv6 verify source

ipv6 verify source limit <max_dynamic_clients>

Parameters

dhcp	Dynamic Host Configuration Protocol V6
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
<ProfileName : word16>	Profile name in 16 characters
<Throttling : 1-10>	Maximum number of MLD group registration
source	source command
limit	limit command
<0-2>	the number of max dynamic clients (0, 1 or 2)
trust	DHCP Snooping trust configuration
<1-10>	Maximum number of MLD group registration

EXAMPLE

```
SM12XPA(config-if)# ipv6 mld snooping max 1
SM12XPA(config-if)# ipv6 mld snooping mrouter
SM12XPA(config-if)# ipv6 mld snooping filter Prof1
SM12XPA(config-if)# ipv6 mld snooping immediate-leave
SM12XPA(config-if)# ipv6 mld snooping max-groups 4
```

```
SM12XPA(config-if)# ipv6 mld snooping
SM12XPA(config-if)# ipv6 dhcp snooping trust
SM12XPA(config-if)# ipv6 mld snooping max 4
SM12XPA(config-if)# ipv6 mld snooping mrouter
SM12XPA(config-if)# ipv6 verify source limit 1
SM12XPA(config)#
```

lacp

Configure Enable Link Aggregation Control Protocol on this interface.

Syntax

~~**lacp**~~

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
auto	Choose a key based on port speed
<1-65535>	Priority value, lower means higher priority
active	Transmit LACP BPDUs continuously
passive	Wait for neighbour LACP BPDUs before transmitting
fast	Transmit BPDU each second (fast timeout)
slow	Transmit BPDU each 30th second (slow timeout)
<cr>	

EXAMPLE

```
SM12XPA(config-if)# lacp key 1
SM12XPA(config-if)# lacp port-priority 500
SM12XPA(config-if)# lacp timeout fast
SM12XPA(config-if)# lacp timeout slow
SM12XPA(config-if)#
```

link-oam

Enable or Disable Link OAM (when the no keyword is entered).

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

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
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 window of time during which error frames are counted
<0-4294967295>	Number of permissible errors frames in the period defined by the error window
<1-60>	Duration of the monitoring period in terms of seconds
threshold	Configure threshold
window	Configure window value
<0-65535>	Number of permissible Error Frame Seconds in the period defined by the error window
threshold	Configure threshold
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

Example:

```
SM12XPA(config-if)# link-oam mib-retrieval supported
SM12XPA(config-if)# link-oam mode active
SM12XPA(config-if)# link-oam mode passive
SM12XPA(config-if)# link-oam remote-loopback supported
SM12XPA(config-if)#
```

lldp

Configure LLDP parameters for an interface.

Syntax

lldp cdp-aware

lldp med media-vlan policy-list <v_range_list>

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

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	Sets the interface to be CDP aware (CDP discovery information 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.
media-vlan	Media VLAN assignment.
transmit-tlv	LLDP-MED Location Type Length Value parameter.
policy-list	Assignment of policies.
policies list e.g. 1,2,	Policies to assign to the interface.
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.
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.
trap	Configures if an SNMP trap shall be emitted when the LLDP neighbor table changes for the interface.

EXAMPLE

```
SM12XPA(config-if)# lldp cdp
SM12XPA(config-if)# lldp receive
SM12XPA(config-if)# lldp tlv-select
SM12XPA(config-if)# lldp tlv-select management-address
SM12XPA(config-if)# lldp tlv-select port-description
SM12XPA(config-if)# lldp med type connectivity
SM12XPA(config-if)# lldp med type end-point
```

```
SM12XPA(config-if)# lldp trap
SM12XPA(config-if)#
```

loop-protect

Configure Loop protection parameters on port.

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

```
SM12XPA(config-if)# loop-protect action log shutdown
SM12XPA(config-if)# loop-protect tx-mode
SM12XPA(config-if)#
```

mac

Configure MAC keyword for an interface.

Syntax

mac address-table learning [secure]

Parameters

address-table	MAC table configuration
learning	Port learning mode
secure	Port Secure mode
<cr>	

EXAMPLE

```
SM12XPA(config-if)# mac address-table learning secure
SM12XPA(config-if)# mac address-table learning
SM12XPA(config-if)#
```

media-type

Configure Media type for an interface.

Syntax: **media-type** { rj45 | sfp | dual | dac-1m | dac-2m | dac-3m | dac-5m }

Parameters:

dac-1m	SFP interface (fiber interface) tuned for 1m DAC cables.
dac-2m	SFP interface (fiber interface) tuned for 2m DAC cables.
dac-3m	SFP interface (fiber interface) tuned for 3m DAC cables.
dac-5m	SFP interface (fiber interface) tuned for 5m DAC cables.
sfp	SFP interface (fiber interface).

Example:

```
SM12XPA(config-if)# media-type dac-5m
SM12XPA(config-if)# media-type sfp
SM12XPA(config-if)# media-type rj45
                              ^
% Invalid word detected at '^' marker.

SM12XPA(config-if)#
```

mrp

Configure Media Redundancy Protocol for an interface.

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:

```
SM12XPA(config-if)# mrp timers leave-time 95
SM12XPA(config-if)# mrp timers join-time 8
SM12XPA(config-if)# mrp timers leave-all-time 2200
SM12XPA(config-if)#
```

mtu

Configure Maximum transmission unit for an interface.

Syntax

mtu <max_length>

Parameters

1518-9600 Maximum frame size in bytes.

EXAMPLE

```
SM12XPA(config-if)# mtu 2000
SM12XPA(config-if)# mtu 1518
SM12XPA(config-if)# mtu 9600
SM12XPA(config-if)#
```

mvr

Multicast VLAN Registration configuration for an interface.

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
<MvrName : 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

```
SM12XPA(config-if)# mvr name MvrVid1 type receiver
SM12XPA(config-if)# mvr name MvrVid1 type source
% Invalid MVR VLAN MvrVid1.    % Failed to set MVR port role.
SM12XPA(config-if)# mvr immediate-leave
SM12XPA(config-if)#
```

mvrp

Enable Multiple VLAN Registration Protocol on the interface.

Syntax: **mvrp** <cr>

Parameters:

Example:

```
SM12XPA(config-if)# mvrp
SM12XPA(config-if)#
```

network-clock

Configure Network Clock on the selected interface.

Syntax: **network-clock** synchronization ssm

Parameters:

synchronization	SSM enable/disable.
ssm	SSM enable/disable.

Example:

```
SM12XPA(config-if)# network-clock synchronization ssm
SM12XPA(config-if)#
```

no

Negate a command or set its defaults for an interface.

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	network-clock	port-security
ptp	pvlan	qos	rmon	sflow
shutdown	spanning-tree	speed	stream-id	switchport
tsn	udld	vcl		

EXAMPLE

```
SM12XPA(config-if)# no description
SM12XPA(config-if)# no sflow
SM12XPA(config-if)#
```

port security

Configure port security for an interface.

Syntax

port-security <cr>

port-security mac-address { [sticky] [<mac> [vlan <vlan_id>]] }*1

port-security maximum <limit>

port-security maximum-violation <violate_limit>

port-security violation { protect | restrict | shutdown }

Parameters

mac-address	Add a static (or sticky, though not recommended) MAC address on interface
maximum	Maximum number of MAC addresses that can be learned on this set of interfaces.
sticky	Enable/disable port security sticky function per interface.
maximum-violation	Maximum number of violating MAC addresses (used when violation is restricted)
violation	The action involved with exceeding the limit.
<Number of addresses : 1-1024>	Number of addresses
<mac_addr>	48 bit MAC address: xx:xx:xx:xx:xx:xx
vlan	VLAN keyword
<vlan_id>	VLAN IDs 1-4095
protect	Don't do anything
shutdown	Shutdown the port
trap	Send an SNMP trap
trap-shutdown	Send an SNMP trap and shutdown the port

EXAMPLE

```
SM12XPA(config-if)# port-security maximum 500
SM12XPA(config-if)# port-security sticky 00:11:22:33:44:55 vlan 10
SM12XPA(config-if)# port-security violation protect
SM12XPA(config-if)# port-security violation trap
SM12XPA(config-if)#
```

ptp

Configure Precision time Protocol (1588) for an interface.

Syntax:

ptp <clockinst> [internal]
ptp <clockinst> allow-faults <allow_faults>
ptp <clockinst> allow-lost-resp <allow_lost_resp>
ptp <clockinst> announce { [interval { <interval> | stop | default }] [timeout <timeout>] }*1
ptp <clockinst> delay-asymmetry <delay_asymmetry>
ptp <clockinst> delay-mechanism { e2e | p2p | common-p2p }
ptp <clockinst> delay-req interval { <interval> | stop | default }
ptp <clockinst> delay-thresh <delay_thresh>
ptp <clockinst> egress-latency <egress_latency>
ptp <clockinst> gptp-interval { <interval> | stop | default }
ptp <clockinst> gptp-to <gptp_to>
ptp <clockinst> ingress-latency <ingress_latency>
ptp <clockinst> localpriority <localpriority>
ptp <clockinst> mcast-dest { default | link-local }
ptp <clockinst> mgtSettableLogAnnounceInterval { <interval> | stop | default }
ptp <clockinst> mgtSettableLogGptpCapableMessageInterval { <interval> | stop | default }
ptp <clockinst> mgtSettableLogPdelayReqInterval { <interval> | stop | default }
ptp <clockinst> mgtSettableLogSyncInterval { <interval> | stop | default }
ptp <clockinst> not-slave
ptp <clockinst> statistics [clear]
ptp <clockinst> sync-interval { <interval> | stop | default }
ptp <clockinst> sync-rx-to <sync_rx_to>
ptp <clockinst> two-step [true]
ptp <clockinst> two-step false
ptp <clockinst> useMgtSettableLogGptpCapableMessageInterval <usemgtSettableLogGptpCapableMessageInterval>
ptp <clockinst> usemgtSettableLogAnnounceInterval <usemgtSettableLogAnnounceInterval>
ptp <clockinst> usemgtSettableLogPdelayReqInterval <usemgtSettableLogPdelayReqInterval>
ptp <clockinst> usemgtSettableLogSyncInterval <usemgtSettableLogSyncInterval>
ptp <v_0_to_3> compute-meanlinkdelay [force]
ptp <v_0_to_3> compute-neighbor-rate-ratio [force]
ptp cmlds allow-faults <v_1_to_255>
ptp cmlds allow-lost-resp <v_0_to_10>
ptp cmlds compute-meanlinkdelay [force]
ptp cmlds compute-neighbor-rate-ratio [force]
ptp cmlds delay-asymmetry <v_minus_100000_to_100000>
ptp cmlds pdelay-thresh <v_0_to_4000000000>
ptp cmlds pdelayreq-interval { <v_minus_7_to_5> | stop | default } [force]
ptp cmlds statistics [clear]
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
cmlds	Common Mean Link Delay Service
<cr>	
allow-faults	Set the allowedFaults value for the port
allow-lost-resp	Set the allowedLostResponses value for the port
announce	Set announce interval and timeout
compute-meanlinkdelay	Compute the Mean Link Delay to neighbor
compute-neighbor-rate-ratio	Compute the neighbor rate ratio
delay-asymmetry	Set path delay asymmetry
delay-mechanism	Set delay mechanism
delay-req	Set pdelay req interval
delay-thresh	Set the meanLinkDelayThresh value for the port to a number of nanoseconds
egress-latency	Set port egress latency
gptp-interval	Set gptp interval
gptp-to	Set the gPtpCapableReceiptTimeout value for the port
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
mgtSettableLogAnnounceInterval	Set announce interval
mgtSettableLogGptpCapableMessageInterval	802.1AS profile only: instructs the peer to stop sending sync messages
mgtSettableLogPdelayReqInterval	Set management settable pdelay req interval
mgtSettableLogSyncInterval	Set sync interval
not-slave	set 'not-slave' attribute for G8275.1 BMC algorithm
statistics	Get G802.1AS statistics counters for the port
sync-interval	Set sync interval
sync-rx-to	Set the syncReceiptTimeout value for the port
two-step	Set the two-step override value for the port to true
useMgtSettableLogGptpCapableMessageInterval	option to set sync interval
usemgtSettableLogAnnounceInterval	option to set announce interval
usemgtSettableLogPdelayReqInterval	option to set peer delay request interval
usemgtSettableLogSyncInterval	option to set sync interval
<1-255>	The allowedFaults value for the port
<0-10>	The allowedLostResponses value for the port
interval	Set announce interval
timeout	Set Announce timeout
<-3-4>	LogAnnounceInterval
default	802.1AS profile only: instructs the peer to use the initial value
stop	802.1AS profile only: instructs the peer to stop sending announce messages
<1-10>	Announce timeout (* announce interval)
force	force indicates to use management settable compute Mean Link Delay
compute-meanlinkdelay	Compute the Mean Link Delay to neighbor
compute-neighbor-rate-ratio	Compute the neighbor rate ratio
force	force indicates to use management settable compute-neighbor-rate-ratio
delay-asymmetry	Set path delay asymmetry
delay-mechanism	Set delay mechanism

delay-req	Set pdelay req interval
delay-thresh	Set the meanLinkDelayThresh value for the port to a number of nanoseconds
<-100000-100000>	Delay asymmetry in ns.
common-p2p	Common Peer to Peer Delay mechanism
e2e	End to End Delay mechanism
p2p	Peer to Peer Delay mechanism
interval	Define pdelay req interval
<-7-5>	logMinPdelayReqInterval
default	802.1AS profile only: instructs the peer to use the initial value
stop	802.1AS profile only: instructs the peer to stop sending PDelay_Req messages
<0-4000000000>	The meanLinkDelayThresh value in nanoseconds.
<-100000-100000>	Egress latency in ns
<int>	LogGptpInterval
default	802.1AS profile only: instructs the peer to use the initial value
stop	802.1AS profile only: instructs the peer to stop sending gptp messages
<1-255>	The gPtpCapableReceiptTimeout value for the port in number of gPtpCapable message TimeInterval's.
<-100000-100000>	Ingress latency in ns
<1-255>	PTP clock priority1: range = 1-255
default	Default destination address
link-local	Link-local destination address
<-3-4>	LogAnnounceInterval
default	802.1AS profile only: instructs the peer to use the initial value
stop	802.1AS profile only: instructs the peer to stop sending announce messages
<int>	802.1AS profile only: instructs the peer to use the initial value
default	
stop	
<-7-5>	logMinPdelayReqInterval
default	802.1AS profile only: instructs the peer to use the initial value
stop	802.1AS profile only: instructs the peer to stop sending PDelay_Req messages
<-7-4>	logSyncInterval
default	802.1AS profile only: instructs the peer to use the initial value
stop	802.1AS profile only: instructs the peer to stop sending sync messages
clear	Clear G802.1AS statistics counters for the port
<cr>	
sync-interval	sync-rx-to
<-7-4>	logSyncInterval
default	802.1AS profile only: instructs the peer to use the initial value
stop	802.1AS profile only: instructs the peer to stop sending sync messages
<1-255>	The syncReceiptTimeout value for the port in number of syncTimeInterval's.
false	
true	
<cr>	
<0-1>	setting 1 alters gptp-interval to configured mgtSettableLogGptpCapableMessageInterval
<0-1>	setting 1 alters announce-interval to configured mgtSettableLogAnnounceInterval

<0-1>	setting 1 alters peer-delay request interval to configured mgtSettableLogSyncInterval
<0-1>	setting 1 alters sync-interval to configured mgtSettableLogSyncInterval
clear	Clear G802.1AS statistics counters for the port
allow-faults	Set the allowedFaults value for the port
allow-lost-resp	Set the allowedFaults value for the port
compute-meanlinkdelay	Compute the Mean Link Delay to neighbor
compute-neighbor-rate-ratio	Compute the neighbor rate ratio
delay-asymmetry	Set Path delay asymmetry
pdelay-thresh	Set the Mean Link delay threshold value for the CMLDS port
pdelayreq-interval	Set Peer delay request interval
statistics	Common mean link delay service statistics

Example:

```
SM12XPA(config-if)# ptp 0 allow-lost-resp 3
SM12XPA(config-if)# ptp 0 announce interval default timeout 4
SM12XPA(config-if)# ptp 0 delay-req interval -7
SM12XPA(config-if)# ptp 0 mcast-dest link-local
SM12XPA(config-if)# ptp 0 sync-interval stop
SM12XPA(config-if)# ptp cmlds delay-asymmetry 6000
SM12XPA(config-if)# ptp cmlds allow-faults 40
SM12XPA(config-if)#
```

Messages:

Error setting port data instance 0 port 1

Error setting port data instance 0 port 2

pvlan

Configure Private VLAN

Syntax

pvlan <pvlan_list>

pvlan isolation

Parameters

<range_list> List of PVLANs. Range is from 1 to number of ports.

isolation Port isolation

EXAMPLE

```
SM12XPA(config-if)# pvlan isolation
SM12XPA(config-if)# pvlan 1
SM12XPA(config-if)# do show pvlan
PVLAN ID  Ports
--------  ------------------------------------------------------------------
1         GigabitEthernet 1/1, GigabitEthernet 1/2, GigabitEthernet 1/3,
          GigabitEthernet 1/4, GigabitEthernet 1/5, GigabitEthernet 1/6,
:::::::
SM12XPA(config-if)# pvlan 9
SM12XPA(config-if)# do show pvlan
PVLAN ID  Ports
--------  ------------------------------------------------------------------
1         GigabitEthernet 1/1, GigabitEthernet 1/2, GigabitEthernet 1/3,
          GigabitEthernet 1/4, GigabitEthernet 1/5, GigabitEthernet 1/6,
::::::
SM12XPA(config-if)# do show pvlan 9
PVLAN ID  Ports
--------  ------------------------------------------------------------------
-------
9         GigabitEthernet 1/3
SM12XPA(config-if)#
```

Messages:

% Invalid PVLAN detected

qos

Configure Quality of Service for an interface.

Syntax

qos class <cosid>

qos cos <cos>

qos cut-through queue <queue>

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

Parameters

class	Class of service ID configuration
cos	Class of service configuration
cut-through	Cut-through 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
wrr	Weighted round robin configuration
<Cos : 0-7>	Specific class of service
<Dei : 0-1>	Specific Drop Eligible Indicator
<Dpl : dpl>	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
remap	Rewrite DSCP field using classified DSCP and DPL=0 remapped through global dscp-egress-translation map
remap-dp	Rewrite DSCP field using classified DSCP and DPL remapped through global dscp-egress-translation map
rewrite	Rewrite DSCP field with classified DSCP value (no translation)
cos-tag	Map for cos to tag configuration
tag-cos	Map for tag to cos configuration
cos	Specify class of service
<Cos : 0~7>	Specific class of service or range
dpl	Specify drop precedence level
<Dpl : 0~1>	Specific drop precedence level or range
pcp	Specify PCP (Priority Code Point)
<Pcp : 0-7>	Specific PCP
dei	Specify DEI (Drop Eligible Indicator)
<Dei : 0-1>	Specific DEI
<Rate : uint>	Policer rate <100-3276700>(kbps) or <1-3276>(mbps) or <100-3276700>(fps) or <1-3276>(kfps).
flowcontrol	Rate is fps
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
destination	Match DMAC and DIP
source	Match SMAC and SIP (default)
queue	Specify queue
<Queue : 0~7>	Specific queue or range
<Rate : 100-3276700>	Shaper rate in kbps
excess	Allow use of excess bandwidth
mapped	Used mapped values (cos,dpl -> pcp,dei)
pcp	Specify default PCP
<Pcp : 0-7>	Specific PCP
dei	Specify default DEI
<Dei : 0-1>	Specific DEI
dscp	DSCP value
tag	VLAN tag
0-100	queue <w0> <w1> <w2> <w3> <w4> <w5> for wrr

Example:

```
SM12XPA(config-if)# qos cos 0
SM12XPA(config-if)# qos dei  0
SM12XPA(config-if)# qos dpl 1
SM12XPA(config-if)# qos dscp-classify any
SM12XPA(config-if)# qos dscp-classify selected
SM12XPA(config-if)# qos dscp-remark remap-dp
SM12XPA(config-if)# qos dscp-remark rewrite
SM12XPA(config-if)# qos dscp-translate
SM12XPA(config-if)# qos map cos-tag cos 1 dpl 0 pcp 0 dei 1
SM12XPA(config-if)# qos policer 500000 flowcontrol
SM12XPA(config-if)# qos queue-shaper queue 0 6000 excess
SM12XPA(config-if)# qos tag-remark mapped
SM12XPA(config-if)# qos tag-remark pcp 0 dei 0
SM12XPA(config-if)# qos trust dscp
SM12XPA(config-if)# qos trust tag
SM12XPA(config-if)# qos wrr 30 40 50 60 70 80
SM12XPA(config-if)#
```

rmon

Configure Remote Monitoring on an interface.

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
<1-3600>	Interval in seconds to sample data for each bucket
<1-65535>	Statistics entry ID

<cr>

Example:

```
SM12XPA(config-if)# rmon collection history 1 buckets 5000 interval 450
SM12XPA(config-if)# rmon collection stats 3000
SM12XPA(config-if)#
```

sflow

Statistics flow.

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.
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.
<PollInterval : 1-3600>	seconds
<14-200>	bytes
all	sampler type All
rx	sampler type RX
tx	sampler type TX
<1-4294967295>	Sampling rate
<cr>	

Example:

```
SM12XPA(config-if)# sflow counter-poll-interval 450
SM12XPA(config-if)# sflow max-sampling-size 50
SM12XPA(config-if)# sflow sampler tx
SM12XPA(config-if)# sflow sampling-rate 75000
Note: Sampling rate modified from 75000 to 4096 to cater for H/W limitations
SM12XPA(config-if)#
```

shut down

Shut down an interface.

Syntax:

shutdown <cr>

Parameters:

shutdown Shutdown of the interface.

<cr>

Example:

```
SM12XPA(config-if)# shutdown
SM12XPA(config-if)#
```

spanning-tree

Configure Spanning Tree protocol for an interface.

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

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
auto	Auto detect
point-to-point	Forced to point-to-point
shared	Forced to Shared
<Instance : 0-7>	instance 0-7 (CIST=0, MST2=1...)
cost	STP Cost of this port
port-priority	STP priority of this port
<Cost : 1-200000000>	Cost range
auto	Use auto cost

EXAMPLE

```
SM12XPA(config-if)# spanning-tree auto-edge
SM12XPA(config-if)# spanning-tree bpdu-guard
SM12XPA(config-if)# spanning-tree edge
SM12XPA(config-if)# spanning-tree link-type auto
SM12XPA(config-if)# spanning-tree mst 0 cost 500000
SM12XPA(config-if)# spanning-tree restricted-role
```

speed

Configure speed for an interface.

Syntax

speed { 25g | 25g-r-fec | 25g-rs-fec | 10g | 5g | 2500 | 1000 | 100 | 10 | auto { [10] [100] [1000] [2500] [5g] [10g] } | kr { [1000] [2500] [5g] [10g] [25g] [no-r-fec] [no-rs-fec] [no-train [remote-only]] } }

Parameters

speed Configures interface speed. If you use 10, 100, or 1000 keywords with the Auto keyword the port will only advertise the specified speeds.

1000	Force 1000 Mbps
10g	Force 10 Gbps
2500	Force 2500 Mbps
25g	Force 25 Gbps
25g-r-fec	Force 25 Gbps and R-FEC mode
25g-rs-fec	Force 25 Gbps and RS-FEC mode
5g	Force 5 Gbps
auto	Auto negotiation
kr	BASE-KR auto-negotiation (10G and 25G interfaces only)

EXAMPLE

```
SM12XPA(config-if)# speed 1000
SM12XPA(config-if)# speed auto
SM12XPA(config-if)# speed auto 1000
SM12XPA(config-if)# speed auto 1000 100
SM12XPA(config-if)# speed 100fx-ams
                          ^
% Invalid word detected at '^' marker.

SM12XPA(config-if)# do show interface GigabitEthernet 1/3 status
Interface               Mode     Speed & Duplex  Flow Control  Max Frame  Excess
ive  Link
----------------------  -------  --------------  ------------  ---------  ------
---  --------
GigabitEthernet 1/3     enabled  Auto            disabled      9600       Discard
100fdx
SM12XPA(config-if)#
```

stream-id

Associate stream with port.

Syntax: **stream-id** <port #>

Parameters: <port #>

Example:

```
SM12XPA(config-if)# stream-id 0
Error: MESA_RC_ERROR!
SM12XPA(config-if)# stream-id 1
Error: MESA_RC_ERROR!
SM12XPA(config-if)#
```

switchport

Configure Switching mode characteristics for an interface.

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 <vce_id> <ipv4> vlan <vid>
switchport vlan mac <mac_addr> vlan <vid>
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_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 - add or remove – forbidden
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
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
ip-subnet	VCL IP Subnet-based VLAN configuration.

mac	MAC-based VLAN commands
protocol	Protocol-based VLAN commands
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
id	id keyword
<1-128>	Unique VCE ID for each VCL entry (1-128)
<ipv4_subnet>	Source IP address and mask (Format: xx.xx.xx.xx/mm.mm.mm.mm).
group	Protocol-based VLAN group commands
<word16>	Group Name (Range: 1 - 16 characters)
vlan	vlan keyword
<vlan_id>	VLAN ID required for the group to VLAN mapping (Range: 1-4095)
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:

```
SM12XPA(config-if)# switchport access vlan 10
SM12XPA(config-if)# switchport forbidden vlan add 100
SM12XPA(config-if)# switchport forbidden vlan remove 100
SM12XPA(config-if)# switchport hybrid acceptable-frame-type all
SM12XPA(config-if)# switchport mode access
SM12XPA(config-if)# switchport trunk native vlan 10
SM12XPA(config-if)# switchport vlan protocol group 1 vlan 100
SM12XPA(config-if)# switchport voice vlan security
SM12XPA(config-if)# switchport voice vlan discovery-protocol oui
SM12XPA(config-if)#
```

VLAN Interface Configuration Commands

Syntax

do <command>

end

exit

help

ip address <subnet>

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>] } }

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>

ip ospf authentication [null | message-digest]

ip ospf authentication-key { unencrypted <unencrypted_pwd> | encrypted <encrypted_pwd> }

ip ospf message-digest-key <md_key_id> md5 { unencrypted <unencrypted_pwd> | encrypted <encrypted_pwd> }

ip ospf { priority <priority> | cost <cost> | hello-interval <hello_interval> | retransmit-interval <retransmit_interval> | dead-interval { <dead_interval> | minimal hello-multiplier <fast_hello_packets> } }

ip rip authentication key-chain <key_chain_str>

ip rip authentication mode { text | md5 }

ip rip authentication string { unencrypted <unencrypted_pwd> | encrypted <encrypted_pwd> }

ip rip receive version { none | 1 [2] | 2 [1] }

ip rip send version { 1 [2] | 2 [1] }

ip rip split-horizon [poisoned-reverse]

ipv6 address <subnet>

ipv6 address { autoconfig | dhcp [rapid-commit] }

ipv6 dhcp relay [destination <v_ipv6_ucast>] interface vlan <v_vlan_id>

ipv6 mld snooping

ipv6 mld snooping compatibility { auto | v1 | v2 }

ipv6 mld snooping last-member-query-interval <ipmc_lmqi>

ipv6 mld snooping priority <cos_priority>

ipv6 mld snooping querier election

ipv6 mld snooping query-interval <ipmc_qi>

ipv6 mld snooping query-max-response-time <ipmc_qri>

ipv6 mld snooping robustness-variable <ipmc_rv>

ipv6 mld snooping unsolicited-report-interval <ipmc_uri>

ipv6 ospf { passive | priority <priority> | cost <cost> | hello-interval <hello_interval> | retransmit-interval <retransmit_interval> | transmit-delay <transmit_delay> | dead-interval { <dead_interval> } }

no ip address
no ip igmp snooping
no ip igmp snooping compatibility
no ip igmp snooping last-member-query-interval
no ip igmp snooping priority
no ip igmp snooping querier { election | address }
no ip igmp snooping query-interval
no ip igmp snooping query-max-response-time
no ip igmp snooping robustness-variable
no ip igmp snooping unsolicited-report-interval
no ip ospf authentication
no ip ospf authentication-key
no ip ospf message-digest-key <md_key_id>
no ip ospf { priority | cost | dead-interval | hello-interval | retransmit-interval }
no ip rip authentication { mode | key-chain | string }
no ip rip split-horizon [poisoned-reverse]
no ip rip { send | receive } version
no ipv6 address [<ipv6_subnet>]
no ipv6 address { autoconfig | dhcp [rapid-commit] }
no ipv6 dhcp relay [{ destination <ipv6_ucast> interface vlan <v_vlan_id> } | { interface vlan <i_vlan_id> }]
no ipv6 mld snooping
no ipv6 mld snooping compatibility
no ipv6 mld snooping last-member-query-interval
no ipv6 mld snooping priority
no ipv6 mld snooping querier election
no ipv6 mld snooping query-interval
no ipv6 mld snooping query-max-response-time
no ipv6 mld snooping robustness-variable
no ipv6 mld snooping unsolicited-report-interval
no ipv6 ospf { priority | cost | dead-interval | hello-interval | retransmit-interval | transmit-delay | passive }

Parameters:

<vlan_list>	List of VLAN interface numbers, 1~4095
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
ip	Interface Internet Protocol config commands
ipv6	IPv6 configuration commands
no	Negate a command or set its defaults
address	Address configuration
igmp	Internet Group Management Protocol
ospf	Open Shortest Path First (OSPF)
rip	Routing Information Protocol (RIP)
snooping	Snooping IGMP

compatibility Interface compatibility
last-member-query-interval Last Member Query Interval in tenths of seconds
priority Interface CoS priority
querier IGMP Querier configuration
query-interval Query Interval in seconds
query-max-response-time Query Response Interval in tenths of seconds
robustness-variable Robustness Variable (RV)
unsolicited-report-interval Unsolicited Report Interval in seconds
address Configure the IPv6 address of an interface
mld Multicast Listener Discovery
X:X:X:X::X/<0-128> IPv6 prefix x:x::y/z
snooping Snooping MLD
<ipv4_addr> IP address
dhcp Enable DHCP client
<ipv4_netmask> IP netmask
fallback DHCP fallback settings
<ipv4_addr> DHCP fallback address
<ipv4_netmask> DHCP fallback netmask
timeout DHCP fallback timeout
seconds DHCP fallback timeout in seconds. Legal values are 0 to 4294967295 seconds
auto Compatible with IGMPv1/IGMPv2/IGMPv3
v1 Forced IGMPv1
v2 Forced IGMPv2
v3 Forced IGMPv3
<IpmcLmqi : 0-31744> 0 - 31744 tenths of seconds
<CosPriority : 0-7> CoS priority ranges from 0 to 7
address IGMP Querier address configuration
election Act as an IGMP Querier to join Querier-Election
<ipv4_ucast> A valid IPv4 unicast address
<IpmcQi : 1-31744> 1 - 31744 seconds
<IpmcQri : 0-31744> 0 - 31744 tenths of seconds
<IpmcRv : 1-255> Packet loss tolerance count from 1 to 255
<IpmcUri : 0-31744> 0 - 31744 seconds
auto Compatible with MLDv1/MLDv2
v1 Forced MLDv1
v2 Forced MLDv2
<ipv4_addr> IP address
<ipv4_subnet> IP address/prefix-size
authentication Enable authentication
authentication-key Configure simple password authentication
cost Set OSPF link state metric for the interface. It is used for Shortest Path First (SPF) calculation.
dead-interval Set the dead-interval value (number of seconds) for the specific interface.
hello-interval Set the hello-interval value for the specific interface.
message-digest-key Configure message digest key authentication

priority	Set OSPF router priority for the specific interface.
retransmit-interval	Set the retransmit-interval value for the specific interface. It's the time interval (in seconds) to wait before retransmitting a database description packet or a link-state request when it has not been acknowledged.
message-digest	Use message digest(MD5) authentication
null	Use null authentication
encrypted	Specifies an ENCRYPTED password will follow
unencrypted	Specifies an UNENCRYPTED password will follow
<word1-8>	The UNENCRYPTED (Plain Text) user password. Any printable characters including space is accepted. Notice 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.
<1-65535>	Use dead-interval value for the specific interface.
minimal	Use minimum dead interval value for the specific interface.
hello-multiplier	Set the fast hello packet. It specifies how many Hello packets will be sent per second.
<1-10>	User value of how many Hello packets will be sent per second.
<1-65535>	User hello-interval value for the specific interface.
<1-255>	Configure message digest key ID
md5	Use message digest(MD5) authentication
encrypted	Specifies an ENCRYPTED password will follow
unencrypted	Specifies an UNENCRYPTED password will follow
<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.
<word1-16>	The UNENCRYPTED (Plain Text) user password. Any printable characters including space is accepted. Notice that you have no chance to get the Plain Text password after this command. The system will always display the ENCRYPTED password.
<3-65535>	User retransmit-interval value for the specific interface.

Example:

```
SM24TBT2DPA(config-if-vlan)# ip dhcp server
SM24TBT2DPA(config-if-vlan)# ip address 1.2.3.4 255.255.255.0
SM24TBT2DPA(config-if-vlan)# ip address dhcp fallback 2.4.6.8 255.255.255.0 timeout 90000
SM12XPA(config-if-vlan)# ip ospf cost 5000
SM12XPA(config-if-vlan)# ip ospf dead-interval minimal hello-multiplier 5
Set OSPF interface configuration failed
SM12XPA(config-if-vlan)# ip ospf hello-interval 3000
SM12XPA(config-if-vlan)# ip ospf priority 90
SM12XPA(config-if-vlan)# ip ospf retransmit-interval 7500
SM24TBT2DPA(config-if-vlan)#
```

LLAG Interface Configuration Commands

To go to LLAG interface config mode from Config mode and then show the available CLI commands:

```
SM12XPA(config)# interface llag 1
SM12XPA(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    LACP port configuration
    no
SM12XPA(config-llag)#
```

Syntax:

do <command>
end <cr>
exit <cr>
help <cr>
lacp failover { revertive | non-revertive }
lacp max-bundle <v_uint>
no lacp failover [revertive | non-revertive]
no lacp max-bundle [<uint>]

Parameters:

<line>	do command entry
failover	Determines whether the LACP group failover is revertive or not
max-bundle	Applies to LACP-enabled groups
<uint>	Maximum number of active bundled LACP ports allowed in an aggregation
non-revertive	A non-revertive group will remain on the standby port even if the active port comes back up
revertive	A revertive group will change back to the active port if it comes back up
|	Output modifiers
<1-14>	Maximum number of active bundled LACP ports allowed in an aggregation

Example:

```
SM12XPA(config-llag)# do show ip interface brief
Interface Address            Method Status
--------- ------------------ ------ ------
VLAN 1    169.254.89.251/16  Manual UP
VLAN 1    172.27.195.105/24  Manual UP
SM12XPA(config-llag)# end
SM12XPA#
PA(config-llag)# exit

SM12XPA(config-llag)# 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?'.)

SM12XPA(config-llag)#
SM12XPA(config-llag)# lacp failover non-revertive
SM12XPA(config-llag)# lacp failover revertive
SM12XPA(config-llag)# no lacp failover non-revertive
SM12XPA(config-llag)# no lacp failover revertive
SM12XPA(config-llag)# no lacp max-bundle 5
SM12XPA(config-llag)#
```

30. DMS Commands

Configure DMS mode. Lantronix' DMS (Device Management System) is an intelligent management tool embedded in the switch to help reduce support time, cost, and effort.

DMS operates by a "Master" switch elected from one of the switches. The Master switch automatically discovers all types of IP device information and diagnoses all cable and device status in the topology. Any member of the DMS switch can be the Master switch.

SYNTAX

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

Parameters

service-mode	DMS mode
priority	DMS priority. You can choose the priority to change the dominant status of the switch.
high	DMS priority is high (the switch will become the DMS Controller (Master) switch.
low	DMS priority is low
mid	DMS priority is mid
non	DMS priority is non (this switch will never become the DMS Controller (Master) switch.

EXAMPLE

```
SM12XPA#(config)# dms service-mode enabled priority mid
SM12XPA#(config)# dms service-mode enabled priority high
SM12XPA#(config)#
```

Note: You can configure other DMS interface parameters using the interface config mode commands.
See chapter 29. Interface Config Mode Commands on page 241.

Appendix A. DHCP Per Port

You can configure DHCP Per Port via the CLI and Web UI. The DHCP Per Port factory default mode is Disabled. See the *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.

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 other 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:

```
# show ip dhcp server
(config)# ip dhcp server per-port
(config)# no ip dhcp server per-port
```

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 current DHCP Server and Per Port configuration, change the config, and display results:

```
SM12XPA#(config)# do show ip dhcp server

DHCP server is globally enabled.
  Enabled VLANs are 1.
  DHCP server per port is disabled.

SM12XPA#(config)# ip dhcp server per-port
SM12XPA#(config)# do show ip dhcp server

DHCP server is globally enabled.
  Enabled VLANs are 1.
  DHCP server per port is enabled.

SM12XPA(config)# no ip dhcp server per-port
SM12XPA(config)# do show ip dhcp server

DHCP server is globally enabled.
  Enabled VLANs are 1.
  DHCP server per port is disabled.

SM12XPA#
```

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:

```
SM12XPA# show ip dhcp server
DHCP server is globally enabled.
  All VLANs are disabled.
  DHCP server per port is enabled.
SM12XPA#
SM12XPA# con ter
SM12XPA#(config)# ip dhcp ?
    excluded-address   Prevent DHCP from assigning certain addresses
    pool                Configure DHCP address pools
    relay               DHCP relay agent configuration
    server              Enable DHCP server
    snooping            DHCP snooping
SM12XPA#(config)# ip dhcp server ?
    per-port                Enable DHCP server per port
SM12XPA#(config)# ip dhcp server
SM12XPA#(config)# end
SM12XPA# show ip dhcp server
DHCP server is globally enabled.
  All VLANs are disabled.
  DHCP server per port is disabled.
SISPM1040-384-LRT-C(config)# ip dhcp server per-port
SISPM1040-384-LRT-C(config)# do show ip dhcp server
DHCP server is globally enabled.
  All VLANs are disabled.
  DHCP server per port is enabled.
SISPM1040-384-LRT-C(config)#
```

Appendix B. MRP Pre-Requisites and Application Examples

You can configure Media Redundancy Protocol (MRP) parameters via the Web UI at Configuration > MRP and monitor them at Monitor > MRP, and via the CLI. See the *Web User Guide* for Web UI operation.

According to ANSI, IEC 62439-2 Ed. 1.0 b:2010 is applicable to high-availability automation networks based on ISO/IEC 8802-3 / IEEE 802.3 Ethernet technology. It specifies a recovery protocol based on a ring topology, designed to react deterministically on a single failure of an inter-switch link or switch in the network, under the control of a dedicated Media Redundancy Manager (MRM) node.

Media Redundancy Protocol per IEC 62439-2 is an interoperable ring technology designed to allow a switch to connect onto a universal redundant high speed ring. MRP is self-healing and self-adjusting, requiring no operator interaction. MRP is based on the concept of standby connections for seamless redundancy.

MRP Description

1. MRP operates at the MAC Layer of the Ethernet Switch.
2. The Ring Manager is called the Media Redundancy Manager (MRM).
3. Ring Clients are called Media Redundancy Clients (MRCs).
4. MRM and MRC ports support three Status Types:
   a. *Disabled* ring ports drop all the received frames.
   b. *Blocked* ring ports drop all the received frames except the MRP control frames.
   c. *Forwarding* ring ports forward all the received frames.
5. Ring Reconfiguration speed is 200 ms for 50 switches on average.
6. The MRM continuously sends Watchdog Packets into the ring network to verify communication between ring points.
7. During normal operation, no packets are transmitted over the redundant link.
8. When the MRM no longer receives the Watchdog Packets it sent out, the redundant path is immediately activated, and it becomes the primary layer 2 packet path.
9. When the failed link is restored:
   a. The MRM switches back to normal operation and the first Path becomes the primary path again.
   b. You can configure a period of time before the MRM switches back to the primary path (to prevent the circuit from flapping if it is not stable).

MRP Operation

Normal operation: the network works in the *Ring-Closed* status. In this status, one of the MRM ring ports is blocked, while the other is forwarding. Conversely, both ring ports of all MRCs are forwarding. Loops are avoided because the physical ring topology is reduced to a logical stub topology.

Failure mode: the network works in the *Ring-Open* status. For instance, in case of failure of a link connecting two MRCs, both ring ports of the MRM are forwarding. The MRCs adjacent to the failure have a blocked and a forwarding ring port; the other MRCs have both ring ports forwarding. The physical ring topology is also a logical stub topology in the Ring-Open status.

Related Devices

MRP is implemented for SISPM1040-384-LRT-C, SISPM1040-362-LRT, and SM12XPA.

MRP Sample Setup

The example below shows SISPM1040-384-LRT-C switches (one MRM and five MRCs).

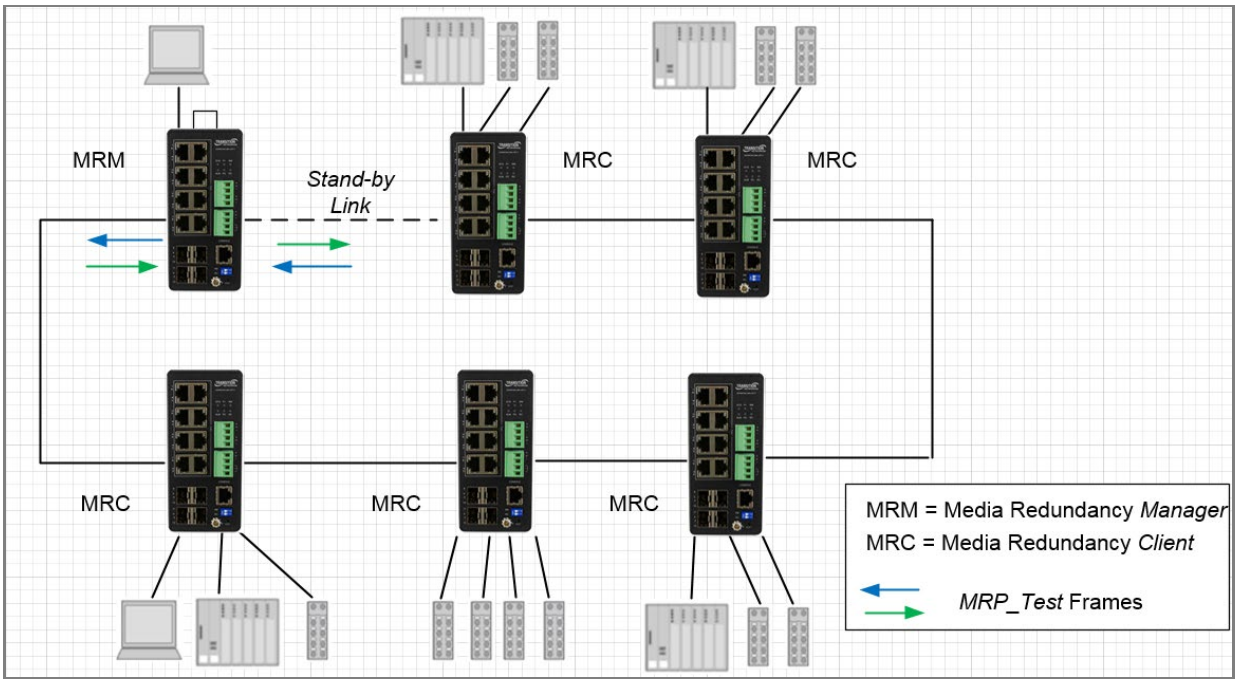


Figure: MRP Sample Setup

MRP Pre-Requisites (General)

The following are required to perform MRP setups.

1. Spanning Tree must be disabled with the `no spanning-tree mode` command.
2. Other Ring technologies must be disabled (G.8031 EPS, G.8032 ERPS, Rapid-Ring, Ring-To-Ring, etc.).
3. Other pre-requisites may apply to the specific examples below.

MRP Setup (CLI Commands)

Example 1: Create two new MRP domains on an SISPM1040-384-LRT-C:

```
SISPM1040-384-LRT-C(config)# mrp domain new 1
SISPM1040-384-LRT-C(config)# mrp domain new 2
SISPM1040-384-LRT-C(config)#
```

Example 2: Show default config for newly-created MRP domains 1 and 2:

```
SISPM1040-384-LRT-C(config)# do show mrp 1
Domain:
  Admin Role:                Undefined
  Name:                      Domain1
  UUID:                      Default
  Primary Ring Port ID:      Undefined
  Secondary Ring Port ID:    Undefined
  VLAN ID:                   0
SISPM1040-384-LRT-C(config)# do show mrp 2
Domain:
  Admin Role:                Undefined
  Name:                      Domain2
  UUID:                      Default
  Primary Ring Port ID:      Undefined
  Secondary Ring Port ID:    Undefined
  VLAN ID:                   0
SISPM1040-384-LRT-C(config)#
```

Example 3: Configure MRP 1 (Manager) and MRP 2 (Client) parameters:

```
SISPM1040-384-LRT-C(config)# mrp 1 role manager
SISPM1040-384-LRT-C(config)# mrp 1 manager media-redundancy enable
SISPM1040-384-LRT-C(config)# mrp 1 manager priority 3
SISPM1040-384-LRT-C(config)# mrp 1 manager test-interval 25
SISPM1040-384-LRT-C(config)# mrp 1 manager test-monitoring 4 2
SISPM1040-384-LRT-C(config)# mrp 1 vlan 100
SISPM1040-384-LRT-C(config)# mrp 2 client blocked-state enable
SISPM1040-384-LRT-C(config)# mrp 2 client link-interval 15 30 2
SISPM1040-384-LRT-C(config)# mrp 2 ringport secondary GigabitEthernet 1/5
SISPM1040-384-LRT-C(config)# mrp 2 vlan 200
SISPM1040-384-LRT-C(config)#
```

Example 4: Show newly-configured MRP 1 parameters:

```
SISPM1040-384-LRT-C(config)# do show mrp 1
Operational:
  Role:                       Undefined
  Status:                     Disabled
  Ring State:                 Undefined
  Primary Ring Port State:    Unknown
  Secondary Ring Port State: Unknown
Domain:
  Admin Role:                 Manager
  Name:                       Domain1
  UUID:                       Default
  Primary Ring Port ID:       Undefined
  Secondary Ring Port ID:     Undefined
  VLAN ID:                    100
Manager:
  Priority:                          3
  Topology Change Interval, ms:      10
  Topology Change Repeat Count:      3
  Short Test Interval, ms:           10
  Default Test Interval, ms:         25
  Test Monitoring Count:             4
  Test Monitoring Extended Count:    2
  Non-blocking MRC supported:        Disabled
  React On Link Change:              Disabled
```

```
  Check Media Redundancy Event:     Enabled
SISPM1040-384-LRT-C(config)#
```

Example 5: Show newly-configured MRP 2 parameters:

```
SISPM1040-384-LRT-C(config)# do show mrp 2
Operational:
  Role:                       Undefined
  Status:                     Disabled
  Primary Ring Port State:    Unknown
  Secondary Ring Port State: Unknown
Domain:
  Admin Role:                 Client
  Name:                       Domain2
  UUID:                       Default
  Primary Ring Port ID:       Undefined
  Secondary Ring Port ID:     5
  VLAN ID:                    200
Client:
  Link Down Interval, ms:     15
  Link Up Interval, ms:       30
  Link Change Count:          2
  BLOCKED state supported:    Enabled
SISPM1040-384-LRT-C(config)#
```

Messages: *W mrp 247/mrp_icli_domain_uuid#219: Warning: MRP Domain UUID: The UUID incorrect*

W mrp 247/mrp_icli_domain_vlan#321: Warning: MRP Domain Vlan ID: unable to modify domain with Id 2, VLAN ID is used in other ring domain

Appendix C. G.8032 Major and Sub Rings Configuration

Introduction

Ethernet Ring Protection Switching (ERPS) protocol is defined by the International Telecommunication Union - Telecommunication Standardization Sector (ITU-T) to prevent loops at Layer 2. The standard number is ITU-T G.8032 (ERPS is also called G.8032). Generally, redundant links are used on a network to provide link backup and enhance network reliability. The use of redundant links, however, may produce loops, causing broadcast storms and rendering the MAC address table unstable. These can affect the network, where the communication quality is not good enough, and communication services might be interrupted.

ERPS provides advantages over traditional ring network technologies such as STP/RSTP/MSTP and optimizes detection mechanism to provide faster convergence. For example, the ERPS-enabled switch provides 50-ms convergence for broadcast packets. See the ERPS command descriptions on pages 10, 44, and 208 for more G.8032 ERPS command information.

Basic Concepts

There are some basic concepts that support ERPS Ring:

- **Ring Protection Link (RPL)** – Link designated by mechanism that is blocked during Idle state to prevent loop on Bridged ring.
- **RPL Owner node** – Node connected to RPL that blocks traffic on RPL during Idle state and unblocks during Protection state.
- **RPL Neighbor node** – Node connected to RPL that blocks traffic on RPL during Idle state and unblocks during Protection state (v2).
- **Link Monitoring** – Links of ring are monitored using standard ETH CC OAM messages (CFM) • Signal Fail (SF) – Signal Fail is declared when signal fail condition is detected.
- **No Request (NR)** – No Request is declared when there are no outstanding conditions (e.g., SF, etc.) on the node.
- **Ring APS (R-APS) Messages** – Protocol messages defined in Y.1731 and G.8032.
- **Automatic Protection Switching (APS) Channel** - Ring-wide VLAN used exclusively for transmission of OAM messages including R-APS messages.

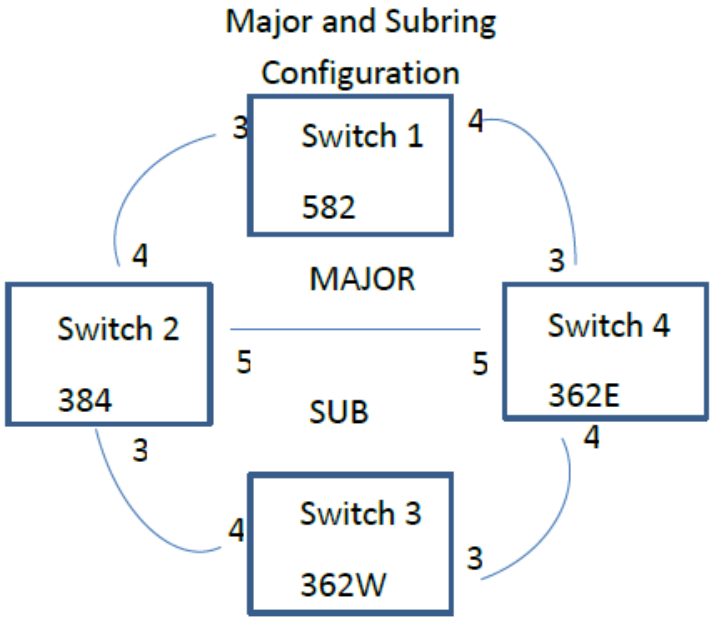
IP Addresses

The sample configurations below use these IP addresses:
SISPM1040-582-LRT : 192.168.1.85
SISPM1040-384-LRT-C : 192.168.1.95
362W : 192.168.1.125
362E : 192.168.1.135

Sample Configuration

Major Ring and Sub Ring : 4 Switches

Major : SW#1, SW#2, SW#4; **Sub** : SW#2, SW#3, SW#4



VLANs	APS	Data						
10,20	5							
RPL Mode	**Major**	**Sub**	**Major**	**Sub**	**Major**	**Sub**		
	Owner Switch #1	Owner Switch #3 #4	Neighbor Switch	Neighbor Switch #2		None Switch #2	None Switch #4	

Switch 1 Configuration (SISPM1040-582-LRT)

VLANs	Port 3	Trunk	Tag All	5,10
	Port 4	Trunk	Tag All	5,10
STP		Port 3	Disable	
	Port 4	Disable		

MEPs	Instance	Port	VLAN	MAC	MEP ID	Peer MAC	Peer MEP ID
	1	3	10	00-C0-F2-49-39-5F	1	00-40-C7-1C-C7-30	4
	2	4	10	00-C0-F2-49-39-60	5	00-C0-F2-53-EF-FC	5

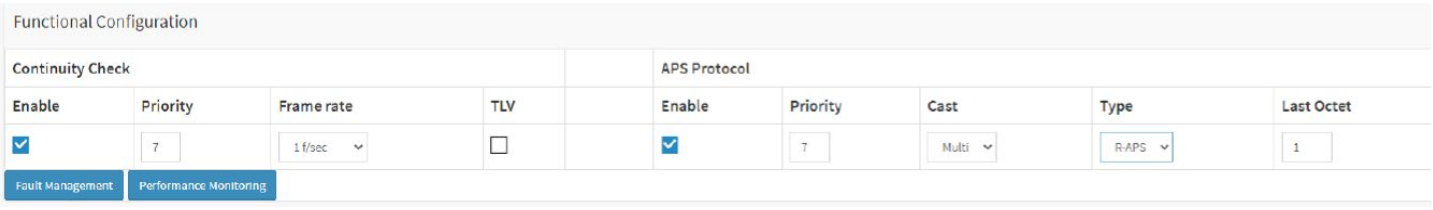
Note: All MEPs are programed the same under the Functional Configuration.

Continuity Check

Check Enable – Priority: 7 – Frame rate: 1f/sec

APS Protocol

Check Enable – Priority: 7 – Cast: Multi – Type: R-APS



ERPS										
ERPS ID	Port 0	Port 1	Port 0 SF	Port 1 SF	Port 0 APS	Port 1 APS	Ring	RPL	Port	VLAN
1	1	2	1	2	1	2	Major	Owner	0	5

Switch 2 Configuration (SISPM1040-384-LRT-C)

VLANs	Port 3	Trunk	Tag All	5,20
	Port 4	Trunk	Tag All	5,10
	Port 5	Trunk	Tag All	5,10,20
STP		Port 3	Disable	
	Port 4	Disable		
	Port 5	Disable		

MEPs	Instance	Port	VLAN	MAC	MEP ID	Peer MAC	Peer MEP ID	
	1		3	20	00-40-C7-1C-C7-2F	3	00-C0-F2-53-F0-BA	8
	2		4	10	00-C0-F2-49-39-60	4	00-C0-F2-49-39-5F	1
	3		5	10	00-40-C7-1C-C7-31	9	00-C0-F2-53-EF-FE	10

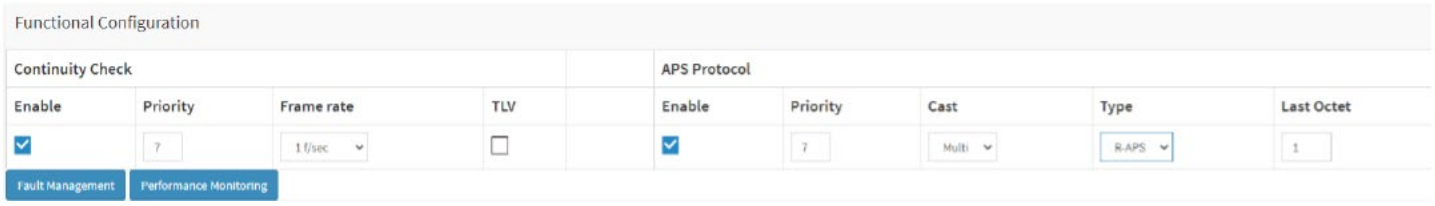
Note: All MEPs are programed the same under the Functional Configuration.

Continuity Check

Check Enable – Priority: 7 – Frame rate: 1f/sec

APS Protocol

Check Enable – Priority: 7 – Cast: Multi – Type: R-APS



ERPS

ERPS ID	Port 0 VLAN	Port 1	Port 0 SF	Port 1 SF	Port 0 APS	Port 1 APS	Ring	RPL	Port
1	35	2	3	2	3	2	Major	Neighbor	1
2	15	0	1	0	1	0	Sub	Neighbor	0

Interconnect Yes, Major 1

Switch 3 Configuration (SISPM1040-362-LRT[W])

VLANs Port 3 Trunk Tag All 5,20

Port 4 Trunk Tag All 5,20

STP Port 3 Disable

Port 4 Disable

MEPs	Instance	Port	VLAN	MAC	MEP ID	Peer MAC	Peer MEP ID
	1	3	20	00-C0-F2-53-F0-B9	7	00-C0-F2-53-EF-FD	6
	2	4	20	00-C0-F2-53-F0-BA	8	00-40-C7-1C-C7-2F	3

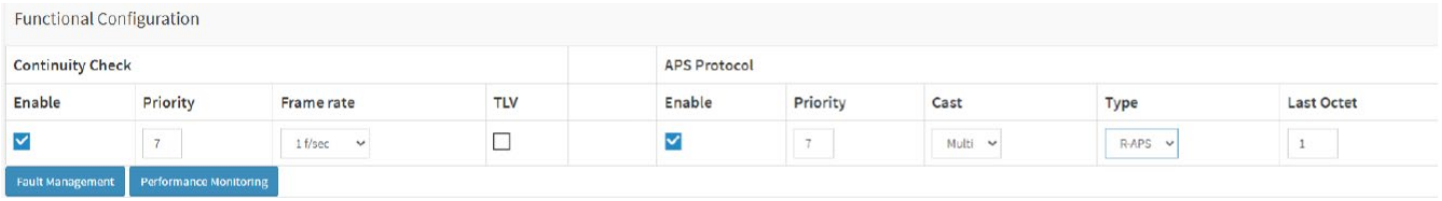
Note: All MEPs are programed the same under the Functional Configuration.

Continuity Check

Check Enable – Priority: 7 – Frame rate: 1f/sec

APS Protocol

Check Enable – Priority: 7 – Cast: Multi – Type: R-APS



ERPS									
ERPS ID	Port 0	Port 1	Port 0 SF	Port 1 SF	Port 0 APS	Port 1 APS	Ring	RPL	Port	VLAN
1	1	2	1	2	1	2	Sub	Owner	1	5

Switch 4 Configuration (SISPM1040-362-LRT[E])

VLANs	Port 3	Trunk	Tag All	5,10
	Port 4	Trunk	Tag All	5,20
	Port 5	Trunk	Tag All	5,10,20
STP		Port 3	Disable	
	Port 4	Disable		
	Port 5	Disable		

MEPs	Instance	Port	VLAN	MAC	MEP ID	Peer MAC	Peer MEP ID
	1	3	10	00-C0-F2-53-EF-FC	5	00-C0-F2-49-39-60	2
	2	4	20	00-C0-F2-53-EF-FD	6	00-C0-F2-53-F0-B9	7
	3	5	10	00-C0-F2-53-EF-FE	10	00-40-C7-1C-C7-31	9

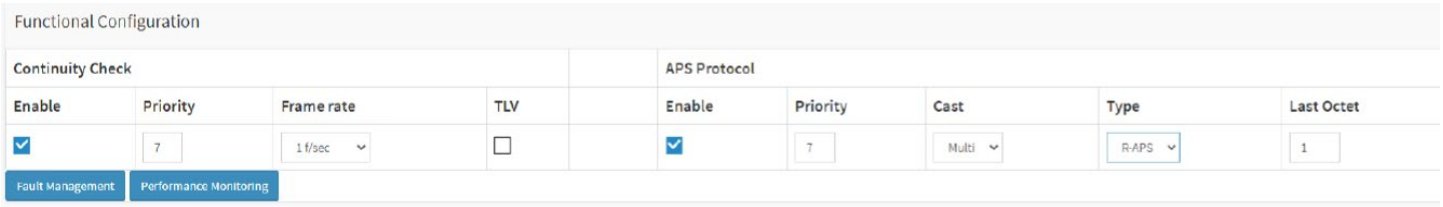
Note: All MEPs are programed the same under the Functional Configuration.

Continuity Check

Check Enable – Priority: 7 – Frame rate: 1f/sec

APS Protocol

Check Enable – Priority: 7 – Cast: Multi – Type: R-APS



ERPS

ERPS ID	Port 0	Port 1	Port 0 SF	Port 1 SF	Port 0 APS	Port 1 APS	Ring	RPL	Port VLAN
1	1	3	1	3	1	3	Major	None	5
2	2	0	2	0	2	0	Sub	None	5

Interconnect Yes, Major 1

Testing

Testing Pings from Switch 4 to Switch 1 – Major Ring

Failing Major ring, No lost pings

C:\Users\dennist>ping 192.168.1.85 -t

Pinging 192.168.1.85 with 32 bytes of data:

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time=1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time=5ms TTL=64 ←----------

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64 **Cable Disconnect**

Reply from 192.168.1.85: bytes=32 time=3ms TTL=64 ←----------

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time=1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time=1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Reply from 192.168.1.85: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.1.85:

Packets: Sent = 45, Received = 45, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 5ms, Average = 0ms

Testing Pings from Switch 4 to Switch 3 – Sub Ring

Fail Subring, No lost pings

```
C:\Users\dennist>ping 192.168.1.125 -t

Pinging 192.168.1.125 with 32 bytes of data:
Reply from 192.168.1.125: bytes=32 time=1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time=1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time=7ms TTL=64    <---------------------
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64    Cable Disconnect
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time=1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

Reply from 192.168.1.125: bytes=32 time=1ms TTL=64

Reply from 192.168.1.125: bytes=32 time<1ms TTL=64

Reply from 192.168.1.125: bytes=32 time<1ms TTL=64

Reply from 192.168.1.125: bytes=32 time<1ms TTL=64

Reply from 192.168.1.125: bytes=32 time<1ms TTL=64

Reply from 192.168.1.125: bytes=32 time<1ms TTL=64

Reply from 192.168.1.125: bytes=32 time<1ms TTL=64

Reply from 192.168.1.125: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.1.125:

Packets: Sent = 41, Received = 41, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 7ms, Average = 0ms

Config files

running-config_192.168.1

```
hostname SISPM1040-362-LRT-E
username admin privilege 15 password encrypted
feec1d1085ff075fd03b1d2d5ab4c0befbff0917079c8abb3a77338041bf5d6e1771bdbbd1a317ea2f42fc2aacc8c
50a8e667456d7c04099f74f8ef9dcc0fbd4
!
vlan 1
!
!
!
!
ip route 0.0.0.0 0.0.0.0 192.168.1.254
tzidx 0
exec-timeout autologout 0
snmp-server location DT Lab Ring
system name SISPM1040-362-LRT-E
system location DT Lab Ring
system description Managed Hardened PoE+ Switch, (4) 10/100/1000Base-T PoE+ Ports + (2)
10/100/1000Base-T Ports + (2) 100/1000Base-X SFP Ports
!
interface GigabitEthernet 1/1
!
interface GigabitEthernet 1/2
!
interface GigabitEthernet 1/3
 no spanning-tree
 switchport trunk allowed vlan 5,10
 switchport trunk vlan tag native
 switchport mode trunk
 poe mode disable
!
interface GigabitEthernet 1/4
 no spanning-tree
 switchport trunk allowed vlan 5,20
 switchport trunk vlan tag native
 switchport mode trunk
 poe mode disable
!
interface GigabitEthernet 1/5
```

```
 no spanning-tree
 switchport trunk allowed vlan 5,10,20
 switchport trunk vlan tag native
 switchport mode trunk
!
interface GigabitEthernet 1/6
!
interface GigabitEthernet 1/7
!
interface GigabitEthernet 1/8
!
interface vlan 1
 ip address 192.168.1.135 255.255.255.0
 ip dhcp server
!
mep 1 down domain port level 4 interface GigabitEthernet 1/3
mep 1 mep-id 5
mep 1 vid 10
mep 1 peer-mep-id 2 mac 00-C0-F2-49-39-60
mep 1 cc 7
mep 1 aps 7 raps
mep 2 down domain port level 4 interface GigabitEthernet 1/4
mep 2 mep-id 6
mep 2 vid 20
mep 2 peer-mep-id 7 mac 00-C0-F2-53-F0-B9
mep 2 cc 7
mep 2 aps 7 raps
mep 3 down domain port level 4 interface GigabitEthernet 1/5
mep 3 mep-id 10
mep 3 vid 10
mep 3 peer-mep-id 9 mac 00-40-C7-1C-C7-31
mep 3 cc 7
mep 3 aps 7 raps
erps 1 major port0 interface GigabitEthernet 1/3 port1 interface GigabitEthernet 1/5
erps 1 mep port0 sf 1 aps 1 port1 sf 3 aps 3
erps 1 vlan 5
erps 2 sub port0 interface GigabitEthernet 1/4 interconnect 1
erps 2 mep port0 sf 2 aps 2
erps 2 vlan 5
!
```

```
spanning-tree aggregation
 spanning-tree link-type point-to-point
!
!
line console 0
!
line vty 0
!
line vty 1
!
line vty 2
!
line vty 3
!
line vty 4
!
line vty 5
!
line vty 6
!
line vty 7
!
line vty 8
!
line vty 9
!
line vty 10
!
line vty 11
!
line vty 12
!
line vty 13
!
line vty 14
!
line vty 15
!
!
end
```

running-config_192.168.1

```
hostname SISPM1040-582-LRT
logging on
logging host 192.168.1.253
username admin privilege 15 password encrypted
7073dec86c15b8a9907bb4106ef783adde46bd5b5969cc68fb55b430336bd7c80d5ded65d2fdb39abe81cc9caa5a9
3620f270c21bca86e776cee9c5588bfb8c7
username superuser privilege 15 password encrypted
4643fdc71f39fd4cb955943fcaf89faca81bc650fbaeebe25a796662d5c225bf0d5ded65d2fdb39abe81cc9c51449
7e27799560e488713aabaac4f167e7732ca
!
vlan 1
!
!
!
!
ip route 0.0.0.0 0.0.0.0 192.168.1.254
ntp automatic
ntp server 1 ip-address ntp1.transition.com
ntp server 2 ip-address ntp2.transition.com
clock timezone '' 9
tzidx 0
exec-timeout autologout 0
poe ping-check enable
snmp-server contact DTroxel
snmp-server location DT Office
system contact DTroxel
system name SISPM1040-582-LRT
system location DT Office
system description Managed Hardened PoE++ Switch (8) 10/100/1000Base-T PoE++ Ports + (2)
100/1000Base-X SFP Slot
!
interface GigabitEthernet 1/1
 no spanning-tree
 poe ping-ip-addr 192.168.1.70
 poe failure-action reboot-Remote-PD
!
interface GigabitEthernet 1/2
 no spanning-tree
 switchport forbidden vlan add 3,5
!
```

```
interface GigabitEthernet 1/3
 no spanning-tree
 switchport trunk allowed vlan 5,10
 switchport trunk vlan tag native
 switchport mode trunk
 poe mode disable
!
interface GigabitEthernet 1/4
 no spanning-tree
 switchport trunk allowed vlan 5,10
 switchport trunk vlan tag native
 switchport mode trunk
 poe mode disable
 poe ping-ip-addr 192.168.1.200
!
interface GigabitEthernet 1/5
 no spanning-tree
!
interface GigabitEthernet 1/6
 no spanning-tree
!
interface GigabitEthernet 1/7
!
interface GigabitEthernet 1/8
 poe mode disable
!
interface GigabitEthernet 1/9
 no spanning-tree
!
interface GigabitEthernet 1/10
 no spanning-tree
!
interface vlan 1
 ip address 192.168.1.85 255.255.255.0
 ip dhcp server
!
mep 1 down domain port level 4 interface GigabitEthernet 1/3
mep 1 vid 10
mep 1 peer-mep-id 4 mac 00-40-C7-1C-C7-30
mep 1 cc 7
```

```
mep 1 aps 7 raps
mep 2 down domain port level 4 interface GigabitEthernet 1/4
mep 2 mep-id 2
mep 2 vid 10
mep 2 peer-mep-id 5 mac 00-C0-F2-53-EF-FC
mep 2 cc 7
mep 2 aps 7 raps
erps 1 major port0 interface GigabitEthernet 1/3 port1 interface GigabitEthernet 1/4
erps 1 mep port0 sf 1 aps 1 port1 sf 2 aps 2
erps 1 rpl owner port0
erps 1 vlan 5
!
spanning-tree aggregation
 no spanning-tree
 spanning-tree link-type point-to-point
!
!
line console 0
!
line vty 0
!
line vty 1
!
line vty 2
!
line vty 3
!
line vty 4
!
line vty 5
!
line vty 6
!
line vty 7
!
line vty 8
!
line vty 9
!
line vty 10
```

```
!
line vty 11
!
line vty 12
!
line vty 13
!
line vty 14
!
line vty 15
!
map-api-key AIzaSyBItuM0hDtK6nJeZPEk7jnrcoGGi92EpFM
!
end
```

running-config_192.168.1

```
hostname SISPM1040-384-LRT-C
username admin privilege 15 password encrypted
6593186b999f348becd63b8612ac561c114250a1a00bd38f6afb5378acb6d08c1864c59b092b0e2b29ba4f1d55916
6800846cbc52c4558a90e4cdf95d3cfcbf4
username dennis privilege 5 password encrypted
a92a5dbf4fcd2e13d35adb36d2418476e907de19a641fa7baf80b1abb2bacd8ee5dbdd44e246b88be1636df6b8769
af790aa8721622481085e33c32e6e119dbd
!
vlan 1
!
!
!
!
ip route 0.0.0.0 0.0.0.0 192.168.1.254
tzidx 0
exec-timeout autologout 0
poe ping-check enable
access-list ace 2 ingress interface GigabitEthernet 1/2 action deny
access-list ace 1 next 2 ingress interface GigabitEthernet 1/2 frame-type ipv4-tcp dport 443
system name SISPM1040-384-LRT-C
system description Managed Hardened PoE+ Switch, (8) 10/100/1000Base-T PoE+ Ports + (4)
100/1000Base-X SFP
!
interface GigabitEthernet 1/1
 no spanning-tree
 lldp cdp-aware
 poe ping-ip-addr 192.168.1.100
 poe failure-action reboot-Remote-PD
!
interface GigabitEthernet 1/2
 no spanning-tree
 lldp cdp-aware
 speed 1000
 duplex full
!
interface GigabitEthernet 1/3
 no spanning-tree
 switchport trunk allowed vlan 5,20
 switchport trunk vlan tag native
 switchport mode trunk
 lldp cdp-aware
```

```
 poe mode disable
!
interface GigabitEthernet 1/4
 no spanning-tree
 switchport trunk allowed vlan 5,10
 switchport trunk vlan tag native
 switchport mode trunk
 lldp cdp-aware
 poe mode disable
!
interface GigabitEthernet 1/5
 no spanning-tree
 switchport trunk allowed vlan 5,10,20
 switchport trunk vlan tag native
 switchport mode trunk
 lldp cdp-aware
 poe mode disable
!
interface GigabitEthernet 1/6
 no spanning-tree
 lldp cdp-aware
!
interface GigabitEthernet 1/7
 lldp cdp-aware
!
interface GigabitEthernet 1/8
 lldp cdp-aware
!
interface GigabitEthernet 1/9
 no spanning-tree
 switchport trunk allowed vlan 1,50,100
 switchport trunk vlan tag native
 lldp cdp-aware
!
interface GigabitEthernet 1/10
 no spanning-tree
 lldp cdp-aware
!
interface GigabitEthernet 1/11
 no spanning-tree
```

```
 lldp cdp-aware
!
interface GigabitEthernet 1/12
 no spanning-tree
 lldp cdp-aware
!
interface vlan 1
 ip address 192.168.1.95 255.255.255.0
 ip dhcp server
!
mep 1 down domain port level 4 interface GigabitEthernet 1/3
mep 1 mep-id 3
mep 1 vid 20
mep 1 peer-mep-id 8 mac 00-C0-F2-53-F0-BA
mep 1 cc 7
mep 1 aps 7 raps
mep 2 down domain port level 4 interface GigabitEthernet 1/4
mep 2 mep-id 4
mep 2 vid 10
mep 2 peer-mep-id 1 mac 00-C0-F2-49-39-5F
mep 2 cc 7
mep 2 aps 7 raps
mep 3 down domain port level 4 interface GigabitEthernet 1/5
mep 3 mep-id 9
mep 3 vid 10
mep 3 peer-mep-id 10 mac 00-C0-F2-53-EF-FE
mep 3 cc 7
mep 3 aps 7 raps
erps 1 major port0 interface GigabitEthernet 1/5 port1 interface GigabitEthernet 1/4
erps 1 mep port0 sf 3 aps 3 port1 sf 2 aps 2
erps 1 rpl neighbor port1
erps 1 vlan 5
erps 2 sub port0 interface GigabitEthernet 1/3 interconnect 1
erps 2 mep port0 sf 1 aps 1
erps 2 rpl neighbor port0
erps 2 vlan 5
!
spanning-tree aggregation
 no spanning-tree
 spanning-tree link-type point-to-point
```

```
!
!
line console 0
!
line vty 0
!
line vty 1
!
line vty 2
!
line vty 3
!
line vty 4
!
line vty 5
!
line vty 6
!
line vty 7
!
line vty 8
!
line vty 9
!
line vty 10
!
line vty 11
!
line vty 12
!
line vty 13
!
line vty 14
!
line vty 15
!
map-api-key AIzaSyBItuM0hDtK6nJeZPEk7jnrcoGGi92EpFM
!
end
```

running-config_192.168.1

```
hostname SISPM1040-362-LRT-W
username admin privilege 15 password encrypted
6158ed7daf39d06ded0e7c4828c3b15bb4c40673bd445afcd643295925ae425d9611d1cbe872708237571aacc7b92
37f33b01ae6866e2484009edfe1fa0bf56f
!
vlan 1
!
!
!
!
ip route 0.0.0.0 0.0.0.0 192.168.1.254
tzidx 0
exec-timeout autologout 0
snmp-server location DT Lab Ring
system name SISPM1040-362-LRT-W
system location DT Lab Ring
system description Managed Hardened PoE+ Switch, (4) 10/100/1000Base-T PoE+ Ports + (2)
10/100/1000Base-T Ports + (2) 100/1000Base-X SFP Ports
!
interface GigabitEthernet 1/1
!
interface GigabitEthernet 1/2
!
interface GigabitEthernet 1/3
 no spanning-tree
 switchport trunk allowed vlan 5,20
 switchport trunk vlan tag native
 switchport mode trunk
 poe mode disable
!
interface GigabitEthernet 1/4
 no spanning-tree
 switchport trunk allowed vlan 5,20
 switchport trunk vlan tag native
 switchport mode trunk
 poe mode disable
!
interface GigabitEthernet 1/5
!
interface GigabitEthernet 1/6
```

```
!
interface GigabitEthernet 1/7
!
interface GigabitEthernet 1/8
!
interface vlan 1
 ip address 192.168.1.125 255.255.255.0
 ip dhcp server
!
mep 1 down domain port level 4 interface GigabitEthernet 1/3
mep 1 mep-id 7
mep 1 vid 20
mep 1 peer-mep-id 6 mac 00-C0-F2-53-EF-FD
mep 1 cc 7
mep 1 aps 7 raps
mep 2 down domain port level 4 interface GigabitEthernet 1/4
mep 2 mep-id 8
mep 2 vid 20
mep 2 peer-mep-id 3 mac 00-40-C7-1C-C7-2F
mep 2 cc 7
mep 2 aps 7 raps
erps 1 sub port0 interface GigabitEthernet 1/3 port1 interface GigabitEthernet 1/4
erps 1 mep port0 sf 1 aps 1 port1 sf 2 aps 2
erps 1 rpl owner port1
erps 1 vlan 5
!
spanning-tree aggregation
 spanning-tree link-type point-to-point
!
!
line console 0
!
line vty 0
!
line vty 1
!
line vty 2
!
line vty 3
!
```

```
line vty 4
!
line vty 5
!
line vty 6
!
line vty 7
!
line vty 8
!
line vty 9
!
line vty 10
!
line vty 11
!
line vty 12
!
line vty 13
!
line vty 14
!
line vty 15
!
!
end
```

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